8.0 Ordnance Disposal Plan

99960

8.1 Geophysical Methodology

Should it be determined during field activities that there is an indication of subsurface unexploded ordnance/ordnance and explosive waste (UXO/OEW) and it becomes necessary to conduct subsurface geophysical work to locate any potential buried UXO/OEW, EODT will utilize a GA-52B Heli-Flux Magnetometer and a MAC-51B Magnetic and Cable Locator. Both of these instruments are manufactured by Schonstedt Instrument Company. A subsurface UXO/OEW geophysical survey/clearance could only be conducted once all surface metal/scrap/metallic debris have been removed from each area to be surveyed. The GA-52B magnetometer will be utilized for subsurface sweep activities, and potential underground utility lines will be located, verified and traced with the MAC-51B locator. This equipment can be effectively operated with one hand, enhancing operator safety by leaving one hand free to assist in maintaining balance over uneven terrain and non-magnetic debris.

Both instruments are capable of locating a 155mm projectile at a depth of ten feet and a 75mm projectile at a depth of six feet, under optimum conditions. A suspected UXO located with one instrument can be either confirmed or eliminated by use of the other instrument.

Magnetometry is the most cost effective method of conducting sub-surface UXO surveys. These suggested Schonstedt instruments are fully portable, lightweight, easily maintained, and very effective. One technician can operate these instruments for up to eight hours without excessive fatigue.

8.2 Standard Operating Procedure

This Standard Operating Procedure (SOP) shall be followed at all times by the EODT field team, unless modified by the EODT Project Manager and agreed to by the IT Project Manager. The UXO Team will consist of two (2) Explosive Ordnance Disposal (EOD) qualified UXO Supervisors, both of whom possess in excess of ten (10) years of relevant U.S. Military EOD experience.

8.2.1 General Procedures

- UXO operations will not be conducted during the hours from sunset to sunrise, or during electrical storms or other severe weather conditions.

- A minimum of two UXO Technicians will be present during all UXO operations, and one will always act as a safety observer.

- EODT shall report all uncovered UXO to the IT Project Manager/Field Engineer, who will notify the Contracting Officer (CO).

- All OEW will be removed and segregated into one of the following six staging areas:

  1. Hazardous Chemical Contaminated UXO
  2. Non-contaminated UXO (explosive hazard only)
  3. Hazardous Chemical Contaminated Inert Ordnance
  4. Non-contaminated Inert Ordnance
  5. Hazardous Chemical Contaminated Ordnance Related Scrap
  6. Non-contaminated Ordnance Related Scrap

- All contaminated and noncontaminated UXO (Nos. 1 and 2 above) will be placed in triple-locked containers. All other ordnance items and related scrap (Nos. 3, 4, 5, and 6 above) will be placed in holding containers. All containers (both locked and holding) will be located in a secured area, which is currently anticipated to be within the fenced enclosure of Summit Equipment & Supply.

- Should any raw explosives be recovered, they will be placed in non-sparking, two-man portable plastic shipping containers. Explosives that are suspected of being RDX will be positively identified using field reagent testing. RDX will be packed and shipped in water. The containers used for transporting this material will be watertight and made of a durable plastic material.

- UXO log books will, at a minimum, contain the following: location of UXO, time located, type and condition, final disposition, and depth of subsurface items.

- A log book will be maintained which describe problems encountered, either ordnance or non-ordnance related.

- All inert ordnance items and ordnance related scrap will be certified by the EODT Site Supervisor to contain no items of a hazardous nature.

- If an item of ordnance cannot be positively identified as being inert through approved EOD procedures or publications, that item will be considered a live UXO and be treated as such.
- All UXO will be positively identified prior to final disposition.
- If an encountered UXO is suspected of containing a toxic military chemical agent, all operations shall cease immediately. The site will be secured by a minimum of two EODT personnel placed upwind of the suspect UXO and the USACE will be notified. EODT personnel will maintain security until relieved by Military personnel.
- In all cases where UXO are encountered, the USACE will be notified of the type and condition of the UXO.
- If any excavations become necessary due to subsurface UXO/OEW, they will be conducted in accordance with the Corps of Engineers Manual EM 385-1-1 and applicable local regulations.
- All excavation holes will be backfilled upon completion of excavation. This will be accomplished using mechanically and/or manually operated equipment. Disturbed areas will be graded to allow proper drainage.
- During all excavation operations for suspect UXO, only the minimum number of personnel required to safely perform the task will be allowed on site.
- Only personnel with experience on a particular piece of equipment will be allowed to operate that equipment.
- The operating condition and accuracy of instruments will be checked prior to each days activities. Sample ordnance items and other source materials will be utilized to check the accuracy of equipment.

