Appendix D
Accident Prevention Plan

Draft
Accident Prevention Plan

MRS-16 Munitions and Explosives of Concern Removal
Former Fort Ord, California

Total Environmental Restoration Contract
Contract No. DACW05-96-D-0011
Task Order No. 016

Submitted to:
U.S. Department of the Army
Corps of Engineers
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Sacramento, California 95814-2922

Submitted by:
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Revision C

March 2006

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List of Attachments

List of Acronyms

AHA	Activity Hazard Analysis
ANSI	American National Standards Institute
APP	Accident Prevention Plan
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CPR	cardiopulmonary resuscitation
EH&S	Environmental Health and Safety
EM	engineering manual
ENG	engineer
FA	first aid
H&S	health and safety
HAZWOPER	hazardous waste operations and emergency response
HSM	health and safety manager
JSA	Job Safety Analysis
LWD	lost workday
MEC	munitions of explosive concern
OSHA	Occupational Safety and Health Administration
PM	Project Manager
PPE	personal protective equipment
Shaw	Shaw Environmental, Inc.
SOW	statement of work
SSHP	Site Safety and Health Plan
SSWP	Site Specific Work Plan
SUXOS	Senior UXO Supervisor
USAESCH	U.S. Army Engineering and Support Center, Huntsville
UXO	unexploded ordnance
USACE	U.S. Army Corps of Engineers

APP Acknowledgement _____

WORKER ACKNOWLEDGEMENT OF THE ACCIDENT PREVENTION PLAN (APP) AND SITE ORIENTATION

I have read or been trained to the contents of this APP and I understand the contents. I agree to abide by its requirements. I also have been properly trained, medically monitored, and fit-tested as required for the work that I am to perform. I understand that failure to comply with the provisions of this plan can lead to disciplinary action and possible termination from the project, or Shaw. Documentation of worker acknowledgment will be placed in the Project Records.

Printed Name	Signature	Date

1.0 Accident Prevention Plan

1.1 Signature Sheet

Plan Preparer:

_____ _____

Kevin Siemann Date
Preparer

Plan Approval:

_____ _____

Peter Kelsall Date
Project Manager

Plan Concurrence:

_____ _____

Rudy Von Burg, CIH Date
Program Certified Industrial Hygienist (CIH)

2.0 Background Information

This Accident Prevention Plan (APP) describes the health and safety (H&S) guidelines developed to protect onsite personnel, visitors, and the public from hazards encountered during the MEC removal at Munitions Response Site (MRS)-16, Former Fort Ord, California. Shaw Environmental, Inc. (Shaw) will perform this scope of work under the U.S. Department of the Army (Army) under the Total Environmental Restoration Contract II (TERC) No. DACW05-96-D-0011. This document shall be used in conjunction with the Shaw H&S policies and procedures along with a Site Safety and Health Plan (SSHP) and established TERC technical and administrative procedures. The SSHP and a list of Shaw H&S policies and procedures cited herein are included as Attachments 1 and 2 to this APP. The procedures and guidelines contained herein were based upon the best available information at the time of the plan's preparation. Specific requirements may be revised if new information is received or conditions change. Written amendments will document any changes made to the plan and will be included as an addendum to the SSHP. This APP has been prepared in accordance with Data Item Description MR-005-06.

2.1 Site Location and Project Objective

Fort Ord is a former military installation that comprises approximately 46 square miles in northwestern Monterey County, California, and is located approximately 120 miles south of San Francisco. Monterey Bay forms the western boundary of the former Fort Ord, and the Santa Lucia Range bounds the former Fort Ord to the south. The cities of Marina and Seaside, and the Salinas Valley are northwest, southwest, and east of the former Fort Ord, respectively.

Munitions Response Site (MRS)-16 is located immediately north of the former Fort Ord Impact Area between Eucalyptus and Parker Flats roads and bounded by Watkins Gate Road to the east. The MEC removal at MRS-16 is described in the Interim Action Record of Decision (ROD) (Army 2002) and amended in the ROD Amendment (Army 2006). The ROD Amendment dictates the removal of MEC at MRS-16 following vegetation clearance by prescribed burn of the 80-acre area.

The overall scope of work for this task involves activities at the MRS-16 area at the former Fort Ord. A munitions response (MR) will be conducted to remove Munitions and Explosives of Concern (MEC) in this area.

The main elements of the scope of this project will involve:

- Create fire breaks by mechanical cutting with MEC construction support

- Support the prescribed burn to be conducted by fire department for vegetation clearance
- Perform a visual surface removal after the burn, prior to the vegetation removal. All visually encountered items that will impede vegetation removal and geophysical surveys shall be removed.
- Remove vegetation that remains after the burn by either mechanical and/or manual methods. Manually cut vegetation shall be removed from the area.
- Perform geophysics to locate subsurface anomalies
- Resolve anomalies by excavation to a depth of approximately four feet
- Survey locations of MEC using GPS methods
- Dispose of MEC by detonation
- Remove munitions debris greater than 2 inches minimum dimension; record the weight of munitions debris for each 100 by 100-foot grid
- Certify munitions debris as free of explosives, and disposal of debris at an approved recycler

The overall scope also includes contract administration, planning, boundary and grid surveying, data management including Geographic Information System (GIS) mapping, limited erosion protection, and reporting requirements.

2.2 Shaw Accident Experience

The table below provides the Shaw experience modification rate and U.S. Occupational Safety and Health Administration (OSHA) recordable incident rate for the last three years.

Shaw Accident Experience

YEAR	Experience Modification Rate Interstate	OSHA Recordable Incident Rate
2004	0.50	1.01
2003	0.57	1.14
2002	0.62	1.7

2.3 Phases of Work and Hazardous Activities

Activity Hazard Analyses (AHAs) have been prepared for each of the anticipated work activities and are included in Section 3.2 of the SSHP (Attachment 1). AHAs for the following activities have been prepared:

- Mobilization/Demobilization
- General Activities
- Exclusion Zone Operations
- Firebreak Construction/ Surface Sweep/ Vegetation Removal
- Dismantle and remove fencing, scrap metal, etc
- Surface Burn Support Activities
- Hand excavation of unexploded ordnance (UXO)
- Unexploded ordnance (UXO) disposal operations
- Discovery of live UXO
- Transportation of explosive materials
- Storage of explosive materials
- Access Survey of Ingress/Egress Route
- Transportation of OE Waste
- Inspection/ Certification of Ordnance and Explosives (OE)-Related Scrap
- OE-Related Scrap Demilitarization
- Rocket motor demilitarization by cutting
- Handling/storage of Demilitarized Scrap

3.0 Statement of Safety and Health Policy

3.1 Corporate Safety Policy

It is the policy of Shaw to provide a safe and healthful workplace for all employees, subcontractors, and consultants in compliance with governmental requirements. Additionally, the requirements of our clients shall take precedence provided that their requirements exceed those of Shaw and governmental regulations.

We believe in two fundamental principles of safety: (1) all accidents, injuries and occupational illnesses are preventable; and (2) if an operation cannot be done safely, we will not do it. To put these principles into practice, every associate will receive the appropriate training, equipment, and other resources necessary to complete assigned tasks in a safe and efficient manner.

Safety, industrial hygiene and accident prevention are the direct responsibility of all members of management, who must create an environment in which everyone shares a concern for their own safety and the safety of their associates. Safety shall take precedence over expediency or short cuts. It is a condition of employment that all employees work safely and follow established safety rules and procedures. No individual(s) may pose a direct threat to the health and safety (H&S) of other individuals in the workplace.

Managers must conduct their businesses in compliance with governmental safety regulations and company procedures. All Shaw H&S procedures shall be implemented for all Shaw employees on all projects where Shaw is the subcontractor, or a joint venture partner. If Shaw is the prime contractor, Shaw procedures shall be applied to all Shaw and subcontractor personnel.

The implementation of effective safety and health practices is a key measure of managerial performance. Management, with the assistance of the internal H&S professional staff, will conduct audits to assess the effectiveness of the safety program(s) in place, and to identify areas for improvement. All deficiencies shall be corrected promptly.

All injuries, occupational illnesses, vehicle accidents, and incidents with potential for injury or loss will be investigated. Appropriate corrective measures will be taken to prevent recurrence, and to continually improve the safety of our workplace.

4.0 Responsibilities and Lines of Authority

Safety responsibilities, accountability, and lines of authority are discussed in Section 1.0 of the SSHP. The Project Manager, Program CIH, and Health and Safety Officer are responsible for formulating and enforcing H&S requirements, and implementing the SSHP. Figure 2-1 of the MRS-16 Munitions and Explosives of Concern Removal Work Plan shows the lines of authority organization matrix.

5.0 Subcontractors and Suppliers

Each subcontractor working on the project site will be required to adhere to the APP/SSHP and the requirements presented below.

5.1 Subcontractor/Supplier Coordination and Control

All subcontractors will be screened for safety performance and compliance with Federal alcohol and drug testing requirements prior to being issued any contract for site work. Subcontractors will comply with the requirements for site safety as outlined in Shaw's H&S Procedure HS011, *Contractor Safety and Health Rules*. The Senior UXO Supervisor (SUXOS) will be responsible for the conduct and control of Shaw subcontractors.

5.2 Subcontractor/Supplier Safety Responsibilities

All subcontractor employees are subject to the same training and medical surveillance requirements as Shaw personnel depending on job activity. All activities involving the potential for worker exposure to hazardous waste materials will require medical and training certification as mandated by 29 Code of Federal Regulations (CFR) 1910.120 and 29 CFR 1926.65. All subcontractor personnel will be required to sign in daily and be required to attend a daily meeting discussing operations and safety issues. All subcontractors involved in construction support/remedial activities will complete a Subcontractor Pre-Job Safety Checklist prior to the start of work at the site. Subcontractors will submit AHAs for their work activities to the Project Manager. All incidents involving subcontractor employees shall be reported to the Project Manager and a copy of the subcontractor's injury/illness report shall be submitted to the H&S Officer within 24 hours.

Subcontractors are required to read and sign the SSHP and comply with all requirements of this APP. Contractors not in compliance will be immediately dismissed from the site.

Suppliers delivering various materials to the project site or providing equipment and/or equipment maintenance will comply with all Shaw rules and regulations. Supplier personnel will not be permitted into restricted areas unless training and medical surveillance is in accordance with 29 CFR 1910.120/1926.65. Contractors will not ride on tractors, forklifts, or similar vehicles unless specific seats are provided. They will follow facility hot work rules if hot work is required. Trucks will be loaded and unloaded in a safe and effective manner and materials will be stored safely in designated locations only. Associated packaging will be properly disposed and litter will not be permitted to be scattered or blown from truck beds. Operators of mobile equipment on site must observe all traffic rules such as speed limits and right-of-ways of pedestrians. Any subcontractor operating Shaw vehicles will have to meet the same driving

safety training requirements as a Shaw employee. Defensive Driver safety retraining is required every two years.

6.0 Training

6.1 Safety Indoctrination Training

All Shaw or subcontractor employees performing work under this contract shall receive initial safety indoctrination training prior to commencement of actual fieldwork. This training will be performed by the SUXOS or a qualified UXO Technician. At a minimum, this initial training shall include, but not be limited to, the following:

- Site location and description including emergency routes, first aid kit location, medical clinic and/or hospital location.
- Statement of Shaw safety and health policy.
- Project organization, key personnel, and responsibilities.
- Chemical, physical and biological hazards.
- MEC Avoidance
- Activity hazard analysis.
- Hazard control program.
- Heat/cold stress.
- Hearing conservation.
- Control of hazardous energy.
- Sanitation.
- Buddy system requirements.
- Fire prevention and protection/hot work.
- Excavation safety.
- Personal protective equipment (PPE).
- Site control measures.
- Exposure monitoring.
- Medical surveillance.
- Emergency response and contingency plan.
- Record keeping and data management.

- Accident reporting and Investigation.
- Site-specific hazard communication.

6.2 Mandatory Training and Certifications

In accordance with CFR 1910.120(e) *Hazardous Waste Operations and Emergency Response* (HAZWOPER), Engineering Manual (EM) 385 1-1, *Safety and Health Requirements Manual*, Section 28, *HAZWOPER*, and Shaw H&S procedure HS050, *Training Requirements*, mandatory training and certifications applicable to this project include at a minimum:

- APP/SSHP training.
- HAZWOPER 40-hour training.
- 24-hour supervised training.
- Hazardous Waste Supervisor training.
- 8-hour HAZWOPER refresher training.
- Shaw defensive driver training.
- Hazard communication training.
- Cardiopulmonary resuscitation (CPR) and first aid training.

Re-certification or refresher training for the cited mandatory training shall follow the following schedule: 8-hour refresher training shall be performed annually for employees who completed the initial 40-hour course. Shaw defensive driver training shall be performed every two years. Hazard communication training at a minimum shall be performed annually and is required on a site specific project basis. CPR training shall be renewed annually and First Aid every three years. Shaw employees who are designated First aid and CPR responders shall also have completed blood-borne pathogen training and adhere to the Shaw H&S procedure HS512, *Handling of Blood or Other Potentially Infectious Material*. Unexploded ordnance (UXO) personnel shall be graduates of the Naval School Explosive Ordnance Disposal or a U.S. Department of Defense certified equivalent course.

6.3 Emergency Response Training

All Shaw personnel who have completed the Shaw 40-hour HAZWOPER Training are qualified as emergency responders per 29 CFR 1910.120/1926.65 (e)(3)(iv). Site-specific emergency response procedures will be reviewed with all site personnel as a part of site indoctrination. The Emergency Response Plan and Contingency Plans are provided in Section 11.0 of the SSHP.

6.4 Supervisory and Employee Safety Meetings

The SUXOS or a designated, qualified UXO technician will conduct daily safety meetings at the start of each work shift for all on-site personnel and will require any subcontractors to follow

similar meeting procedures and participate in the Shaw daily safety meetings. Daily safety meetings will comply with Shaw procedure HS051, *Tailgate Safety Meetings*.

7.0 Safety and Health Inspections

7.1 Inspections

The SUXOS will conduct safety inspections daily to determine if operations are being performed in accordance with the SSHP and USACE requirements and regulations. Inspection findings will be recorded on the H&S daily report. The SUXOS will be identified in the SSHP together with Data Base number, training and experience. The SUXOS will have the ability to identify predictable MEC hazards, hazardous working conditions, and has authorization to take prompt corrective action. The SUXOS is responsible for conducting and preparing reports of daily safety inspections of work processes, site conditions and equipment conditions and submitting them to the Field Team Leader daily. Copies of these reports shall be maintained at the project locations and copies forwarded to the Health and Safety Officer.

The Shaw PM, Program CIH, or H&S Officer may periodically conduct site visits and perform Site Safety Assessments. These reports are kept on file at the Regional offices and are tracked in a database for each Shaw project, including the number of action items noted during the visit and written confirmation of the corrective actions for each item. These responses are compiled and provided to program management for review. Deficiencies shall also be documented on the project safety and health assessment summary/deficiency tracking log. This log shall be posted on the safety and health bulletin board in areas commonly used by employees. For sites where a fixed support area is not available, the log shall be maintained by the SUXOS and be readily available to all on-site personnel.

7.2 External Inspections/Certifications

Shaw does not anticipate, but may consider, the use of outside sources to provide safety inspections, as necessary.

As required, safety equipment will comply with appropriate regulations of the OSHA, National Institute for Occupational Safety and Health, American National Standards Institute (ANSI), American Society for Testing and Materials, or other recognized certification organizations.

8.0 Safety and Health Expectations, Incentive Programs, and Compliance

8.1 Safety Program Goals, Objectives, and Accident Experience Goals

Shaw considers safety the highest priority during work at a site containing potentially hazardous materials and has established a goal of **zero incidents** for all projects. Each project will be conducted in a manner that minimizes the probability of near misses, equipment/property damage or injury. Shaw will establish programs to recognize people and projects that demonstrate excellence in safety performance. Shaw will use safety observation programs to identify and correct unsafe acts and conditions. Safety awareness programs will be used to provide continuous training and development of good safety practices. Shaw site supervision will investigate all incidents to determine root causes and institute corrective actions to prevent recurrence. Shaw will provide and enforce safety rules to protect employees, subcontractors, clients and the public.

Specific goals for safety performance and incident prevention have been established through the corporate safety office as follows:

- Lost workday (LWD) case incident rate: 0
- Total recordable incident rate: 0
- Chargeable vehicle accident rate: 0

The accident experience goal for this contract is **zero accidents**.

8.2 Shaw Safety Incentive Programs

The Shaw PM will develop a site-specific program for approval by the Regional Safety Manager and the UXO Service Center PM. Shaw procedure HS023, *Accident Prevention Program: Safety Incentive Award Program*, covers all project sites. This program has been designed to recognize group safety performance and reward the individual only when the project/location team has achieved its established goals. It is intended to encourage all employees to be concerned not only for their own safety, but for the safety of co-workers as well. Key elements of this program include:

- Eligibility
- Program development
- Award value
- Program funding
- Minimum goals
- Award request

- Goal verification

8.3 Shaw Employee Safety Responsibility Requirements

Each employee is responsible for personal safety as well as the safety of others in the area and is expected to participate fully in the Safety Improvement Process, particularly the Safety Observation Program. The employee will use all equipment provided in a safe and responsible manner as directed by the SUXOS or the Task Manager. All Shaw personnel will follow the policies set forth in the Shaw H&S Procedures HS001-999 (available on site on compact disc, binder, or through a secure intranet). Site personnel concerned with any aspect of H&S shall bring it to the attention of the SUXOS or the Task Manager. If not satisfied, they should contact the Site Safety and Health Officer. All project personnel have the authority to stop work if in their judgment serious injury could result from continued activity. The SUXOS or the Task Manager shall be notified immediately if this becomes necessary. When a stop work is issued, the TERC II H&S Manager will be notified with in one hour. To protect the H&S of all personnel, employees that knowingly disregard safety policies or procedures may be subject to disciplinary actions up to and including termination. Shaw Employee Safety Responsibility is fully detailed in HS010, *Employee Safety and Health Work Rules*.

8.4 Managers and Supervisors Safety Accountability

It is the duty of the first line supervisor to motivate employees to adhere to Shaw's safety policy in each work situation. A first line supervisor for these purposes is defined as that person designated to give immediate on-site supervision to personnel involved in a task. For the MRS-16 site, this person is the Task Manager.

All Field Team Leaders shall have complete knowledge of the safe procedure for all jobs and tasks under their supervision, or when in doubt, shall seek assistance prior to initiating a task. This is the only acceptable manner in which to perform the task. If the task cannot be accomplished safely, it will not be attempted. Task Manager or his designee shall:

- Explain the safety procedure involved with a task to each employee and check frequently to see that the employee understands and works as instructed.
- Allocate sufficient time for the training and coaching of all employees to insure that everyone knows the correct procedure for safely accomplishing required tasks.
- Prevent new employees from performing any tasks until required training is completed.
- Immediately correct unsafe conditions that involve site employees or contractors.
- Ensure that the employees are outfitted with and wear PPE as specified by the SSHP,

and other Shaw procedures or as directed by the CIH or H&S Officer.

- Set a good safety example.
- Obtain the cooperation of employees and contractors.
- Provide a safe work environment for employees and contractors.
- Confirm contractor safety performance records have been verified prior to contract award and monitor contractor performance during operations.
- Report all accidents, near misses and property damage in accordance with Shaw procedure HS020, *Accident Prevention Program: Reporting, Investigation and Review*.
- Establish a safety culture, using the elements of the Shaw Safety Improvement process, which promotes awareness, encourages participation, and recognizes excellence.

9.0 Accident Reporting

9.1 Exposure Data (Man-hours Worked)

Shaw's Environmental Health and Safety (EH&S) Manager tracks and maintains incident records for Federal reporting requirements. Incident rates are reported monthly to the Shaw's EH&S Manager. Incident rates and workers compensation losses are tracked for each business line. Man-hours and lost workday (LWD) cases will be submitted to the contracting officer representative monthly. The data must be submitted to arrive at USACE not later than 10 calendar days after the end of each month. The information cut-off date will be the last day of each month. The monthly submission must include the title of the report (i.e., Accident Exposure Data Report), contract number, task order number, project site, month and year for which the report is made, a point of contact listing both email address and telephone number, and number of LWD accidents to include total days lost. If no hours are worked on the project/task, a report showing "zero (0)" is required.

