



9.4 HEAT STRESS MONITORING

Heat stress monitoring will be conducted IAW the guidelines presented in Chapter 10. This monitoring will be conducted by, or at the direction of, the SSHO and will be used to minimize physiological effects in the event that high temperature extremes are experienced during site operations. Detailed heat and cold stress monitoring procedures are outlined in Chapter 10 of this SSHP and the physiological heat stress monitoring will be implemented when air temperatures reach 75°F. The guidance presented in Table 9-1 and in Chapter 10 of this SSHP will be used by the SSHO to determine when and what type of heat and cold stress monitoring will be conducted.

9.5 NOISE MONITORING

High noise levels are anticipated during the operation of EMM. The noise levels will be monitored to determine if hearing protection devices will be required and to ensure that the level of hearing protection being used is adequate. At the start of potential high noise operations, sound level readings will be taken in the hearing zone of the affected personnel. Noise dosimetry will be conducted for any operation where sound level readings indicate a potential for exposures above 85 decibels as recorded in the A-weighted sound level (dBA). Table 9-1 will be consulted to determine the type, amount and frequency of noise monitoring.

9.6 METAL DETECTOR USE

The Whites all-metal detector will be used to assist site personnel in the performance of the subsurface clearance. Anomalous items or areas will be investigated using the procedures presented in Chapter 2 of the WP.

9.7 MONITORING EQUIPMENT CALIBRATION AND MAINTENANCE

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

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10.0 HEAT STRESS PREVENTION

10.1 INTRODUCTION TO HEAT STRESS

Heat stress is one of the most common (and potentially serious) illnesses that can affect site workers. The most common cause of heat stress is the environmental conditions and use of PPE. Individuals will vary in their susceptibility and response to the stress induced by increased body heat, and multiple factors may predispose a worker to heat stress. These factors include: previous occurrence of heat stroke; lack of physical fitness; lack of acclimatization to hot environments; degree of hydration; level of obesity; current health status (i.e., having an infection, chronic disease, diarrhea, etc.); alcohol or drug use; and the worker's age and sex. Due to this variation in susceptibility, all site personnel shall frequently assess themselves and their buddy for signs/symptoms of heat stress. For the remainder of this Section, reference to "liquids" shall indicate water, electrolyte replacement solutions and other non-caffeinated drinks - not tea, coffee or soft drinks.

10.2 HEAT STRESS DISORDERS

10.2.1 Heat Rash

Heat rash is caused by continuous exposure to heat and humid air and is aggravated by wet chafing clothes. This condition can decrease a worker's ability to tolerate hot environments.

1. Symptoms: Mild red rash, especially in areas of the body which sweat heavily.
2. Treatment: Decrease amount of time in protective gear and provide powder such as corn starch or baby powder to help absorb moisture and decrease chafing. Maintain good personal hygiene standards and change into dry clothes if needed.

10.2.2 Heat Cramps

Heat cramps are caused by a rate of perspiration that is not balanced by adequate fluid and electrolyte intake. The occurrence of heat related cramps are often an indication that excessive water and electrolyte loss has occurred, which can further develop into heat exhaustion or heat stroke.

1. Symptoms: Acute, painful spasms of muscles such as the back, abdomen and extremities.
2. Treatment: Remove victim to a cool area and loosen restrictive clothing. Stretch and massage affected muscles to increase blood flow to the area. Have patient drink one to two cups of liquids immediately, and every twenty minutes thereafter. Consult with physician if condition does not improve. If available, an electrolyte replacement solution should be taken along with water. Do not consume soft drinks which may aggravate the condition.

10.2.3 Heat Exhaustion

Heat exhaustion is a state of very definite weakness or exhaustion caused by excessive loss of fluids from the body. This condition leads to inadequate blood supply and cardiac insufficiency. Heat exhaustion is less dangerous than heat stroke, but nonetheless must be treated. If allowed to go



untreated, heat exhaustion can quickly develop into heat stroke and the weakness caused by heat exhaustion may precipitate other hazards, such as falls or the inability to operate equipment.

1. Symptoms: Pale or flushed, clammy, moist skin, profuse perspiration, and extreme weakness. Body temperature is basically normal or slightly elevated, the pulse is weak and rapid, breathing is shallow, and headache, dizziness or nausea are usually present.
2. Treatment: Remove the individual to a cool, air-conditioned place, loosen clothing, elevate feet and allow individual to rest. Have patient drink one to two cups of liquids immediately, and every twenty minutes thereafter. If the signs and symptoms of heat exhaustion do not subside, or become more severe, immediate medical attention will be required.

10.2.4 Heat Stroke

Heat stroke is an acute, dangerous reaction to heat stress caused by a failure of the body's heat regulating mechanisms. The failure of the individual's temperature control mechanism causes the perspiration system to stop working correctly, causing the body core temperature to rise very rapidly to a point (105+°F) where brain damage and death will result if the person is not cooled quickly.

1. Symptoms: Red and hot skin that may or may not be dry, due to previous sweating; dizziness; confusion; extremely high body temperatures, rapid respiratory and pulse rate; delirium; convulsions; unconsciousness or coma.
2. Treatment: Cool the victim immediately. If the body temperature is not brought down quickly, permanent brain damage or death may result. Cool the victim by either sponging or immersing the victim in very cool water to reduce the core temperature to a safe level (<102° F). If conscious, give the victim cool liquids to drink. Observe the victim and obtain immediate medical help. Do not give the victim caffeine or alcoholic beverages.

10.3 PREVENTATIVE MEASURES

10.3.1 Minimal Preventative Measures

In order to avoid heat related illnesses, proper preventative measures shall be implemented whenever environmental conditions dictate the need. The preventative measures listed in this paragraph represent the minimal steps to be taken and shall include the following procedures:

1. The SSHO shall examine each site worker prior to the start of daily operations in order to determine the individuals susceptibility to heat stress. Workers exhibiting factors which make them susceptible to heat stress will be closely monitored by the SSHO.
2. Site workers shall be trained to recognize and treat heat related illnesses. This training shall include the signs, symptoms and treatment of heat stress disorders.
3. Workers will be encouraged to drink a minimum of 16 ounces of liquids prior work in the morning, after lunch and prior to leaving the site. Disposable cups and liquids will be provided on site. Acceptable liquids will include water and an electrolyte replacement solution, with the intake of each being equally divided.

4. When ambient conditions and workload requirements dictate, as determined by the SSHO, workers will be encouraged to drink 16 to 32 ounces of liquids during each rest cycle.
5. A shelter or shaded area will be provided to protected workers from sunlight during rest.
6. Physiological monitoring shall be conducted to prevent and/or detect heat induced stress. Monitoring shall be conducted IAW paragraph 10.4 of this Section.
7. Site workers will be given time to acclimatize to working in hot environments. Acclimatization usually takes two to six days and allows the worker's body to become adjusted to working in hot environments. This process involves a gradual increase of the workload over the two to six day period. The recommended acclimatization schedule suggests starting workers at 50% of the anticipated work load and increasing daily by 10%.

10.3.2 Additional Preventative Measures

When possible and/or feasible, the following measures will also be implemented to aid in prevention or reduce the effects of heat induced stress:

1. As needed, cooling devices will be provided to aid in body heat exchange.
2. Workers will be encouraged to achieve and maintain an optimum level of physical fitness. Increased physical fitness will allow workers to better tolerate and respond to heat and heavy work loads due to less physiological strain; a lower heart rate and more efficient sweating.

10.4 PHYSIOLOGICAL HEAT STRESS MONITORING

When site personnel are engaged in site activities with ambient air temperatures greater than 75°F, physiological heat stress monitoring shall be conducted to allow for the near real-time surveillance of the physiological affects caused by personnel exposure to heat. The physiological monitoring methods listed in this para are to be implemented based upon the severity of the heat and the work load. As a minimum, the SSHO shall monitor the worker's heart rate, as outlined in para 10.4.1, as an indication of the physiological stress induced by the work load and exposure to heat. However, if monitoring with the heart rate method indicates the need for closer, more direct monitoring, the oral temperature method outlined in para 10.4.2 will be implemented. The need for monitoring body water loss will be determined by the SSHO, and will be based upon observation of the sweat loss experienced by site personnel during their work cycle. The frequency of physiological monitoring shall be determined using the information presented in Table 10-1.

10.4.1 Heart Rate Monitoring

The worker's baseline heart rate should be recorded prior to initiation of site activities by measuring the radial pulse rate for thirty seconds. After each work cycle, the heart rate should be measured by taking the pulse rate (PR) as early as possible into the resting period. Taking the radial (wrist) pulse rate is the preferred method, however the carotid (neck) pulse rate may be taken if a worker has difficulty finding the radial pulse. The PR at the beginning of the rest period should not exceed 110



beats per minute (bpm). If the PR is higher than 110 bpm, the next work period should be shortened by 33%, while the length of the rest period stays the same. If the PR exceeds 110 bpm at the beginning of the next rest period, the work cycle should be further shortened by another 33%. This procedure is continued until the PR at the beginning of the rest cycle is maintained below 110 bpm.

10.4.2 Oral Temperature Monitoring

If deemed necessary by the SSHO, oral temperature (OT) monitoring will be conducted. The worker's OT will be taken and recorded prior to initiation of site activities using a clinical thermometer placed under the tongue. The OT must be taken prior to consumption of cool liquids and will be done at the end of each work period or at a frequency determined by Table 10-1. Whenever the OT exceeds 99.6°F, the work cycle must be shortened by one third, without changing the length of the rest period. If a worker's OT has exceeded 99.6°F, test the OT again at the end of the rest cycle, and do not allow the worker to return to work until the OT drops below 99.6°F. If a worker's OT exceeds 100.4°F the worker shall not be allowed to work in impermeable or semi-permeable PPE for the remainder of that work day.

10.4.3 Body Weight Loss

If expected site conditions and work requirements have the potential for causing excessive fluid loss, the SSHO shall monitor the workers fluid loss by weighing each worker prior to and again at the conclusion of each days site activities. This will be needed to ensure that proper hydration is being maintained and that the total amount of water weight loss throughout the day does not exceed 1.5% of the employee's body weight. Body weights will be taken with the workers wearing undergarments only. If, as determined by the SSHO, site conditions and work requirements cause an extreme amount of fluid loss, body weights will also be taken prior to the lunch break. Calculation of the water weight loss, and assessing the effectiveness of hydration shall be conducted as follows:

1. Subtract the ending weight (W_{ending}) from the daily starting weight (W_{start}) to obtain the weight lost (W_{lost}) for a given work period: $(W_{\text{start}}) - (W_{\text{ending}}) = (W_{\text{lost}})$.
2. Multiply the starting weight by 1.5% to obtain permissible weight loss (W_{perm}):
 $(W_{\text{start}}) \times 0.015 = (W_{\text{perm}})$.
3. Compare (W_{lost}) to the (W_{perm}), if (W_{lost}) is less than or equal to (W_{perm}), then hydration during the measured period has been adequate, but if (W_{lost}) is greater than (W_{perm}), then hydration should be increased during the next work period.

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**Table 10-1:
 SUGGESTED FREQUENCY OF PHYSIOLOGICAL MONITORING ^{a, d}**

<u>ADJUSTED TEMPERATURE</u> ^a	<u>NORMAL WORK ENSEMBLE</u> ^c	<u>IMPERMEABLE ENSEMBLE</u>
90°F (32.2°C) or above	After each 45 minutes of work	After each 15 minutes of work
87.5°-90°F (30.8°-32.2°C)	After each 60 minutes of work	After each 30 minutes of work
82.5°-87.5°F (28.1°-28.1°C)	After each 90 minutes of work	After each 60 minutes of work
77.5°-82.5°F (25.3°-28.1°C)	After each 120 minutes of work	After each 90 minutes of work
72.5°-77.5°F (22.5°-25.3°C)	After each 150 minutes of work	After each 120 minutes of work

- a For work levels of 250 kilo calories/hour.
- b Calculate the adjusted air temperature (ta adj) by using this equation: $ta\ adj\ ^\circ F = ta\ ^\circ F + (13 \times \% \text{ sunshine})$. Measure air temperature (ta) with a standard mercury-in-glass thermometer, with the bulb shielded from radiant heat. Estimate percent sunshine by judging what percent time the sun is not covered by clouds that are thick enough to produce a shadow. (100 percent sunshine = no cloud cover and a sharp, distinct shadow; 0 percent sunshine = no shadows. Use decimal expression of % sunshine)
- c A normal work ensemble consists of cotton coveralls or other cotton clothing with long sleeves and pants.
- d Source: NIOSH/OSHA/USCG/EPA. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities. DHHS (NIOSH) 85-115. Cincinnati, OH.

10.5 REQUIREMENT FOR ADDITIONAL MONITORING

The SSHO will report to the EODT OSHM in the event that one or more EODT personnel experience adverse heat related effects even though the physiological monitoring and work period reduction requirements found in para 10.5 are followed. The EODT OSHM will then determine what other monitoring or control methods will be used to further control the effects of heat exposure.

10.6 HEAT STRESS DOCUMENTATION

The SSHO shall be responsible for recording all heat stress related information. This will include training sessions and physiological monitoring data. Training sessions shall be documented using the EODT Training Roster. Pulse rate monitoring data will be recorded on the Heat Stress Monitoring Log, with the OT and/or water loss calculations being recorded in the Site Safety Log, and/or Site Monitoring Log.

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CHAPTER 11: SITE CONTROL

11.1 CENTER OF OPERATIONS

EODT intends to use, to the maximum extent possible and allowable, any available government facilities and equipment whose location logistically supports site operations. During the site visit, EODT coordinated with *FMC* personnel, to include Range Control, regarding the use of government furnished equipment (GFE) and local procedures for range use. EODT, CEHNC, and *FMC* Ammunition Supply Point (ASP) personnel also met to discuss the regulations and procedures EODT will implement to allow EODT access to, and use of, two explosive storage magazines in the *FMC* ASP. If possible, EODT will also use available *FMC* facilities for the storage of site equipment, otherwise, EODT will establish equipment storage at the motel where site personnel will reside during the project. It is not anticipated that EODT will establish an on-site office due to the short duration of the project.