8.2.2 Removal Action Plan

EODT personnel will grid the entire area to be searched into 50-foot-by-50-foot grids. The corners of each grid will be staked with wooden stakes and brightly colored surveyor tape will be run between each of the stakes at an approximate height of four feet. Once a particular grid is cleared, the surveyor tape will be removed. This will allow the entire area to be cleared in a systematic manner, ensure total coverage and provide a highly visible means for other workers to identify which areas they cannot enter. No non-EODT personnel

will be allowed into the uncleared areas without an EODT escort or while clearance operations are in progress.

Once the entire area is sectioned off in grids and each grid is marked, the site supervisor will develop a grid specific sweep plan for each grid. Due to the extensive amount of salvage and totally different conditions throughout the site, the method of sweep and clearance will differ from grid to grid. However, the grid will be divided into three foot lanes and swept lane by lane whenever possible.

A visual sweep throughout each grid will be conducted. All UXO, inert ordnance items and ordnance related scrap located will be identified and determination made by EODT personnel as to whether or not any explosive hazard exists. Whenever an explosive hazard exists, the item will be classified and treated as an UXO. Any item that cannot be positively identified as explosive free will also be treated as an UXO.

All UXO/OEW items located will be removed from the grid to the holding area and segregated into one of the six staging areas identified in 2.1.1 above.

Once this initial sweep has been conducted for each grid, EODT personnel will accompany IT personnel while they conduct salvage and scrap removal operations. UXO technicians will maintain a constant visual inspection of all salvage/scrap removal operations to ensure that when any additional UXO/OEW are uncovered, that salvage operations are immediately stopped until the UXO/OEW materials are identified and removed.

8.2.3 Hazardous Chemical Decontamination Plan

Where applicable, UXO, inert ordnance and ordnance related scrap will be tested for hazardous chemicals in accordance with the Sampling and Analysis Plan (Section 6). All UXO/OEW identified as being contaminated with hazardous chemicals will then be decontaminated in accordance with the decontamination plan. Upon completion of decontamination procedures, the UXO/OEW will be placed in the appropriate staging area for non-contaminated UXO, inert ordnance or ordnance related scrap.

8.2.4 Transportation/Temporary Storage of UXO and Hazardous OEW

EODT personnel will transport UXO to a Government selected site in Ravenna, OH on a weekly basis. All uncontaminated UXO located and packaged within the triple locked containers in any given week will be moved to the Ravena temporary storage facility each Friday afternoon. All UXO will be secured at the selected temporary storage site to await disposal.

All federal, state, and local transportation requirements for explosive materials will be strictly adhered to, to include explosive driver and explosive vehicle requirements. Transportation of UXO will be accomplished by an UXO Supervisor in an EODT vehicle which meets all explosive vehicle requirements.

8.2.5 Disposal of UXO and Hazardous OEW

Once an exact disposal site has been identified and located at Ravenna, a site specific Demolition SOP will be developed. This SOP will be submitted for approval prior to any disposal operations commencing.

8.3 Video Tape

A standard VHS half-inch color video tape of 45-60 minutes with audio explanations of work in progress will be taken by IT's Field Engineer at the work site and submitted as part of the Project Report.

8.4 Quality Control

The Quality Control (QC) guidelines described herein will be utilized for all EODT work activities performed at the Summit Equipment and Supply site, Akron, OH and at the UXO Disposal site, Ravenna, OH. The site-specific QC system was designed to provide necessary documentation to verify work activities, to document and aid in the verification of ordnance, bulk explosive, and fragment and scrap identification, to provide information for the development of an ordnance accountability ledger, to document data required, and to provide a systematic and documented means for proper USACE notification as required by each Delivery Order.

8.4.1 Quality Control Management

Ultimate responsibility for EODT field QC activities rests with the EODT Site Safety Officer. However, all project personnel are responsible for performing their QC functions as outlined in this section. As such, all project personnel must read and understand the requirements of this Section. Office QC activities, such as report preparation and project review, are the responsibility of the EODT Project Manager. All communications concerning this Delivery Order to or from the USACE will be accomplished through the IT Project Manager.