9.2 Accident Investigations, Reports, and Logs

The SUXOS and Task Manager shall conduct accident/incident investigations. A report is completed by the Task Manager and it must be submitted within 24 hours to the Shaw Corporate Safety Department in Baton Rouge, Louisiana. All incident reporting forms are provided in Shaw procedure HS020, *Accident Prevention Program: Reporting, Investigation, and Review*.

Engineer (ENG) Form 3394 is required to be prepared and submitted in reporting LWD cases, accidents where three or more persons are admitted to a hospital, a fatality, permanent totally disabling injury, permanent partial disabling injury, or property damage greater than $2,000. ENG Form 3394 must be submitted to the Contracting Officer or authorized representative following the accident in accordance with EM 385-1-1.

Minor incidents, such as near-misses or first-aid injuries shall be included in the daily field QC reports.

9.3 Immediate Notification of Major Accidents

Shaw will immediately notify the client of any major accident, including injury, fire, equipment/ property damage, and environmental incident. Immediate notification and investigation of accidents is an important component of Shaw procedure HS020. A full report will be provided within 24 hours. Accidents involving personal injury/illness or property damage shall immediately be reported to the Contracting Officer or authorized representative.

9.4 Accident Response

The nearest workers will immediately assist a person who shows signs of medical distress or who is involved in an accident as long as the accident scene is safe. The Task Manager will be immediately summoned. The Task Manager will immediately make contact with field personnel to alert them of a medical emergency situation. The Task Manager will advise the following information:

- Location of the victim at the work site.
- Nature of the emergency.
- Whether the victim is conscious.
- Specific conditions contributing to the injury, if known.

10.0 Medical Support

Medical support will be provided on site by CPR/FA qualified first responders.

The SUXOS or Task Manager is designated as the first responder for medical emergencies or minor injuries. At least two on-site employees will be FA and CPR qualified. Offsite medical support will be provided by local occupational health clinics or hospitals. Directions to the nearest hospital/medical facility are included in Attachment 1.

11.0 Personal Protective Equipment

Shaw procedure HS600, *Personal Protective Equipment*, outlines minimum PPE requirements. This procedure, coupled with H&S management experience, training in proper selection use and maintenance of PPE, site-specific conditions, potential environmental contaminants, and physical hazards, will dictate site-specific requirements. Initial protection levels provided in the SSHP have been established for the site work activities based on the anticipated levels of site contaminants, physical hazards, and the scope of work. The SSHP in conjunction HS600 shall serve as the written certification for use of PPE. All selected PPE shall be used in accordance with manufacturer's recommendations and best management practices. Once on site, visual inspection of the work activities by the SUXOS or Task Manager may indicate the need for changes in PPE level(s). Any significant change in the PPE level will be approved by the program CIH and/or HSM.

All personnel using respiratory protection (if necessary) will be cleared by a physician for use of a respirator and will be fit-tested to assure they can achieve an acceptable fit. Physician clearance and results of fit testing will be documented as required.

12.0 Plans (Programs, Procedures) Required by EM 385 1-1

12.1 Layout Plans

Layout plans are not anticipated for this scope of work since temporary facilities construction will not occur on site. Work zones are identified in Section 6.0 of the SSHP, *Site Control Measures.*

12.2 Emergency Response Plans

Shaw employees will travel to the nearest medical facilities identified in the SSWP. Emergency response information shall be reviewed prior to initiation of field work so workers become familiar with the hospital route and nearest medical facilities. Employees shall become familiar with information in the SSHP that addresses the following:

- Emergency Contacts
- Medical Emergencies
- Personal Injury
- Fire Control
- Spills or Leaks
- Site Evacuation
- Emergency Decontamination
- Adverse Weather Conditions/Natural Disasters

12.3 Hazard Communication Program

Material Safety Data Sheets for chemicals that may be required during site operations shall be provided in SSHP and will be updated by the SUXOS as new chemicals are brought on site. Shaw procedure HS060, *Hazard Communication Program,* shall be implemented on site. Hazardous materials are not anticipated to be brought on site in the execution of this Statement of Work (SOW). Employee hazard communication training records are available through the Shaw Records Training Department via secure intranet access.

12.4 Respiratory Protection Plan

The primary objective of respiratory protection is to prevent employee exposure to atmospheric contamination. When engineering measures to control contamination and respirable hazards are not feasible, or while they are being implemented, personal respiratory protective devices will be used. Shaw's respiratory protection requirements are specified in HS601, *Respiratory Protection Program.*

The criteria for determining respirator need have been evaluated based on the SOW and potential contamination. Respiratory protection is not anticipated based on the SOW. However, in the event that conditions change, air monitoring will be conducted to confirm that respiratory protection levels are adequate. All respirator users will be OSHA trained in proper respirator inspection, use, storage and maintenance. All persons assigned to use respirators will have medical clearance to do so.

12.5 Health Hazard Control Program

The AHAs presented in the SSHP address the hazard evaluation for proposed site activities. The AHA shall serve as the initial certification of hazard assessment and has been prepared by the Shaw HSM. The AHA is an ongoing process from initiation of the SSHP to implementation and completion of fieldwork. The second phase consists of further analysis in the field and completing a daily Job Safety Analysis (JSA). Shaw procedure HS045, *Job Safety Analysis,* shall be used to document second-phase hazard control. The SUXOS or Task Manager will complete the JSA in accordance with the requirements contained in HS045 and when site conditions or potential hazards change. The JSA will serve as an amendment to the initial AHA and shall be reviewed with all site employees during the daily tailgate safety meeting.

12.6 Lead Abatement Plan

A lead abatement plan is not required based on the current SOW.

12.7 Asbestos Abatement Plan

An asbestos abatement plan is not required based on the current SOW.

12.8 Abrasive Blasting Plan

An abrasive blasting plan is not required based on the current SOW.

12.9 Confined Space

Shaw procedure HS300, *Confined Spaces,* is the written confined space entry program that covers permit and non-permit confined space entry requirements. Confined space entry is not anticipated based on the current SOW.

12.10 Hazardous Energy Control Plan

Shaw procedure HS315, *Control of Hazardous Energy*, provides the necessary guidelines specific to lockout/tagout. A lockout/tagout site-specific plan is not required based on the current SOW.

12.11 Critical Lift Procedures

Shaw procedure HS822, *Crane Operations,* and HS823, *Rigging and Lifting,* define critical lift procedures. Critical lift plans are not required based on the current SOW.

12.12 Contingency Plan for Severe Weather

Contingency plans for severe weather are included in the SSHP.

12.13 Access and Haul Road Plan

An access and haul road plan is not required based on the current SOW and existing site conditions. Current access roads shall be used.

12.14 Demolition Plan

A demolition plan, including engineering evaluation and lead-based paint and asbestos surveys, is not required based on the current SOW.

12.15 Emergency Rescue (Tunneling)

Tunneling is not anticipated based on the current SOW.

12.16 Underground Construction Fire Prevention and Protection Plan

An underground construction fire prevention and protection plan is not required based on the current SOW.

12.17 Compressed Air Plan

A compressed air plan is not required based on the current SOW.

12.18 Formwork and Shoring Erection and Removal Plans

Formwork and shoring erection and removal plans are not required based on the current SOW.

12.19 Jacking Plan (Lift) Slab Plan

A jacking plan (lift) slab plan is not required based on the current SOW.

12.20 Blasting Plan

A blasting plan is not required based on the current SOW.

12.21 Diving Plan

A diving plan is not required based on the current SOW.

12.22 Alcohol and Drug Abuse Prevention Plan

Shaw substance abuse procedures are outlined in Shaw HS101, *Drug and Alcohol Testing*. Shaw is committed to a drug- and alcohol-free work place. Pre-employment, reasonable cause, and client-specific drug and alcohol testing is part of the overall substance abuse program. Post-accident drug and alcohol testing is a requirement of Shaw when not prohibited by State or Local law.

12.23 Fall Protection Plan

Shaw procedure HS301, *Fall Protection*, outlines minimum requirements for employee protection when exposed to a fall of six feet or greater, or when working over dangerous equipment or operations. A site-specific fall protection plan is not required based on the current SOW.

12.24 Steel Erection Plan

A steel erection plan is not required based on the current SOW.

12.25 Night Operations Lighting Plan

Shaw will not perform field reconnaissance tasks during hours of darkness. A night operations lighting plan is not required based on the current SOW.

12.26 Site Sanitation Plan

A site sanitation plan is not required based on the current SOW. Shaw will provide potable drinking water to site employees as described in the SSHP.

12.27 Fire Prevention Plan

A fire prevention plan is not required based on the current SOW. Spark- or flame-producing operations shall follow the requirements outlined in Shaw procedure HS314, *Hot Work in Hazardous Locations*, and the SSHP.

13.0 Contractor Information to Meet the Requirements of the Major Sections of EM 385-1-1

Shaw will provide personnel with the necessary training and experience to safely execute this project and SOW. Employees will be competent in the respective areas of site work for which they will be involved. In addition to this APP, Shaw has prepared a SSHP (Attachment 1) to meet the major requirements of EM 385-1-1, *United States Army Corps of Engineers (USACE) Safety and Health Requirements Manual*. The level of detail provided in the SSHP has been tailored to the type of work, complexity of operations and hazards anticipated. For all locations, chemical, physical, and biological occupational exposure prevention shall be addressed as well as ordnance safety requirements. Additional procedures for major requirements are provided in the Shaw H&S Procedures Manual.

Medical and FA support will be provided onsite by FA and CPR qualified first responders. The SUXOS and Task Manager are designated as the first responders for medical emergencies or minor injuries. At least two onsite employees will be FA and CPR qualified.

Shaw will provide suitable PPE as required for the nature of the job being performed, including but not limited to: boots, safety eyewear, hard hats, reflective apparel, and gloves. This PPE will be specified by the H&S department prior to use, subject to an assessment of the hazards to which employees will be potentially exposed. Employees shall use H&S-approved PPE on any task where there is potential exposure to: physical hazards such as equipment operation, objects dropping from above, or flying particles; or exposure to toxic or irritating gases, fumes, vapors, liquids, or other materials which may cause respiratory distress or skin irritation. Employees shall be trained in the proper use, maintenance, and limitations of PPE. Employees shall wear hard hats, eye protection, and ANSI-approved safety foot protection at all job sites.

Fire prevention shall be accomplished by the utilization of inspection and permit systems for all spark- or flame-producing activities. The local fire department shall be notified in advance of site operations and appraised of the type of work and location where fire safety controls are essential. Fire watches shall be required and personnel will understand how to properly operate fire-extinguishing systems and make emergency notifications. All "hot work" activities shall comply with Shaw H&S procedure HS314, *Hot Work in Hazardous Locations*.

Public safety will be achieved by the means of site control zones and access to the work area by authorized personnel only. Site control measures are described in the SSHP.

14.0 Site-Specific Hazards and Controls

Before initiating a work activity presenting hazards not identified in the initial AHAs, the SUXOS or Task Manager will complete a JSA in consultation with the HSM. Shaw H&S procedure HS045, *Job Safety Analysis,* will be used whenever activities, site conditions, or operations change. The AHA describes steps to safely mitigate classic safety hazards, explosive ordnance and explosives hazards, and chemical, physical, and biological hazards.

ATTACHMENT 1
SITE SAFETY AND HEALTH PLAN

SITE SAFETY AND HEALTH PLAN

MRS 16
FORMER FORT ORD, CALIFORNIA

SACRAMENTO TERC II
USACE CONTRACT NO. DACW05-96-D-0011
DO 0016

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Acronyms and Abbreviations

ºF	degrees Fahrenheit
AHA	Activity Hazard Analysis
ATV	all terrain vehicle
Army	U.S. Department of the Army
CCR	California Code of Regulations
CESPK	Sacramento District USACE
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CPR	cardiopulmonary resuscitation
CWM	chemical warfare material
DID	data item description
DoD	U.S. Department of Defense
EMR	electromagnetic radiation
ENG	Engineering Form
EOD	explosive ordnance disposal
EZ	exclusion zone
HEPA	high efficiency particulate air
HTRW	hazardous, toxic, and radioactive waste
MEC	Munitions and Explosives of Concern
MSDS	Material Safety Data Sheet
OE	ordnance and explosives
OSHA	Occupational Safety and Health Administration
PAH	polyaromatic hydrocarbons
PPE	Personal Protective Equipment
RMSF	Rocky Mountain spotted fever
SOP	standard operating procedure
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
SSWP	Site Specific Work Plan
SUXOS	Senior Unexploded Ordnance Supervisor
SZ	support zone
USACE	U.S. Army Corps of Engineers
UXO	unexploded ordnance
UXOSO	Unexploded Ordnance Safety Officer
WNV	West Nile Virus

Site Safety and Health Plan

This Site Safety and Health Plan (SSHP) addresses safety and health procedures and requirements for munitions removal actions at MRS-16 at the former Fort Ord. This SSHP was developed by Shaw Environmental, Inc. (Shaw) in accordance with Mandatory Center of Expertise Data Item Description OE-005-06.

If hazardous, toxic, and radioactive waste (HTRW) is encountered during munitions removal activities, fieldwork will be stopped and the HTRW project manager, site safety health officer (SSHO), and OE Safety Specialist will be notified. The SSHO will identify potential concerns and implement appropriate requirements. Safety and health procedures and requirements for HTRW activities are presented in the *Basewide Site Safety and Health Plan, Fort Ord Remedial Action, Former Fort Ord, California* (Basewide SSHP; Shaw, 2004).

The safety and health procedures and requirements are established based on preliminary analysis of potential hazards at MRS-16. This SSHP meets the requirements of the following:

- Shaw Corporate Health and Safety Policies and Procedures
- Occupational Safety and Health Administration 29 Code of Federal Regulations Parts 1910 and 1926
- Engineer Regulation 385-1-92, Safety and Occupational Health Requirements for HTRW Activities (USACE, 2003a)
- Engineer Regulation 385-1-95, Safety and Health Requirements for Ordnance and Explosives Operations (USACE, 2003b)
- Engineer Manual 385-1-1, *Safety and Health Requirements Manual* [U.S. Army Corps of Engineers (USACE), 2003c]
- Engineer Pamphlet 385-1-95a. Basic Safety Concepts and Considerations for Ordnance and Explosive Operations (USACE 2001a)

This SSHP and the Basewide SSHP, in combination with the Shaw Corporate Health and Safety Policy and Procedures Manual (Table 1-1) serve as the company's Injury and Illness Prevention Plan as presented in Standard Operating Procedure Health and Safety (HS019).

Shaw fully acknowledges its responsibility to provide a safe and healthful work place for its employees, clients, and the general public. Shaw's mission is to provide our clients with safe and economical solutions to the munitions removal action. Shaw's safety and health program has been carefully designed to thoroughly address safety and health issues arising from all phase of operations.

Authorized USACE representatives have the right to notify Shaw of any condition that poses a serious or imminent danger to health and safety. Upon such notification, Shaw shall immediately take corrective action. Furthermore, any authorized USACE representative may issue an order stopping all or part of the work until satisfactory corrective action has been taken.

1.0 Personnel Organization, Qualifications, and Responsibilities

The overall project organization and reporting structure is presented in Section 2.0, Technical Management Plan. Health and Safety personnel, organization, qualifications, and responsibilities as required in Sacramento District U.S. Army Corps of Engineers (CESPK) data item description (DID) OT-FTO-25 are addressed in more detail in this section.

1.1 Certified Industrial Hygienist

The Certified Industrial Hygienist (CIH) is responsible for the development, implementation, and oversight of the Basewide Site Safety and Health Plan (SSHP), and in coordination with the Unexploded Ordnance Safety Officer (UXOSO), is responsible for the development, implementation, and oversight of this SSHP. The CIH shall be available for emergencies and onsite consultation.

1.2 Unexploded Ordnance Safety Officer

The UXOSO is responsible for implementation of this SSHP during munitions and explosives of concern (MEC) and munitions debris removal activities, as well as making recommendations and revisions for the program CIH's and Senior Unexploded Ordnance Supervisor's (SUXOS) approval. The UXOSO will conduct daily inspections to determine if operations are being conducted in accordance with this SSHP, U.S. Department of the Army (Army) requirements, and Occupational Safety and Health Administration (OSHA) regulations. The UXOSO reports directly to the CIH and SUXOS. An open dialogue is kept between the UXOSO, CIH, SUXOS, and supervisory personnel of the project to ensure that safety issues are quickly addressed and corrective action taken. The UXOSO has the authority to take immediate steps to correct unsafe or unhealthful conditions, including the stoppage of fieldwork when deemed necessary.

The UXOSO will implement the requirements of the Explosives Management Plan (Section 3.0) in compliance with all U.S. Department of Defense (DOD), federal, state, and local statutes and codes; analyze MEC and explosives operational risks, hazards, and safety requirements; establish and ensure compliance with all site-specific safety requirements for MEC and explosives operations; enforce personnel limits and safety exclusion zones (EZs) for MEC clearance operations, MEC and explosives transportation, storage, and destruction; conduct safety inspections to ensure compliance with munitions safety codes; and operate and maintain required air monitoring equipment for airborne contaminants.

1.3 Senior Unexploded Ordnance Supervisor

The SUXOS directly controls the operations of all field teams performing MEC and munitions debris activities and will spend most of the day in the field monitoring their performance and

assisting them in achieving maximum operational safety and efficiency. He reports directly to the Project Manager and receives guidance from the Shaw Service Center concerning technical MEC and operational issues. He will implement the approved plans in the field and must review and approve any changes to the approved MEC plans. He will supervise all unexploded ordnance (UXO) teams on the project, not to exceed a total of 10. The SUXOS has the authority to temporarily stop work to correct an unsafe condition or procedure.

1.4 Site Safety and Health Officer

The SSHO will serve as an advisor to the UXOSO in evaluating health and safety concerns with respect to hazardous, toxic, and radioactive waste (HTRW) issues and general (non-OE) work practices. The SSHO may be asked to provide information and help develop specific guidance to ensure the safe work practices on combination munitions/HTRW sites.

1.5 Ordnance and Explosives Field Personnel

As promulgated by the CESPK in DID OT-FTO-25, all UXO personnel will be graduates of either the U.S. Army Bomb Disposal School Aberdeen Proving Ground, Maryland; the U.S. Naval Explosive Ordnance Disposal (EOD) School, Indian Head, Maryland; the U.S. Naval EOD, Eglin Air Force Base, Florida; the EOD Assistants Course, Redstone Arsenal, Alabama; the EOD Assistant Course at Eglin Air Force Base, Florida; or other DOD certified equivalent course.

All personnel working in the field during MEC removal actions are responsible for complying with this SSHP and all other required safety and health guidelines.

1.6 Visitors

Site access by personnel making deliveries or performing repairs to utilities, public or government officials, visitors, or local residents will be limited to support areas only. Support zone access will be limited to designated work, delivery, or observation areas to minimize any potential exposure to site contaminants. Site observation areas will be located upwind from predominant wind directions, and access to observation areas may be restricted by weather conditions or site activities. Authorization for limited site access will be determined on a case-by-case basis by the UXOSO in consultation with the CIH and Project Manager. Site access for such personnel will be limited to areas with no potential for exposure during routine operations. These personnel will be escorted on-site and will be strictly prohibited from entering the exclusion zone (EZ).

Visitors will not be permitted to enter MEC removal action sites unless they have completed the appropriate training and medical surveillance requirements, and have the proper personal protective equipment (PPE). Authorized visitors will be briefed on the hazards present at that

location by the UXOSO. Visitors will be responsible for compliance with the requirements specified in this SSHP.