11.2 PROJECT SITE ACCESS

Project site access will be via existing access roads. EODT will control access to the project site through the use of signs, barricades, or other site-specific means approved by the CEHNC and the *FMC* Range Control. Only the personnel directly involved in the on-site operations will be granted unlimited access to the site. All others will report to the SUXOS and will be considered visitors to the site, and as such, the provisions of paragraph 6.14 will be implemented for site visitors. A work zone (WZ) is defined as any location where EODT is conducting any of the site tasks in the SOW.

11.3 WZ ACCESS CONTROL AND SECURITY

Unlimited entry into a WZ will be given to only those personnel needed to safely conduct the current task. Ensuring WZ security will be the primary duty of the SUXOS and SSHO, but all site personnel will take an active role in detecting unauthorized access. During site operations which do not involve the investigation of anomalies/OE, EODT will establish WZ security using visual observations to prevent unauthorized personnel from entering the WZ. During any operations involving anomaly investigations or OE disposal, EODT shall establish an EZ, or PWD of at least 760 feet around the WZ. As needed, EODT will use road blocks, sentries, and other methods of controlling unauthorized access to the EZ. The SUXOS will coordinate the closure of any roads with the *FMC* Range Control office, and if OE is discovered with greater blast or fragmentation distances the procedures in Chapter 2 of the WP will be used to determine the size of the EZ.

11.4 SITE CONTROL DURING DEMOLITION OPERATIONS

Site access control will be especially critical during demolition operations. Disposal activities are inherently hazardous and require strict adherence to approved safety and operational procedures, as well as strict adherence to site control procedures. OE that is unfuzed and determined safe to move



may be removed from the excavation site and temporarily stored in a sandbagged, temporary holding area until it is disposed of during the planned disposal operations. Consolidated disposal shots will be conducted at the safest location within the site, as determined by the SUXOS and the CEHNC OSS. *Those OE that are fused or unsafe to move will be disposed of using BIP procedures IAW the WP and guidance from the CEHNC OSS. While the initial PWD has been established as 1,080 feet,* the PWD may be increased or decreased, based on data obtained from HNC-ED-CS-S-98-1, January 1998. (with the approval of the on-site CEHNC OSS). Demolition operations will be performed under the direction and supervision of the SUXOS, and in the event of any noncompliance, the SUXOS has the authority to stop or suspend operations.

Prior to priming the demolition shots, the SUXOS will ensure all pertinent parties have been notified of an impending demolition shot. The SUXOS will also direct all personnel not involved in the priming process to evacuate the area and assemble at the designated assembly point. Once this is accomplished, the SUXOS will then ensure the proper use of roadblocks and tamping material and will sound the required audible warnings.

Upon completion of the demolition shot, the SUXOS will visually inspect each disposal shot and site security will be maintained until the demolition operations are secured. While the SUXOS performs a visual inspection of the disposal site(s), the SSHO will stand by at a safe distance and be prepared to render assistance in the event of an emergency. Upon completion of this inspection, and providing there are no residual hazards, the SUXOS will authorize the resumption of normal site operations. All demolition shots will be coordinated with the CEHNC OSS, and no off-site disposal of OE will be conducted.

11.5 EQUIPMENT STORAGE AND SECURITY

During non-working periods, all project equipment used on site, to include hand tools, will be stored, to the greatest extent possible, inside a secured area. For the storage of explosives, EODT shall use *FMC* ASP explosives magazines that will stay locked at all times except during the issue or return of demolition materials. Two keys will be required to gain access to the magazine, and EODT ordnance accountability and explosives logs will be used to control inventory.

11.6 SITE MAPS

Prior to initiation of site activities, the SSHO and SUXOS will generate a site map, which will detail the following information: site size and shape; restricted areas; designated assembly points; the site access routes; demolition areas; staging areas; any other information deemed necessary by the SUXOS or SSHO. The site map will be used by the SSHO during site safety training and the daily tailgate safety briefings. The site map will be created prior to initiation of site activities. General maps of *FMC* project site are included in Appendix C of the WP.



11.7 SITE COMMUNICATIONS

Effective on-site and off-site communication is an integral part of site control and will be established prior to initiation of site activities. On-site communication will be used to: coordinate site operations; maintain site control; pass along safety information, work/rest periods, etc.; and alert site personnel to emergency situations. Off-site communication will be available to ensure effective communication with off-site management personnel and emergency response services. All site personnel will be familiar with the different methods of both on-site and off-site communication. The methods EODT will use for on- and off-site communication will include:

- Hand-held five-watt portable radios, with a range of five-to-eight miles that will be used to maintain communications between the SUXOS and the field team.
- A cellular telephone, acquired through a local cellular service (very high frequency band 150-174), will be used for communications between the field team and emergency services.

As a backup to verbal communications, hand signals may be used to communicate basic information, and air horns may be used for emergency notification. Therefore, site personnel will be familiar with the following hand and audible signals:

1. Thumbs up: "Okay; I'm all right; I understand."
2. Thumbs down: "No; negative."
3. Pointing to ear(s): "Can't hear; don't understand."
4. Waving hand(s) over head: "Need assistance now."
5. **Grabbing throat: "Can't breathe."**
6. **Pinching nose: "Unusual smell detected."**
7. Pointing to eyes then pointing to person/object: "Watch person/object closely."
8. Grab buddy's wrist: "Evacuate site now; no questions."
9. One long air horn blast: "Evacuate site to assembly point."
10. Two short air horn blasts: "Condition under control; return to site."

11.8 BUDDY SYSTEM

An important element in controlling personnel exposure to site hazards is the implementation of buddy system procedures. These procedures ensure that no site personnel are allowed to work without another qualified worker present to provide assistance if needed. At all times buddies should:

1. Observe their buddy for signs of exposure site hazards or stresses;
2. Observe the site area in which they are working for hazards;
3. Remain within verbal or visual contact with their buddy at all times; and
4. Notify the team leader and or field office if emergency assistance is needed.

CHAPTER 12: PERSONNEL AND EQUIPMENT HYGIENE

12.1 PERSONAL HYGIENE AND SANITATION FACILITIES

Personal hygiene and sanitation facilities will be established on site IAW 29 CFR 1910.120(n) and EM 385-1-1, Section 2, to ensure that personnel maintain good personal hygiene. These facilities shall include a personal washing area, toilet facilities, and a lunch/break area. Under field conditions where a project site is not provided with a sanitary sewer system, temporary chemical toilet facilities will be used by EODT to fulfill the sanitary toilet requirement.

12.2 ROUTINE EQUIPMENT HYGIENE

Tools and equipment used on site will be kept free of accumulations of soil and other debris. Equipment used in the field shall be cleaned and inspected at the end of each workday to ensure that the equipment is maintained in safe operating condition. Any equipment found to be defective will be brought to the attention of the SSHO or SUXOS.

12.3 PPE HYGIENE AND INSPECTION

Site personnel using PPE (e.g., gloves and safety glasses) will keep the equipment clean and in good working condition. All site personnel will be responsible for periodically inspecting their PPE to ensure that it is maintained in safe working order. PPE that is worn-out or defective will be brought to the attention of the SSHO and replaced as needed.

12.4 SANITATION

12.4.1 Water Supply

An adequate supply of potable (drinkable) water shall be provided on site at all times and will be supplied IAW the following provisions:

1. Containers will be clearly marked, be capable of being tightly closed, equipped with a tap, maintained in a sanitary manner, and cleaned at least weekly;
2. Where single service cups are provided, separate sanitary containers will be provided for the storage of the unused cups and for the disposal of the used cups, and
3. Water or other supplied beverages shall not be dipped from the container by any means, and use of a common cup shall not be allowed.

No use or storage of nonpotable water is anticipated. However, if containers of such water are used, they will be conspicuously labeled "Caution: water unfit for drinking, washing, or cooking."

12.4.2 Toilet Facilities

Under field conditions where a project site is not provided with a sanitary sewer system, temporary toilet facilities shall be located at the site. Chemical toilets will be used by EODT to fulfill this



requirement. Each temporary toilet shall be naturally lighted, have ventilation, be lockable from the inside, and be serviced weekly. The minimum requirements for toilet facilities can be found in the OSHA Standard 29 CFR 1910.120(n). Due to the size of the project site and the number of personnel working on site, EODT will provide one temporary toilet near the site.

12.4.3 Washing Facilities

Hand and face washing facilities will be utilized by all personnel exiting the WZ and prior to any eating, drinking, tobacco use, or other hand-to-face activities. Due to the remoteness of the site and the lack of immediately available water resources, handi-wipes and rinse water will be provided for on-site hand and face washing.

12.4.4 Site Housekeeping

All work areas will be maintained in a clean/neat fashion, free of loose debris and scrap. Any materials/equipment not being used will be removed and stored or disposed of accordingly. All work areas shall be supplied with a trash receptacle that includes a lid. The contents of all trash receptacles will either be removed from the site daily or emptied daily into an on-site central storage container that will be tightly closed each night prior to departure from the site.

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CHAPTER 13: HAZARD CONTROLS

13.1 GENERAL

This Chapter outlines the engineering controls, SWPs, and Standing Site Orders which will be followed by all site personnel to eliminate or reduce the risk of exposure to the anticipated site hazards. These control measures are presented as a working guide for site personnel and are not intended to cover all EODT, OSHA, or USACE compliance issues. Additionally, EODT's SOPs located in Appendix G of the WP will be used as guidance documents. Since the EODT SOPs are generic in nature and are intended to compliment this SSHP, many of the SOPs may contain information that is superfluous to this project. Prior to, and during site operations, the SSHO and SUXOS will carefully read the SOPs and determine which SOP provisions apply to this project. As a general rule, all site personnel will comply with the following guidelines:

1. The applicable regulatory requirements of 29 CFR 1910, 29 CFR 1926, and EM 385-1-1 shall be followed during all site activities.
2. All site personnel shall immediately report to the SSHO any conditions which do not comply with, or are not addressed by this SSHP.
3. Site personnel will wear the PPE as specified in Chapter 7 of this SSHP.
4. All investigation, handling, transportation, and demolition of OE found on site will be conducted IAW the CEHNC Safety Concepts and Basic Considerations for Unexploded Ordnance (UXO), revised February 16, 1996.
5. Any bites or stings received from wildlife will be reported to the SSHO, who will then determine the appropriate course of action to be taken to treat the bite.
6. Personnel in vegetated or wooded areas will wear long-sleeve shirts with the sleeves rolled down to reduce contact with, and injury from, insects and hazardous or poisonous plants.
7. Site personnel shall inform the SSHO of any known medical conditions which may cause, or result in, an adverse health condition. This includes hypersensitive allergic reactions to stinging and biting insects or contact with poisonous plants; diabetes; high blood pressure; skin or eye sensitivity to sunlight and UV radiation; chronic illness; and acute illnesses, such as a cold, the flu, or stomach/intestinal disorders. Persons with known hypersensitive allergic reactions to stinging/biting insects or toxic plants shall carry appropriate emergency medical antidotes on their person at all times when on site.
8. Site personnel shall not participate in horseplay or other prohibited acts that could cause harm or injury to site personnel, property, or the environment.

13.2 ENGINEERING CONTROLS

When personnel exposure to site hazards is unavoidable, sound safety and health practice recommends the development and use of engineering controls that remove the potential for personnel exposure. This form of hazard control is the preferred method, and in 29 CFR 1910.120(g) OSHA



required that feasible engineering controls be used to control personnel exposures to chemical and physical hazards. However, due to the dynamic and complex nature of site operations and the hazards usually encountered on an OE site, design and implementation of engineering controls are typically not feasible for most site operations and hazards. Therefore, during project activities, the feasible engineering controls listed below will be used.

1. During demolition of OE, EODT shall utilize sandbags to minimize and control the noise and fragmentation associated with the explosive disposal of OE. To ensure that no secondary fragments are produced, EODT will only use sand or other finely divided soil in the sandbags.
2. All powered hand tools will be operated with the manufacturer's guards in place.

13.3 HEAVY EQUIPMENT OPERATION

No heavy equipment operation is planned for this project.

13.4 POWER AND HAND-TOOL OPERATION

13.4.1 Power Tools

To control the hazards associated with power tool operation, the requirements outlined in 29 CFR 1910, Subpart P; 29 CFR 1926, Subpart I; and EM 385-1-1, Chapter 13; and the safe work practices listed below shall be observed when using power tools.

1. Operation of power tools shall be conducted by personnel trained in the use of the tool, its operation, and safety precautions.
2. Power tools shall be inspected prior to use, and defective equipment shall be removed from service until repaired.
3. Power tools with guards for moving parts shall have such guards in place prior to and during use, and loose fitting clothing or long hair shall be secured away from moving parts.
5. Hands, feet, etc., shall be kept away from all moving parts.
6. Maintenance and/or adjustments to equipment shall not be conducted while it is in operation or connected to a power source, and maintenance on gasoline-powered tools shall be conducted only after the spark plug has been removed and secured.
7. An adequate operating area shall be provided, allowing sufficient clearance and access for operation, and good housekeeping practices shall be followed at all times.

13.4.2 Hand Tools

Use of improper or defective tools can contribute significantly to the occurrence of accidents on site. Therefore, the requirements outlined in EM 385-1-1, Chapter 13 and the safe work practices listed below shall be observed when using hand tools:

1. Hand tools shall be inspected for defects prior to each use.
2. Defective hand tools shall be removed from service and repaired or properly discarded.