8.4.2 Field Investigation Documentation

8.4.2.1 Daily Field Activity Records

Four (4) field activity logs will be maintained on a daily basis by EODT personnel for each field activity performed, including:

- **Site Activity Log**, which will include:

  - Staking and layout of grids and lanes
  - Investigative activities
  - Identification and removal activities
  - Hazardous chemical field screening activities
  - Hazardous chemical decontamination activities
  - UXO transportation activities
  - UXO disposal activities

- **Site Safety Log**, which will include:

  - PPE requirements and any changes to PPE requirements
  - All safety training and briefings
  - Visitor site specific training
  - Identified safety concerns and corrective action(s)
  - Exclusion Zone (EZ) entry and departure times for each individual and their accumulated time in EZ
  - Information regarding accidents and/or any safety violations

- **Quality Control Log**, which will include:

  - QC checks of all logs

  - Visual and instrumental QC checks of cleared areas

  - Daily calibration of instruments

  - QC checks of hazardous chemical screening and decontamination procedures

  - QC checks of UXO/OEW segregation procedures

  - QC checks of transportation and disposal procedures

  - Results of corporate QC Audits.

- **Ordnance Accountability Log**, which will include:

  - The below listed information regarding all UXO and inert ordnance items
  - Date, location, identification, condition and all associated hazards of the item
  - Document disposition from time of item location through final disposition.

All field log books will be bound with consecutively numbered pages and will be controlled by the EODT Site Supervisor. The requisite daily activity documentation will include:

- Date and recorder of field information
- Start and end time of work activities
- Visitors to work location
- Weather conditions
- Important phone calls
- Excavation equipment used (if required)
- UXO log, ordnance, inert ordnance, bulk explosives by type, condition, depth and location
- Changes from approved or planned work instructions

- Signature of the cognizant supervisor indicating concurrence with the information recorded.

8.4.2.2 Ordnance Identification and Accountability

All ordnance items located will be visually inspected and, to the extent possible, identified by a qualified UXO specialist. The technician will also, to the extent possible, identify the status of the item (e.g., misfire, unfired, dud) and any potential associated hazards (e.g., fragmentation, ejection, chemical). The identification, condition and associated potential hazards of each item will be verified by the Project Supervisor, who is responsible for maintaining accountability and traceability records for each ordnance item located. An Ordnance Accountability Log will be maintained by the Project Supervisor for this Delivery Order. The Ordnance Accountability Log will document ordnance disposition from the time of excavation through disposal or until release final disposition. At the completion of the field work, and prior to the submission for the Removal Report, the IT Project Manager will verify the completeness and accuracy of the Ordnance Accountability Log by comparison to Field Activity Logs, site working map(s) and ordnance disposal records.

8.4.2.3 Records of Inert Ordnance Items

Approximate locations and identification of inert ordnance items will also be documented in the Ordnance Accountability Log. Records of turn-in documentation will be developed using DD Form 1348-1 and instructions for completing this form, which are found in the Defense Utilization and Disposal Manual, Department of Defense (DOD) 4160.212-M.

8.4.2.4 Working Map

A working map(s) of the Summit Equipment & Supply site will be used to document ordnance locations during removal activities. As each ordnance item is located and identified the, Project Supervisor will record on the Working Map the location and corresponding log entry number in the Ordnance Accountability Log.

8.4.2.5 Quality Control Surveillances

QC surveillances/inspections will be conducted by either the EODT corporate Safety and QA/QC Manager or the Engineering Services Manager. These inspections will be conducted periodically (every 30 to 45 days) throughout project duration to verify that proper procedures and protocols are being followed. Field Surveillances will concentrate on sweep procedures,

proper documentation and checks of resulting data for completeness and accuracy. A final QC field surveillance will be conducted just prior to demobilization to ensure that all aspects of the field work have been completed per the scope of work.

8.5 Safety , Health and Emergency response Plant (SHERP)

The SHERP is presented in Appendix A to this Work Plan

NOTE: Appendix A only addresses UXO and Explosive Safety issues in an effort to reduce duplicate effort by IT and EODT. Should IT require additional input from EODT, please notify us immediately.

8.6 Personnel Responsibilities and Qualifications

EODT personnel assignments for the field work portion this project will be made once a start date has been determined, and their resumes will immediately be forwarded for concurrence and approval. Currently, Mr. C.M. Read is assigned as the Project Manager, Mr. H.B. Redmond, Jr. as the corporate Safety and QA/QC Manager and Mr. F.J. Czajkowski as the Site Supervisor. Their resumes are included in Appendix B to this Work Plan.