1.7 Stop Work Authority

All UXO personnel have the right and duty to stop work when conditions are unsafe, and to assist in correcting these conditions. If the UXOSO determines that workplace conditions present an immediate uncontrolled risk of injury or illness, immediate resolution with the SUXOS shall be sought. If the SUXOS is unable to correct the unsafe conditions, the UXOSO or U.S. Army Corps of Engineers (USACE) OE Safety Specialist are authorized and required to issue a Stop Work Order, which shall be immediately binding on all affected Shaw employees and subcontractors.

Upon issuing the Stop Work Order, the UXOSO shall contact the Project Manager and request assistance in implementing corrective action so that operations may be safely resumed. If the Project Manager and the health and safety staff are unable to agree on the necessary corrective actions, or the appropriateness of the Stop Work Order, the issue shall be referred to the CIH and SUXOS. Resumption of safe operations is the primary objective; however, operations shall not resume until the health and safety professional has given approval that workplace conditions now meet acceptable safety standards.

2.0 Site and Project Description

The former Fort Ord served as a training and staging facility for infantry troops from its opening in 1917 until its closure in 1993. Over the years various types of MEC have been used during training activities, including hand grenades, mortars, rockets, mines, artillery rounds, and small arms rounds. Some training activities using petroleum hydrocarbons were also conducted. Some of the ranges were used for small arms training only, while other ranges were used for a variety of training activities. Ranges used strictly for the purpose of small arms training using .50-caliber ball ammunition or smaller are not considered munitions sites.

More detailed information regarding the site's history, size, topography, and locations where MEC and munitions debris have been found is included in Section 1.0, Introduction, of the main text of the Site Specific Work Plan (SSWP).

Details on the approach and components of the MEC removal actions are provided in Section 2.0, Technical Management Plan, of the main text of the SSWP.

3.0 Hazard Analysis and Risk Assessment

MEC activities will be in accordance with the general guidance contained in EP 385-1-95a (USACE, 2001b).

Personnel and visitors will be familiar with site hazards and strictly adhere to the appropriate safety procedures prescribed in this SSHP including the Activity Hazard Analysis (AHA) presented in Table 3-1. The AHA identifies potential safety, health, biological, and environmental hazards associated with specific tasks, and provides for the protection of personnel, the community, and the environment. Additional AHAs will be developed for new tasks and added to this SSHP. AHAs for HTRW and construction activities are presented in the Basewide SSHP (Shaw, 2004)

Because of the complexity and constant change of projects, sites must be continually inspected to identify new hazards. Changes to the AHA may be originated by the UXOSO but must be approved by the CIH, SUXOS, and the USACE OE Safety Specialist.

3.1 Buddy System

The buddy system will be employed by all personnel during operations. This system requires that a partner, or buddy, accompany each worker. The buddy provides the co-worker/partner with assistance, observes the partner for signs of exposure, periodically checks the integrity of the partner's PPE, and notifies the UXOSO if help is needed. The buddy must be in a line of sight or hearing of the partner and be prepared to enter any area the partner enters. The buddy must be fully certified to work in the level of protection that the employee is working in, and must have the appropriate PPE available.

3.2 MEC Hazards

Munitions and Explosives of Concern (MEC) are categories of military munitions that may pose unique explosives safety risks, including UXO, discarded military munitions, or explosive munitions constituents present in high enough concentrations to pose an explosive hazard.

This section discusses the hazards associated with the MEC removal actions at MRS-16. The general work practices outlined in EP 385-1-95a (USACE, 2001b) will be followed during removal activities. AHAs detailing hazards associated with MEC removal actions are presented in Tables 3-1.

3.2.1 General Safety Concerns and Procedures

The following general safety concerns and procedures will be implemented before and during MEC operations:

- MEC operations will not be conducted until a complete plan for the site is prepared and approved. These plans will be based upon limiting exposure to the minimum number of personnel, for the minimum time, to the least amount of MEC consistent with safe and efficient operations.
- Only UXO qualified personnel will perform MEC procedures. Non-UXO personnel may be utilized to perform MEC related procedures when supervised by a UXO Technician III. All personnel will be fully trained and capable of recognizing the specific hazards of the procedures being performed. Training requirements are presented in Section 4.4. When non-essential UXO personnel enter the EZ, all MEC operations will cease.
- Personnel who will be handling MEC items will not wear inner or outer garments having static electricity generating characteristics or carry fire or spark producing devices into the site.
- Prior to any action being performed on a MEC item, all fuzing will be positively identified. The identification will consist of fuze type by function, condition (armed or unarmed), and the physical state/condition of the fuze, (i.e., burned, broken, parts exposed/sheared, etc.).

Listed below are precautionary measures that need to be implemented for the general types of MEC items:

Bombs:

- Check fuze well for remains or components of fuze.
- Exercise caution when packing fuze well of bombs or projectiles with explosives.

Clusters, Dispensers, Launchers:

- Approach and work from the sides of a dispenser.
- Consider an intact dispenser as fully or partially loaded.
- Consider any payloads outside the container or dislodged inside as armed.
- Take precautions for the most hazardous payloads until positively identified.

Projectiles:

- Determine if the projectile has been fired and if so, consider it armed.
- Check for the presence of unburned tracers.

- Avoid the rear and front of rocket-assisted and base ejecting projectiles.
- Handle projectile components such as powder increments, cartridges and primers with caution.
- Seal the open ends of projectiles or sheared projectile components with tape or other suitable material before transporting.

Grenades:

- Do not disturb a grenade other than remotely until the fuze condition is positively determined.
- Do not attempt to re-install safety pins on a dud fired grenade.
- Do not attempt to withdraw impinged firing pins from the fuze of a dud fired grenade.
- Do not dispose of grenades by functioning them as designed.

Rockets:

- Approach and work on rockets from the sides.
- Do not dismantle or strip dud fired rockets or rocket motors.
- Do not expose electrically fired munitions to radio transmissions within 25 feet .
- Do not transport an unfired rocket motor until having shielded the motor igniter from electromagnetic radiation (EMR).
- Dispose of unfired rocket motors, with or without warheads, in such a manner as to prevent their becoming propulsive.

Guided Missiles:

- When found, restrict vehicular movement in the area of a guided missile.
- Avoid entanglement with guidance wires of wire guided missiles.
- Restrict radio communications in the vicinity of a dud fired missile.
- Approach and work on missiles from the side and rear quarter.
- Do not dismantle or strip dud fired missiles motors.
- Do not transport an unfired missile motor until having shielded the motor igniter from EMR.

- Dispose of unfired missile motors, with or without warheads, in such a manner as to prevent their becoming propulsive.

3.2.2 Explosives with Unknown Filler

The standard operating procedure (SOP) provided in Attachment A will be followed in instances where explosive material cannot be identified and may contain unknown filler.

3.2.3 MEC Safety Precautions

The following are safety precautions that need to be implemented during munitions response actions:

- Prior to any action being performed on a MEC item, every effort will be made to identify the item. Two UXO technicians will positively identify MEC items, independently. Under no circumstances will any MEC item be moved to make a positive identification. If an unknown MEC is found, the USACE OE Safety Specialist will be notified immediately.
- While working on-site all personnel will use the "buddy" system (Section 3.1).
- All demolition operations will be in compliance with TM-60A-1-1-31 and applicable/appropriate TM-60 Series publications. Detailed demolition operations and procedures are presented in Section 2.0, Technical Management Plan, of the main text of the SSWP.
- All operations will be suspended immediately upon approach of an electrical storm.
- Use appropriate precautions and grounding procedures, recognizing hazards of EMR when working with or on electrically initiated or susceptible MEC.
- Avoid inhalation and skin contact with smoke, fumes, dust and vapors during detonation of MEC.
- Do not attempt to extinguish burning explosives or any fire that might involve explosive materials.
- Incorporate appropriate property and personnel protective measures for shock and fragmentation when conducting MEC operations.
- In the event that MEC items must be transported, transport MEC items in the appropriate container and orientation to provide maximum protection for the personnel operating the vehicle. Hand-carry no more than two items (one in each hand) at a time and then only as required by the operation being performed.

3.3 Chemical Hazards

This section discusses the hazards associated with materials that are likely to be encountered during removal activities.

3.3.1 Health-Significant Contaminants

Lead, explosive compounds, and petroleum distillates have been detected at MEC removal sites at concentrations that exceed base-specific background concentrations. At these levels, they pose a risk of exposure to site personnel by inhalation, ingestion, and skin and eye contact. The action levels for total dust presented in the Basewide SSHP were developed to ensure that exposure above one-half of each compound's permissible exposure limit will not be reached. Health effects along with routes of exposure for these potential contaminants are detailed in the following paragraphs.

Lead. Lead has no local toxic effects. Systemic poisoning symptoms are nonspecific: fatigue, headache, poor sleeping, aching bones and muscles, constipation, abdominal pains, and decreased appetite. All these symptoms are reversible with time away from exposure. Continued exposure results in anemia, pallor, "lead line" on the gums, and decreased hand-grip strength. Lead also has central nervous system effects and was implicated in producing learning deficiencies in exposed children. Compounds of lead display a variety of toxic effects that may be more specific to the compound than to the lead. Some of these compounds were found to be carcinogenic in experimental animals. For example, the effects of lead's toxicity may be compounded when it takes the form of lead chromate, which is a suspected human carcinogen.

Explosive Compounds. Explosive compounds (such as cyclotrimethylenetrinitramine and cyclotetramethylene-tetranitramine) can affect the body if inhaled or swallowed, or by contact with the eyes or skin. Exposure to explosive compounds can cause liver damage with yellow jaundice and anemia that may be fatal. Exposure may also cause irritation of the eyes, nose, and throat with sneezing, coughing and sore throat. It may cause a skin rash and stain the skin, hair, and nails a yellowish color. It may affect the ability of the blood to carry oxygen. This lack of oxygen may result in a bluish discoloration of the skin, weakness, drowsiness, shortness of breath, and unconsciousness. In addition, it may cause muscular pains, heart irregularities, kidney irritation, cataracts of the eyes, menstrual irregularities, and nerve damage.

Petroleum Distillates. Petroleum distillates can affect the body if they are inhaled, come in contact with the eyes or skin, or are swallowed. Overexposure to petroleum distillates may cause dizziness, drowsiness, headache, and nausea. They may also cause irritation of the eyes, throat, and skin.

3.3.2 Other Potential Contaminants

Other contaminants present a minimal health risk at a low concentration. Potential chemical hazards specific to MRS-16 may include exposures to Polyaromatic Hydrocarbons (PAHs), crystalline silica, and poison oak and sumac as residues from OB/OD operations.

- PAHs are compounds that are formed during the combustion process and typically remain within the ash or residue that is generated. As such, exposure to PAHs can occur mainly by inhalation of dust and direct skin contact. Ingestion of dirt and dust is also possible. PAHs are considered possible human carcinogens and exposure to these materials should be kept as low as feasible.
- Crystalline silica is another substance that is typically generated during the combustion process, particularly with combustion of vegetation. Exposure to crystalline silica is typically through inhalation and over exposures can lead to lung damage. The use of dust masks or high efficiency particulate air (HEPA) respirators can reduce the risk of exposure to crystalline silica through inhalation.
- Contact with residues of poison oak and sumac can result in severe allergic reactions. Typical exposure is through direct skin contact. However, these plant residues may also be associated with the ash, dust and debris so respiratory protection will be available.

In addition to chemical compounds, other types of waste that might be encountered include:

- Medical waste
- Dry sewage

Should any nonstandard event occur (e.g., discovery of leaking drums or paint cans, soil with abnormal consistency and discoloration, sealed glass containers, or unknown and unidentified materials), fieldwork will be stopped at this location and the Project Manager and SSHO will be notified. The SSHO will identify potential concerns and implement requirements before MEC removal activities continue. Safety and health procedures and requirements for HTRW activities are presented in the Basewide SSHP (Shaw, 2004).

Table 3-2 presents the exposure guidelines for the site contaminants presented in this section.

3.3.3 Proposition 65 Chemicals

The potential chemicals of concern that may be on site and listed by Proposition 65 include:

1. Lead
2. Silica (crystalline)
3. PAHs (certain specific chemical compounds)

These chemicals have been discussed in Sections 3.3.1 and 3.3.2.

3.4 Biological Hazards

Biological hazards include ticks, poisonous plants, snakes, bird excrement, hantavirus, fecal coliform, stinging insects, spiders, wild animals, and bloodborne pathogens.

Mosquitos. Mosquitos are vectors for West Nile Virus Infection, a condition that can vary in presentation in different individuals. Most persons who become infected with West Nile virus (WVN) develop no clinical illness or symptoms.

West Nile Fever - Of the approximately 20% of infected people who develop symptoms, most develop what has been termed West Nile fever. Fever, headache, fatigue, skin rash on the trunk of the body (occasionally), swollen lymph glands (occasionally) and eye pain (occasionally).The incubation period for the development of these symptoms is between 2 to 14 days.

West Nile Meningitis/Encephalitis. Severe infections involve the Central Nervous System resulting in aseptic meningitis and encephalitis. Characteristic symptoms for meningitis include fever, headache, stiff neck, and changes in the white cells of the spinal fluids (Pleocytosis) with a predominance of lymphocytes. Characteristic symptoms for encephalitis include fever, headache, alteration of consciousness, lethargy, confusion, coma, limb paralysis, cranial nerve palsies and tremors.

West Nile Poliomyelitis is a flaccid paralysis syndrome associated with WNV infection and is less common than meningitis or encephalitis. This syndrome is generally characterized by the acute onset of asymmetric limb weakness or paralysis in the absence of sensory loss. The paralysis can occur in the absence of fever, headache or other common symptoms associated with WNV. Paralysis of the respiratory muscles leading to respiratory failure can sometimes occur (fatal).

WNV infection can be suspected in a person based on geographical location, clinical symptoms and patient history but laboratory testing is required for a confirmed diagnosis. The most efficient diagnostic method is the detection of specific antibodies to WNV in serum collected within 8-14 days of illness onset or cerebral spinal fluid collected within 8 days of illness onset.

WNV Treatment – There is no specific treatment for WNV infection. The more severe infections may require hospitalization and supportive care to prevent secondary infections

Ticks. Ticks are vectors of many different diseases, including Rocky Mountain Spotted Fever (RMSF), Q Fever, Tularemia, Colorado Tick Fever, and Lyme Disease. Ticks attach to their host's skin and intravenously feed on its blood creating an opportunity for disease

transmission. 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. Recently, lyme disease has been the most prevalent type of disease transmitted by ticks in the United States.

If a site employee believes they have been bitten by a tick, or if any of the signs and symptoms appear, the employee will contact the UXOSO, who will authorize the employee to visit a physician for an examination and possible treatment.

The following precautions should be taken when working in areas that might be infested with ticks:

- Cover your body as much as possible. Wear long pants and long-sleeved shirts. Light color clothing makes spotting of ticks easier.
- Try to eliminate possible paths by which the tick may reach unprotected skin. For example, tuck bottoms of pants into socks or boots and sleeves into gloves. (Duct tape may be used to help seal cuffs and ankles.) If heavy concentrations of ticks or insects are anticipated or encountered, Tyvek® coveralls may be used for added protection.
- Conduct periodic and frequent (e.g., hourly) surveys of your clothing for the presence of ticks. Remove any ticks and insects that become attached to clothing.
- Spray outer clothing, particularly your pant legs and socks, but not your skin, with an insect repellent that contains permethrin or permanone, or use a repellent with N,N-diethyl-m-tuluomide, which can be applied to the skin.
- When walking in wooded areas, avoid contact with bushes, tall grass, or brush as much as possible.
- Tuck pant legs into boot tops or tape pants to boot tops to prevent ticks from crawling up the pant leg (this may not be an option at sites where extreme heat stress is anticipated).
- If dressed in Level D or Modified Level D and no other head protection is required, wear a hat to prevent ticks from getting into the hair.

If a tick is discovered, the following procedure should be used to remove it:

- Do not detach a tick with your bare fingers; bacteria from a crushed tick may be able to penetrate even unbroken skin. Fine-tipped tweezers should be used.
- Grip the tick as close to your skin as possible and gently pull it straight away from you until it releases its hold.

- Do not twist the tick as you pull and do not squeeze its bloated body. That may actually inject bacteria into your skin.
- If the tick resists, cover the tick with salad oil for about 15 minutes to asphyxiate it, then remove it with tweezers.
- Do not use matches, a lit cigarette, nail polish or any other type of chemical to "coax" the tick out.
- Be sure to remove all parts of the tick's body, thoroughly wash your hands and the bite area with soap and water, 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.
- Look for the signs of the onset of RMSF, such as a rash-like inflammation consisting of red spots under the skin that appear 3 to 10 days after the tick bite.
- Notify the UXOSO of any tick bites as soon as possible.

Poisonous Plants. Poison oak (Rhus diversiloba), and poison sumac (Rhus vernex) are identified by three or five leaves radiating from a stem. The plant tissues have an oleoresin, which is active in live, dead, and dried parts and produces a delayed allergic hypersensitivity. The oleoresin may be carried through smoke, dust, contaminated articles, and the hair of animals. The best antidote for poisonous plants is recognition and avoidance.

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

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

Crusting and scaling occurs within a few days. Symptoms usually disappear in 1 to 2 weeks in cases of mild exposure and up to 3 weeks when exposure is severe.

Reaction to poisonous plants can be prevented if the exposed skin is washed with mild soap and water within 10 minutes of contact. Contact can be prevented by site workers wearing appropriate clothing. Preventive measures which can prove effective for most site personnel are:

- Avoid contact with any poisonous plants and keep a steady watch to identify, report, and mark poisonous plants found outside.
- 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.
- Avoid spreading oils from these plants to hands and other parts of the body.

Snakes. There are various types of poisonous snakes indigenous to California. The degree of toxicity resulting from snake bites depends on the potency of the venom, the amount of venom injected, and the size of the person bitten. Poisoning may occur from injection or absorption of venom through cuts or scratches.

The most effective way to prevent snake bites is to avoid snakes in the first place. To minimize the threat of snake bites, all personnel will be aware of the potential for encountering snakes and will avoid actions that increase the likelihood of encounters (e.g., turning over logs). Personnel should avoid walking at night or in high grass and underbrush. Visual inspection of work areas should be performed prior to activities taking place. The use of leather boots and long pants will be required since more than half of all bites are on the lower part of the leg. No attempt at killing snakes should be made; many people are bitten in such an attempt.

If someone is bitten by a potentially poisonous snake, the following treatment should be initiated:

- Keep the patient calm.
- Notify emergency medical services.
- Transport to closest medical facility.
- Wash the wound and keep the affected body part still, if time permits.
- Apply direct pressure to the site of the bite if bleeding is extreme.
- Keep the affected area lower than the heart.

- Carry or have him/her walk slowly to the nearest vehicle and immediately transport to the nearest medical facility or hospital.

Bird Excrement. Accumulation of bird excrement can pose a biological threat to site workers and visitors. There is a group of pulmonary disease and disorders that result from exposure to infected bird droppings. The inhalation of dust from infected droppings can result in one of these pulmonary infections. All site activities that deal with the disturbance of accumulated bird excrement will be performed in Level C PPE using high-efficiency particulate-air respirator filters at a minimum.

Hantavirus. Rodents, such as deer mice, can potentially carry hantavirus. Deer mice usually live at higher elevations, like mesas, and can be distinguished from other rodents by their small size (2 4/5 to 4 inches long) and by their bi-colored tail. However, the Center for Disease Control believes that other rodents also have the potential to carry the virus, so precautions must be taken when dealing with any species of rodent. It is not possible to distinguish by observation whether a rodent carries the hantavirus.

Hantavirus affects the respiratory system in humans. The first symptoms of infection can occur at any time up to 45 days after exposure and include one or more of the following: fever, muscle aches, headache, or coughing. These symptoms progress rapidly into a severe lung disease that often requires intensive-care treatment. Hantavirus can be transferred to humans, primarily from breathing infected rodent excreta particles that have become airborne or ingesting excreta particles that have clung to hands or clothing. It can also be contacted from rodent bites or transferred through broken skin. Though the illness caused by hantavirus is severe, it is a relatively rare illness that can be prevented by simple precautions and common sense.