3. Tools shall be selected and used in the manner for which they were designed.
4. Be sure of footing and grip before using any tool.
5. Do not use tools that have split handles, mushroom heads, worn jaws, or other defects.
6. Leather work gloves shall be worn to increase gripping ability and to protect the hand if a cut, laceration, or puncture hazard exists during the use of the tool.
7. Safety glasses or a face shield shall be used if use of tools presents an eye/face hazard.
8. Do not use makeshift tools or other improper tools.
9. When working on elevated surfaces, tools shall be secured to ensure they cannot fall on someone below.

13.5 EXCAVATIONS

The current SOW does not call for the excavation of anomalies **to a depth greater than one foot**. If changes to the SOW call for **excavation of items to greater than one foot**, the EODT Excavation and Trenching SOP will be submitted to the CEHNC KO for approval and inclusion in this SSHP.

13.6 MATERIAL HANDLING AND LIFTING

Site personnel will exercise care in lifting and handling heavy or bulky items. Materials being lifted either mechanically or manually will not be moved, or suspended, over personnel unless positive precautions have been made to protect the personnel from falling objects. Whenever heavy or bulky material is to be moved manually, the size, shape, and weight of the object and the distance and path of movement must be considered to prevent joint and back injuries. The following hierarchy shall be followed in selecting a means for material handling:

1. Movement of the material by mechanical device (i.e., lift truck, crane, etc.);
2. Movement by manual means using mechanical aid (i.e., dolly or cart); and
3. Movement manually with protective equipment (i.e., lifting belt or lifting monitor).

The lifting fundamentals listed below address the proper manual material lifting procedures. These lifting procedures will be followed whenever personnel are required to lift objects.

1. A firm grip on the object is essential, therefore the hands and object shall be free of oil, grease, and water, which might prevent a firm grip.
2. The hands, and especially the fingers, shall be kept away from any points that cause them to be pinched or crushed, especially when setting the object down.
3. The item shall be inspected for metal slivers, jagged edges, burrs, rough or slippery surfaces and pinch points, and gloves shall be used, if necessary, to protect the hands.
4. The feet shall be placed far enough apart for good balance and stability.
5. Personnel shall ensure that solid footing is available prior to lifting the object.



6. When lifting, personnel shall get as close to the load as possible, bend their legs at the knees, keep their back as straight as possible, and lift the object with the legs, as they are straightening from their bending position.
7. Never carry a load that cannot be seen over or around.
8. When placing an object down, the stance and position are identical to that for lifting, with the back kept straight and the legs bent at the knees, while the object is lowered.
9. If needed, EODT shall provide back support devices to aid in preventing back injury during lifting activities.
10. When two or more people are required to handle an object, care should be taken to ensure the load is lifted and distributed uniformly between the individuals carrying the load. Each person, if possible, shall face the direction in which the object is being carried.

13.7 ELECTRICAL HAZARDS

For this project, no electrical wiring installation is anticipated, nor is the use of electrical tools. This is true since no electrical power is available at the *FMC* site. Use of battery powered hand tools does not constitute use of an electrical tool and are not covered by this paragraph. If the use of electrical tools becomes necessary, the EODT Electrical Hazards SOP will be submitted to the CEHNC KO for approval and submission into this SSHP.

13.8 MACHINE AND EQUIPMENT GUARDING

In order to protect site personnel from unguarded moving machinery and equipment surfaces, the requirements found in Subpart O of 29 CFR 1910, Section 16B of USACE EM 385-1-1, and the general provisions listed below will be followed:

1. All reciprocating, rotating or moving parts of machinery or equipment shall be guarded IAW manufacturer's specifications if they create a hazard through contact with personnel;
2. All hot surfaces of equipment shall be guarded or insulated to prevent injury and fire;
3. No guard, safety appliance, or device shall be removed from machinery or equipment or made ineffective except when making immediate repairs, lubrication, or adjustments, and then only after the power has been shut off; and
4. All guards or safety appliances removed for repair, lubrication, or adjustments will be replaced immediately upon completion of said activity and before the power is turned on.

13.9 FIRE AND EXPLOSION HAZARDS

13.9.1 Causes of Fires and Explosions

Although fires and explosions may arise spontaneously, they are more commonly the result of carelessness during the conduct of site activities, such as during refueling of heavy or hand-held equipment. Some potential causes of explosions and fires include:



1. Ignition of explosive or flammable chemical gases or vapors by external ignition sources;
2. Agitation of shock or friction-sensitive compounds; and
3. Sudden release of materials under pressure.

13.9.2 Fire Prevention

Explosions and fires not only pose the obvious hazards of intense heat, open flames, smoke inhalation, and flying objects, but may also cause the release of toxic chemicals into the environment. Site personnel involved with potentially flammable material or operations shall follow the guidelines listed below and EM 385-1-1, Section 9 to prevent fires and explosions:

1. Prior to initiation of site activities involving explosive/flammable materials, all potential ignition sources shall be removed or extinguished;
2. Non-sparking and explosion-proof equipment shall be used whenever the potential for ignition of flammable/explosive gases/vapors/liquids exists;
3. Smoking shall be prohibited at, or in the vicinity of, operations which may present a fire hazard, and the area shall be conspicuously posted with signs stating "No Smoking or Open Flame Within 50 Feet;"
4. Flammable and/or combustible liquids must be handled only in approved, properly labeled metal safety cans equipped with flash arresters and self-closing lids;
5. Transfer of flammable liquids from one metal container to another shall be done only when the containers are electrically interconnected (bonded);
6. The motor of machines being fueled shall be shut off during the fueling operations; and
7. Outdoor flammable/combustible materials storage areas will be lined and contained; located 50 feet from buildings; and kept free of weeds, debris and other combustible materials.

13.9.3 Fire Protection

To ensure adequate fire protection, the SSHO will inspect the site to ensure that all flammable and combustible materials are being safely stored in appropriately configured storage areas and containers. The SSHO will also ensure that no flammable/combustible materials are stored near any sources of ignition and that sources of ignition are removed a safe distance from storage areas. If needed, storage areas will be segregated from the remainder of the site through the use of flagging and signs. Portable fire extinguishers shall be located on site IAW the requirements of Chapter 14.

13.10 SIGNS AND LABELS

An important element of site safety involves providing site personnel with information related to hazardous operations, areas, and materials. To ensure effective, consistent communication of these hazards, the requirements of OSHA 29 CFR 1910.145 and USACE EM 385-1-1, Section 8 will be implemented whenever signs, tags, or labels are used on site.



13.11 BIOLOGICAL HAZARDS

Due to the warm weather conditions anticipated for the duration of this project, site personnel will have substantial potential for contact with biological hazards. Biological hazards which may be found on site include: hazardous plants and animals; bees, hornets, wasps, ticks and other biting or stinging insects. Employee awareness and the safe work practices outlined here should reduce the risk associated with these hazards.

13.11.1 Plants Causing Skin and Tissue Injury

The plants which present the greatest degree of risk to site personnel (i.e., potential for contact versus effect produced) are those which produce tissue injury and skin reactions. Contact with splinters, thorns, and sharp leaf edges is of special concern to site personnel. This concern stems from the fact that punctures, cuts, and even minor scrapes caused by accidental contact may result in noninfectious skin lesions and the introduction of fungi or bacteria through the skin or eye. This is especially important in light of the fact that the warm, moist environment created inside impermeable protective clothing is ideal for the propagation of fungal and bacterial infection. Personnel receiving any of the injuries listed above, even minor scrapes, should report immediately to the SSHO for initial care and continued observation of the injury.

13.11.2 Plants Causing Skin Reactions

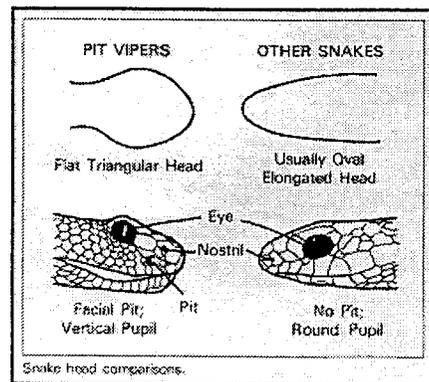
The skin reaction associated with contacting these plants is caused by the body's allergic reaction to toxins contained in oils produced by the plant. Becoming contaminated with the oils does not require contact with only the leaves. Contamination can be achieved through contact with other parts of the plant such as the branches, stems or berries, or contact with contaminated items such as tools and clothing. The allergic reaction associated with exposure to these plants may include: blistering at the site of contact; reddening, swelling, itching and/or burning at the site of contact; pain, if the reaction is severe; and conjunctivitis, asthma, and other allergic reactions if the person is extremely sensitive to the poisonous plant toxin. If the rash is scratched, secondary infections can occur. The rash usually disappears in 1 to 2 weeks in cases of mild exposure and up to 3 weeks when exposure is severe. The preventative measures listed below can prove effective for most site personnel:

1. Avoid contact with any poisonous plants on site, and keep a steady watch to identify, report and mark poisonous plants found on site;
2. Wash hands, face or other exposed areas at the beginning of each break period and at the end of each work day;
3. Avoid contact with contaminated tools, equipment, and clothing, and wash contaminated tools, equipment and clothing on a daily basis; and
4. Barrier creams, detoxification/wash solutions and orally administered desensitization may prove effective and should be tried to find the best preventative solution.

13.11.3 Snakes

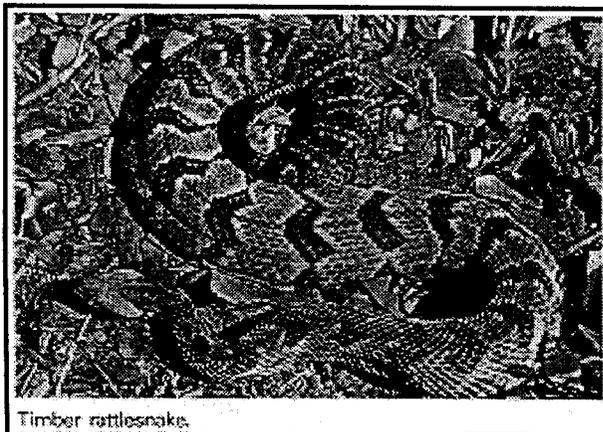
When site activities are conducted in warm weather areas, the potential for contact with poisonous snakes becomes a very real danger. Normally, if a person is approaching a snake, the noise created by the person is usually sufficient to frighten the snake into leaving. However, extreme caution must be exercised when conducting site operations around areas where snakes might be found (i.e., rocks, bushes, logs, or in holes, crevices, and abandoned pipes). Additionally, all site personnel entering or working in areas where snakes could be encountered will be required to wear snake leggings.

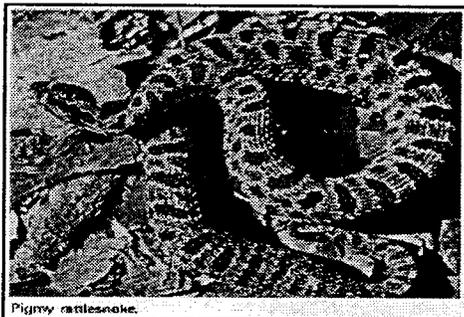
The types of poisonous snakes that may be encountered at the *FMC* project site include the timber rattlesnake, the pigmy rattlesnake, the eastern diamond back, the copperhead, the cottonmouth, and the coral snake. With the exception of the coral snake, the venomous snakes belong to the pit viper group, meaning they have large triangular shaped heads with sensor pits on both sides of the head between the eye and nostril. Pit vipers also have vertical (catlike) pupils.



The eastern diamondback rattlesnake is an extremely large, heavy-bodied snake, capable of attaining a length of about 8 feet. The diamondback likes the relatively dry pine flat-woods and longleaf pine-turkey oak hills of southern Alabama. The burrow of the gopher tortoise often serves as a refuge, particularly during cold weather. Diamondback feed on mice, rats, rabbits, and less frequently on squirrels and birds.

The timber rattlesnake or canebrake rattlesnake is a large, heavy-bodied snake that may attain a length of over 7 feet. The species may be found in most of Alabama. It is most common in sparsely settled, forested areas. The reddish-brown stripe running down the back is disrupted by a series of large, black chevron-like cross bands on the pinkish gray or tan body. The tail is uniformly black, the head is large and sometimes a dark diagonal line can be seen running through, or just behind, the eye.

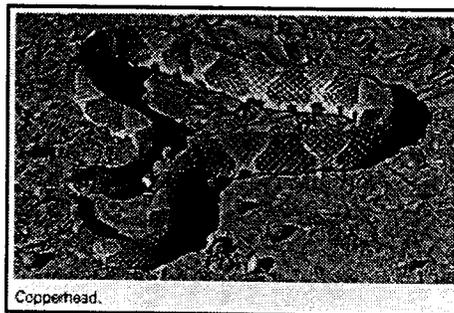




Pigmy rattlesnake.

Pigmy rattlesnake (Photo 4)-- a small snake, with a maximum length of 30 inches. Distributed throughout the state, it is seldom encountered except during late summer. The small rattle can scarcely be heard more than 3 feet away. Its sandy color and contrasting dark stripes afford the snake excellent camouflage in dry grassy environments where it can be found in late summer.

The copperhead has an average adult length of 22-36 inches, and is a stout-bodied snake with broad, light brown to gray cross bands, alternating with dark brown to reddish-brown cross bands which take on an hourglass shape. On the sides of the body the dark bands usually have light centers and occasionally one dark spot.



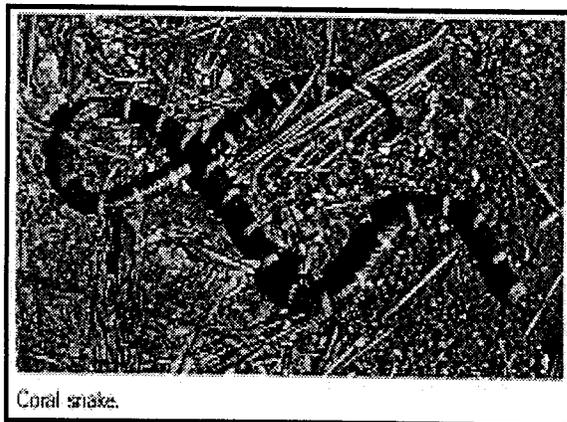
Copperhead.