All EODT personnel assigned who will be assigned to this project are graduates of the DOD EOD School, Naval Ordnance Station, Indian Head, MD. EODT personnel are qualified and experienced in the utilization of MK 26 Foerster Ordnance Locators, Heli-Flux magnetometers, magnetic and cable locators, seismic acoustic locators, and are qualified to operate ground penetrating radars. All EODT personnel on this project have completed the OSHA training course for Hazardous Waste Site Workers in accordance with 29 CFR 1910.120. Qualification certificates are maintained on file at IT and EODT company offices. The responsibilities of the various positions are described in Tables 6-1 for EODT personnel.

TABLE 6-1
Description of EODT Personnel Responsibilities

EODT Title	Description of Responsibilities
Project Manager	Individual with overall responsibility for a particular contract, program or task order. Reports to the Operations Director of EOD Technology, Inc. Negotiates contract requirements with client, approves personnel and equipment resource requirements, approves all deliverables, evaluates potential problem areas and initiates corrective actions, and point of contact between clients Program manager and EODT.
Corporate Safety and QA/QC Manager	Master EOD Technician/UXO Supervisor with minimum of 15 years Military EOD experience and 10 years supervisory EOD experience. Responsible for the development of Safety and Health Plans and Quality Control Plans. Ensures that Site Safety Officer and Site QC Manager implement these plans, conducts periodic inspections/audits to ensure plans are adhered to, and reviews project reports. Reports to the President of EODT.
Site Supervisor	Master EOD Technician/UXO Supervisor with minimum of 15 years Military EOD experience and 10 years supervisory EOD experience. Develops Site Specific Work Plans, identifies personnel and equipment requirements, and directly supervises all daily activities of the field team. He is responsible for the successful completion of all field work within scope, budget and time requirements; early detection and identification of potential problem areas and instituting corrective measures; and preparation of all project reports. Reports to Program Manager.
Site Safety Officer/ QC Manager	Master EOD Technician/UXO Supervisor with minimum of 10 years Military EOD experience in a supervisory capacity. Responsible for implementation of all Site Safety/QC Plans, all on site training requirements, recommending changes for Level of PPE as site conditions warrant, notifying Site Supervisor of any potential safety problems and implementing safety related corrective actions, and ensuring that quality of work performed meets all requirements. Has "Stop Work" authority for safety reasons. Reports to the corporate Safety and QA/QC Manager.

Master EOD Technician (Level 2)/UXO Supervisor	Minimum of 15 years Military EOD experience with at least 10 years in a supervisory position. Performs on site EOD/UXO duties as directed by the Site Supervisor and may serve as a Team Leader.
Master EOD Technician (Level 1)/UXO Supervisor	Minimum of 10 years Military EOD with at least 5 years in a supervisory position. Performs on site EOD/UXO duties as directed by the Site Supervisor and may serve as a Team Leader.
Senior EOD Technician (Level 2)/UXO Technician	Minimum of 5 years Military EOD experience and 2 years civilian UXO experience. Performs EOD/UXO duties as directed by the Site Supervisor or assigned Team Leader.
Senior EOD Technician (Level 1)/UXO Technician	Minimum of 5 years Military EOD experience. Performs EOD/UXO duties as directed by the Site Supervisor or assigned Team Leader.
EOD Service Support Specialist	Non-EOD Technician. Trained in "Sweep" techniques and operation/maintenance of locating and heavy equipment.

(UXO-RELATED INFORMATION FOR INCLUSION IN THE SHERP)

Attachment 1

to

APPENDIX A

SAFETY CONCEPTS AND BASIC CONSIDERATIONS

FOR

UNEXPLODED ORDNANCE (UXO)

ATTACHMENT 1

SAFETY CONCEPTS AND BASIC CONSIDERATIONS FOR UNEXPLODED ORDNANCE (UXO)

1.0 INTRODUCTION

There are a variety of safety precautions, both general and specific, which relate to OEW operations. These related safety precautions should be consulted and complied with, as appropriate to the operation or situation. By their nature, OEW operations are hazardous and certain calculated risks must be taken. Ingenuity, judgement, common sense and, above all, the mastery of EOD techniques and observance of EOD principles will determine success or failure. The below listed safety precautions are general in nature and are applicable to EOD/OEW operations involving ordnance.

2.0 GENERAL SAFETY PRECAUTIONS:

The following general safety precautions are applicable to OEW-related operations:

a. During EOD/OEW operations, only the minimum number of personnel essential to the operation should be present in the vicinity. EOD/OEW operations will normally be conducted by a minimum of two EOD technicians.

b. Do not allow unauthorized or unnecessary personnel to be present in the vicinity of possible hazardous explosive ordnance or when EOD/OEW operations are pending or in progress.

c. Personnel working with explosives and explosive ordnance shall comply with the following:

   1) Do not carry fire or spark-producing devices on site.