The best way to avoid contact with hantavirus is to avoid contact with rodents and their excreta. Do not leave food or garbage where rodents have access to them; this includes leaving food items and wrappers in vehicles. When possible, seal any opening greater than 1/4-inches diameter in vehicles or structure with steel wool to prevent rodent access.

Fecal Coliform. The basic procedure for precautions while working around material suspected of contamination by coliform bacteria are the same as those outlined under Hantavirus. Remediation of old latrines will be conducted in Level C respiratory protection unless otherwise designated by the UXOSO.

Stinging Insects. Contact with stinging insects like bees, hornets, and wasps may result in site personnel experiencing adverse health affects that range from being mild discomfort to 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.

Nests and hives for bees, wasps, hornets, and yellow jackets often occur in ground, trees, and brush. The area will be checked for obvious nests and hives before it is cleared. If a nest or hive is found, the UXOSO will be contacted before the nest is disturbed or removed. Bites and stings can be painful and may elicit an allergic reaction.

Individuals with life threatening allergies will not work in areas where there is a great potential for insect stings. If simple first-aid measures do not alleviate the symptoms, the victim will be taken to the nearest medical center. An attempt will be made to kill the offending insect and take it to the emergency room with the victim if this can be done quickly and without endangering personnel.

Some of the factors related to stinging insects that increase the degree of risk associated with accidental contact are as follows:

- The nests for these insects are frequently found in remote, wooded, grassy areas.
- 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 has not experienced an allergic reaction, there is no guarantee that they will not have an allergic reaction upon receipt of another sting.

With these things in mind and with the high probability of contact with stinging insects, all site personnel shall comply with the following safe work practices:

- If a worker knows that he is hypersensitive to bee, wasp, or hornet stings, they must inform the UXOSO of this condition prior to participation in site activities. The UXOSO will question all site personnel concerning allergies or sensitivities prior to initiating work on-site.
- All site personnel will be watchful for the presence of stinging insects and their nests, and shall advise the UXOSO if a stinging insect nest is located or suspected in the area.
- Any nests located on-site shall be flagged off and site personnel shall be notified of its presence.
- If stung, site personnel shall immediately notify the UXOSO to obtain treatment and allow the UXOSO to observe them for signs of allergic reaction.
- Site personnel with a known hypersensitivity to stinging insects shall keep required emergency medication on or near their person at all times.

Stings of bees, wasps and hornets are responsible for more deaths in the United States than bites and stings of all venomous creatures. This is due to the sensitization by the victim to the venom from repeated stings, which can result in anaphylactic reactions. The stinger may remain in the skin and should be removed by teasing or scraping rather than pulling. An ice cube placed over the sting will reduce pain. An analgesic-corticosteroid lotion is often used. People with known hypersensitivity to such stings should carry a kit containing antihistamine and epinephrine.

Spiders. The biting insects of greatest concern are spiders, especially the black widow and the brown recluse. These spiders are of special concern due to the significant adverse health effects that can be caused by their bite.

- **Black Widow** – The black widow is a coal-black, bulbous spider 3/4 to 1-1/2 inches in length, with a bright red hourglass on the underside of the abdomen. The black widow is usually found in dark moist locations, especially under rocks and 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 (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

- **Brown Recluse** – The brown recluse is brownish to tan in color, rather flat, 1/2 to 5/8 inches long with a dark brown "violin" shape on the underside. It may be found in trees or in dark locations. Victims of a brown recluse bite may exhibit the following signs or symptoms:
  - Blistering at the site of the bite, followed by a local burning at the site 30 to 60 minutes after the bite;
  - Formation of a large, red, swollen, pustulating lesion with a bull's-eye appearance;
  - Systemic effects may include a generalized rash, joint pain, chills, fever, nausea, and vomiting; and
  - 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, these 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. If either of these spiders is confirmed to be on-site, the UXOSO shall brief the site personnel as to the identification and avoidance of the spiders. Site personnel should notify the UXOSO if they locate either of these spiders.

Wild Animals. Normally animals avoid people and areas where activities are ongoing. Small animals, such as raccoons, infected with rabies or when cornered, may become aggressive. When working, remain alert for likely locations that animals inhabit. Avoid nests, dens, and holes in the ground that may be the animal's home.

The only effective measure to preclude animal bites is avoidance. Contact with all wild animals will be avoided at all times. Persons bitten by an animal should seek medical assistance immediately, especially if it is suspected that the animal is rabid. Aggressive or disoriented behavior, as well as foaming of the mouth can be signs of rabid animals. Until medical assistance can be reached, persons should watch for symptoms of severe swelling, nausea, and shock.

Bloodborne Pathogens. In July of 1992, OSHA issued a final Standard for Protection of Workers Potentially Exposed to Bloodborne Pathogens [29 Code of Federal Regulations (CFR) 1910.1030]. This primarily involves medical and research personnel. Bloodborne pathogens are pathogenic microorganisms which may be present in human blood and can cause disease in humans. These pathogens include, but are not limited to hepatitis B virus and human immunodeficiency virus.

Potential exposure during site activities results from workers who are infected. The OSHA Standard specifically includes first aid providers and is enforceable on-site subject to the

Hazardous Waste Site Work and Emergency Response Standard (29 CFR 1910.120). The basic concept of this standard is that medical care workers and first aiders must take the "Universal Precaution" of assuming that any blood containing fluid or person bleeding or contaminated with blood containing fluid is positive (infected) with both viruses.

Protection involves the use of personal protection such as gloves, eye shields, one-way valve rescue breather devices, and training. In order to effectively protect against any hazards, workers must have a basic understanding of the hazard. This is particularly true for personnel expected to administer first aid if necessary.

3.5 Operation of All Terrain Vehicles

All Terrain Vehicles (ATVs) may be used during performance of the tasks at the MRS-16. Operators of these vehicles shall perform equipment safety inspections on a daily basis. Operators of vehicles equipped with roll bars shall wear safety seat belts and be cognizant of terrain slopes and conditions that can lead to roll-over. Vehicles will not be operated at speeds greater than 15 miles per hour and in accordance with the manufacturer's safety instructions. OSHA approved safety cans will be employed for fueling ATVs, and fire extinguishers will be readily accessible. Fueling will not be conducted while the vehicle is operating. Vehicles will be maintained according to the manufacturer's instructions.

4.0 Training Requirements

All UXO field personnel shall comply with the requirements CESPK DID OT-FTO-25. Non-UXO personnel may be utilized to perform MEC related procedures when supervised by a UXO Technician III. All personnel will be fully trained and capable of recognizing the specific hazards of the procedures being performed.

4.1 General Training

The UXOSO will be responsible for informing all personnel performing on-site activities and all visitors of the contents of this SSHP and ensuring that each person signs the SSHP acknowledgment form (Form 4-1) before entering an EZ. By signing this form, individuals recognize the hazards present on the site and the policies and procedures required to minimize exposure to hazards or adverse effects caused by hazards. Documentation of certification of training requirements and the training acknowledgment form (Form 4-2) will be reviewed by the UXOSO, provided to the SUXOS, and filed on-site. Untrained employees may be restricted from sites where the potential for exposure exists as determined by the UXOSO. SOP HS050 contains a discussion on training requirements.

Shaw trains all field personnel according to Title 29 CFR 1926.65 or in Title 8 California Code of Regulations (CCR) 5192 before their initial assignment to any project.

4.2 MEC Awareness Training

MEC awareness training is an appropriate safety precaution for all personnel working on former Fort Ord. MEC awareness consists of initial and repetitive training in basic MEC characteristics, identification, and reporting procedures.

Initial MEC Training. Initial MEC training should be provided to all field workers prior to engaging in field operations. The intention of the initial MEC training is to prepare a previously untrained person to recognize UXO and to properly respond to the discovery of UXO.

Initial training may be given by the most experienced UXO Technician on-site. Health and safety personnel should not present the initial training unless they are a qualified UXO Technician to avoid the possibility of conveying inaccurate information on MEC. This training will cover the following topics, at a minimum:

- MEC types - Describe the basic characteristics, deployment, and functioning of the following MEC:
  - Bombs

  - Rockets/missiles
  - Projectiles
  - Mines
  - Grenades
  - Small arms

- MEC and munitions debris identification - Describe the typical identification features of MEC. It is beneficial to supplement this training with photos, diagrams, and inert training aids:

  - What to look for (general shapes, lines that indicate venturi, rotating bands, etc.)
  - Natural camouflage of MEC caused by rust, vegetation, and partial burial
  - Chemical warfare material (CWM)

- Procedures to use upon finding a suspected MEC:

  - Do not disturb.
  - Mark site with whatever is available (flagging tape, shovel, etc.).
  - Report find to supervisor immediately.

Repetitive MEC Training. In addition to the initial MEC training described above, site workers should receive repetitive MEC training. Repetitive training is intended to add to the site worker's knowledge of MEC hazards, reporting procedures, and to periodically re-emphasize the possibility of encountering hazardous UXO. Repetitive MEC training should be given at least once every month by a UXO Technician and can be done during a daily tailgate safety meeting.

A typical repetitive MEC training session will last from 5 to 50 minutes depending on the complexity of the topic discussed. Appropriate topics for presentation include the following:

- Review of MEC identification
- Review of MEC reporting procedures
- Review of MEC hazards
- Review of MEC accidents that have occurred on other project sites
- Disseminate new information concerning MEC hazards (for example, the discovery of MEC in an unexpected location)
- CWM procedures

4.3 40-Hour Training

The following is a general list of topics covered in the 40-hour course:

- General site safety
- Physical hazards (fall protection, noise, heat stress, and cold stress)
- Key management positions responsible for site health and safety
- Safety, health, and other hazards
- Use of PPE
- Work practices by which employees can minimize risks from hazards
- Safe use of engineering controls and equipment on-site
- Medical surveillance requirements, including recognition of symptoms and signs that might indicate over exposure to hazards
- Worker Right-to-Know (Hazard Communication)
- Engineering controls and safe work practices
- Components of the site health and safety program
- Decontamination practices for personnel and equipment
- Confined space entry procedures
- Emergency Response procedures
- As low as reasonably achievable

4.4 Supervisory Training

Site supervisory personnel shall receive eight additional hours of specialized training on program supervision. The following topics are discussed:

- Overall health and safety program
- PPE program
- Spill containment program
- Air-monitoring techniques

4.5 Refresher Training

Personnel are required to complete eight hours of refresher training annually on the following topics:

- Safe work practices
- Chemical hazard awareness
- Hearing conservation
- Hazard communication
- Respirator refresher
- Confined-space entry procedures update
- MEC awareness

4.6 Supervised Field Experience

Personnel will receive a minimum of three days actual field experience under the direct supervision of a trained, experienced supervisor. This supervised field experience will be documented.

4.7 Visitor Training

Site access by personnel making deliveries or performing repairs to utilities, public or government officials, visitors, or local residents will be limited to support areas only. These persons will not be required to comply with the medical and training requirements as previously defined. Authorized visitors will be briefed on the hazards present at that location by the UXOSO. Visitors will be responsible for compliance with the requirements specified in this SSHP.

4.8 Tailgate Safety Meetings

The UXOSO conducts a tailgate safety meeting for all personnel at the beginning of each work shift or whenever new employees arrive at the job site once the job commences. The topics discussed at the tailgate safety meeting include health and safety considerations for the day's activities, necessary PPE, problems encountered, and new operations. Attendance records and meeting notes are maintained with the project files. At the conclusion of each shift, a debriefing for site employees will be held, if necessary. SOP HS051 will be adhered to at all times.

4.9 Site-Specific Training

Shaw provides site-specific training for all personnel assigned to projects falling within the scope and application of 29 CFR 1926.65. The content of the training will be derived from information contained within this SSHP and the Basewide SSHP (Shaw, 2004). All workers must also read and sign the SSHP acknowledging acceptance of site rules and understanding of site hazards

before being permitted to enter an EZ. Emergency procedures will be reviewed during this training.

4.10 Hazard Communication

All personnel performing field activities shall receive basic hazard communication training, which involves a review of the Shaw written hazard communication program, container labeling, and chemical health hazards.

In order to comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200 and to ensure that site personnel are informed of the hazards associated with the materials with which they work, the following requirements will apply to all commercial products containing hazardous substances that are brought on-site.

- Material Safety Data Sheets (MSDSs) will be maintained for each product containing a hazardous substance that will be used on-site.
- All containers not supplied with adequate hazard labeling will have a hazard communication label affixed to the container providing the health and physical hazards associated with the material.
- All personnel, including subcontractors who work with products containing hazardous substances, will be trained in accordance with the requirements of 29 CFR 1910.1200. This training will be performed and documented by the UXOSO.
- An inventory of all products containing hazardous substances used on-site will be maintained.

All personnel performing field activities shall receive basic hazard communication training, which involves a review of the Shaw written hazard communication program, container labeling, and chemical health hazards. SOP HS060 will be adhered to at all times.

4.11 First Aid and Cardiopulmonary Resuscitation

At least two persons trained in a minimum of both American Red Cross first-aid techniques and Cardiopulmonary Resuscitation (CPR) will be on-site whenever MEC activities occur. Refresher training in CPR is required every two years and every three years for first aid. These two employees will meet both the training and vaccination requirements of Shaw's Bloodborne Pathogen Exposure Control Plan.

4.12 Lead Awareness

Employees subject to exposure to lead at or above the action level will undergo additional lead awareness training as presented in the Basewide SSHP (Shaw, 2004). The lead compliance

program required to be developed for lead construction projects (8 CCR 1532.1) that stipulates training requirements is also presented in the Basewide SSHP.

5.0 Personal Protective Equipment

This section provides guidelines for selection of appropriate PPE in accordance with 29 CFR 1910.120 (g) (5), 1910.134, and 1910.132. Specific requirements for PPE will be defined in the SSWP. SOP HS600 will be adhered to at all times. Environmental and personal monitoring will be conducted to identify health hazards to determine appropriate level of employee protection needed. Environmental and personal monitoring requirements are presented in Section 7.0.

5.1 Respiratory Protection

Respiratory protective equipment shall be National Institute of Occupational Safety and Health approved, and respirator use shall conform to American National Standards Institute Z88.2, OSHA 29 CFR 1910.134 requirements. SOP HS601 further defines the respiratory protection program that details the selection, use, inspection, cleaning, maintenance, storage, and fit testing of respiratory-protective equipment. This procedure complies with the requirements contained within 29 CFR 1910.134.

All personnel (including visitors) performing on-site activities and using an air-purifying respirator must have successfully passed a qualitative respirator fit test in accordance with OSHA 29 CFR 1910.134 within the last 12 months. Documentation of fit testing is the responsibility of each employer. Fit testing and any training related to respiratory protection for Shaw personnel will be documented on the Training Acknowledgement Form (Form 4-2).

5.2 Hearing Conservation

A hearing conservation program will be implemented at the site when exposures equal or exceed an 8-hour time weighted average of 85 A-weighted decibels. Hearing loss caused by high sound levels is a problem that can be prevented. Sound-level measuring will be conducted initially on-site and whenever new tasks are started or additional equipment is brought onto the site that has not previously had its sound level quantified.

Engineering controls, such as mufflers and baffles, will be utilized when feasible to reduce noise. Hearing protection, such as E-A-R™ plugs (Noise Reduction Rating of 29), is required to be worn by personnel working with or around heavy equipment and as sound-level monitoring dictates. SOP HS402 will be adhered to.

5.3 Levels of Protection

The following is a brief description of the PPE that will be required during munitions removal action. The OSHA terminology for protective equipment will be used: Levels A, B, C, and D. Use of Level A and B protection is not anticipated during this project.

Where foot traffic and proximity to earth moving equipment is required, all personnel will be required to wear reflective traffic vests or as specified by the UXOSO.

5.3.1 Level C Protection

Level C protection is not anticipated during this project. Level C protection may however be required in areas that are known to contain HTRW chemical hazards. The Level C PPE requirements are presented in the Basewide SSHP (Shaw, 2004)

5.3.2 Level D Protection

Level D PPE at a minimum shall consist of:

- Street clothes or coveralls
- Steel-toed work boots (except UXO personnel)
- Safety glasses
- Hearing protection (if necessary)
- Splash shield (if necessary)
- Hardhat
- Leather gloves

If additional skin protection from poisonous plants is required, then the above Level D PPE ensemble will be upgraded to a modified Level D PPE to include:

- Tyvek™ coveralls with hoods and elastic wrists and ankles.
- Nitrile gloves (inner).
- Duct tape openings (ankles, wrists)

In addition, depending upon meteorological conditions dust exposure may become a consideration. If dust cannot be controlled with engineering methods due to environmental concerns, dust masks or half face respirators equipped with HEPA filters (P-95 or greater) will be assigned

Hard hats may create an unsafe condition for the UXO Technicians by falling off at a critical moment. In the event of the accidental detonation of a UXO (the worst case accident scenario), the hard hat will not protect the UXO Technician from fragments and may worsen the injury by

reflecting fragments into the head. Therefore, hard hats are not required while performing MEC clearance.

Emergency and first aid equipment will be available at all times (Section 10.12). The team support vehicle will be designated as an emergency vehicle. Table 5-1 presents a list of emergency and first aid equipment needed on-site.

5.3.3 Activity-Specific Levels of Protection

The required level of protection is specific to the activity being conducted. For each project site, the initial levels of PPE will be identified in Job Safety Analysis approved by the UXOSO and CIH.

6.0 Medical Surveillance

Shaw will utilize the services of a Board-Certified Occupational Medicine physician for the medical surveillance requirements of this project. Dr. Jerry Burk (below) will review all medical examinations and will be available for medical consultation on an as-needed basis.

Dr. Jerry Burk, Health Resources
600 West Cummings Park, Suite 3400
Woburn, MA 01801
(800) 350-4511

6.1 Medical Examination

As required by SOP HS100, all personnel on-site working within the EZ will have successfully completed a pre-placement or periodic/updated physical examination. The SOP HS102, Management of Employee Record will be followed. The contents of this examination were determined by the Occupational Medical Physician. The CIH may consult with the physician and recommend additional testing of employees or subcontractors.

6.2 Pre-placement Examination

This examination was designed to meet the requirements of 29 CFR 1926.65 and 8 CCR 5192. The Shaw medical surveillance program examination, at a minimum, consists of the following:

- Medical and occupational history questionnaire that includes information on past gastrointestinal, hematologic, renal cardiovascular, reproductive, immunological, and neurologic problems
- Physical examination
- Blood pressure measurements
- Complete blood count and differential to include hemoglobin and hematocrit determinations, red cell indices, and smear of peripheral morphology
- Blood urea nitrogen and serum creatinine
- Pulmonary function test
- Audiogram
- Electrocardiogram for employees over 35 years old or when other complications indicate the necessity
- Drug and alcohol screening (SOP Health and Safety Operations 101)

- Visual acuity

The following information is, or has been, provided to the examining physician:

- Copy of 29 CFR 1926.65 and appendices
- Description of employee's duties
- Contaminants potentially exposed to
- Description of the PPE to be used
- Information from previous medical exams

The medical surveillance provided to the employee includes a judgment by the medical examiner of the employee's ability to use either positive- or negative-pressure respiratory equipment. Any employee found to have a medical condition that could directly or indirectly be aggravated by exposure to the chemical substances expected to be on site (Section 3.3) or by the use of respiratory equipment will not be employed for the project. A copy of the medical examination is provided at the employee's request.

The employee will be informed of any medical conditions that would result in work restriction or that would prevent them from working at hazardous waste sites.

6.3 Annual Examination

Shaw field employees receive an annual update examination meeting the requirements of 29 CFR 1926.65. The results of these exams are compared to previous results and the baseline physical to determine if any effects due to exposure have occurred. Appropriate actions are taken as recommended by the physician should the results indicate an exposure; otherwise, employees are cleared for continued work.