Cottonmouth.

The cottonmouth, also called a water moccasin, has an average adult length of 20-48 inches with a dark-colored, heavy body. Juveniles are brightly colored with reddish-brown cross bands on a brown background. On the juvenile, the dark cross bands contain many dark spots and speckles. This pattern darkens with age so adults retain only a hint of the former banding, or are uniform black.

The average adult length of the coral snake is 20-30 inches. Although the coral snake lacks the large triangular head of the pit vipers, the coral snake can be easily identified by its markings. The body is ringed with black, yellow (or white) and red, with the narrower yellow rings separating the wider red and black rings. The order of the rings, along with the black nose and tail, help distinguish the coral snake from several non-venomous look-a-likes. The snakes that look similar to the coral snake typically have red



Coral snake.

snouts and tails and the red bands on these snakes never touch the yellow bands. To help identify the coral snake, the following mnemonic rhyme can be used: 'Red touching yellow can kill a fellow.'



As stated previously, EODT will issue snake leggings for all personnel entering an area where snakes may be encountered. However it will also necessary for site personnel to exercise extreme caution when working in wooded and grassy areas. At no time should personnel place their hands in areas they cannot see, such as under rocks, fallen trees, dense brush, etc. All site personnel will immediately report to their team leader and the SSHO any sighting or encounter with venomous snakes. The procedures to be followed in the event someone is bitten by a snake are:

1. Do not cut "Xs" over the bite area as this will intensify the effect of the venom;
2. Do not apply suction to the wound since this has a minimal effect in removing venom;
3. Do not apply a tourniquet since this will concentrate the venom and increase the amount of tissue damage in the immediate area;
4. If possible, kill the snake, bag it and transport it with the victim or try to get a good look at it so it can be identified for proper selection of anti-venom;
5. Do not allow the victim to run for help since running increases the heart rate and will increase the spread of the venom throughout the body;
6. Keep the victim calm and immobile;
7. Have the victim hold the affected extremity lower than the body while waiting for medical assistance; and
8. Transport the victim to medical attention immediately.

13.11.4 Stinging Insects

Contact with stinging insects like bees, hornets and wasps may result in site personnel experiencing adverse health affects that range from being mildly uncomfortable to being life threatening. Therefore, stinging insects present a serious hazard to site personnel, and extreme caution must be exercised whenever site conditions increase the risk of encountering stinging insects. Some of the factors related to stinging insects that increase the degree of risk associated with accidental contact are as follows:

1. The nests for these insects are frequently found in remote areas;
2. The nests are usually not obvious and can be situated in trees, rocks, bushes or in the ground;
3. Accidental contact with these insects is highly probable, especially during warm weather;
4. If a site worker accidentally disturbs a nest, multiple stings, leading to extreme pain and swelling can leave the worker incapacitated and in need of medical attention;
5. Personnel may be hypersensitive bee/wasp/hornet toxins, and when stung, experience a violent and immediate allergic reaction resulting in anaphylactic shock;
6. Anaphylactic shock manifests itself very rapidly and is characterized by extreme swelling of the body, eyes, face, mouth and respiratory passages; and
7. 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 probability of contact with stinging insects, all site personnel shall comply with the following safe work practices:

1. If a worker knows that he is hypersensitive to bee, wasp or hornet stings, they must inform the SSHO of this condition prior to participation in site activities;
2. All site personnel will be watchful for the presence of stinging insects and their nests;
3. Any nests located on site shall be flagged off and site personnel notified of its presence;
4. If stung, site personnel shall immediately report to the SSHO to obtain treatment and to allow the SSHO to observe them for signs of allergic reaction; and
5. Site personnel with a known hypersensitivity to stinging insects shall keep required emergency medication on or near their person at all times.

13.11.5 Biting Insects

Many types of biting insects such as mosquitos, flies and fleas may be encountered on site. The use of insect repellents will be encouraged by the SSHO if deemed necessary. The biting insects of greatest concern are spiders, due to the significant adverse health effects that can be caused by their bite. If hazardous spiders are suspected or known to be on site, the SSHO shall brief the site personnel as to the identification and avoidance of the spiders. As with stinging insects, site personnel should report to the SSHO if they locate either of these spiders on site or notice any type of bite while involved in site activities.

13.11.6 Scorpions

Scorpions are basically night animals and contact with humans is usually in the form of a person disturbing a scorpion in its day time hiding place, which may include gloves or boots/shoes left unattended over night. Scorpions are usually flat, straw to reddish brown in color, range in size from $\frac{3}{4}$ to 3 inches in length and are distinguishable by their pincher-like claws and long telson (tail), that ends in a curved stinger. The scorpion venom of some species is capable of causing death in young or old people, and may cause severe adverse health affects in adults. The signs and symptoms typically associated with scorpion envenomation are highly variable depending upon the species involved, and may only cause localized pain at the site of the sting. However, scorpion stings may cause any or all of the following:

1. Prickling sensation at the time of the sting, followed quickly by severe pain;
2. The victim may experience restlessness, breathing difficulty, convulsion, muscle cramps, nausea/vomiting, fever, headache, dizziness, abdominal pain, hypertension, rapid heart beat and profuse sweating; and
3. Generalized weakness for 24 hours or more following the sting.



There is no effective first aid treatment for scorpion stings, however, with very young and very old victims, or for severe envenomation, a polyvalent scorpion anti-venom may be given by a physician. Due to the variation in signs/symptoms which may result, any victim of a scorpion sting should be transported to a medical facility for observation and treatment. If possible capture the scorpion for later identification at the medical facility. If scorpions are suspected or known to be on site, the SSHO shall brief the site personnel as to the identification and avoidance of the scorpions. As with other stinging insects, site personnel should report to the SSHO if they locate scorpions or notice any type of bite while involved in site activities.

13.11.7 Ticks

Due to the nature and climate of the site, the potential for site personnel to encounter ticks is high for this project. In the United States, three groups of ticks can transmit to humans diseases caused by bacteria, viruses and other microbial vectors. The diseases which may be associated with personnel exposure to ticks indigenous to the project site may include: ehrlichiosis, often called rashless (or spotless) Rocky Mountain spotted fever; lyme disease; Rocky Mountain spotted fever (RMSF); and tularemia, which is most frequently contracted by human contact with infected animals such as rabbits. All of these diseases start with the affected person developing a flu-like illness including fever. Aside from the use of insect repellants, the major factor in preventing the transmission of disease through tick bites is the early detection of the tick on the skin. According to the Center for Disease Control, ticks are most likely to transmit infection after approximately two or more days of feeding. Additionally, ticks typically transmit infection during the nymph stage (juvenile) since the nymphs are small in size (less than two millimeters) and are rarely noticed. Adult ticks can transmit disease, but due to their larger size, they are more likely to be noticed and removed before having sufficient time to transmit infection. Another key factor in the prevention of infection is the proper removal of the tick. To remove an imbedded tick, use fine point tweezers, grasp the tick close to the skin and pull the tick straight out. Do not twist the tick, and do not squeeze the ticks body. Wash the affected area with soap and water after removal and apply an antibiotic to the area for several days to prevent infection at the bite site. Any ticks removed from site personnel should be kept in a labeled container and the affected person shall notify the SSHO of the bite occurrence. Additional details regarding preventative measures and signs/symptoms of tick borne infections is presented in Appendix G of the WP.

13.11.8 Rodent Hazards

A 1993 outbreak of fatal respiratory illness on an Indian Reservation in the Four Corners area (the border of Utah, Colorado, New Mexico, and Arizona) led epidemiologist to the discovery of Hanta virus as the causative agent. Since that discovery, Hanta virus disease has been reported in every western state except Washington, and in many eastern states. Hanta virus is carried by rodents, and was initially thought to be carried particularly by deer mice, however, several other related or



geographical neighbors have been tested positive for hanta virus. The piton mouse, brush mouse, house mouse, harvest mouse, cliff chipmunk, rock squirrel, and white-throated wood rat have all been tested and were shown to have the hanta virus

Hanta virus infected rodents carry the hanta virus in their blood and it is present in their urine and feces. The Hanta virus does not cause disease in the carrier animal but it does in man. Humans are thought to become infected when they are exposed to contaminated dust from the nests or droppings of mice. The disease is not, however, passed between humans. Contaminated dust is often encountered when cleaning long-vacated enclosed areas, or when nesting areas are disturbed.

The initial symptoms of Hanta virus disease closely resemble influenza. The disease begins abruptly with fever, chills, muscle aches (myalgia), headache, nausea and vomiting, malaise, and a dry cough may be present. The fever may be higher in younger people than in older people. For a very short period, the infected person feels somewhat better but this is followed within a day or two by an increased respiratory rate caused by a seepage of fluid into the lungs. The initial shortness of breath is subtle and the patient may be unaware of it, but progression is rapid as the affected person develops respiratory failure. An effective treatment for Hanta virus is not yet available, and even with intensive supportive therapy, over 50% of the diagnosed cases have been fatal. Immediate medical attention will be sought for any site personnel who exhibit the signs/symptoms of hanta virus infection, and the physician will be informed that a potential exists for hanta virus exposure.

The primary mode of preventing hanta virus exposure is to avoid exposure to mouse or rodent urine and feces. When personnel are working in the field or around enclosed areas, they will remain alert to the presence of rodent droppings and will report the presence of such materials to the SSHO. If work is required in an area where contact is possible, any mouse nests or droppings will be sprayed with a 10% solution of chlorine bleach or equivalent disinfectant, and allowed to sit for 30 minutes. The materials will then be wetted again and removed using rubber gloves. The materials will be placed in plastic bags, sealed, and disposed of as biological waste. All potentially contaminated hard surfaces will also be washed with a bleach or disinfectant solution, and vacuuming will be avoided until the area has been thoroughly decontaminated.

13.11.9 Other Hazardous Animals

Normally, wildlife in remote areas will endeavor to avoid contact with humans. However, under certain circumstances animals may feel threatened by, and become aggressive toward, humans. This is especially true if an animal feels cornered or if humans encroach upon nesting areas, dens or borrows. Site personnel will remain alert to the presence of wildlife and will avoid potential nests, dens or other animal homes. Personnel will also report to the SSHO the presence of such observations, as well as any encounters with animals on site.



13.12 ILLUMINATION

In order to control the potential for injury or illness involved with situations where site personnel have limited visibility, EODT personnel will, as a general rule, work from 30 minutes after sunrise to 30 minutes before sunset.

13.13 OE HAZARDS

13.13.1 General OE Site SWPs

For all site activities, the OE procedures and practices listed below shall be strictly enforced.

1. All OE-related activities shall be conducted IAW applicable sections of the Safety Concepts and Basic Considerations for Unexploded Ordnance (UXO).
2. All OE items will be independently identified by two UXO-qualified technicians.
3. Only the minimum number of personnel required to perform a given OE-related activity will be involved in the operation.
4. Movement and handling of OE will be kept to a minimum at all times.
5. Only EODT UXO-qualified personnel will be involved in the investigation, identification, movement, and handling of known or potential OE items and explosive materials.
6. The preferred method of OE disposal is BIP; however, to reduce the number of times personnel must handle explosive demolition materials, those items identified as being unfuzed and safe to move may be collected and consolidated for disposal.
7. No smoking, or possession or use of open flame or spark sources, will be allowed in the EZ, unless approved by the SSHO, and then only in designated areas

13.13.2 Debris Removal Activities

EODT UXO-qualified personnel will use the procedures listed below for the characterization debris and potential OE at *FMC*,

1. Only EODT UXO-qualified personnel will investigate potential OE items.
2. In all cases where OE is identified, the procedures listed below will be followed to determine the disposition of the OE:
 - a. Those OE items that are identified as being unfuzed and safe to move by two EODT personnel will be removed from the work area and temporarily stored in a sandbagged holding area located on site until they are disposed of on site at the end of the workday according to the procedures outlined in the WP;
 - b. If an OE item is identified as being fuzed or unsafe to move by EODT personnel, the item will be left in place and disposed of by BIP procedures, IAW the WP procedures and guidance from the CEHNC OSS.



13.13.3 OE SWPs for Non-UXO-Qualified Personnel

Non-UXO-qualified personnel on site shall follow the SWPs listed below during all site activities:

1. Non-UXO-qualified personnel shall receive site-specific OE recognition training prior to participation in site activities;
2. Non-UXO-qualified personnel shall be escorted on site by UXO-qualified personnel in all areas; and
3. Non-UXO-qualified personnel shall not touch or disturb any object which could potentially be OE-related and shall immediately notify the nearest UXO-qualified person of the presence of the object.

13.14 USE OF PRODUCTS CONTAINING HAZARDOUS MATERIALS

Due to the nature of some products used on site and the manner in which they will be used, it is **not** anticipated that there will be a potential for airborne exposure to the hazardous materials used on site. However, some products used have the potential for skin contact hazards, and the handling of explosives presents a hazard to personnel involved with demolition operations. To help ensure personnel safety from hazardous materials, EODT personnel will follow the SWPs listed below.