   2) Do not smoke, except in authorized areas.

   3) Do not have fires for heating or cooking, except in authorized areas.

   4) Do not conduct operations without approved Standard Operating Procedures (SOPs) and proper supervision.

   5) Do not become careless by reason of familiarity with ammunition.

6) Do not conduct explosive operations during electrical, sand, dust or snow storms.

7) Do not conduct explosive operations between sunset and dawn.

d. If a chemical UXO is encountered, the two-man concept is immediately implemented and notification shall be made through proper channels. EODT personnel shall immediately establish and maintain security of the UXO and the immediate vicinity until military authorities arrive and assume custody.

e. In dealing with an unknown type of ordnance, past experience, conditions of delivery, and probable or obvious targets will usually provide a clue as to type. However, considerations should include:

1) The most hazardous type it could be.

2) The most hazardous features it could contain.

3) The most hazardous condition it could be in.

f. Make every effort to identify the ordnance before performing any procedures. However, do not move the item to inspect it unless absolutely necessary and then move it using remote means. Remotely conduct any initial movement or jarring of a possibly hazardous munition or item.

g. Care must be observed in probing for, moving and handling UXO. Do not depress plungers, turn vanes or rotate spindles, levers, setting rings or other fittings on the ordnance.

h. Do not disassemble or subject any UXO to unnecessary movement, except in response to a valid requirement.

i. Personnel preparing to work on possible live ordnance that could contain electrical elements shall momentarily ground themselves before touching the ordnance.

j. The site shall be surveyed for electromagnetic radiation (EMR) radio frequency (RF) transmitters and appropriate action taken. Safe distances have been established for specific transmitter power and transmitters. These distances shall be made available to the contractor by CEHND-ED-SY, upon request. Additionally, EODT maintains Naval OP 3565, Electromagnetic Radiation Hazards (Hazards to Ordnance), on file in the corporate technical library.

k. Do not take magnetic tools or equipment near an unidentified object until it can be absolutely determined that the object is not magnetically functioned.

l. Do not wear outer or undergarments made of wool, silk or synthetic textiles such as rayon and nylon while working on UXO. These materials can generate sufficient static charge to ignite fuels or initiate explosives. Any person coming in contact with a UXO shall ground himself prior to touching electronic explosive devices (EEDs). This must be done to discharge any electrostatic charge accumulation from the body.

m. Consider explosive ordnance, which has been exposed to fire, as extremely hazardous. Chemical and physical changes may have occurred making it more sensitive.

n. Avoid inhaling and skin contact with smoke, fumes and vapors of explosives and related hazardous materials. Do not get in the smoke of burning explosives, including solid propellants. The smoke will penetrate ordinary clothing. Sever dermatitis, as well as eye and respiratory irritation, can result. If the smoke cannot be avoided, wear protective clothing and a self-contained breathing apparatus. Wear gloves and wash thoroughly with soap and water as soon as possible after handling toxic explosives and propellants.

o. Do not ingest any explosive material; most are poisonous if taken internally. Do not inhale the gaseous products of high explosive detonations (certain types of gases produced are poisonous).

p. Do not subject any explosive-loaded item of ordnance to shock or rough handling.

q. Protect explosive-loaded ordnance, and explosive-loaded components, from extremes of heat, including the direct rays of the sun.

r. Do not carry explosives, or explosive components, in pockets or elsewhere on the body, unless in special containers designed and approved for this purpose.

s. Do not permit smoking, matches or other sources of fire or flame within 100 feet of an area in which explosives or explosive-loaded ordnance is being handled.

t. Exercise extreme caution in dealing with old, damaged and possibly deteriorated explosive-loaded ordnance. Certain explosives, notably picric acid and ammonium picrate, may react with metals, other explosives, air or chemicals in the earth to produce extremely sensitive explosive compounds.

u. Do not rely on the color coding of UXO for positive identification of contents. Munitions having none, or incomplete/improper color coding have been encountered.

v. Assume a practice UXO contains a live charge until it can be determined otherwise.

w. Avoid the area forward of the nose of a munition until it can be determined that the item is not a shaped charge, High Explosive Anti-Tank (HEAT) UXO. The explosive jet can be fatal to great distances forward of the longitudinal axis of the item.

x. Assume any shaped charge munition to contain a piezoelectric (PZ), graze-sensitive fusing system until the fusing is otherwise identified. A PZ graze-sensitive fuze is extremely sensitive. It can fire at the slightest physical change, and may remain hazardous for an indefinite period of time.