6.4 Exit Examination

Shaw offers exit physical examinations for all employees involved in the medical surveillance program who are leaving the company for any reason to ensure they are in good health.

6.5 Lead Standard Monitoring

Biological monitoring for blood lead and zinc protoporphyrin levels may also be performed at the discretion of the CIH, although lead hazards are not expected at MRS-16. .

6.6 Subcontractor Requirements

Subcontractors will certify that all their employees have successfully completed a physical examination by a qualified physician on the Training Acknowledgment Form (Form 4-2). The physical examinations will meet the requirements of 29 CFR 1926.65, 1926.62 and 1910-124.

Subcontractors will also supply copies of the medical examination certificate for each employee they have on-site.

6.7 Medical Records

Medical and personal exposure monitoring records will be maintained according to the requirements of 29 CFR 1926.65 and will be kept for the duration of employment plus 30 years. Confidentiality of employee medical records will be maintained. The written medical opinion from the occupational physician will be made available upon request to the USACE representative for any site worker.

6.8 Medical Restrictions

When a medical care provider identifies a need to restrict work activity, the employee's home office will communicate the restriction to the employee, SSHO, SUXOS, UXOSO, and CIH. The terms of the restriction will be discussed with the employee and the SSHO. Every attempt will be made to keep the employee working while not violating the terms of the medical restriction.

7.0 Environmental and Personal Monitoring

Environmental and personal monitoring will be conducted to identify health hazards in order to determine the appropriate level of employee protection needed on-site. The following sections apply, unless the CIH and SSHO deem that monitoring for a specific activity may be discontinued or modified. Specific monitoring requirements will be identified in the SSWP and AHA.

7.1 Dust Emission Monitoring

Dust emission monitoring will be conducted during site activities to ensure that field personnel are adequately protected from airborne contaminants. The expected contaminant and the instruments to measure it are:

- Dust emissions: Dust Tracks, or Mini-Rams. The action level criterion (Level D to Level C) for dust/particulate is 0.5 milligrams per cubic meter, as determined by a Mini-Ram. If the action level is exceeded, the Program CIH may specify integrated sampling and if so, the action level for the contaminant of concern will apply. Table 7-1 shows the project action levels.
- If dust emissions exceed the action levels as defined in Table 7-1, respiratory protection will be instituted.

7.2 Meteorological Monitoring

Wind speed and direction will be monitored. Wind direction will be used to determine the appropriate location for the Dust Tracks, or Mini-Rams.. Wind speed will be monitored and used to determine, in conjunction with visual assessment and results from dust monitoring, whether the operation should be halted. Weather conditions will also be monitored (See Section 10.14).

7.3 Radiation Monitoring

Radiation monitoring is not anticipated at this time, however, where there is a concern for ionizing radiation exposure, the work area will be initially screened with a radiation survey meter for gamma radiation. If gamma sources are identified, quantitative instruments will be used to measure alpha, beta, and gamma sources.

7.4 Calibration of Air Monitoring Equipment

All air monitoring equipment will be maintained and calibrated according to the manufacturer's recommendations, which will be available in the UXOSO's site office. Calibration will be done before and after use each day and under the approximate environmental conditions the

instrument will be used. All air monitoring activities will be documented on the equipment calibration log.

If an instrument is found to be inoperative or suspected of giving erroneous readings, the SSHO shall be responsible for immediately removing the instrument from service and obtaining a replacement unit. The specific Shaw or subcontractor operation for which this equipment is essential shall cease until an appropriate replacement unit is obtained. The SSHO will be responsible for ensuring a replacement unit is obtained and/or repairs are initiated on the defective equipment.

When applicable, only manufacturer-trained and/or authorized Shaw personnel will be allowed to perform instrument repairs or preventive maintenance.

7.5 Record Keeping

The UXOSO or his designee will be responsible for establishing and maintaining records of all required monitoring as described below:

- Date, time, location, pertinent task, and exposure information
- Description of the analytical methods, equipment used and calibration data
- Type of PPE worn
- Engineering controls used to reduce exposure
- Sampling location
- Work operations taking place during monitoring
- Meteorological data
- Signature of analyst/sample collector
- Field Activity Daily Log

8.0 Site Control

The UXOSO will designate and coordinate access and security on-site to prevent access to hazardous conditions by unauthorized personnel. Due to the hazardous nature of MEC, only UXO qualified personnel will perform MEC procedures. Non-UXO personnel may be utilized to perform MEC related procedures when supervised by a UXO Technician III. All non-UXO personnel will be fully trained and capable of recognizing the specific MEC hazards as presented in Section 3.0. When non-essential MEC personnel enter the EZ, all MEC operations will cease.

An EZ will be established around a work site. The EZ will be large enough to prevent personal injuries from fragmentation as a result of MEC operations. The limits of the EZ will be marked with hazard tape or other suitable marking material.

A support zone (SZ) will also be established outside of the EZ where personal decontamination and break areas will be provided. Eating, drinking, and smoking are prohibited except in designated areas.

In case of emergency, personnel will exit the site and move to the designated safe area as prescribed in Section 10.0.

8.1 Perimeter Postings

Appropriate warning signs will be strategically placed where people enter the EZ. Signs should read,

"DANGER – DO NOT ENTER. UNEXPLODED ORDNANCE AREA. KEEP CLEAR. EXPLOSIVES IN USE."

or similar. Signs may be more hazard-specific as necessary. Additional signs may be posted at the perimeter of the site to alert passersby of potential dangers.

8.2 Communications

Two-way radios will be provided to on-site field personnel during this project. Cellular telephones will also be available.

If MEC or electroexplosive devices susceptible to EMR devices in the radio frequency range are present, the UXOSO will notify personnel so that preventive steps can be taken.

8.3 Security

This section describes the procedures for controlling access by personnel and vehicles into potentially dangerous or hazardous working areas within the site. Security fencing, lighting, and warning signs will control access to each area. Entrance to each area will be restricted to specific points that will be controlled and monitored by project personnel. Only project personnel, subcontractor personnel, and authorized visitors with proper identification will be allowed access to the site. A UXO escort will always accompany non-UXO personnel.

Security measures described in the following sections include:

- Security operations
- General security
- Site-specific areas

8.3.1 Security Operations

The primary mission of security operations is the control of personnel and vehicles entering and leaving the sites. Control will be provided by security fencing or barricade tape installed around each site, depending on-site-specific conditions, with specific points established to gain access to the sites. As work progresses, portable fencing will be relocated, as required. Access gates (when applicable) will be locked when unattended.

The integrity of the fencing will be checked on a regular basis. Necessary repairs will be noted in the safety log and immediately reported to the SSHO, who will assign repair responsibilities.

Project personnel will conduct periodic patrols around and through the sites. Personnel on patrol will remain in radio contact with the administration trailer.

8.3.2 General Security

Security operations will include:

- Maintaining a visitor log at the project reception desk and work sites.
- Escorting visitors to the site(s) by project personnel. Visitors will receive an abbreviated site orientation briefing in accordance with this SSHP.
- Contracting with a security service to patrol the sites during off work hours and weekends.
- Notifying local law enforcement in the event of vandalism, trespassing, or breaking and entering. It is not intended that project personnel assume a confrontational role.
- Site facilities containing items of value, or which are subject to vandalism, will remain locked when unoccupied.

- A key cabinet will be located at the project offices and will contain master keys (and spares) for on-site locks. A key log identifying personnel and the keys specifically issued will be implemented and maintained. Key control will be the responsibility of the Project Administrator. Procedures for storage and accountability of explosive magazine keys and locks are presented in Section 3.0, Explosives Management Plan.

8.3.3 Site-Specific Areas

The site security for the removal sites will consist of one or all of the following measures:

- Fencing (chainlink, safety, or barbed wire) will be installed to prevent public access to the sites
- Materials and supplies will be placed in locked boxes within a fenced yard
- Plastic barrier fence, steel posts, or fencing will be installed to segregate areas of work activity
- Signs stating "Authorized Personnel Only" will be installed around areas of work activity
- Warning signs will be erected at specific areas to provide warning of hazardous conditions in accordance with the requirements of this SSHP.

9.0 Personnel Decontamination

Personnel decontamination facilities will be established on sites that are known to contain HTRW and poisonous plant concerns to ensure that personnel maintain a high degree of personal hygiene and minimize exposure to chemical and biological hazards. If required, the personnel decontamination area will be established immediately outside the EZ to facilitate decontamination and PPE removal.

9.1 Level C Decontamination

Level C protection is not anticipated during this project. If required in areas known to contain HTRW chemical hazards, the Level C decontamination procedures are presented in the Basewide SSHP (Shaw, 2004).

9.2 Level D Decontamination

Decontamination procedures are not required for Level D protection.

The following decontamination procedures shall be followed for modified Level D PPE:

- Step into first wash tub and wash work boots with soap solution and scrub brush.
- Step into second wash tub and rinse boots with clean water and scrub brush.
- Remove outer leather gloves.
- Remove outer Tyvek™ coveralls and dispose in the proper receptacle.
- Remove nitrile gloves and dispose in the proper receptacle.
- Wash hands and face before eating, drinking, or smoking.
- Redress in street clothes and leave site.

The UXOSO will also determine if personnel wearing modified Level D PPE will be required to shower. This decision will be based on the potential for PPE breakthrough to have occurred and other subjective information. Personnel are required to wash hands, face, and other exposed skin areas before leaving the EZ for breaks or lunch. Towels, washcloths, soap, and shampoo will be provided to personnel. Work clothes will be left in the shower/change facility. With the exception of work within the SZ, no work clothing, shoes, or boots will be worn off or carried out of the project area. Non-disposable soiled work clothes will be laundered on-site or taken to an appropriate laundry service. Inner protective clothing and towels will be laundered utilizing soap and chlorine bleach.

10.0 Emergency Response Plan and Contingency Procedures

Site personnel must be prepared to respond and act quickly in the event of an emergency or accidental contaminant release. Emergency preparedness and response procedures will aid in protecting site workers and the surrounding environment.

This Emergency Response Plan, as required by 29 CFR 1910.120, addresses the following elements:

- Pre-emergency planning and procedures for reporting incidents to appropriate government agencies for potential chemical exposure, personal injuries, fire/explosions, environmental spills and releases, discovery of radioactive materials
- Personnel roles, lines of authority, communications
- Posted instructions and list of emergency contacts: physician, notified nearby medical facility, fire and police departments, ambulance service, state/local/federal agencies, CIH, and Contracting Officer
- Emergency recognition and prevention
- Site topography, layout and prevailing weather conditions
- Criteria and procedures for site evacuation, emergency alerting procedures/employee alarm system, emergency PPE and equipment, safe distance, place of refuge, evacuation routes, site security and control
- Specific procedures for decontamination and medical treatment of injured personnel
- Route maps to nearest pre-notified medical facility
- Criteria for initiating community alert program, contacts and follow-up

10.1 Pre-Emergency Planning

During the development of the AHAs included in this SSHP, potential health and safety hazards associated with the conduct of site activities were identified. Once identified, these hazards were assessed to determine the risk that these hazards could result in an emergency situation. Contingency plans for responding to the potential emergency situations have been developed and are included in this SSHP.

Shaw has gathered information/phone numbers of the local and site emergency response authorities. The authorities will be contacted and informed of the nature of the site activities to

be performed under this SSHP, and the potential hazards that the conduct of these activities pose to investigation personnel, the environment and the general public.

Preplanning measures include employee training, fire and explosion prevention and protection, chemical spill and discharge prevention and protection, and safe work practices to avoid personal injury or exposure. The following sections provide general procedures to be followed. Specific procedures will be identified in the SSWP.

10.2 Personnel Roles/Lines of Authority

The roles and responsibilities of Shaw personnel for response to emergencies at former Fort Ord will be clearly defined and coordinated with Shaw subcontractors, USACE project personnel, and Fire Department emergency response team. The responding Fire Department (911) will evaluate the emergency situation and make the determination whether to involve the Hazardous Materials Unit in the response. The responsibilities of specific project individuals and the coordination of the responding Fire Department are defined as follows.

Senior UXO Supervisor. At all times during scheduled work activities, the SUXOS or alternate shall be present. This individual will be responsible for implementing emergency procedures and determining appropriate response actions. Depending on the circumstances and time permitting, the SUXOS will review proposed response actions with the UXOSO and the USACE OE Safety Specialist. Specific responsibilities for the SUXOS include:

- Evaluating and assessing emergency incidents or situations
- Assigning personnel and coordinating response activities on-site
- Assuring that field personnel are aware of the potential hazards associated with the site
- Summoning a Fire Department emergency response team
- Notifying the Project Manager of an emergency situation
- Coordinating response to an incident with the USACE OE Safety Specialist
- Assuring that all Shaw emergency equipment is routinely inspected and functional
- Working with the UXOSO and SSHO regarding the correction of any work practices or conditions that may result in injury to personnel or exposure to hazardous substances
- Assuring that appropriate emergency response agencies are aware of the provisions made herein
- Evaluating the safety of site personnel in the event of an emergency, and providing evacuation coordination if necessary

- Maintaining site facilities and assisting site personnel in accessing those facilities

The SUXOS will direct all emergency response activities conducted or managed by Shaw and is responsible for field implementation and enforcement of health and safety policies and procedures.

UXO Safety Officer. The UXOSO will assist the SUXOS in evaluating health and safety concerns with respect to MEC emergency response actions and has authority to take action providing a safe work place to employees and subcontractors during such events.

Site Safety and Health Officer. The SSHO will assist the SUXOS and UXOSO in evaluating health and safety concerns with respect to HTRW emergency response actions and has authority to take action providing a safe work place to employees and subcontractors during such events.

Project Manager. The Project Manager will provide support to emergency responders and dedicate appropriate project resources to the response effort. If required, the Project Manager will mobilize additional personnel and equipment to the site. The Project Manager will notify and provide the USACE OE Safety Specialist with recommendations concerning any additional action(s) to be taken.

10.3 List of Emergency Contacts and Notification

The SUXOS, Project Manager, and UXOSO will be notified immediately in the event of an emergency. The SUXOS will immediately evaluate the incident and, if necessary, notify the Presidio of Monterey Fire Department (911) emergency support service. If not previously notified, the Project Manager, USACE OE Safety Specialist, and designated environmental contact will be advised of the situation. Emergency telephone numbers are listed in Table 10-1. The munitions notification list for the Army is presented in Table 10-2 and the notification list for Shaw is presented in Table 10-3. These lists will be maintained with current contacts, and telephone numbers will be posted along with other emergency phone numbers at all telephone locations at the site.

The information provided to the notified person should include the nature of the incident and the exact location and the suspected contaminants or material involved. Information regarding the incident that should be reported to the emergency operator includes the following:

- Name and telephone number of the individual reporting the incident
- Location and type of incident
- Nature of the incident (fire, explosion, spill, or release) and substances involved
- Number and nature of medical injuries
- Movement or direction of spill/vapor/smoke

- Response actions currently in progress
- Estimate of quantity of any released materials
- Status of incident
- Other pertinent information

A complete incident report shall be completed by the UXOSO and provided to the USACE OE Safety Specialist once the urgency of the emergency incident has been resolved.

10.4 Advance Notifications

Advance notifications will be made before any extraordinary activity, such as MEC disposal operations, chemical handling or shipment, deep excavations, road closures, or hauling of contaminated materials on public roads. These notifications include:

- Notification to the Total Environmental Restoration Contract Community Relations Manager, who will determine the need for notification to the general public.
- Notification to the Fort Ord Fire Department for any activity where there is a potential need for rescue personnel.
- Notification to agencies and organizations potentially affected by road closures or detours. The list of notifications will be identified in the SSWP.

Attention will be paid to the potential impacts of activities on nearby residences, businesses, and especially schools. To the extent possible, traffic will be routed to avoid schools. As necessary, work may be conducted when schools or other businesses are closed.

10.5 Emergency Recognition and Prevention

Site employees will be informed of the known hazardous substances on-site, consisting of the explosives stored in the magazines on Barloy Canyon Road, and the UXO known to be present in MEC removal areas. The consequences of an accidental detonation will depend on the filler (e.g. high explosives, white phosphorous, chemical).

All site employees will be trained on the potential sources of emergencies for the site, and how to recognize emergency conditions. This training will include recognition of signs of an unplanned release (i.e., odors, visual indications, instrument readings, etc.).

10.6 Site Topography, Layout, and Prevailing Weather Conditions

The MRS-16 work site is small (2 acres) and located adjacent to a paved road. There is good access in the event of an emergency.

The area's climate is characterized by warm, dry summers and cool, rainy winters. The Pacific Ocean is the principal influence on the climate at former Fort Ord, causing fog and onshore winds that moderate temperature extremes. Daily ambient air temperatures typically range from 40 to 70 degrees Fahrenheit (ºF), but temperatures in the low 100 °F have occurred. Thick fog is common in the morning throughout the year. Winds are generally from the west.

The average annual rainfall of 14 inches occurs almost entirely between November and April. Because the predominant soil is permeable sand, runoff is limited and streamflow only occurs intermittently and within the very steep canyons in the eastern portion of former Fort Ord.

10.7 Medical Emergency Response

In the event of severe physical or chemical injury, Presidio of Monterey Fire Department emergency response personnel shall be summoned for emergency medical treatment and ambulance service. Their response time is estimated to be less than 10 minutes upon initial notification. The Presidio of Monterey Fire Department emergency medical responders will be utilized to provide care to severely injured personnel. Once an initial assessment is made by the emergency medical technicians, the decision on using ground or air transportation for the victims will be made. Minor injuries will be treated on-site by qualified first-aid/CPR providers and if additional treatment beyond first aid is required, the injured personnel will be transported to the Community Hospital of Monterey Peninsula. The Community Hospital of Monterey Peninsula can provide 24-hour emergency medical care along with the services of a critical care center.

Transportation routes and maps shall be posted in the project office and in each site vehicle prior to the initiation of on-site activities. A copy of this map is provided as Figure 10-1.

10.8 Personal Exposure or Injury

Every precaution will be taken to aid in the prevention of injuries and/or exposure to MEC and HTRW contaminants. These precautions are detailed in this SSHP and the Basewide SSHP (Shaw, 2004) and generally consist of the following measures:

- Personnel will be properly trained for their work duties.
- Site personnel will wear appropriate PPE for each specific task or work assignment.
- Site personnel will follow the proper field safety protocols as defined.
- Site controls will be enforced so that only authorized personnel are able to access the work zones.
- Site personnel will be made aware of potential environmental and chemical hazards.

- Real-time air monitoring will be performed to evaluate the effectiveness of engineering controls and levels of personal protection.
- Proper decontamination procedures will be followed for personnel and equipment.

In the event of personal exposure to HTRW contaminants, the general guidelines presented in the Basewide SSHP will be implemented.

- Contact/Absorption - Soap and potable water will be used to wash contaminants from the skin. If irritation persists, the condition of the individual will be assessed and transport to a medical center arranged, if necessary.
- Inhalation - The victim will be moved immediately to an area providing fresh air. Decontamination of the victim and artificial respiration will be provided, if necessary. The condition of the individual will be assessed and transport to a medical center arranged, if necessary.
- Ingestion - Immediately contact local poison control center. The victim will be decontaminated, if necessary, and transported to a medical facility.

10.9 Fire Control

In the event of a fire, imminent danger of a fire (vegetation or other), explosion, or imminent danger of an explosion, all activities shall halt, and the Presidio of Monterey Fire Department (911) shall be notified immediately. If it is safe to do so, site personnel may use fire-fighting equipment available on-site to remove and isolate flammable or other hazardous materials that may contribute to the fire.

Upon arrival of the Presidio of Monterey Fire Department emergency responders, the SUXOS and/or UXOSO will advise the fire chief or lead representative of the location, nature, and identification of the hazardous materials on-site, as well as any other specific hazards inherent to the site.

The following measures will be implemented during site-field activities to minimize the risk of fire and/or explosion:

- To the extent possible detonations will be located away from vegetation, or vegetation and flammable material will be removed from near the detonation site. A fire watch will be maintained after any detonations.
- Smoking is permitted on-site only in the designated smoke area.
- Good housekeeping procedures will be required on-site.
- Material storage methods will be in accordance with manufacturers' recommendations.