1. The handling, transportation of explosive materials used for OE disposal will be conducted in strict compliance with the SOPs presented in Appendix G of the WP. These procedures present very specific guidelines for the handling, transportation and use of demolition materials, and any personnel involved with demolition operations will as a matter of site training read these SOPs in detail and will follow their guidance implicitly.
2. To determine the chemical properties of the hazardous materials and the protective measures to be used, all site personnel who use products containing hazardous materials shall personally review the MSDS for each product used.
3. All products with airborne exposure hazards (i.e., gasoline and other fuels, spray paints, etc.) will be used outdoors or in well-ventilated areas, and personnel will stand upwind of the dispensing point when dispensing the product.
4. Personnel using or dispensing a product with a skin contact hazard, will utilize protective gloves, as identified in Chapter 7 of this SSHP, when dispensing the material.
5. Only those personnel who have received appropriate HAZCOM training, as outlined in section 6.10 of this SSHP, shall use a product containing hazardous materials.
6. Personnel shall immediately wash any affected area of the skin that accidentally comes in contact with a hazardous material identified as being a skin contact hazard.

13.15 CONTROL OF HAZARDOUS ENERGY SOURCES (LO/TO)

Due to the small-scale, short-term nature of this project, no equipment or machinery will be on site which will require the control of energized systems. If this condition changes, the SSHO will contact the OSHM.



13.16 SITE STANDING ORDERS

To maintain safety and health awareness, a list of standing orders has been developed which outlines the practices that must be followed at all times. These standing orders will be enforced by the SSHO, and personnel violating these orders may be subject to disciplinary action. The general standing orders for the site and the WZ are listed in Tables 13-1 and 13-2. As a reminder to site personnel, these tables will be posted in the office trailers and equipment storage areas and will be reviewed periodically during the tailgate safety briefings.

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TABLE 13-1: GENERAL SITE STANDING ORDERS

1. Running and horseplay are prohibited in all areas of the site.
2. Ignition of flammable materials in any work area is prohibited, unless approved in writing by the SSHO.
3. Buddy system procedures will be enforced during all site operations.
4. The number of personnel in any work area will be the minimum number necessary to perform work tasks in a safe and efficient manner.
5. Site personnel will check in with the SSHO prior to leaving the site and again upon returning to the site.
6. Site visitors are to be escorted by UXO-qualified EODT personnel at all times.
7. Site personnel will perform only those tasks which they are qualified to perform.
8. Site personnel will remain aware of site conditions at all times and will alert the SSHO to any changes which could pose a hazard to site personnel, the environment, or the public.
9. All site personnel are cautioned not to walk, kneel or sit on any surface with potential leaks, spills of contamination.
10. Remember, "When in doubt, don't." Ask questions first.



TABLE 13-2: WORK ZONE STANDING ORDERS

1. No matches, lighters, or other spark sources are allowed in any designated WZ.
2. No personnel will enter a designated WZ without authorization from the SUXOS or SSHO.
3. With the exception of taking fluids to prevent dehydration, no eating, drinking, or other hand to mouth/face activity will be permitted in a WZ unless proper hygiene has been performed and then only in designated areas of the WZ.
4. Use of fluids in the WZ will only be allowed after hands and face have been washed or wiped with a disposable towelette.
5. Always have your buddy with you in this zone, and follow the buddy system procedures.
6. No personnel allowed in this area without appropriate training, medical surveillance and PPE as specified by the SSHP.
7. Remain alert to site conditions and report any changes or unusual occurrences to the SSHO.
8. Verbal communication shall be immediately available at all times between the WZ and off-site emergency resources.
9. Remember: **Site Safety and Health Are Everyone's Responsibility.** Do your part.



CHAPTER 14: EMERGENCY PLANNING AND RESPONSE

14.1 INTRODUCTION

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

14.2 PRE-EMERGENCY PLANNING

14.2.1 Identification of Local Emergency Services

Prior to the conduct of site operations, EODT site personnel will have contacted and met with appropriate local authorities. The purpose of these meetings will be to inform local authorities of the nature of the site activities to be performed under this SSHP and the potential hazards that these activities pose to site personnel, the environment, and the general public. EODT personnel shall obtain from the local authorities information related to the type of emergency services available, including any contact phone numbers or procedures needed to summon the services. The SSHP will be responsible for ensuring that the telephone numbers and procedures for contacting local emergency services are posted IAW the requirements of this Chapter.

14.2.2 Identification of Potential Emergencies

During the development of this SSHP, great attention was given to identifying potential safety and health hazards associated with the conduct of site activities. Once identified, these hazards were assessed to determine the potential 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 section 14.9 of this Chapter. The potential emergencies which may result during the conduct of site activities are as follows:

1. Personal injury from the unintentional detonation of OE;
2. Injury or illness associated with contact with physical or biological hazards;
3. Fire;
4. Inclement weather; and
5. Spill of hazardous materials.



14.2.3 Identification/Coordination of Emergency Transportation Services

Prior to the initiation of site activities involving the potential for exposure to the site hazards identified in this SSHP, the SSHO will contact local emergency services to identify the services available and the means that will be used to summon the available services. Emergency life support and transportation services will be available by dialing 911 on either a hard-line telephone or a locally acquired cellular phone.

14.3 EMERGENCY RESPONSE COC/CONTACTS

14.3.1 On-scene Incident Commander

In the event of an emergency, the SSHO will assume the responsibility of the On-scene Incident Commander (OSIC) and will be assisted by the SUXOS. The alternate person to assume this role, in the event that the SSHO is unavailable or incapacitated, will be the SUXOS. The OSIC will have the responsibility of directing all on-site and off-site emergency response personnel and shall, as soon as possible, advise the CEHNC OSS of the emergency situation.

14.3.2 CEHNC Emergency Coordinator

Upon notification of an on-site emergency, the CEHNC OSS may be directed by CEHNC to assume the role of Emergency Coordinator (EC). The EC will then have overall responsibility for coordinating the efforts of the OSIC and off-site emergency response agencies. The EC shall ensure that required off-site emergency services have been summoned and will also be responsible for notifying and coordinating all relevant federal, state, and local regulatory and response agencies.

14.3.3 On-site Emergency Response Personnel

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

14.3.4 Off-site Emergency Response Services

The off-site emergency response services which may be needed in the event of a site emergency include: land ambulance personnel and transportation, medical facilities for the treatment of physical injuries, local fire and law enforcement support, and spill response support. These resources will, in the event of an emergency, be contacted by the OSIC or EC by dialing 911 on the site phone.

14.4 OFF-SITE COMMUNICATIONS

It will be the responsibility of the SUXOS to ensure that off-site communications are available at all times. Site operations shall not be conducted unless means of off-site communications are



established. Off-site communication will be accomplished through the use of telephone service to the responsible support agencies. The telephone numbers for all emergency services and contacts are listed in Table 14-1. These phone numbers shall be posted in the office/break area, and all site personnel shall be aware of the procedures for obtaining off-site emergency services.

14.5 ON-SITE COMMUNICATIONS

14.5.1 General Requirements and Procedures

Evacuation routes, assembly points, emergency and site control procedures, hospital routes, and emergency numbers will be discussed each day at the tailgate safety briefing to ensure all site personnel are familiar with this information. A hospital route map and the list of emergency contacts presented in Table 14-1 will be posted in all EODT office and storage areas and maintained in all site vehicles. All site personnel will be familiar with the location of these lists and maps and will be aware of the location of the closest telephone and/or radio communications.

14.5.2 WZ Alarm System

To alert WZ team members, the SSHO will have an air horn which will be sounded to inform EZ personnel of the occurrence of an emergency. The effectiveness of the air horn will be tested during initiation of site activities in the WZ to ensure that all site personnel can clearly perceive the alarm above operational noise levels. If operational noise levels prevent site personnel from detecting the air horn alarm, other means of notification will be implemented.

To alert WZ personnel of the occurrence of an emergency, one long blast on the air horn will be the signal to evacuate the site immediately. The initial assembly point for each WZ will be located in a safe area, as identified during the tailgate safety briefing each morning. Once WZ personnel are assembled, the SUXOS will conduct a head count of all team personnel. Once accounted for, WZ personnel will communicate with the OSIC and await the arrival and/or instructions from the OSIC, which may include: further evacuation from the site, emergency response instructions or any other instructions deemed necessary by the OSIC. Once the OSIC arrives at the emergency site, the OSIC will assess the situation and communicate the actions to be taken.

14.6 HOSPITAL ROUTE

14.6.1 General Instructions

During the daily tailgate safety briefing, the SSHO will review the instructions for obtaining medical attention and transporting site personnel to the hospital. All site vehicles shall be provided with copies of the site map generated by the SSHO and the instructions/map provided in this section. Prior to the initiation of site activities, and periodically thereafter, the hospital route will be driven by the SSHO to ensure that the route to the hospital is free of unanticipated delays.



TABLE 14-1: EMERGENCY TELEPHONE NUMBERS

Service / Contact	Agency / Position	Telephone Number
All Emergency Services (police, fire, ambulance, etc.)	Fort McClellan Emergency Services	256-848-4623 / 6799
Police Services:	<i>PMO</i>	256-848-5555/4531
	Anniston Police Department and Calhoun County Sheriff Dept.	911 or 256-238-1800
Hospital (ALS and trauma)	Northeast Regional Hospital	256-235-5121
Rescue and Ambulance	Anniston Emergency/Rescue Ambulance	256-237-8572
Range Control	<i>Officer-In-Charge</i> <i>24-hour Contact Number</i>	<i>256-848-4623</i> <i>256-848-3344</i>
Local EOD Support	722nd Ordnance Company (EOD), Anniston Army Depot, Anniston, AL 24-hour Contact Number	256-235-4664 256-238-1477
EPA (24 hours)		205 655-2222
Poison Control Center		800-342-9293
CEHNC Safety Office		205-895-1582 or 1598
Mr. David Skridulis	CEHNC Project Manager	256-895-1468
Valerie Clinkenbeard	CEHNC Technical Engineer	256-895-1622
	CEHNC On-site Safety Specialist	TBD
Michael Short	EODT Project Manager	(423)-690-6061
Andrew Bryson, CIH	EODT CIH	(423)-690-6061

14.6.2 Directions to the Northeast Alabama Regional Medical Center

In the event that an injury occurs on site that requires medical attention, the nearest hospital that may be utilized is the Northeast Regional Hospital, in Anniston, Alabama. Located approximately 10 travel-miles from *FMC*, this hospital has a fully staffed and operational emergency service department capable of diagnosing and treating nearly any injury that could occur on site, to include trauma. Surface and air ambulance transportation services are available through 911 Emergency that are staffed with fully qualified EMT personnel capable of providing ALS during transportation. For serious on-site injuries, the SSHO will contact the 911 Emergency Operator and summon the ambulance service. It will be the determination of the 911 Emergency Operator to determine the type of transportation to be used.



Not all on-site injuries will require ALS service and ambulance transportation to the hospital. If the SSHO determines that an injured party can be transported to medical attention using a site vehicle, the directions presented below and the map presented in Figure 14-1 will be used to transport the injured party to the hospital. To reach the Northeast Regional Hospital, depart the site and proceed to **Baltzell** Gate and turn left (southwest) on Summerall Gate Road. Continue on this road until coming to the intersection of Highway 21, and take Highway 21 south into Anniston where the road becomes North Quintaro Avenue. Continue going south to East 10th Street and turn left. The Northeast Regional Medical Center is on the left.

14.7 EMERGENCY EQUIPMENT

14.7.1 General Requirements

The emergency equipment listed below in Table 14-2 shall be on site, stored in the location indicated, and available for use during the operation specified. All emergency equipment shall be maintained in proper working order and inspected by the SSHO at least weekly to ensure completeness and proper working order. In the event that any of the disposable items are utilized, the SSHO shall ensure they are replaced immediately. Site operations shall not be conducted if the required emergency equipment is not immediately available on site.

TABLE 14-2: EMERGENCY EQUIPMENT REQUIREMENTS

Emergency Equipment	No. per Location	Locations Where Item(s) To Be Stored	Operation Where Emergency Equipment Is Required
First Aid/Burn Kit/Burn Blanket/CPR Mask	1 ea.	Each WZ	All operations
Portable Eye Wash Kit	1 ea.	Each WZ	Operations involving hazardous materials
15- Minute Eye Wash	1 ea.	Field support area	All operations
Biohazard Kit	1 ea.	Each WZ	All operations
Air Horn	1 ea.	Each WZ	All operations
Spill Containment/ Cleanup Supplies	Varies	Field support area	Operations involving hazardous materials
Fire Extinguisher	1 ea.	Each WZ, vehicle, and flammable storage areas	All operations
Cellular Phone	1 ea.	Field support area	All operations

14.7.2 Portable Fire Extinguishers

To ensure that adequate fire fighting equipment is readily available on site, the fire extinguishers listed below will be located at the locations specified. Fire extinguishers will be stored in well-



marked locations where they can be readily accessed and will be stored in locations where they are protected from damaging environmental elements. The SSHO shall ensure that all fire extinguishers are visually inspected monthly and that these inspections are documented. All site personnel will be advised of the location and operation of fire extinguishers and will be informed of the procedures to be followed in the event of a fire. Emergency procedures for small and large fires and explosions are found in this section.

1. Flammable/combustible liquid storage areas shall have at least one 4A:20B:C fire extinguisher located within 25 to 75 feet;
2. All vehicles shall be equipped with a fire extinguisher of not less than 10B units;
3. All vehicles used in the transport of explosives shall be equipped with two fire extinguishers of not less than 10B units or higher, with one fire extinguisher mounted or placed inside the cab of the vehicle and one mounted outside by the driver's side door;
4. Temporary offices or support locations shall be equipped with a fire extinguisher of not less than 10B units; and
5. At least one portable fire extinguisher having a rating of not less than 20:B units shall be located at each WZ.

14.7.3 First Aid Kit Requirements

To ensure that adequate first aid supplies are available, the size and number of first aid kits shall be sufficient to accommodate the maximum number of people (including government personnel and visitors) on site at any given time. This determination will be made by the EODT-designated physician, who must approve the first aid kits used on site. The kits shall be located in the WZ, and the location of the kits shall be made known to all WZ personnel. Additionally, all first aid kits will be provided with adequate water and other supplies necessary to cleanse burns, wounds or lesions.