y. Anticipate a detonation when burning any explosive. Certain low explosives, such as black powder, casting powders and solid propellants having a nitrogen content can react under certain conditions with a violence approaching a high-order detonation.

z. Civil War projectiles shall be treated as any other UXO, especially projectiles with uncut Bormann time fuzes and projectiles with percussion fuzes. Some of these fuzes have brass construction and have generally provided a watertight seal, even if they have been in the ground over 100 years. No projectile should be exposed to excess heat. The ignition point of black powder, used as a bursting charge in all Civil War projectiles, is 457 degrees Fahrenheit. Under no circumstances should an attempt be made to drill a hole in a projectile, either through the fuze or the body of the projectile.

3.0 EXCAVATION OF UNEXPLODED ORDNANCE

a. The usual method for uncovering buried UXO is to excavate by hand. Hand excavation is the most reliable method for uncovering UXO, but unless the UXO is very near the surface, hand excavation exposes more people to the hazard of detonation for a longer period of time than any other method.

b. Earth moving machinery (EMM) may be used to excavate for buried UXO, if the UXO is estimated to be deeper than 12 inches. EMM shall not be used to excavate within 12 inches of a UXO. When excavation gets within 12 inches of a UXO, hand excavation shall be used to uncover the UXO.

c. Excavation shall comply with the provisions of 29 CFR 1926 subpart P.

d. Perform initial movement of an embedded projectile remotely. First movement of an embedded projectile may cause fuze functioning. During this remote operation, precautions shall be taken for a high-order detonation.

e. UXO which penetrates the earth to a depth where the force of the explosion is not enough to rupture the earth's surface forms an underground cavity called a camouflet. Camouflets will be filled with the end product of the explosion, carbon monoxide gas. Camouflet detection and precautions must be considered if records search indicates the site was used as an impact area.

4.0 SAFETY PRECAUTIONS FOR FUZES

a. Before any movement of a UXO, the fuze condition must be ascertained. If the condition is questionable, consider the fuze armed. The fuze is considered the most hazardous component of UXO, regardless of type of condition.

b. Observe magnetic and acoustic precautions when approaching an unidentified fuze.

c. Avoid any unnecessary movement of an armed fuze.

d. Perform any initial movement of an armed fuze remotely.

e. Do not disturb a PZ firing crystal in any way.

f. When transporting a possible armed fuze, position the fuze in the most neutral orientation possible.

g. Do not subject a mechanical time fuze to any unnecessary movement.

h. Do not attempt to reset an adjustable clockwork fuze.

i. Do not turn off or turn on any source of radio frequency or any rapidly alternating electric current in the vicinity of a known or suspected proximity (VT) fuze.

j. Do not approach a VT fuze until the prescribed waiting period has elapsed, and then approach from the rear.

k. Keep a fuze which has been removed from ordnance separated from other explosive ordnance.

5.0 PRECAUTIONS FOR PYROTECHNICS AND INCENDIARY MUNITIONS

a. Protect the eyes by number-6-shade welder's goggles, or equivalent, if visual exposure to burning pyrotechnic material is probable.

b. Use sand to smother incendiary fires. Water may induce a violent reaction or be completely ineffective.

c. Bury the incendiary-loaded munitions in sand when transporting. This will smother any fire which may start until other corrective action can be taken.

d. Anticipate a high-order detonation when burning pyrotechnic or incendiary-loaded ordnance.

e. Do not approach a pyrotechnic or incendiary ordnance burn for 30 minutes after cessation of burning.

f. Do not attempt to dispose of photo-flash munitions by burning.

g. Do not look directly at photo-flash munitions during disposal operations.

h. Photo-flash powder is extremely sensitive, as it contains black powder and aluminum.

i. Use oil or WD-40 to desensitize spilled photo-flash powder.

j. Do not manually remove fuzes from munitions containing photo-flash powder. Photo-flash powder generates hydrogen gas when exposed to moisture.

k. Expended pyrotechnic/practice devices may contain red/white phosphorus residue. Due to incomplete combustion, red and white phosphorus may be present and re-ignite spontaneously if subjected to friction.

l. Extra care shall be taken when uncovering a buried UXO if a records search indicated white phosphorus (WP) munitions were fired or destroyed in the area. A buried WP munition may be damaged and when exposed to air, may start burning and detonate. An ample supply of water and mud shall be immediately available if excavation reveals a WP UXO. Appropriate protective equipment and first aid shall also be immediately available.

m. Do not approach a smoking WP UXO. Burning WP may detonate the burster or dispersal explosive charge at any time.

n. Do not transport a WP munition, unless it is immersed in water, mud or wet sand.

o. WP UXO shall not be detonated into the ground. The UXO shall be counter-charged on the bottom-center-line.