- Flammable liquids will be stored in approved containers and cabinets only.
- All storage, handling, or use of flammable and combustible materials shall be conducted by trained personnel.
- Entry and exit pathways shall be kept clear of debris or obstacles.
- Work areas will be cleared of excess vegetation and obstructions.

Any base-specific guidelines established by the Army will be strictly enforced. Any fire, no matter how small, must be reported to the Presidio of Monterey Fire Department chief or designated official.

10.10 Spills or Leaks

Shaw will maintain the following equipment and materials in the SZ for use during spill response activities:

- Overpacks for drums
- Absorbent pads
- Granular absorbent material (noncombustible)
- Polyethylene sheeting
- 55-gal. drums
- Shovels and assorted hand tools
- Drum liners
- Citrikleen™ (or equivalent)
- Air horn
- Appropriate PPE for chemicals in use or likely to be encountered

If a hazardous waste spill or material release to the air, soil, or water at the site is observed, Shaw will immediately notify the USACE OE Safety Specialist and the Presidio of Monterey Fire Department. An assessment will be made of the magnitude and potential impact of the release. If it is safe to do so, site personnel will attempt to locate the source of the release, prevent further release, and contain the spilled and/or affected materials as follows:

- The spill or release area will be approached cautiously. Real-time air monitoring will be continuously performed in the spill vicinity.
- Hazards will be identified based on available information from witnesses or material identification documents (placards, MSDSs and logs). The potential hazards will be evaluated to determine the proper personal protection levels, methods, and equipment necessary for response.
- If necessary, the release area will be evacuated, isolated, and secured.

- If possible, spill containment will initially be made without entering the immediate hazard area.
- Entry to the release area will be made with the PPE, personnel, methods, and equipment necessary to perform the work. Hazardous spill containment and collection will be performed in four steps as follows:
  - Contain the spill with absorbent socks, booms, granules, or construction of temporary dikes.
  - Control the spill at the source by plugging leaks, uprighting containers, overpacking containers, or transferring contents of a leaking container.
  - Collect the spilled material with shovels or heavy equipment as necessary.
  - Store the spilled material for further treatment or disposal. Treatment and/or disposal options of the material will depend on the amount and type of material.

If site personnel cannot safely and sufficiently respond to an environmental release, evacuation of the area may be warranted. The decision to evacuate will depend on the risk of exposure to SZ personnel and the severity of the release. The Presidio of Monterey Fire Department will be notified in the event of a significant spill. Upon their arrival at the site, the SUXOS and/or SSHO will brief them on the current situation at hand and any potential hazards the team may be faced with.

10.11 Site Evacuation Procedures

The authority to order personnel to evacuate the area rests with the SUXOS or UXOSO who would advise the other as soon as possible. In the event that site evacuation is required, a continuous, uninterrupted air horn will be sounded for approximately 10 seconds. Air horns will be located in the site administration office, shower trailer, and active work area. Radio communication may also be used to alert site workers and provide special instructions. Evacuations may or may not be limited to specific EZ or site area.

- Personnel working in the EZ will immediately make their way to the designated assembly or rally point for a "head count." Depending on the severity of the event and allowable time, personnel exiting the EZ may be instructed to forego or modify decontamination procedures.
- Personnel in the SZ will immediately report to the designated assembly or rally point for a "head count" and further instructions. The SUXOS and the UXOSO will remain in contact to ensure that evacuation procedures are properly executed. If the designated assembly or rally point is inaccessible, personnel shall evacuate to an upwind location as determined by the windsock and perform a "head count."

- Situations requiring evacuation may include unusually severe weather conditions, fires, or significant chemical spills or releases. In the event of project evacuation, the USACE OE Safety Specialist, Fire Department (911), and Police Department (911) will be notified immediately. A site emergency map that delineates evacuation routes, emergency air horn locations, first-aid kit locations, rally point, and site-control-zone perimeters will be developed once an on-site evaluation of conditions and topography is complete.
- The safe evacuation distance will depend on the type of emergency involved and will ultimately be determined by the UXOSO and the USACE OE Safety Specialist. If an emergency situation involves CWM, the default safe distance will be 450 feet from the suspected materials.

In an emergency, it is imperative that site control and security be maintained. To control site personnel, the SUXOS will utilize the Site Entry/Exit Log to ensure all personnel are present or accounted for at the assembly point(s). Depending upon site size and configuration, weather and wind conditions and the nature of the emergency, the following will, as applicable, be used to maintain site security:

- Close, but do no lock, gates as evacuation occurs.
- Erect flagging or barrier tape to prevent accidental entry.
- Use communications devices to alert personnel to stay clear of the site.
- Use vehicles to block access routes to the site, but ensure they can be moved rapidly if emergency vehicles must use the access route.

10.12 Emergency Equipment

The team support vehicle is designated as an emergency vehicle. All emergency equipment will be maintained in proper working order and inspected by the UXOSO to ensure completeness and proper working order. The results of the inspection will be documented in the safety log. In the event that any of the disposable items are used, the UXOSO will ensure they are replaced immediately. The emergency equipment listed in Table 5-1 will be available on-site.

10.13 Emergency Decontamination Procedures

Treatment of illnesses or injuries to personnel working within the areas of the site may be more difficult because of protective clothing requirements and the potential for exposure. The UXOSO or Emergency Medical Care Provider must quickly assess the extent of the injury or illness of the victim. A determination will be made if lifesaving medical treatment is critical and if personal decontamination procedures will create additional injuries or aggravate the existing condition. Life-threatening injuries must receive immediate medical attention. Decontamination procedures may be modified, simplified, or eliminated completely under such circumstances.

The following guidelines are established for responding to minor emergencies when an individual may have been injured or overcome by exposure to a hazardous substance at the area of concern. If a truly serious injury exists, only portions of these guidelines may be appropriate to ensure prompt medical treatment.

- Notify supervisory and safety personnel, and verify that the area is safe to remain.
- Select an emergency decontamination location upwind and/or uphill from the area of concern, and determine the most effective pathway to emergency vehicles.
- Field decontamination should be performed in two stages: washing with soapy water, followed by a clear water rinse.
- Upon arrival at the injured party, stabilize any life-threatening problems, such as burns, or spills, and remove (i.e., brush or blot with absorbency pads) visible, gross contamination. If possible, prevent coming in contact with any contamination present at the scene. However, do not delay with this task, and be prepared to transport immediately to the decontamination area.
- Have support personnel perform real-time air monitoring.
- Determine type, nature, and extent of exposure or injury based on mechanism.
- Quickly cut or tear first layer of protective clothing (outer suit) off the injured party and discard. If cutting, always cut away from the body toward the extremities to avoid inflicting further injury.
- Without delay, efficiently move the injured away from the accident scene, possible contamination, or any hazardous substances. Relocate to a nearby "clean" area to expedite removal of respiratory protection and establish communication.
- If the individual is unconscious, evaluate if an adequate airway exists and breathing and circulation are present. If absent, commence rescue breathing or CPR without delay.
- Move the injured to the decontamination area and transfer responsibilities to support personnel.
- Using soapy solution, support personnel should carefully wash outer garments as needed and rinse.
- Spray outer protective clothing with clear water.
- Quickly remove tape from the injured's wrists and ankles; assume the individual is injured until an assessment indicates otherwise.
- Carefully, but quickly, cut the second layer of protective clothing (inner suit, boots, and gloves) off the injured party. Always cut away from the body toward the extremities to avoid inflicting further injury.

- Be prepared to turn emergency care over to Emergency Medical Service personnel. Otherwise, administer appropriate standard first aid to injuries.
- Following stabilization of any injuries, monitor and be on the alert for shock, wrap the injured in a warm blanket or other items to conserve body heat, and be prepared for vomiting.
- Cover any contact surfaces of transport equipment with a protective sheet or plastic.
- Inform all arriving personnel and transport crew of nature and extent of injuries and any potential hazards present.

10.14 Adverse Weather Conditions

Adverse weather can take many forms. Thunder and lightning storms, earthquakes, hail, high winds, and tornados are a few examples. Sudden changes in the weather, extreme weather conditions, and natural disasters can create a number of subsequent hazards. Generally, poor working conditions arise, and slip, trip, and fall hazards exist. Natural disasters can create many secondary hazards, such as release of hazardous materials to the environment, structure failure, and fires.

Routinely monitoring weather conditions and reports may help reduce the impact of severe weather and natural disasters. It may be necessary to halt certain hazardous operations or stop work altogether to allow the situation to pass. The UXOSO must decide what operations, if any, are safe to perform based on existing conditions and anticipated conditions.

The best protection against most severe weather episodes is to avoid potential exposure. This avoidance means seeking shelter before the storm hits. Stay away from pipes and electrical equipment should lightning be a threat, and watch for damage caused by lightning strikes nearby.

10.15 Earthquakes

The following general guidelines will be adhered to in the event of an earthquake:

- If you are indoors, duck or drop down to the floor. Take cover under a sturdy desk, table, or other furniture. Hold on to it and be prepared to move with it. Hold the position until the ground stops shaking and it is safe to move. Stay clear of windows, fireplaces, and heavy furniture or appliances. Do not rush outside. You may be injured by falling glass or building parts. Do not try using the stairs or elevators while the building is shaking or while there is danger of being hit by falling glass or debris.
- If you are outside, get into the open, away from buildings and power lines.
- If you are driving; stop if it is safe, but stay inside. Do not stop on or under a bridge, overpass, or tunnel. Move your car as far out of the normal traffic pattern as possible. Do not stop under trees, light posts, electrical power lines, or signs.

10.16 Critique and Follow-Up of Emergency Procedures

The USACE OE Safety Specialist shall be verbally notified immediately and receive a written notification using USACE Engineering Form (ENG) 3394 within 24 hours of all accidents or incidents, including releases of toxic chemicals, fires, or explosions. The report shall include the following items:

- Name, organization, telephone number, and location of the Contractor
- Name and title of the person(s) reporting
- Date and time of accident/incident
- Location of accident/incident (i.e., site location and facility name)
- Brief summary of accident/incident, including pertinent details such as the type of operation ongoing at time of accident
- Cause of accident/incident, if known
- Casualties (fatalities and disabling injuries)
- Details of any existing chemical hazard or contamination
- Estimated property damage, if applicable
- Nature of damage and effect on contract schedule
- Action taken by Contractor to ensure safety and security
- Other damage or injuries sustained (public or private)

The SUXOS and the UXOSO will investigate the cause of the incident to prevent its reoccurrence. The investigation should begin as soon as practical after the incident is under control but not later than the first work day after the incident. Investigations will follow the procedures described below:

- Interview witnesses and participants as soon as possible or practical.
- Determine the chronological sequence of events (opinions as to cause should not be solicited at this time.)
- Note the location, movement, displacement, liquid levels, sounds, noises, or other sensory perceptions experienced by the participants or witnesses.
- Obtain weather data.
- Ascertain the location and position of all switches and controls.

- Verify the condition of all safeguards.

After the facts have been collected, causal factors should be identified. Two causal factors typically exist, apparent and contributing; there may be several of each. Apparent factors are those that are self-evident or readily deduced. Contributing factors usually become apparent by questioning why the apparent causal factor was allowed to exist.

10.17 Community Alert

In the event of an emergency that would require evacuation of the local community, the USACE and the Base Realignment and Closure Transition Office will coordinate notifications as necessary.

11.0 Confined Space Entry

Confined space entry is not anticipated during MEC removal actions. A confined space is defined as a space large enough and so configured that a person can bodily enter and perform assigned work, has limited means for entry or exit, and is not designed for continuous employee occupancy. SOP HS300 for confined-space entry will be followed if such an activity is needed during the execution of this project.

12.0 Spill Containment

There are no hazardous substances or materials expected to be on-site that would potentially pose a spill concern. Gasoline and diesel fuel may be stored in cans of less than five gallons. As a precaution, spill containment equipment will be stored in the field equipment office. If a spill occurs, preventive measures will be implemented in accordance with Section 10.10.

13.0 Heat Stress

Heat stress is caused by a number of interacting factors, including environmental conditions, clothing, workload, and the individual characteristics of the worker. Extremely hot weather can cause physical discomfort, loss of efficiency, or personal injury. Because heat stress is probably one of the most common illnesses at a site, regular preventive measures are vital. Individuals vary in their susceptibility to heat stress. Table 13-1 presents examples of permissible heat exposure limit values.

Personnel (including subcontractor employees) potentially exposed to heat stress conditions will be made aware of the sources of heat stress, how the body handles heat, heat-related illnesses, preventive/corrective measures, and first-aid procedures.

13.1 Signs and Symptoms of Heat Stress

If the body's physiological processes fail to maintain a normal body temperature because of excessive heat, a number of physical reactions can occur ranging from mild to fatal.

Heat related problems include the following:

- Heat Rash - Caused by continuous exposure to heat and humidity and aggravated by chafing clothes. Heat rash decreases the body's ability to tolerate heat as well as being a nuisance.
- Heat Cramps - Caused by profuse perspiration with inadequate electrolytic fluid replacement. Heat cramps cause painful muscle spasms and pain in the extremities and abdomen.
- Heat Exhaustion - Caused by increased stress on various organs to meet increased demand to cool the body. Heat exhaustion causes shallow breathing; pale, cool, moist skin; profuse sweating; and dizziness. Heat exhaustion can be alleviated by promptly moving the affected individual to a cool place to lie down and by providing cool fluids to drink.
- Heat Stroke - The most severe form of heat stress. Heat stroke symptoms include hot, dry skin; no perspiration; nausea; dizziness; confusion; strong, rapid pulse; and coma. The body must be cooled immediately to prevent severe injury or death.

13.2 Heat Stress Prevention

One or more of the following practices will help reduce the probability of succumbing to heat stress:

- Acclimate workers to heat conditions when field operations are conducted during hot weather.

- Provide plenty of liquids to replace the body fluids lost by perspiration. Fluid intake must be forced because, under conditions of heat stress, the normal thirst mechanism is not adequate to bring about a voluntary replacement of lost fluids.
- If possible, install mobile showers or hose-down facilities to reduce body temperature and cool protective clothing.
- If possible, conduct field operations in the early morning.
- Train personnel to recognize the signs and symptoms of heat stress and its treatment.
- Rotate personnel to various job duties if possible.
- Provide shade or shelter to relieve personnel of exposure to the sun during rest periods.

Individuals succumbing to the symptoms of heat-stress will notify the UXOSO immediately. The onset of heat stress will preempt any of the aforementioned, halt activities, and initiate treatment. Early detection and treatment of heat stress will prevent further serious illness or injury and lost work time. Proper and effective heat stress treatment can prevent the onset of more serious heat stroke or exhaustion conditions. Individuals that have succumbed to any heat-related illness become more sensitive and predisposed to additional heat stress situations.

14.0 Cold Stress

Cold stress is not anticipated to be encountered during the execution of this delivery order. If cooler conditions than expected are encountered (e.g., 45 °F) during work hours, the requirements established in SOP HS401 will be followed.

15.0 Record Keeping and Data Management

Proper record keeping and data management are essential in the implementation of this SSHP. The forms associated with the record keeping and data management requirements must be completed in an accurate, timely fashion and filed with the appropriate entities. It is the responsibility of the UXOSO to ensure that the forms are properly completed. Completed forms will be kept and maintained by Shaw. These records shall be maintained for a 5-year period. Subcontractors will also be responsible for keeping a copy of the forms pertaining to their personnel.

15.1 Logs

The UXOSO will maintain and complete a daily log for each day's work. The daily log will document chronologically each day's health and safety activities in sufficient detail for future reference as needed. Other relevant data and field information will be recorded on separate log forms for air monitoring, sampling, equipment calibration inspections, and incident reporting.

An EZ sign-in log will be maintained that will provide a project record of the following information for each work shift's activities:

- Worker's name
- Work area
- Duties performed
- Level of protection
- Time in/time out

All personnel will be required to log in and out of the EZ.

A visitors' sign-in log will be maintained in the project office and administration area. Visitors requesting access to hazardous field activities must have appropriate project approval, be medically qualified, and have the health and safety training prerequisites for hazardous waste operations.

An OSHA 2203 Job Safety and Health Protection poster will be clearly displayed in the site administration trailer.

15.2 Safety Inspections

Shaw's accident prevention program is centered around the following key procedures:

- Project reporting, investigation, and review of all near misses, incidents, and accidents

- Management reviews of all incident/accident reports, corrective action, and project safety concerns
- Review of project, operations, and construction activities by health and safety professionals

Safety reviews and inspections are conducted by all tiers of the management structure and are documented. A list of all corrective action items is required to be maintained showing the corrective action, responsible person, and the date action is to be completed. Follow-up inspections are conducted by health and safety personnel to ensure that corrective actions or measures were implemented.

The SSHO and Project Manager will both inspect the site at least monthly and interview one or two site workers regarding areas of safety concerns or ideas for safety improvement. Site supervisory personnel will inspect site conditions and activities daily to identify changing conditions or potential hazards. Identified safety and occupational health deficiencies and suggested corrective measures will be brought to the attention of the SSHO and UXOSO. Safety review inspections will be recorded and filed for reference by Shaw project management and USACE personnel.

15.3 Accident/Incident Reporting and Investigation

A USACE Monthly Work Related Summary of Injuries and Illnesses form will be provided to the COR. In accordance with OE Mandatory Center of Expertise DID OE-15 the following categories of accidents/incidents shall be reported to the Contracting Officer by telephone or written report.

- Accidents/Incidents which result in a fatality, injury of employees, lost workdays, and/or property damage assessed at a cost of $2,000 or more shall be reported to the Contracting Officer as soon as possible after learning of the incident. The report shall contain as much information as is known concerning the incident. An ENG Form 3394 (available at the field office) shall be completed within 30 calendar days after the incident in accordance with the instructions attached to the form and forwarded to the Contracting Officer. The ENG Form 3394 shall be legible and signed by the supervisor of the person injured (or supervisor of the activity where property damage occurred) and by the next level of management.
- Shaw shall immediately report to the Contracting Officer any incident which could bring adverse attention or publicity to the Army or USACE.
- Shaw shall maintain a list of alternate points of contact in the event the Contracting Officer is not available.

All project personnel are required to report all near misses, injuries, illnesses, and accidents no matter how slight, to their immediate supervisor, who will immediately notify the UXOSO. The UXOSO shall immediately arrange appropriate medical care as required. Once immediate medical care for the injured personnel has been accomplished, the UXOSO shall complete and submit the appropriate report forms within 24 hours. The appropriate form(s) to be completed may include:

- Shaw SUXOS/SSHOs Employee Injury Report
- Shaw Vehicle Accident Report
- Shaw General Liability, Property Damage, and Loss Report
- ENG Form 3394

Identified safety and occupational health deficiencies and corrective measures shall be documented and filed on-site for reference by the Army or designated representative.

All near misses, injuries, illnesses, and accidents shall be investigated by on-site management personnel. The SSHO, SUXOS, Project Manager, and UXOSO will investigate the conditions that led to the accident. They will document how the accident occurred and identify unsafe acts or conditions that occurred or existed at the time of the accident. Corrective actions will be determined and implemented to prevent recurrence of the accident, and responsibility for implementation of corrective actions will be assigned. The investigation shall be started immediately, and all information shall be collected as soon as possible after the occurrence. The final report and required forms will be submitted to the army and other appropriate personnel. The requirements of it health and safety procedure HS020 will be strictly enforced.

16.0 Chemical Warfare Agents

Chemical Agent Identification Sets have been found at former Fort Ord. It is not anticipated any other CWM will be encountered at future work sites. In the event that suspect CWM is encountered, all personnel will immediately move upwind and away from the presumed source. The discoverer will immediately notify the SSHO who will in turn notify the UXOSO. At this point, the UXOSO will take over and implement the requirements for CWM presented in the Basewide SSHP (Shaw, 2004).