14.7.4 Eye Washes

Emergency, portable eye washes will be readily available in each WZ where there is a potential for hazardous materials to come in contact with the eyes. Portable eye wash bottles will be available for immediate use while the injured person is transported to the area where a 15-minute eye flushing station will be available. After flushing, the eyes will be bandaged lightly and the person transported to the appropriate medical facility for further evaluation and treatment.

14.8 GENERAL EMERGENCY PROCEDURES

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



14.8.1 Notification

Once an emergency has occurred, the air horn alarm will be sounded to initiate site evacuation and the SSHO/OSIC will be notified of the occurrence and nature of the emergency. Once the OSIC has been informed of the emergency, the OSIC will ensure that all site personnel are alerted to the presence of the emergency. The sounding of the air horn alarm will allow for the following:

1. The notification of personnel as to the presence of an emergency;
2. The cessation of all work activity as required;
3. The reduction of noise levels in order to speed and simplify communication; and
4. The initiation of emergency and/or evacuation procedures.

14.8.2 Assessing the Emergency

If on-site EODT or off-site emergency personnel are to enter the site in response to the emergency, the OSIC shall assess the incident so as to identify and record vital information about the site and situation. This data will be passed on to response personnel and will, to the extent possible, include the items listed below.

1. What happened:
 - a. type of incident;
 - b. cause of incident;
 - c. the time the incident occurred;
 - d. extent of chemical release (if applicable), including route of migration; and
 - e. extent of damage to structures, equipment, and terrain.
2. Where on the project site the incident has occurred.
3. Personnel/casualties involved:
 - a. victims (number, location, and condition) and treatment required; and
 - b. missing personnel.
4. What could happen from this point; consider:
 - a. potential for fire or explosion, coupled with release of hazardous materials;
 - b. location of all personnel in relation to hazardous areas; and
 - c. potential for emergency affecting the general public or the environment.
5. What can be done to resolve the situation; consider:
 - a. equipment and personnel needed for rescue and hazard mitigation;
 - b. number of uninjured personnel available for response;
 - c. resources available on site;
 - d. resources available from off-site response groups and agencies;
 - e. time needed for off-site response resources to reach the site; and
 - f. hazards involved in rescue and response.

14.8.3 Rescue and Response Actions



Based on the information collected during the emergency assessment, the general response and rescue actions listed below will be taken. Depending upon the nature of the emergency, some actions may be conducted concurrently, and some actions may not be required. At no time will site personnel attempt an emergency response or rescue until the situation has been assessed and the appropriate response outlined by the OSIC. Ensuring that the incident has been properly assessed and that the appropriate actions have been selected will ensure that further injuries do not occur due to poor response planning.

1. Evacuate personnel by moving site personnel to a safe distance upwind of the incident.
2. Enforce the buddy system and allow no one to enter the site unattended.
3. Survey casualties to locate all victims, assess their condition and determine the resources needed for casualty stabilization and transportation.
4. Assess existing and potential hazards and decide whether and how to respond.
5. Request aid by contacting the required off-site personnel or facilities, such as ambulance, fire department, police, etc.
6. Allocate personnel and equipment resources to rescue and initiate incident response operations.
7. Control the situation by bringing the hazardous situation under complete or temporary control and use measures to prevent the situation from migrating from the immediate area.
8. Assign PPE IAW the nature and type of emergency.
9. Extricate victims and assist them from the area.
10. Decontaminate personnel, if necessary, by washing or removing outer clothing only if it can be done without causing further danger or damage to the affected personnel.
11. Stabilize injured personnel and administer any medical procedures that are necessary before the victims can be moved.
12. Transport the affected personnel via the predetermined mode, according to the nature of the injury.
13. Record to whom the incident occurred, the time it occurred, and the destination and condition of the casualty at the time of transport.
14. Record disposition, condition, and location of all personnel affected by the emergency.

14.8.4 Post-Emergency Follow-up

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

1. Notify all appropriate governmental agencies as required (i.e., OSHA must be notified if there have been any fatalities or five or more personnel hospitalized);
2. Restock and clean all equipment and supplies utilized or damaged in the emergency;



3. The EODT PM and OSHM, in conjunction with the SUXOS, SSHO, and CEHNC OSS, shall conduct an accident investigation to determine the cause of the emergency and what preventative measures shall be taken to ensure the emergency does not occur again;
4. The EODT PM and OSHM, in conjunction with the SUXOS, SSHO, and CEHNC OSS, shall conduct an emergency response critique to assess the effectiveness of the emergency response procedures and to identify any areas requiring improvement;
5. Complete the USACE Accident Investigation Report (Eng. Form 3394) and any other governmental or EODT accident forms; and
6. Review and revise, as needed, the site operational and emergency response procedures, and, if necessary, update the SSHP to reflect the new procedures.

14.8.5 Documentation

Documentation related to the emergency shall be recorded in an accurate, authentic and complete fashion. Documentation shall be recorded as soon as possible after the emergency to ensure it is recorded while the events are vivid in the minds of the personnel involved. The information recorded will include:

1. A chronological record of events;
2. A listing of the personnel involved, including personnel on site, site personnel who responded, personnel in charge, and off-site groups or agencies that responded;
3. A listing of the actions taken to minimize the effects of or mitigate the emergency;
4. The results from any air monitoring conducted during the emergency, and if applicable, results of environmental samples;
5. An assessment of the potential exposures received by site personnel and the surrounding public; and
6. A recording of the injuries or illnesses which occurred as a result of the emergency.

14.9 CONTINGENCY PLANS

The following paragraphs contain emergency specific contingency plans. These plans outline the procedures for mitigating each of the potential emergency situations that were identified in the pre-emergency planning (see section 14.2.2). These contingency plans specify the minimum emergency procedures and may be subject to alteration by the SSHO, based on actual or changing site conditions. Any changes to these contingency plans shall be approved by the EODT OSHM and the CEHNC OSS.

14.9.1 Treatment of Injuries or Illnesses Occurring On Site

In the event of an emergency involving personal injury or illness, immediate, appropriate response will be the key to preventing further injury/illness and providing comfort to the affected party. If any



site personnel are injured, or overcome by illness, the applicable procedures listed below will be followed.

1. Upon notification of the occurrence and the nature of the injury/illness, the OSIC will respond to the location where the injury/illness has occurred.
2. Once the OSIC arrives at the scene, the severity of the injury/illness will be assessed, the required first aid support will be provided, and the OSIC will initiate the necessary procedures needed to ensure rapid, efficient transportation of the affected person to appropriate medical support, if required.
3. If immediate life support is not required, or once the victim is stabilized, the victim's PPE will be removed to the extent possible while exercising caution not to worsen the injury.
4. If ALS and immediate transportation to a medical facility is required, the OSIC shall immediately summon emergency services via 911. If deemed necessary by the 911 Operator, an air ambulance may be summoned to transport the affected party.
5. If additional medical attention is required, but ALS is not required, the SSHO, or a designated person, may transport the affected person to the designated medical facility.

14.9.2 Fires and Explosions

14.9.2.1 Fire Extinguishers

The occurrence of a fire on site can present a serious threat to all site personnel, the environment, and the general public. To ensure that immediate, aggressive response is possible, dry-chemical-type fire extinguishers shall be available at each individual work site. Dry-chemical fire extinguishers, as specified in section 14.2, shall also be provided at any other site location where flammable materials may present a fire risk, such as the petroleum, oil, and lubricant storage area.

14.9.2.2 Small Fires

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

1. The SSHO/OSIC and SUXOS will be immediately notified of the occurrence of the fire.
2. All unnecessary personnel shall be evacuated to an upwind location.
3. EODT personnel will extinguish the fire from an upwind location.
4. The OSIC will request emergency response assistance (ambulance, fire, police) as needed for any injuries or exposures to smoke or other hazardous chemicals.
5. EODT personnel will not attempt to extinguish a fire, even a small one, if explosives are involved, and all site personnel will evacuate the site if explosives are involved.
6. Once fire fighting has begun, the OSIC shall notify the SUXOS and CEHNC OSS. After the fire is extinguished, an investigation will be initiated to determine the cause of the fire and to identify any operational changes that may be required to prevent future fires.



14.9.2.3 Large Fires

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

1. The SSHO/OSIC and SUXOS will be immediately notified of the occurrence of the fire.
2. All unnecessary personnel shall be evacuated from the site, to an upwind location.
3. The OSIC shall summon the local fire department, and any other emergency response services (police, ambulance, hospital, etc.), as needed for the treatment of injuries or exposures to smoke or other exposures caused by the fire.
4. To the extent that it can be safely accomplished, the OSIC will direct site personnel to move vital equipment/supplies from the fire's path.
5. To the safest extent possible, and with available resources, EODT personnel will fight the fire from an upwind location.
6. At no time shall attempts be made to extinguish a fire involving explosives, and all personnel will evacuate the site if the fire involves explosives.
7. Once fire fighting has begun, the OSIC shall notify the SUXOS and CEHNC OSS. After the fire is extinguished, an investigation will be initiated to determine the cause of the fire and to identify any operational changes that may be required to prevent future fires.

14.9.2.4 Explosion

In the event of an explosion, all personnel shall evacuate and help secure the site. The OSIC, SUXOS, and CEHNC OSS will immediately be notified of the situation and the OSIC shall request the required support equipment and personnel. If personnel injuries have occurred, the OSIC shall direct and coordinate the treatment of the affected personnel IAW section 14.9.1. After an explosion, it is essential that the site be evacuated and that no one is allowed to re-enter the area, except to possibly save a life, for at least 30 minutes after the explosion. The OSIC, in conjunction with the CEHNC OSS, will determine what actions will be taken to resolve the situation, and once resolved, the OSIC will initiate an investigation to determine the cause of the explosion. Any changes to the EODT WP or SSHP will be made and approved prior to the resumption of site activities.

14.9.3 Inclement Weather

14.9.3.1 General Requirements

In the event of inclement weather, such as heavy precipitation, electrical storms, high winds, snow storms, dense fog, or extremely cold weather, it may be necessary to cease site operations and evacuate the site. The SSHO shall be responsible for contacting the U.S. Weather Service on a daily basis and advising the SUXOS of the forecast. If necessary, the weather service will be contacted on a more frequent basis. If inclement weather occurs, the procedures outlined below will be followed until the inclement weather passes.



14.9.3.2 Heavy Precipitation

In the event that heavy precipitation is imminent, or occurs suddenly, site operations shall be halted, equipment will be secured, and site personnel will retreat to shelter. The determination to re-start operations will be the responsibility of the SUXOS, who will consult with the SSHO to ensure site conditions are safe for re-entry and continuation of operations.

14.9.3.3 Thunderstorms

Thunderstorms, with their associated lightning, present a significant hazard to site personnel. If a thunderstorm is noticed in the area, the SSHO will observe the storm to determine its direction and speed. If the storm approaches the site, the SSHO shall determine when the storm becomes a threat to the site and will call for an evacuation of the site, and site personnel will assemble in a sheltered area until the storm passes. If the SSHO determines that it is unsafe to remain on site, the SSHO shall call for the evacuation of the site. A severe thunderstorm watch announcement on the radio or television indicates that a severe thunderstorm is possible. A severe thunderstorm warning signifies that a severe thunderstorm has been sighted, or detected by radar, and may be approaching. Work may continue at the work site during severe thunderstorm watches; however, site work shall cease and the WZ will be evacuated during a thunderstorm or severe thunderstorm warning.

14.9.3.4 High Winds

High winds can create conditions which threaten the safety and health of site personnel. If the SSHO determines that the wind levels on site present a hazard to site personnel, site operations will be halted and site personnel will assemble in the field office area. If wind levels are high enough, the SSHO may even require the evacuation of the entire site until such time as conditions improve. The determination to restart operations will be the responsibility of the SUXOS, who will consult with the SSHO to ensure site conditions are safe for re-entry and continuation of operations. At no time will demolition operations be conducted when the wind speed is greater than 25 miles per hour.

14.10 SPILL RESPONSE

14.10.1 Spill Response Supplies

A portable spill response kit containing oil/solvent absorbent pillows/pads, non-sparking shovel, PPE and disposal supplies shall be maintained in a readily accessible location where fuels, oils, solvents and other environmentally harmful materials are stored on site. Upon notification of a spill, the SSHO, or a party designated by the SSHO, will transport this kit to the spill site for use by EODT personnel in the cleanup of the spilled materials.