6.0 SAFETY PRECAUTIONS FOR GROUND-LAUNCHED AND EMPLOYED MUNITIONS

a. All munitions that have been fired, launched, thrown, placed, etc., will be considered armed.

b. Permit only one man at a time to work on a mine.

c. Consider an emplaced land mine armed until proven otherwise. Many training mines contain firing indicator charges capable of inflicting serious injury.

d. Exercise care with wooden mines that have been buried for a long time. Because of soil conditions, the wood deteriorates and the slightest inadvertent pressure on top may initiate the fuze.

e. Probe and examine carefully the ground around a mine before starting to work on it.

f. Be constantly on the lookout for booby traps.

g. Before lifting a mine, neutralize all fuzes and remove the mine remotely.

h. Always assume a mine to be protected by other mines, anti-lift devices and other booby traps.

i. Do not cut or pull a taut wire, never pull a slack one; look at both ends of a wire before you touch it.

j. Approach and work on unfired rocket and missile motors from the side. Do not expose electrically-fired rocket motors within 150 feet of any exposed electronic transmitting equipment or exposed antenna leads.

7.0 EODT SITE SAFETY AND HEALTH OFFICER

The Site Safety and Health Officer (SSHO) for this project is:

(To Be Determined)

EOD Technology Inc. (EODT)
111 Robertsville Road
Oak Ridge, TN 37830

Mr._____ has over ___ years of explosive safety training. He is a Master Explosive Ordnance Disposal (EOD) Technician and a graduate of the U.S.Army Chemical School, Redstone, Alabama, and Naval Explosive Ordnance Disposal School, Indian Head, Maryland. He is certified in Explosive Hazard Control and has completed the OSHA training requirements for Hazardous Waste Site Workers and Supervisors Training in accordance with 29 CFR 1910.120. He is also first aid and Cardiopulmonary Resuscitation (CPR) certified.

The SSHO has the following responsibilities:

- Assist in the development of the SHERP
- Coordination with the CIH
- Implementation and enforcement of the SHERP
- Conducting daily safety briefs
- Training of employees in site specific hazards
- Specify proper level of Personal Protective Equipment (PPE)
- Develop additional H&S procedures, as required.

8.0 TASK DESCRIPTIONS

- Conduct a surface clearance and collect all UXO, inert ordnance, ordnance related scrap and any explosive residue encountered.

- All encountered UXO, to include pieces of explosive residue, shall be positively identified prior to disposal or turn in the Defense Re-utilization and Marketing Office (DRMO).

- UXO encountered shall be identified and condition determined. If UXO is considered safe to move, it shall be removed, screened for hazardous chemical contamination (and decontaminate if necessary) and then placed in a locked containers within the secure area, pending transportation to Ravenna and disposal.

- If an encountered UXO is suspected of containing a toxic chemical agent, all operations shall cease, the UXO site secured by two (2) UXO personnel, and the contracting officer notified, who will in turn request EOD support from the nearest Army EOD detachment.

- Excavation to gain access to subsurface UXO (if required) shall not exceed a depth of 6 feet.
- Should any explosives be recovered, they will be placed in authorized, non-sparking, 2-man portable, shipping containers and prepared for off site shipment and disposal by EODT. The recovered explosive shall be packed and shipped in water unless it can be positively identified as TNT.
- All access holes and detonation pits shall be filled upon conclusion of procedures.
- Provide daily and weekly safety training of all site personnel.
- Assist in collecting and tabulating data.

9.0 HAZARD IDENTIFICATION AND RISK ASSESSMENT

9.1 Hazard Identification

Physical hazards expected to be encountered in conducting UXO and OEW clearance operations are uneven terrain, unsure footing, debris, sharp edges on salvage materials and tick bites. UXO/OEW hazards expected to be encountered are various calibers and types of ammunition from 22-caliber to 8-inch projectiles, artillery and bomb fuzes.

9.2 Risk Assessment

Hazards identified in paragraph 3.1 have the potential to cause death or serious harm. The hazards presented by UXO have the potential to kill or cause serious injury if improperly handled. UXO operations are inherently dangerous and require strict adherence to safe practices, safety procedures, and positive control of personnel. Due to the variety of ordnance items that may be encountered on this site, the potential for hazardous chemicals, and the varying terrain and salvage debris conditions in which UXO can be found, all site workers must be vigilant in identifying hazards in the work place and bringing them to the attention of supervisory personnel. As additional hazards are identified, protective measures will be implemented.