17.0 References

Shaw Environmental, Inc., 2004. *Basewide Site Safety and Health Plan, Rev. 8 Fort Ord Remedial Action, Former Fort Ord, California.*

U.S. Army Corps of Engineers (USACE), 2001a. *Engineer Pamphlet 385-1-95a. Basic Safety Concepts and Considerations for Ordnance and Explosive Operations.*

USACE, 2001b. EP 385-1-95a.

USACE, 2003a. *Engineer Regulation 385-1-92, Safety and Occupational Health Requirements for Hazardous, Toxic and Radioactive Waste Activities*.

USACE, 2003b. *Engineer Regulation 385-1-95, Safety and Health Requirements for Ordnance and Explosives Operations.*

USACE, 2003c. Engineer Manual 385-1-1*, Safety and Health Requirements Manual*.

Tables

Table 1-1

CORPORATE HEALTH AND SAFETY POLICIES AND PROCEDURES

Standard Operating Procedure Number	Title
HS001	Safety Policy
HS003	Philosophy for Corporate Procedures
HS010	Employee Safety and Health Work Rules
HS011	Contractor Safety and Health Rules
HS012	Chemical Hygiene Plan
HS013	Health and Safety Procedure Variance
HS018	Safety Councils
HS019	Injury and Illness Prevention Program
HS020	Accident Prevention Program: Reporting, Investigation, and Review
HS021	Accident Prevention Program: Management Safety Reviews
HS022	Accident Prevention Program: Review of New Proposals, Projects, Operations, Construction, and Jobs by Health and Safety
HS023	Accident Prevention Program: Safety Incentive Award Program
HS040	Stop Work Authority
HS041	Embryo-Fetus Protection Program
HS050	Training Requirements
HS051	Tailgate Safety Meetings
HS052	Health and Safety Plans
HS060	Hazard Communication Program
HS090	OSHA Regulatory Inspections
HS091	Reporting of Fatality or Multiple Hospitalization Incidents
HS100	Medical Policies and Procedures
HS101	Drug and Alcohol Testing
HS102	Management of Associate Exposure and Medical Records
HS104	Employee Notification of Industrial Hygiene Monitoring Results
HS105	Occupational Injury/Illness Procedures and Return to Work Following a Non-Occupational Medical Absence
HS106	First Aid Kits
HS300	Confined Spaces
HS302	Ladder Safety
HS303	Pressurized Water Cleaning and Cutting Equipment
HS304	Compressed Gas Cylinders
HS306	Handling Unknown Compressed Gas Cylinders
HS307	Excavation and Trenching
HS309	Underground Storage Tank Removal
HS314	Hot Work in Hazardous Locations
HS315	Control of Hazardous Energy Sources
HS316	Drill Rig Operations
HS317	Unexploded Ordnance (UXO)
HS400	Working in Hot Environments
HS401	Cold Stress

TABLE 1-1

CORPORATE HEALTH AND SAFETY POLICIES AND PROCEDURES (Continued)

Standard Operating Procedure Number	Title
HS402	Hearing Conservation Program
HS500	OSHA Regulated Toxic and Hazardous Substances
HS501	Cadmium Compliance Plan
HS512	Handling of Blood or Other Potentially Infectious Material
HS600	Personal Protective Equipment
HS601	Respiratory Protection Program
HS700	Radiation Protection Program
HS800	Motor Vehicle Operation: General Requirements
HS810	Commercial Motor Vehicle Operation and Maintenance
HS811	DOT -Hour Emergency Number
HS820	Forklift Operation
HS822	Crane Operations
HS900	Emergency Response Program

Table 3-1

ACTIVITY HAZARD ANALYSIS

MRS 16 Munitions Response

ACTIVITY	POTENTIAL SAFETY/ HEALTH HAZARDS	RECOMMENDED CONTROLS
• Mobilization/ • Demobilization	• Strains/Sprains	• When pulling lifting, do not turn or twist our back, use legs • Use proper tools for the task being performed • Use back support device if necessary. • Lifts greater than 60 pounds require assistance or mechanical equipment • Follow proper lifting techniques: • Get a good footing; • Place feet about one shoulder width apart; • Bend at knees to grasp weight; • Keep the back straight; • Get a firm hold; • Lift gradually by straightening the legs; and pull in straight line, Do not twist and pull simultaneously; • If weight is uncomfortable to lift, get help.
• General Activities	• Ticks	• Wear long pants and long-sleeved shirts. • Light color clothing makes spotting of ticks easier. • Try to eliminate paths by which a tick may reach skin. • Periodically check clothing for the presence of ticks. • Spray outer clothing with insect repellent. • Try to avoid contact with bushes, tall grass, or brush.
	• Stinging insects	• Watch out for and avoid stinging insects. • Identify allergic personnel.
	• Spiders	• Notify Unexploded Ordnance Safety Officer (UXOSO) if poisonous spiders are seen.
	• Snakes	• Use caution around scrap piles or rock piles and under tarps. • Notify the UXOSO if poisonous snakes are found.
	• Wild Animals	• Avoid wild animals, especially if behaving unusually (e.g. disoriented, raccoons in the daylight, foaming at the mouth),
	• Poisonous Plants	• Watch out for and avoid poisonous plants i.e. (Poison Oak) • Wash hands to prevent spreading oils using pre and post exposure creams/barrier. • Avoid contact with plant oils on clothes or equipment. • Adjust personal protective equipment (PPE) level to “Modified D” if in Poison Oak areas. • Implement decontamination (Decon) procedures • Avoid spreading poison oak contamination by keeping work clothing on site.
	• Slip, trip, and fall hazards, especially in steep or rocky areas	• Use caution on wet, steep, or uneven terrain. • Keep work area clean, not cluttered with tools, equipment, and debris. • Wear over-the-ankle boots. During magnetometer/Schonstedt operations no metal parts in or on boots. • Backfill excavations as soon as possible.
	• Strains/Sprains	• When pulling lifting, do not turn or twist our back, use legs • Use proper tools for the task being performed
	• Heat or cold stress	• Wear appropriate clothing and follow recommended work schedules and monitoring controls.
	• Noise	• Wear hearing protection when sound pressure levels in work areas exceed 85 dBA (generally when people three feet apart must raise their voices to be heard in normal conversation). Use monitoring equipment to determine noise levels. •

Table 3-1

ACTIVITY HAZARD ANALYSIS

MRS 16 Munitions Response

ACTIVITY	POTENTIAL SAFETY/ HEALTH HAZARDS	RECOMMENDED CONTROLS
	• Manual Lifting	• Use back support device if necessary. • Lifts greater than 60 pounds require assistance or mechanical equipment • Follow proper lifting techniques: • Get a good footing; • Place feet about one shoulder width apart; • Bend at knees to grasp weight; • Keep the back straight; • Get a firm hold; • Lift gradually by straightening the legs; and pull in straight line, Do not twist and pull simultaneously; • If weight is uncomfortable to lift, get help.
	• Cuts and abrasions	• Wear adequate hand protection • Keeps hands, fingers clear of moving equipment (pinch/points)
	• Inclement Weather	• If inclement weather is threatening, the Senior UXO Supervisor (SUXOS) will cease activities and direct personnel to shelter. • If caught in the open during an electrical storm, seek shelter in vehicles or move to a topographically low area away from tall objects and conductors (e.g., transformer, power lines, metal sheds) and wait for the storm to leave the area. • No return to work until all clear is given
• Exclusion zone operations	• Blast overpressure fragmentation blast	• UXO safety officer (UXOSO) is responsible for the establishment of each UXO team. • Minimum safe distance maintained between two teams will never be less than 200 feet or the K50 overpressure distance.
• Firebreak Construction/ Surface Sweep/ Vegetation Removal	• Accidental detonation of ordnance and explosives (OE)	• Observe the U.S. Army Engineering and Support Center, Huntsville, Safety Concepts and Basic Considerations for unexploded ordnance (UXO) Operations. • Personnel involved will attend a site-specific OE/UXO recognition class prior to the commencement of any site activities. • Be alert and mark all OE located. • Only clear and grub to within four inches of the ground surface. • UXO trained personnel will escort non-UXO personnel at all times. • Surface sweeps will be conducted with magnetometers or other suitable geophysical instrumentation to identify potential OE.
	• Brush hogs, trimmers, and other power and hand tool hazards	• Wear appropriate personal protection equipment including chaps and face shield for chainsaws. • Follow manufacturer's user manual. • Use appropriate equipment and safety devices.
• Dismantle and remove fencing, scrap metal, etc.	• Power and hand tool hazards	• Follow manufacturer's user manual. • Use proper personal protective equipment (PPE) in accordance with equipment operating manual (i.e., leather gloves, hearing protection, shin guards, eye protection). • Follow requirements of EM 385-1-1. • Inspect tools prior to use and remove defective equipment service. • Use tools in the manner for which they were designed. • Be sure of footing and grip before using any tool. • Keep loose fitting clothing or long hair away from moving parts. • Keep hands, feet, etc. away from moving parts. • Disconnect power prior to conducting maintenance or adjustments.

Table 3-1

ACTIVITY HAZARD ANALYSIS

MRS 16 Munitions Response

ACTIVITY	POTENTIAL SAFETY/ HEALTH HAZARDS	RECOMMENDED CONTROLS
• Surface Burn Support Activities	• Blast overpressure fragmentation blast	• UXO safety officer (UXOSO) is responsible for the establishment of each UXO team. • Minimum safe distance maintained between two teams will never be less than 200 feet or the K50 overpressure distance.
• Hand excavation of unexploded ordnance (UXO)	• Accidental detonation	• Observe the CEHNC, Huntsville, Safety Concepts and Basic Considerations for UXO Operations. • Only UXO technicians will excavate or handle UXO. • Personnel in the immediate vicinity of UXO operations will be kept to the minimum necessary for safe operations but no less than two UXO technicians. • Do not subject UXO to heat, shock, or friction. • Only hand excavation permitted when within 1 foot of UXO. • Use magnetometers frequently to pinpoint the location of UXO.
	• Non-UXO personnel	• Establish exclusion zone (EZ) and maintain site control. • Stop all UXO operations when non-UXO trained personnel are within the EZ.
	• Buried Hazardous Materials	• Notify UXO Safety Officer (UXOSO) if buried materials are encountered during excavations. • If potential asbestos materials (shingles, tiles, siding, etc.) are encountered that are not friable, minimize dust generation with water as a precaution. • If asbestos materials are friable, discontinue excavation.
• Unexploded ordnance (UXO) disposal operations	• Accidental detonation of explosives	• Observe UXO safety precautions contained in CEHNC Safety Concepts and Basic Considerations for UXO Operations. • Observe procedures outlined in EOD/TM/TO 60A-1-1-31.
• Discovery of live UXO	• Accidental detonation of explosives	• OE items will be visually examined for markings and other external features such as (shape, size) and external fittings. • Under no circumstances will any OE item be moved in an attempt to make a positive identification. • If an unknown OE item is encountered the onsite USACE representative will be immediately notified • All activities will cease and any non UXO personnel will retreat to 300 feet behind UXO team/Hazardous area. • No radio transmission within 100 meter of UXO hazard. • Mark hazard with flagging. • Personnel handling OE items will not wear outer or inner garments having static electricity generating characteristics – refer to DA Pam 385-64
• Transportation of explosive materials	• Unqualified Drivers	• Drivers operating outside the boundaries of any federal installation will be licensed in accordance with federal, state, and local regulations. • Drivers will observe all posted speed limits while operating a motor vehicle on a public roadway.

Table 3-1

ACTIVITY HAZARD ANALYSIS

MRS 16 Munitions Response

ACTIVITY	POTENTIAL SAFETY/ HEALTH HAZARDS	RECOMMENDED CONTROLS
• Transportation of explosive materials (continued)	• Accidental detonation of explosives	• Explosives will be transported in accordance with 49 Code of Federal Regulations (CFR) Parts 100-199. • Refer to Section 3, Explosives Management Plan. • Explosives will be transported in closed vehicles whenever possible. • Observe the CEHNC, Safety Concepts and Basic Considerations for UXO Operations. • When using an open vehicle, explosives will be covered with a flame resistant tarpaulin. • Motor vehicles will be shut off when loading/unloading explosives. • Beds of vehicles will have either a nonconductive bed liner, dunnage, or sand bags to protect the explosives from contact with the metal bed and fittings. • Initiating explosives, such as blasting caps, will remain separated at all times. • Each vehicle used for the transport of ordnance and explosives (OE) will be outfitted with a fire extinguisher and first aid kit. • Do not fuel trucks when loaded with OE. • No personnel in cargo compartment of vehicle. • No OE allowed in passenger compartment of vehicle. • No smoking in vehicle of OE/OXO material.
	• Vehicle operations	• Vehicles transporting explosives off-road will not exceed 25 miles per hour. • Chock wheels when loading or unloading OE-related materials. • Drivers will observe all posted speed limits while operating a motor vehicle on a public roadway.
• Storage of explosive materials	• Accidental detonation of explosives	• Materials will be stored in accordance with federal, state and local regulations. • Refer to Explosives Management Plan, and Explosives Siting Plan. • Observe the CEHNC, Safety Concepts and Basic Considerations for UXO Operations.
• Access Survey of Ingress/Egress Route	• Accidental detonation of explosives	• Survey will be conducted by a UXO team and safe routes clearly marked and delineated. Observe the U.S. Army Engineering and Support Center, Huntsville, Basic safety Concepts and Considerations for Ordnance and Explosives Operations.
• Transportation of OE Waste	• Accidental detonation of explosives	• No personnel allowed in OE cargo department of vehicle. • No OE allowed in passenger compartment of vehicle. • Block, brace, secure OE with suitable material. • No smoking in vehicles used for transport of OE/UXO waste.
	• Vehicle operations	• Placard vehicle in accordance with DOT regulations. • Vehicles transporting explosives off-road will not exceed 25 MPH. • Drivers will observe all posted speed limits while operating a motor vehicle on a public roadway.
• Inspection/ Certification of Ordnance and Explosives (OE)-Related Scrap	• Accidental detonation of explosives	• Observe unexploded ordnance (UXO) safety precautions contained in U.S. Army Corps of Engineers (USACE)-Huntsville Division Safety Concepts and Basic Considerations for UXO Operations. • Only UXO technicians will inspect OE-related scrap. • Personnel in the immediate vicinity of OE-related scrap inspections will be kept to the minimum necessary for safe operations but no less than two UXO technicians. • Observe requirements of DoD 4160.21-M-1 • • •

Table 3-1

ACTIVITY HAZARD ANALYSIS

MRS 16 Munitions Response

ACTIVITY	POTENTIAL SAFETY/ HEALTH HAZARDS	RECOMMENDED CONTROLS
• OE-Related Scrap Demilitarization	• Accidental detonation of explosives	• Observe UXO safety precautions contained in USACE-Huntsville Division Safety Concepts and Basic Considerations for UXO Operations. • Only UXO technicians will perform explosive demilitarization of OE-related scrap.
	• Shredder Operations	• Stay clear of moving mechanical parts. • Ensure only inspected scrap is fed into shredder.
• Rocket motor demilitarization by cutting.	• Accidental detonation of explosives	• A Senior UXO Supervisor and one other UXO technician must supervise cutting operations. • No more than 3 cutting stations will be employed and supervised at any time. • Non-UXO Qualified personnel can assist the UXO Technician in cutting operations. • A UXO Technician must directly supervise all non-UXO Qualified personnel • Keep hands, fingers clear of saw blade. • Keep hand and fingers clear of pinch points on the saw.
• Handling/storage of Demilitarized Scrap	• Lose in chain of custody • Potential MEC intermingle with non-MEC scrap	• All demilitarized MEC scrap must to secured in a seal-able or locked container after demilitarized and certified by the Senior UXO Supervisor. • Only the Senior UXO Supervisor will have custody of the container locks. • MEC scrap will **NOT** be secured in the same container as non-MEC scrap.
EQUIPMENT TO BE USED	**INSPECTION REQUIREMENTS**	**TRAINING REQUIREMENTS**
• Vehicles • Fire extinguishers; first aid kits • Demolition materials • Explosives • Blocking, bracing, and cushioning materials • Shredder/ Mechanized Equipment • Personal Protective Equipment • Communications equipment	• Daily inspection and maintenance of equipment • Daily inspections of all power cords	• OSHA HAZWOPER Training in accordance with 29 CFR 1910.120 • UXO personnel Explosives and Ordnance Disposal-trained • Daily safety meetings • Site-specific orientation • Proper handling and storage of explosives

Table 3-2

EXPOSURE GUIDELINES FOR IDENTIFIED SITE CONTAMINANTS

CONTAMINANT (SYNONYMS)	OSHA PEL[a]		ACGIH TLV[b]		IDLH[e]	WARNING PROPERTIES
	8-HR TWA[c]	15-STEL[d]	8-HR TWA	15 MIN STEL		
Crystalline Silica (Quartz)	0.1 mg/m^3 (CALOSHA PEL)		0.1 mg/m^3		25 mg/m^3	Odor Threshold: Not applicable Eye Irritant Level: Not established
Gasoline	300 ppm	500 ppm	300 ppm	500 ppm	Not established	Odor Threshold: 2-5 ppm Eye Irritant Level: Variable
HMX (cyclotetramethylenetetranitramine)	Not established		Not established		Not established	Odor Threshold: Not established Eye Irritant Level: Variable
Lead	0.05 mg/m^3		0.15 mg/m^3		Not applicable	Odor Threshold: Not applicable Eye Irritant Level: Not established
PAH (Coal tar pitch volatiles)	0.02 mg/m3		0.02 mg/m3		Not applicable	Odor threshold: none Eye irritant level: not established
RDX (Cyclonite)	1.5 mg/m^3		1.5 mg/m^3		Not applicable	Odor Threshold: Not applicable Eye Irritant Level: Not applicable
Trinitrotoluene (TNT)	1.5 mg/m^3 (skin) 0.5 (CAL/OSHA)		0.1 mg/m^3		500 mg/m^3	Odor Threshold: None Eye Irritant Level: Not established

[a] Cal OSHA Permissible Exposure Limit
[b] American Conference of Government Industrial Hygienists Threshold Limit Value
[c] 8-hour time-weighted average
[d] Minutes: Short-term exposure limit
[e] Immediately dangerous to life and health
[g] Milligrams per cubic meter
[h] Parts per million by volume

Table 5-1

EMERGENCY EQUIPMENT REQUIREMENTS

Emergency Equipment	Number per Location	Location Stored
First Aid/Burn Kit*	1 each	Team Support Vehicle
Eye Wash	1 each	All First Aid Kits
CPR Pocket Mask	1 each	All First Aid Kits
Disposable Latex Gloves	5 each	All First Aid Kits
Fire Extinguisher (10 BC Rated)	1 each	Team Support Vehicle

*First aid kit contents should be consistent with the requirements presented in SOP HS106.

Table 7-1

ACTION LEVELS

When in Level D / Modified D PPE

Analyte	Action Level[b]	Required Action[c]
Dust	≥ 0.5 mg/m^3 above background ≥ 2.0 ppm above background in BZ ≥ 5.0 ppm above background in BZ	initiate dust suppression use HEPA respirators Stop work[g]
Crystaline silica	≥ 0.05 mg/m3 in BZ ≥ 0.5 mg/m3 in BZ	Use HEPA respirators Stop work

BZ = breathing zone.
ppm = part per million
mg/m3 = milligram per cubic meter

[a] Personal Protective equipment
[b] Milligrams per cubic meter, parts per million, or percent (%)
[c] Four instantaneous peaks in any 15-minute period or a sustained reading for 5 minutes in excess of the action level will trigger a response
[g] Contact with the Certified Industrial Hygienist (CIH) must be made before continuing work. The CIH may then initiate integrated air sampling/gas chromatography along with additional engineering/administrative controls. No one is permitted to downgrade levels of PPE without authorization from the CIH.

Note: No one is permitted to downgrade levels of PPE without authorization from the CIH.