14.10.2 Spill Response

It is not anticipated that site operations will involve handling large containers of hazardous waste which could be easily spilled. However, small containers (5 gallons or less) of gasoline or diesel fuel



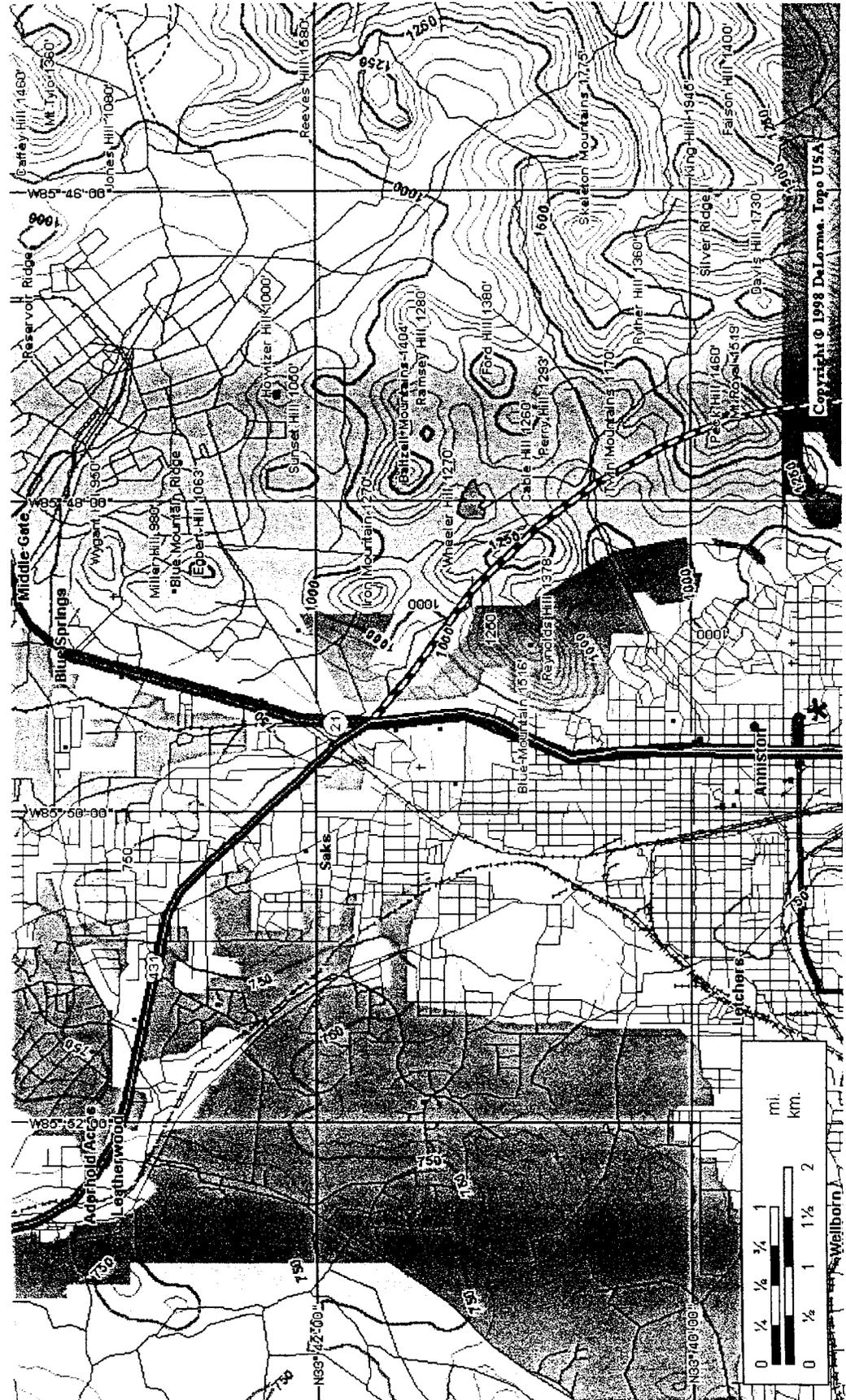
may be used and stored on site. If material from these containers is spilled, EODT personnel will follow these steps:

1. The immediate area will be evacuated, ignition sources will be extinguished, and the OSIC will be notified of the spill.
2. The EODT OSIC will evaluate the situation to ensure it is safe for personnel to begin cleanup operations.
3. The OSIC will assign the level of protection to be worn by the spill response personnel.
4. All required supplies will be assembled and positioned such that they are readily available to the spill response personnel.
5. Spill response personnel will take measures to stop the spill and will, if applicable, use absorbents or adsorbents to collect the spilled material.
6. Using non-sparking tools, EODT personnel will collect the contaminated soil and place it in a plastic bag, which will then be placed in U.S. DOT-approved drum.
7. The SUXOS will notify the CEHNC OSS that the spill occurred and will brief the OSS as to the cleanup actions that were taken by EODT personnel.
8. The CEHNC OSS will then provide the SUXOS guidance on disposal of the drummed contaminants and any other actions that must be taken.

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FIGURE 14-1. ROUTE TO NORTHEAST REGIONAL MEDICAL CENTER



* - Location of the Northeast Regional Medical Center



CHAPTER 15: SAFETY-RELATED PROJECT RECORDS

15.1 SAFETY LOG

The SSHO shall maintain a Safety Log and shall be responsible for ensuring that all safety- and health-related activities and events are recorded in the log each day. As a minimum the Safety Log should include: a reference to the conduct of the tailgate safety briefing; details of any accidents, injuries, illnesses, or near misses; details related to the conduct and outcome of internal and external audits; the reason for, and duration of, safety-related “stop work” orders; and any other issues pertaining to site or personnel safety or health.

15.2 INJURY/ILLNESS/ACCIDENT REPORTS

In the event that a reportable accident/incident occurs at the job site, USACE Eng Form 3394 shall be completed and forwarded within two working days to the OSHM and CEHNC. In addition, if OSHA Form 200 needs to be completed, the SSHO will forward the required information to the OSHM so the form may be completed as required. If a near miss occurs, or if an incident occurs that is not reportable to the USACE but involves personnel injury or property damage, the SSHO shall investigate the incident and report the results of the investigation using the EODT Accident/Injury/Illness/Near Miss Report form. This form will be forwarded to the OSHM to be reviewed by the OSHM and PM.

15.3 TRAINING LOG

The SSHO is responsible for ensuring that all safety- and health-related training conducted is documented in the Training Log and/or on the appropriate training forms. This log will include the initial site-specific training conducted prior to the start of site activities, the Daily/Weekly Safety Briefings, hazard-specific training, OE refresher/recognition training, emergency response exercises, etc. The SSHO shall maintain this log and any associated training forms on site.

15.4 VISITOR LOG

The SSHO shall be responsible for maintaining the visitor log which will be used to record the entry and exit of all visitors, including EODT; USACE visitors; or federal, state, or local officials who visit the site. This log shall utilize the EODT Site Visitors Log, and all information required by the form will be completed by the site visitor and the SSHO. No visitors will be allowed to enter the project site or WZs without completing the required information.

15.5 DAILY AND WEEKLY SITE INSPECTIONS

Daily inspections shall be conducted by the SSHO to ensure that site operations and personnel are complying with this SSHP and other regulatory requirements. The results of these inspections shall be recorded in the Safety Log and documented on the EODT Safety Inspection and Audit Log form.



Any site or operational discrepancies identified will be noted on this form, and the results of the inspection shall be reported to the SUXOS. On a weekly basis, the SSHO shall conduct a compliance audit of the site. This audit will again be recorded in the Safety Log and documented on the EODT Safety Inspection and Audit Log form. All safety inspection and audit forms shall be maintained on site.

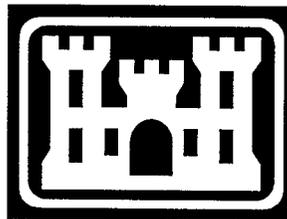
ATTACHMENT 1
OF THE
SITE SAFETY AND HEALTH PLAN
CSHP CERTIFICATION

FOR THE
SURFACE TO ONE-FOOT SUBSURFACE ORDNANCE
AND EXPLOSIVES CONSTRUCTION SUPPORT

FORT MCCLELLAN, ALABAMA

Contract Number: DACA87-97-D-0005
Task Order: 0012

Prepared For:



The U.S. Army Engineering and Support Centers
Huntsville, Alabama

Prepared By:



2229 Old Highway 95
Lenoir City, Tennessee 37771

May 1999



CORPORATE SAFETY AND HEALTH PROGRAM CERTIFICATION

1.0 STATEMENT

In accordance with the Occupational Safety and Health Administration (OSHA) requirements outlined in paragraph (b) of the Hazardous Waste Operations and Emergency Response standards, found in 29 CFR 1910.120, and 29 CFR 1926.65, EOD Technology, Inc. (EODT) has developed, and actively implements, a comprehensive Corporate Safety and Health Program (CSHP). This program was developed to not only meet regulatory requirements, but more importantly, to provide EODT with the foundation necessary for ensuring the continued health and well being of all EODT, subcontractor, and client personnel involved in the conduct of site operations. To further meet regulatory compliance, and to ensure its continued development and improvement, the CSHP is reviewed on a periodic basis by EODT's Occupational Safety and Health Manager and unexploded ordnance (UXO) qualified Director of Operations. This periodic review allows for the inclusion of new or updated hazard control technology and regulatory requirements. The EODT CSHP is available for review upon request.

As required by OSHA, the EODT CSHP addresses all necessary and applicable items presented in 29 CFR 1910.120(b)(1)-(4) and 29 CFR 1926.65(b)(1)-(4), and includes the following:

1. The EODT safety and health organizational structure;
2. A comprehensive WP defining the tasks and objectives for EODT's site operations;
3. An outline and description of the necessary elements to be included in the site specific safety and health plans (SSHP) required for operations on hazardous waste sites, including the use of the SSHP as a tool for pre-entry briefings and hazard information;
4. The specifications for the EODT training and medical surveillance programs;
5. The procedures needed to ensure coordination between EODT and its contractors and subcontractors, including procedures to ensure all affected parties are informed of the known hazards and emergency response procedures associated with site activities;
6. A description of the relationship between the CSHP requirements and the SSHP; and
7. Attachments which contain the EODT standard operating procedures and OSHA required programs to be used for controlling site hazards.

2.0 CERTIFICATION

The signature of the individual below certifies that the statements listed above are true and factual.

Drew Bryson, CIH, MPH

Name (typed)

Signature

8/4/99

Date

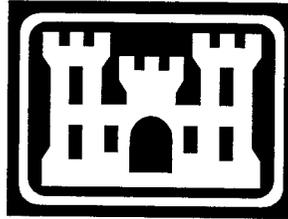
ATTACHMENT 2
OF THE
SITE SAFETY AND HEALTH PLAN
CERTIFICATION OF TASK HAZARD
ASSESSMENT FORMS

FOR THE
SURFACE TO ONE-FOOT SUBSURFACE ORDNANCE
AND EXPLOSIVES CONSTRUCTION SUPPORT

FORT MCCLELLAN, ALABAMA

Contract Number: DACA87-97-D-0005
Task Order: 0012

Prepared For:



The U.S. Army Engineering and Support Centers
Huntsville, Alabama

Prepared By:



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CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Field Office, Storage Area and Support Zone Set-up and Close Out

DATE: 8/4/99

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

<input checked="" type="checkbox"/> Physical exertion <input checked="" type="checkbox"/> Heat Stress <input type="checkbox"/> Cold Stress <input checked="" type="checkbox"/> Heavy equipment operations <input checked="" type="checkbox"/> Vehicle traffic in work area(s) <input checked="" type="checkbox"/> Fire hazards (underline) - Gasoline/Diesel use - Explosives handling/storage - Explosive gases/vapors	<input checked="" type="checkbox"/> Lifting hazards <input checked="" type="checkbox"/> Slip, trip or fall <input checked="" type="checkbox"/> High noise (>85 dBA) <input type="checkbox"/> Overhead utilities <input type="checkbox"/> Underground utilities <input type="checkbox"/> Intrusive activity (underline) - Soil drilling - Soil excavation - Setting grounding rod	<input type="checkbox"/> Confined space <input checked="" type="checkbox"/> Hazardous plants <input checked="" type="checkbox"/> Hazardous wildlife <input checked="" type="checkbox"/> Ultraviolet radiation <input checked="" type="checkbox"/> Hand/Power Tool use <input checked="" type="checkbox"/> Rocky/Steep slopes <input checked="" type="checkbox"/> Skin contact w/ hazardous materials <input type="checkbox"/> Ordnance and explosives <input checked="" type="checkbox"/> Cut/Puncture from sharp objects
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2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard: <input checked="" type="checkbox"/> Low <input type="checkbox"/> Serious <input type="checkbox"/> Moderate <input type="checkbox"/> Unknown	Phys./Bio. Hazard: <input checked="" type="checkbox"/> Low <input type="checkbox"/> Serious <input type="checkbox"/> Moderate <input type="checkbox"/> Unknown
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3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

<input checked="" type="checkbox"/> Tailgate Safety Briefing <input checked="" type="checkbox"/> Specialized Training <input checked="" type="checkbox"/> Safe Work Practices	<input checked="" type="checkbox"/> Personal protective equipment <input type="checkbox"/> Air Monitoring <input type="checkbox"/> Site Control Zones	<input type="checkbox"/> Decontamination <input type="checkbox"/> Magnetometer Survey
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Engineering Controls: Tools with manufacturer supplied guards will be used with guards in place.

Applicable SOPs/Programs: Heat Stress, Hearing Conservation, the SSHP

Other:

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	<input type="checkbox"/> A <input type="checkbox"/> B	<input type="checkbox"/> C <input checked="" type="checkbox"/> D	<input type="checkbox"/> Modified
Respiratory Protection	<input type="checkbox"/> SCBA <input type="checkbox"/> Escape SCBA - Size	<input type="checkbox"/> Full face respirator <input type="checkbox"/> ½ Face respirator	<input type="checkbox"/> Cartridge - Type <input checked="" type="checkbox"/> No respirator required
Protective Clothing	<input type="checkbox"/> Fully encapsulating suit <input type="checkbox"/> Standard Tyvek	<input type="checkbox"/> Saranex <input type="checkbox"/> PE Tyvek	<input checked="" type="checkbox"/> Company clothing <input type="checkbox"/> Other:
Gloves (specify inner/outer)	<input type="checkbox"/> Nitrile <input type="checkbox"/> Butyl	<input type="checkbox"/> Neoprene <input type="checkbox"/> Latex	<input checked="" type="checkbox"/> Leather <input type="checkbox"/> Cotton
Head/Face/Eye/Ear Protection	<input checked="" type="checkbox"/> Safety glasses <input checked="" type="checkbox"/> Ear plugs/muffs	<input type="checkbox"/> Safety goggles <input type="checkbox"/> Face shield	<input checked="" type="checkbox"/> Hard hat <input type="checkbox"/> Other:
Foot/Leg Protection	<input checked="" type="checkbox"/> Work boots <input type="checkbox"/> Steel-toed leather boots	<input type="checkbox"/> Steel foot covers <input checked="" type="checkbox"/> Snake leggings	<input type="checkbox"/> Chemical over boots

5.0 Modifications Required: † - Safety glasses required if an eye hazard exists, to include UV hazard; ! - Ear plugs or muffs required for noise levels above 85 dBA, 8-hour TWA; * - Hard hats required if an overhead hazard exists or when working around heavy equipment; ‡ - Snake leggings required in areas where snakes may be present, as prescribed by the SSHO.