10.0 TRAINING

10.1 General

All personnel assigned to or regularly entering areas of the site beyond the support zone will have received the appropriate training. Additionally, all employees handling UXO will be graduates of the Naval Explosive Ordnance Disposal School, Indian Head, Maryland. In accordance with 29 CFR 1910.120, applicable training shall include the following:

- Basic Safety Training - This course stresses the fundamentals of safety, including the causes and prevention of slip, trip and fall hazards; confined space entry; heat stress illness; and prevention.

- Hazards and Protection - This course deals with the identification, recognition, and safe work practices with toxic materials. The use and limitations of applicable protective clothing, respirators, and decontamination procedures. A respirator fit test is provided to each employee attending the course. General ordnance/explosive related identification and safety precautions and practices will be addressed.

- First Aid and CPR - At least 1 EODT employee will have completed the standard Red Cross First-Aid and CPR courses.

- Site Specific Safety Training - This training session covers the mandates of the project SHERP. In particular, this stresses emergency response procedures and will discuss the physical, chemical and UXO/OEW hazards of the site.

- H&S Programs - The SHERP for this site will be discussed in detail.

10.2 Tailgate Safety Meetings

Prior to commencing work on site, each employee will be given a safety brief by the EODT Site Safety Officer that identifies potential hazards and risks that may be encountered. Additional training in the use of safety equipment, emergency medical procedures, emergency assistance notification procedures, accident prevention, discussion of the work plan, and a site orientation by employees will serve to insure that accomplishment of the work project can be carried out in a safe and effective manner. At the conclusion of each day's work, a debrief for all employees will be held and the day's work will be discussed to determine if changes are warranted before commencing the next day's work.

Records of all training periods documenting date, attendance, and topics will be maintained as part of the project documents.

10.3 Visitor Training

Training for visitors and other individuals seeking access to the work site must be provided to ensure that potential hazards and risks are identified. Visitors and other individuals seeking access to the work site will receive a safety briefing by the SSHO and EODT Site Safety Officer that identifies their safety-related responsibilities. This briefing (typically 5 to 10 minutes in length) will include:

- Location of potential hazards and risks
- Required PPE
- Areas of the site that visitors are restricted from
- Discussion of the site evacuation plan and emergency procedures
- Other topics as deemed necessary.

11.0 SITE CONTROL AND LAYOUT

Within the "EZ", the boundaries of each 50-foot-by-50-foot area to be cleared will be clearly identified to prevent any accidental intrusion by personnel not immediately involved in UXO/OEW clearance operations. Once each of these areas has been cleared of surface UXO/OEW, the IT Site Engineer will be notified that the specific area has been visually swept and cleared, and that other site workers can enter the area. EODT UXO personnel will be present on the SES site whenever anyone is working in these areas, and they will be available to assist in the event that additional suspected UXO/OEW is located during salvage removal operations.

12.0 UXO SAFETY PRACTICES

12.1 General

There is no "safe" procedure for dealing with UXO, merely procedures which are considered least dangerous. However, maximum safety in any UXO operation can be achieved through

adherence to applicable safety precautions and a preplanned approach. All personnel engaged in UXO operations shall be thoroughly trained in explosive safety and be capable of recognizing hazardous explosive exposures. Safety must become a firmly established habit when working with UXO.

12.2 Personnel

EODT employees conducting Render Safe Procedures (RSP), removal actions or disposing of UXO must be graduates of the Basic Explosive Ordnance Disposal Course, Naval Explosive Ordnance Disposal School, Indian Head, Maryland.

12.3 Specific UXO Safety Precautions

NOTE: REFER TO ATTACHMENT 1 - SAFETY CONCEPTS AND BASIC CONSIDERATIONS FOR UNEXPLODED ORDNANCE (UXO)

12.4 UXO Response

If a UXO is encountered, it shall be positively identified and a determination of its condition made. If the UXO is considered safe to move, it shall be removed, decontaminated (if necessary) and placed in the secured staging area, pending transportation to Ravenna, OH and disposal by EODT personnel.

If a chemical UXO is encountered, the 2-man concept is immediately implemented and notification shall be made through proper channels. EODT personnel shall immediately establish and maintain security of the UXO and the immediate vicinity until military authorities arrive and assume custody.