Table 10-1

EMERGENCY TELEPHONE NUMBERS

Fort Ord Post Police Department	831-242-7853
Federal Police	831-242-7701
Fort Ord Fire Department (Emergencies) HAZMAT Teams Fort Ord Fire Department HAZMAT Team	831-242-7851
Community Hospital of Monterey Peninsula	831-624-4311
Poison Control Center	1-800-876-4766 1-404-588-4400
National Response Center	1-800-424-8802

Table 10-2

UNEXPLODED ORDNANCE/ORDNANCE AND EXPLOSIVE WASTE NOTIFICATION LIST

For all OE incidents on Army property:

(a) Person who encountered an item reports to POM police (fill out OE incident report section A)
(b) POM police notifies USACE Safety (complete OE incident report section B). POM police will request 787th EOD to respond, if outside of normal business hours
(c) USACE UXO Safety Specialist or a qualified person will respond to the incident (complete OE incident report section C)
(d) USACE Safety notifies DENT (complete OE incident report section D)

The incident information is entered into the Fort Ord OE database

ON-SITE USACE OE SAFETY SPECIALIST (and in this order)

1.	Clint Huckins	Office: 831-884-9925, Ext. 226

INSTALLATION CONTACTS (and in this order)

During Business Hours

1.	Lyle Shurtleff	Office: 831-242-7919
2.	Gail Youngblood	Office: 831-242-7918

If the secretary is called, please inform the secretary of the urgency of reaching responsible management.

After Business Hours

1.	Lyle Shurtleff	Home: 831-633-0175
2.	Jim Willison	Home: 831-899-1103

LAW ENVORCEMENT COMMAND (LEC)

831-242-7851, -7852, -7735, or –7737

Table 10-3

NOTIFICATION LIST, SHAW

Peter Kelsall, Project Manager	Site: 831-883-5810 Cell: 303-981-8435 Home: 303-683-6002
Dan Nohrden, Site Superintendent	Site: 831-883-5813 Cell: 831-238-2707 Home: 831-625-6242
Tim Mathisen, Senior UXO Supervisor	Site: 775-867-5406
Rudy Von Burg, Program CIH/ Radiation Safety Officer	Office: 925-288-2366 Home: 510-235-2969
Charles Thomas, UXO Quality Control Supervisor	Site: 814-472-6788
Tom Ghigliotto, QC Supervisor	Site: 831-883-5814 Cell: 831-212-4122 Home: 831-884-0824
UXO Safety Officer to be determined	Site: Cell:
Bob Menke, Director, UXO Service Center	Site: 703-815-5961 Cell: 703-307-2104

Table 13-1

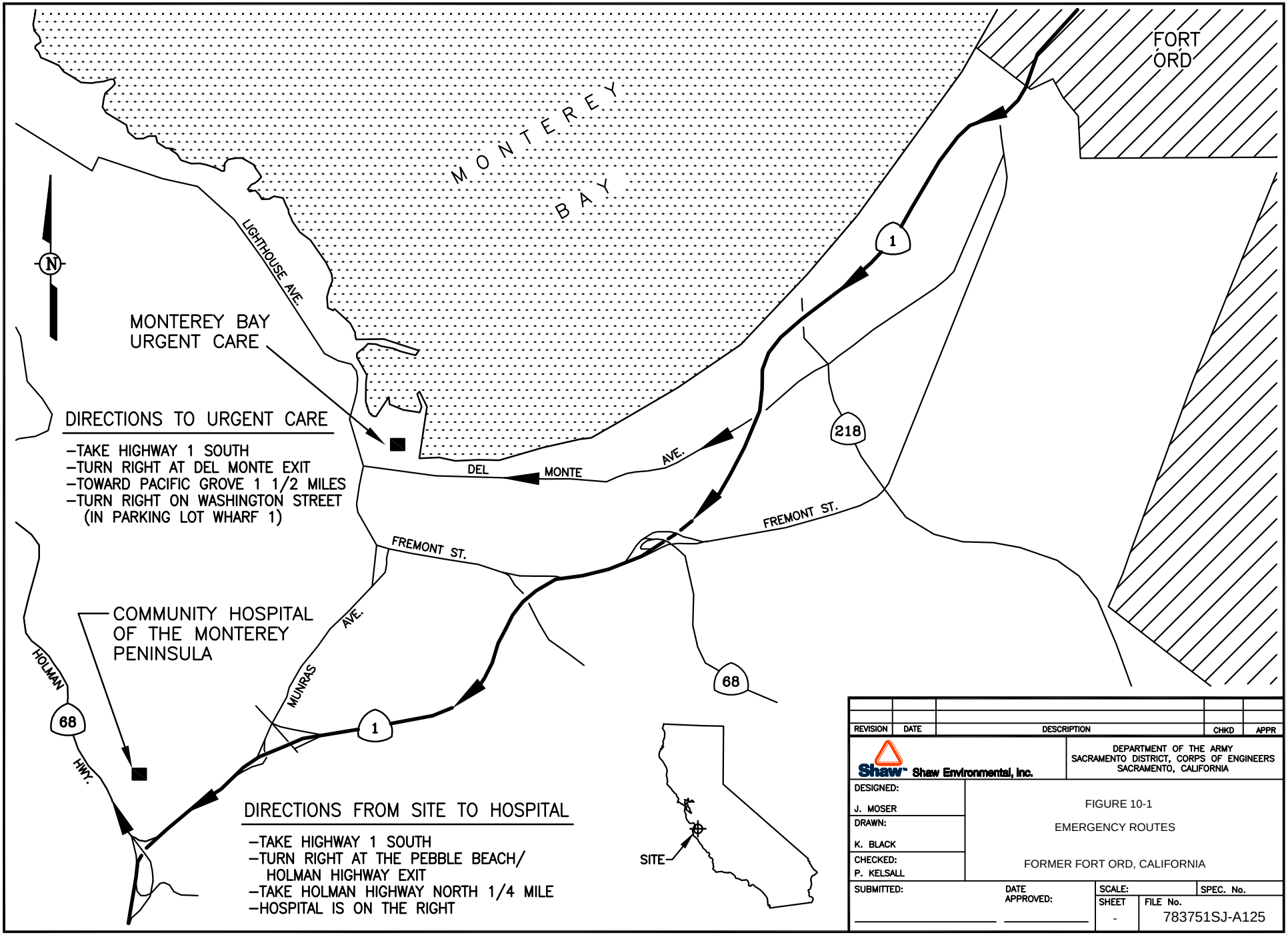
EXAMPLES OF PERMISSIBLE HEAT EXPOSURE LIMIT VALUES

Work – Rest Regimen	*Work Load Light	Moderate	Heavy
Continuous work	30.0 (86)	26.7 (80)	25.0 (77)
75% Work – 25% Rest, each hour	30.6 (87)	28.0 (82)	25.9 (78)
50% Work – 50% Rest, each hour	31.4 (89)	29.4 (85)	27.9 (82)
25% Work – 75% Rest, each hour	32.2 (90)	31.1 (88)	30.0 (86)

*Consult the ACGIH TLV booklet for definitions of Light, Moderate and Heavy work loads. Values are given in °C and (°F) WBGT, and are intended for workers wearing single layer summer type clothing. As workload increases, the heat stress impact on an unacclimatized worker is exacerbated. For unacclimatized workers performing a moderate level of work, the permissible heat exposure TLV should be reduced by approximately 2.5°C.

Source: American Conference of Governmental Industrial Hygienist (ACGIH). 1995-1996 *Threshold Limit Values and Biological Exposure Indices*. Cincinnati, OH.

Figures



REVISION	DATE	DESCRIPTION	CHKD	APPR

Shaw™ Shaw Environmental, Inc.

DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

DESIGNED: J. MOSER
DRAWN: K. BLACK
CHECKED: P. KELSALL

FIGURE 10-1
EMERGENCY ROUTES
FORMER FORT ORD, CALIFORNIA

SUBMITTED: _____ DATE APPROVED: _____

SCALE: SPEC. No.
SHEET -
FILE No. 783751SJ-A125

Forms

Form 4-1

SITE SAFETY AND HEALTH PLAN ACKNOWLEDGMENT FORM

The contract for the above project requires that you be provided with complete formal and site-specific training; that you be supplied with proper personal protective equipment, including respirators; that you be trained in its use; and that you receive a medical examination to evaluate your physical capacity to perform your assigned work tasks under the environmental conditions expected while wearing the required personal protective equipment. These provisions are to be done at no cost to you. By signing this certification, you are acknowledging that your employer has met these obligations to you.

I HAVE REVIEWED, UNDERSTAND, AND AGREE TO FOLLOW THE SITE SAFETY AND HEALTH PLAN FOR FORT ORD.

PRINTED NAME	SIGNATURE	REPRESENTING	DATE

Form 4-2

TRAINING ACKNOWLEDGMENT FORM

By signing this certificate, you are acknowledging that you have completed the following formal training courses that meet Occupational Health and Safety Administration (OSHA) requirements:

SITE-SPECIFIC TRAINING: I have been provided and have completed the site-specific training required by this Contract. The UXOSO conducted the training._____
Employee/Visitor Initials

RESPIRATORY PROTECTION: I have been trained in accordance with the criteria in Shaw's/my Employer's Respiratory Protection Program. I have been trained in the proper work procedures and use the and limitations of the respirator(s) I will potentially wear. I have been trained in and will abide by the facial hair policy._____
Employee/Visitor Initials

RESPIRATOR FIT-TEST TRAINING: I have been trained in the proper selection, fit, use, care, cleaning, maintenance, and storage of the respirator(s) that I will potentially wear. I have been fit-tested in accordance with the criteria in IT Corporation's/my Employer's Respiratory Protection Program and have received a satisfactory fit. I have been assigned my individual respirator. I have been taught how to properly perform positive and negative pressure fit-check upon donning negative pressure respirators each time._____
Employee/Visitor Initials

MEDICAL EXAMINATION: I have had a medical examination within the last 12 months, which was paid for by my employer. The examination included health history and pulmonary function tests and may have included an evaluation of a chest x-ray. A physician made a determination regarding my physical capacity to perform work tasks on the project while wearing protective equipment, including a respirator. I was personally provided a copy and informed of the results of that examination. My employer's UXOSO evaluated the medical certification provided by the physician and signed the appropriate blank below. The physician determined that there were: no limitations to performing the required work tasks:_____
Employee/Visitor Initials

identified physical limitations to performing the required work tasks._____
Employee/Visitor Initials

[Employee's] [Visitor's] Signature_____

Date_____

Printed Name_____

Social Security
Number_____

Employer's_____

Date_____

Printed Name_____

Social Security Number_____

Attachment A

STANDARD OPERATING PROCEDURE

FOR

OE WITH UNKNOWN FILLER

1.0 PURPOSE

The purpose of this SOP is to provide the step by step procedures and safety and health requirements applicable in the event ordnance items are discovered and the filler cannot be positively determined on the former Fort Ord.

A Chemical Warfare Materiel (CWM) Risk Assessment has been completed for the former Fort Ord. The results indicated that the probability of encountering CWM munitions is "unlikely" while the probability of encountering CWM Chemical Identification Sets (CAIS) is "seldom."

2.0 SCOPE

This SOP applies to all personnel involved in the conduct of UXO clearance of the former Fort Ord.

3.0 REGULATORY REFERENCES

- AR 385-61, AR 385-64, DA Pam 385-61 and DA Pam 385-64 for Safety concerning RCWM containing explosives
- AR 50-6, Chemical Surety
- AR 190-11 Security for RCWM

4.0 RESPONSIBILITIES

4.1 Program Manager

Responsible for ensuring availability of resources required to safely implement this SOP.

4.2 OE Field Operations Manager

The OEFOM is responsible for incorporating this SOP in plans, procedures, and training and ensuring that all personnel conducting UXO clearance operations are familiar with and comply with this SOP.

4.3 UXO Safety Officer

The UXO Safety Officer (UXOSO) ensures that all operations pertaining to UXO clearance is being conducted in a safe manner and in accordance with the Programmatic Work Plan, Site Specific Work Plan, and this SOP. The UXOSO conducts safety audits of the operations and ensures that all personnel are properly trained and utilizing the appropriate PPE.

4.4 Senior UXO Supervisor

The Senior UXO Supervisor (SUXOS) is responsible for planning, coordinating, and supervising all subcontractor on-site UXO activities; preparation of standard operating procedures (SOPs) for UXO operations ensuring compliance with DoD directives as well as local, state and federal statues and codes.

4.5 UXO Team Leader

The UXO team leader is responsible for supervision of the team conducting the clearance operation. He is required to conduct training of personnel involved in UXO clearance operations to ensure that every member of the UXO team thoroughly understands this SOP.

4.6 OE Safety Specialist (USACE)

The OE Safety Specialist (OESS) provides on-site safety support for OE activities, verifies UXO qualifications of contractor employees, coordinates exclusion zones activities with advise of the PM, OE Design Center POC and OE Safety Manager, facilitates military Explosive Ordnance Disposal (EOD) response when needed, provides technical OE safety support to USACE districts and contractors, and conducts government quality assurance inspections of completed work.

5.0 OPERATIONS

5.1 General

There are three ordnance items of concern that require positive identification of the filler prior to any disposition, which include; the Livens Projector, 4-inch Stokes mortar, and the 4.2-inch mortar.

- Visual recognition of the Livens Projector, 4.2-inch mortar, and the 4-inch Stokes is necessary and requires training on recognition features to ensure everyone uses the same techniques. The 4-inch Stokes mortar with chemical filler is 16 inches, 15 inches when filled with smoke producing filler, and 14 inches when filled with incendiary filler. The length is measured from the outside edge of the raised shoulders at both ends of the Stokes body. The 4.2-inch mortar is measured from the base of the tail boom to the top of the fuze. The 4.2 inch mortar of lengths other than 21.01-inches will be treated as ordnance/UXO with a known filler in accordance with the former Fort Ord PWP/SSWP.

- Livens Projectors, the 16-inch long 4-inch Stokes, and the 21.01-inch long 4.2-inch mortar shall be treated as OE with unknown fillers.

- Upon recognition/identification of a Livens Projector, a 4.2-inch mortar, or a 4-inch Stokes by any UXO team member conducting a UXO clearance operation, the team member will immediately notify the Team Leader who will measure the item. If the measurements are 16 inches for a Stokes mortar, or if the item recognized/identified is a 4.2-inch mortar 21.01 inches long, or a Livens Projector, the Team Leader will notify the Senior UXO Supervisor (SUXOS) and the USACE OE Safety Specialist.

- The UXO team and any other teams in the vicinity will evacuate the area, proceeding at least 200 feet upwind, and await the USACE OE Safety Specialist and the SUXOS.

- Upon arrival of the USACE OE Safety Specialist, the UXO Team leader will accompany him to the location of the suspect item.

- In the event the USACE OE Safety Specialist determines the item contains a known filler other than CWM, it shall be disposed of in accordance with the former Fort Ord PWP/SSWP.

- Upon verification by the USACE OE Safety Specialist of an OE item with an unknown filler, the exact location will be recorded using a GPS unit and backfilled with excavated material in the event the item is white phosphorous (WP). The

UXO Team Leader and USACE OE Safety Specialist will evacuate to the safe area upwind, and the OE Safety Specialist will notify DENR, the Garrison Commander, Sacramento District Safety Manager, and HNC. The UXO Team will investigate the surrounding area for additional like items as directed by the USACE OE Safety Specialist.

- The Garrison Commander and DENR will request the services of the U.S. Army Technical Escort Unit (TEU).

- In the event TEU positively identifies the filler as CWM, or the filler remains unknown, TEU will make the determination for and conduct a safe disposal of the item.

- In the event TEU positively identifies the filler as non-CWM, they will release the item to the USACE for disposal in accordance with the Former Fort Ord Programmatic Work Plan.

6.0 SAFETY

6.1 General

At no time will a Livens Projector, a 21.01-inch long 4.2-inch mortar, or a 4-inch Stokes mortar measuring 16 inches in length (fuzed or un-fuzed) be moved prior to disposition determination by TEU.

6.2 PPE

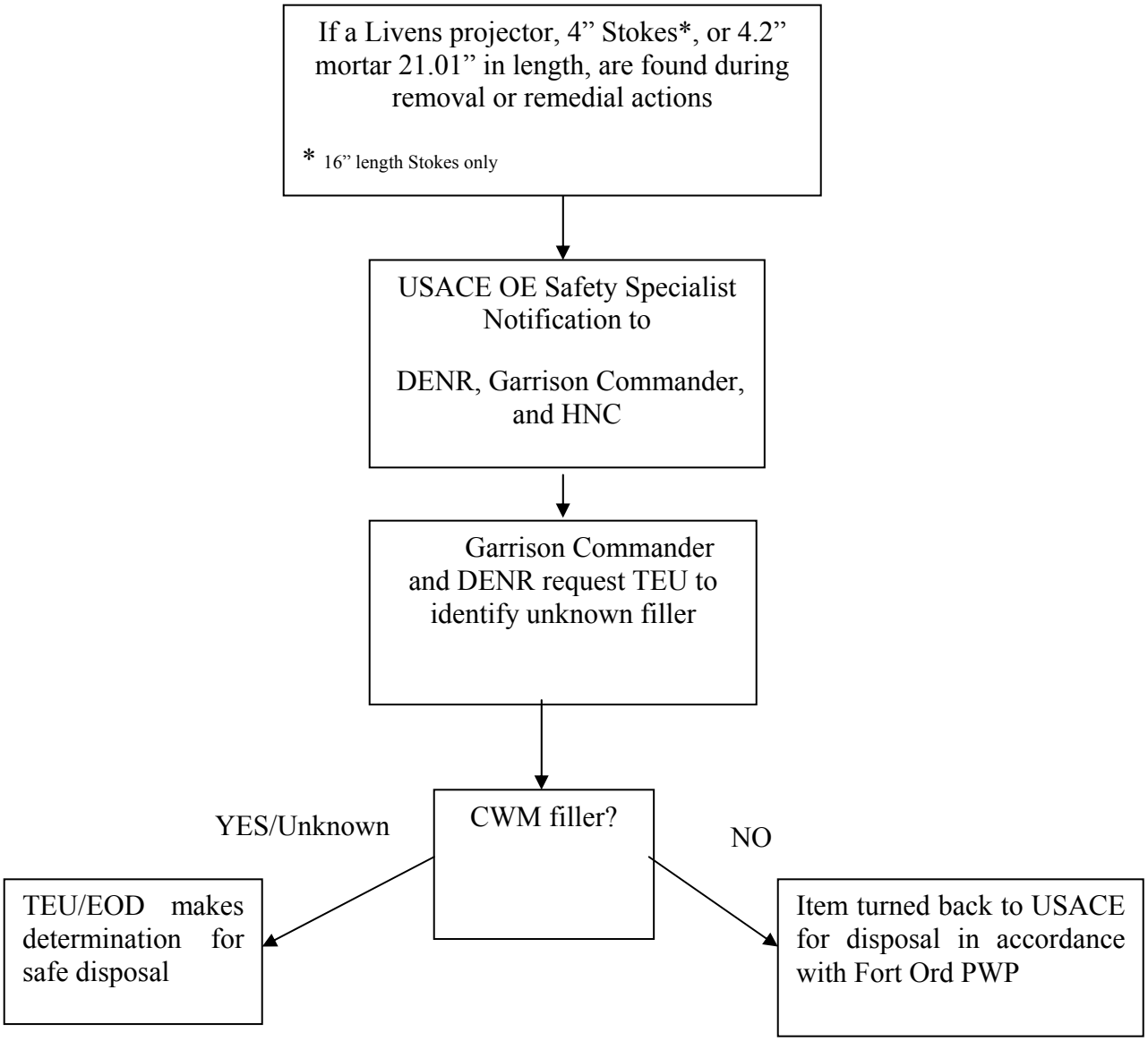
- Standard PPE for field UXO Clearance operations will be utilized.

Fort Ord OE Cleanup

Flowchart

For OE with Unknown Filler

Attachment 1



ATTACHMENT 2
SHAW POLICIES AND PROCEDURES

(Available upon request)