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH

Signature:



CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Vegetation Grubbing and Clearing

DATE: 8/4/99

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.			
<input checked="" type="checkbox"/> Physical exertion <input checked="" type="checkbox"/> Heat Stress <input type="checkbox"/> Cold Stress <input type="checkbox"/> Heavy equipment operations <input type="checkbox"/> Vehicle traffic in work area(s) <input checked="" type="checkbox"/> Fire hazards (underline) - <u>Gasoline/Diesel use</u> - Explosive materials - Explosive gases/vapors	<input checked="" type="checkbox"/> Lifting hazards <input checked="" type="checkbox"/> Slip, trip or fall <input checked="" type="checkbox"/> High noise (>85 dBA) <input type="checkbox"/> Overhead utilities <input type="checkbox"/> Underground utilities <input type="checkbox"/> Intrusive activity (underline) - Drilling - Soil excavation - Setting monuments/stakes	<input type="checkbox"/> Confined space <input checked="" type="checkbox"/> Hazardous plants <input checked="" type="checkbox"/> Hazardous wildlife <input checked="" type="checkbox"/> Ultraviolet radiation <input checked="" type="checkbox"/> Hand/Power Tool use <input checked="" type="checkbox"/> Rocky/Steep slopes <input checked="" type="checkbox"/> Skin contact w/ hazardous materials <input checked="" type="checkbox"/> Ordnance and explosives <input checked="" type="checkbox"/> Cut/Puncture from sharp objects	
2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.			
Chemical Hazard: <input checked="" type="checkbox"/> Low <input type="checkbox"/> Serious <input type="checkbox"/> Moderate <input type="checkbox"/> Unknown		Phys./Bio. Hazard: <input type="checkbox"/> Low <input type="checkbox"/> Serious <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Unknown	
3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.			
<input checked="" type="checkbox"/> Tailgate Safety Briefing <input checked="" type="checkbox"/> Specialized Training <input checked="" type="checkbox"/> Safe Work Practices	<input checked="" type="checkbox"/> Personal protective equipment <input type="checkbox"/> Air Monitoring <input checked="" type="checkbox"/> Site Control Zones	<input checked="" type="checkbox"/> Decontamination - Boot wash. <input type="checkbox"/> Magnetometer Survey <input checked="" type="checkbox"/> Visual Survey for UXO/OE	
<input checked="" type="checkbox"/> Engineering Controls: Weed cutter shoulder harness will be properly adjusted and used, eliminating the potential for the blade to kick back and strike the operator's feet or legs.			
<input checked="" type="checkbox"/> Applicable SOPs/Programs: Heat Stress, Biological Hazards, Hearing Conservation, the SSHP			
<input checked="" type="checkbox"/> Other: Safety observer will be stationed to watch vegetation removal personnel during operation of equipment. Personnel will remain at least 25 feet from other personnel, and will inspect areas in front of blade to avoid any metal objects. <i>Machetes used for removal will be attached via lanyard to the operator and personnel will remain 25 feet from cutting area.</i>			
4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.			
Level of Protection	<input type="checkbox"/> A <input type="checkbox"/> B	<input type="checkbox"/> C <input checked="" type="checkbox"/> D	<input checked="" type="checkbox"/> Modified
Respiratory Protection	<input type="checkbox"/> SCBA <input type="checkbox"/> Escape SCBA - Size	<input type="checkbox"/> Full face respirator <input type="checkbox"/> ½ Face respirator	<input type="checkbox"/> Cartridge - Type <input checked="" type="checkbox"/> No respirator required
Protective Clothing	<input type="checkbox"/> Fully encapsulating suit <input type="checkbox"/> Standard Tyvek	<input type="checkbox"/> Saranex <input type="checkbox"/> PE Tyvek	<input checked="" type="checkbox"/> Company clothing <input type="checkbox"/> Other:
Gloves (specify inner/outer)	<input checked="" type="checkbox"/> Nitrile - during refueling <input type="checkbox"/> Butyl	<input type="checkbox"/> Neoprene <input type="checkbox"/> Latex	<input checked="" type="checkbox"/> Leather <input type="checkbox"/> Cotton
Head/Face/Eye/Ear Protection	<input checked="" type="checkbox"/> Safety glasses <input checked="" type="checkbox"/> Ear plugs and ear muffs	<input type="checkbox"/> Safety goggles <input checked="" type="checkbox"/> Wire or nylon face shield	<input checked="" type="checkbox"/> Hard hat <input type="checkbox"/> Other:
Foot/Leg Protection	<input checked="" type="checkbox"/> Work boots <input type="checkbox"/> Steel-toed leather boots	<input type="checkbox"/> Steel foot covers <input checked="" type="checkbox"/> Kevlar Chaps	<input checked="" type="checkbox"/> Snake leggings
5.0 Modifications Required: <i>i</i> - Chaps required for chain saw use. <i>‡</i> - Snake leggings required as prescribed by the SSHO, unless chainsaw chaps are being worn.			
6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.			
Printed Name: Drew Bryson, CIH, MPH		Signature:	



CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Magnetometer Surveying

DATE: 8/4/99

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.			
<input checked="" type="checkbox"/> Physical exertion <input checked="" type="checkbox"/> Heat Stress <input type="checkbox"/> Cold Stress <input type="checkbox"/> Heavy equipment operations <input type="checkbox"/> Vehicle traffic in work area(s) <input checked="" type="checkbox"/> Fire hazards (underline) - Gasoline/Diesel use - Explosive materials - Explosive gases/vapors	<input checked="" type="checkbox"/> Lifting hazards <input checked="" type="checkbox"/> Slip, trip or fall <input type="checkbox"/> High noise (>85 dBA) <input type="checkbox"/> Overhead utilities <input type="checkbox"/> Underground utilities <input type="checkbox"/> Intrusive activity (underline) - Drilling - Soil excavation - Setting monuments/stakes	<input type="checkbox"/> Confined space <input checked="" type="checkbox"/> Hazardous plants <input checked="" type="checkbox"/> Hazardous wildlife <input checked="" type="checkbox"/> Ultraviolet radiation <input checked="" type="checkbox"/> Hand/Power Tool use <input checked="" type="checkbox"/> Rocky/Steep slopes <input checked="" type="checkbox"/> Skin contact w/ hazardous materials <input checked="" type="checkbox"/> Ordnance and explosives <input checked="" type="checkbox"/> Cut/Puncture from sharp objects	
2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.			
Chemical Hazard: <input checked="" type="checkbox"/> Low <input type="checkbox"/> Serious <input type="checkbox"/> Moderate <input type="checkbox"/> Unknown		Phys./Bio. Hazard: <input checked="" type="checkbox"/> Low <input type="checkbox"/> Serious <input type="checkbox"/> Moderate <input type="checkbox"/> Unknown	
3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.			
<input checked="" type="checkbox"/> Tailgate Safety Briefing <input checked="" type="checkbox"/> Specialized Training <input checked="" type="checkbox"/> Safe Work Practices	<input checked="" type="checkbox"/> Personal protective equipment <input type="checkbox"/> Air Monitoring <input checked="" type="checkbox"/> Site Control Zones	<input type="checkbox"/> Decontamination <input type="checkbox"/> Magnetometer Survey	
<input type="checkbox"/> Engineering Controls: <input checked="" type="checkbox"/> Applicable SOPs/Programs: Heat Stress, Biological Hazards, Hearing Conservation, the SSHP <input type="checkbox"/> Other:			
4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.			
Level of Protection	<input type="checkbox"/> A <input type="checkbox"/> B	<input type="checkbox"/> C <input checked="" type="checkbox"/> D	<input type="checkbox"/> Modified
Respiratory Protection	<input type="checkbox"/> SCBA <input type="checkbox"/> Escape SCBA - Size	<input type="checkbox"/> Full face respirator <input type="checkbox"/> ½ Face respirator	<input type="checkbox"/> Cartridge - Type <input checked="" type="checkbox"/> No respirator required
Protective Clothing	<input type="checkbox"/> Fully encapsulating suit <input type="checkbox"/> Standard Tyvek	<input type="checkbox"/> Saranex <input type="checkbox"/> PE Tyvek	<input checked="" type="checkbox"/> Company clothing <input type="checkbox"/> Other:
Gloves (specify inner/outer)	<input checked="" type="checkbox"/> Nitrile - During refueling <input type="checkbox"/> Butyl	<input type="checkbox"/> Neoprene <input type="checkbox"/> Latex	<input checked="" type="checkbox"/> Leather <input type="checkbox"/> Cotton
Head/Face/Eye/Ear Protection	<input checked="" type="checkbox"/> Safety glasses <input type="checkbox"/> Ear plugs and ear muffs	<input type="checkbox"/> Safety goggles <input type="checkbox"/> Wire or Nylon Face shield	<input type="checkbox"/> Hard hat <input type="checkbox"/> Other:
Foot/Leg Protection	<input checked="" type="checkbox"/> Work boots <input type="checkbox"/> Steel-toed leather boots	<input type="checkbox"/> Steel Toe covers <input type="checkbox"/> Kevlar leg chaps	<input checked="" type="checkbox"/> Snake Leggings
5.0 Modifications Required:			
6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.			
Printed Name: Drew Bryson, CIH, MPH		Signature:	



CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Demolition Operations

DATE: 8/4/99

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

<input checked="" type="checkbox"/> Physical exertion <input checked="" type="checkbox"/> Heat Stress <input type="checkbox"/> Cold Stress <input checked="" type="checkbox"/> Heavy equipment operations <input type="checkbox"/> Vehicle traffic in work area(s) <input checked="" type="checkbox"/> Fire hazards (underline) - Gasoline/Diesel use - <u>Demolition materials</u> - Explosive gases/vapors	<input checked="" type="checkbox"/> Lifting hazards <input checked="" type="checkbox"/> Slip, trip or fall <input checked="" type="checkbox"/> High noise (>85 dBA) <input type="checkbox"/> Overhead utilities <input type="checkbox"/> Underground utilities <input checked="" type="checkbox"/> Intrusive activity (underline) - Drilling - <u>Soil Tamping</u> - <u>Setting monuments/stakes</u>	<input type="checkbox"/> Confined space <input checked="" type="checkbox"/> Hazardous plants <input checked="" type="checkbox"/> Hazardous wildlife <input checked="" type="checkbox"/> Ultraviolet radiation <input checked="" type="checkbox"/> Hand/Power Tool use <input checked="" type="checkbox"/> Rocky/Steep slopes <input checked="" type="checkbox"/> Skin contact w/ hazardous materials <input checked="" type="checkbox"/> Ordnance and explosives <input checked="" type="checkbox"/> Cut/Puncture from sharp objects
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2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard: <input checked="" type="checkbox"/> Low <input type="checkbox"/> Serious <input type="checkbox"/> Moderate <input type="checkbox"/> Unknown	Phys./Bio. Hazard: <input type="checkbox"/> Low <input checked="" type="checkbox"/> Serious <input type="checkbox"/> Moderate <input type="checkbox"/> Unknown
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3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

<input checked="" type="checkbox"/> Tailgate Safety Briefing <input checked="" type="checkbox"/> Specialized Training <input checked="" type="checkbox"/> Safe Work Practices	<input checked="" type="checkbox"/> Personal protective equipment <input type="checkbox"/> Air Monitoring <input checked="" type="checkbox"/> Site Control Zones	<input type="checkbox"/> Decontamination <input checked="" type="checkbox"/> Post demolition check of area
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Engineering Controls: Soil tamping and other controls shall be used to ensure personnel exposure to impulse noise from the demolition shot(s) is less than 140 dBA.

Applicable SOPs/Programs: Heat Stress, Biological Hazards, Hearing Conservation, Demolition Operations, the SSHP

Other:

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	<input type="checkbox"/> A <input type="checkbox"/> B	<input type="checkbox"/> C <input checked="" type="checkbox"/> D	<input type="checkbox"/> Modified
Respiratory Protection	<input type="checkbox"/> SCBA <input type="checkbox"/> Escape SCBA - Size	<input type="checkbox"/> Full face respirator <input type="checkbox"/> ½ Face respirator	<input type="checkbox"/> Cartridge - Type <input checked="" type="checkbox"/> No respirator required
Protective Clothing	<input type="checkbox"/> Fully encapsulating suit <input type="checkbox"/> Standard Tyvek	<input type="checkbox"/> Saranex <input type="checkbox"/> PE Tyvek	<input checked="" type="checkbox"/> Company clothing <input type="checkbox"/> Other:
Gloves (specify inner/outer)	<input type="checkbox"/> Nitrile <input type="checkbox"/> Butyl	<input type="checkbox"/> Neoprene <input type="checkbox"/> Latex	<input checked="" type="checkbox"/> Leather <input type="checkbox"/> Cotton
Head/Face/Eye/Ear Protection	<input checked="" type="checkbox"/> Safety glasses <input type="checkbox"/> Ear plugs/muffs	<input type="checkbox"/> Safety goggles <input type="checkbox"/> Face shield	<input checked="" type="checkbox"/> Hard hat <input type="checkbox"/> Other:
Foot/Leg Protection	<input checked="" type="checkbox"/> Work boots <input type="checkbox"/> Steel-toed leather boots	<input type="checkbox"/> Steel foot covers <input checked="" type="checkbox"/> Snake Leggings	<input type="checkbox"/> Chemical over boots

5.0 Modifications Required: † - Safety glasses required if an eye hazard exists; * - Hard hats required if an overhead hazard exists or when working around EMM. Safety glasses and hard hat, if worn will be secured to prevent them from falling off the face/head.

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH

Signature: