FINAL WORK PLAN

For the

OE ENGINEERING REMOVAL ACTION
FORMER CAMP HERO
MONTAUK, NEW YORK

Prepared for:

U.S. ARMY
ENGINEERING & SUPPORT CENTER,
HUNTSVILLE, ALABAMA

Geographical District
U.S. Army District, New York

Contract: DACA87-00-D-0037
Task Order: 0024
Project Number: C2NY002404

Prepared by:

EODT
EOD TECHNOLOGY, INC.

2229 Old Highway 95
Lenoir City, TN 37771

June 2003

EODT
EOD TECHNOLOGY, INC.

P.O. Box 24173, Knoxville, Tennessee 37933-2173
(865) 988-6063, Fax (865) 988-6067
e-mail: eodt@eodt.com

June 27, 2003

U.S. Army Engineering and Support Center, Huntsville
Attn: CEHNC-CT-E (Ms. Lydia Tadesse)
P. O. Box 1600 (4820 University Square)
Huntsville, Al 35807-4301

Re: Contract No. DACA87-00-D-0037; Task Order 0024 – OE Removal Action – Former Camp Hero, Montauk, NY - Transmission of Final Work Plan

EODT Letter No: 0631-0024-008

Dear Ms. Tadesse:

EOD Technology, Inc. (EODT) is pleased to submit the final Work Plan for Former Camp Hero. For convenience, the documents themselves have been shipped directly to Jerry Kresge.

If you have any questions, please don't hesitate to give me a call. EODT appreciates the opportunity to be of continued support to the U. S. Army Engineering and Support Center, Huntsville.

Yours very truly,

EOD TECHNOLOGY, INC.

William M. Pearse
Project Manager

Enclosures as noted.

0631-wmp

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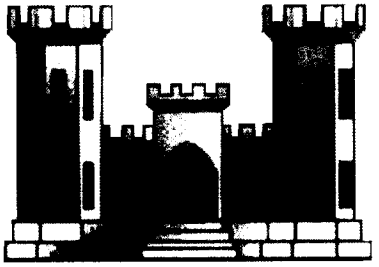

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William Pearse, Project Manager

Dr. Charles C. Phillips, Corporate Health and Safety Manager

Stephen C. Voland, Corporate Quality Control Manager

June 2003

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LIST OF ACRONYMS AND ABBREVIATIONS

ACGIH	American Conference of Government Industrial Hygienists
AEDA	Ammunition, Explosives, and Dangerous Articles
ALARA	as low as reasonably achievable
ALS	Advance Life Support
ANSI	American National Standards Institute
APUV	all purpose utility vehicle
AR	Army Regulations
ASP	Ammunition Supply Point
ASSHP	Abbreviated Site Safety and Health Plan
BATF	Bureau of Alcohol, Tobacco and Firearms
BBP	Bloodborne pathogens
BIP	blown in place
CADD	Computer Aided Design and Drafting
CEHNC	U.S. Army Engineering and Support Center, Huntsville
CERCLA	Comprehensive Environment Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CLIN	Contract line item number
CMIR	Conventional Munitions Impact Range
COC	chain of command
COR	Contracting Officer's representative
CPR	cardiopulmonary resuscitation
CSHP	Corporate Safety and Health Program
CSIT	Corporate Safety Inspection Team
CTHA	Certification of Task Hazard Assessment
CWM	Chemical Warfare Materiel
DA	Department of the Army
dBA	decibels-A weighted
DID	data item description
DOD	Department of Defense
DOL	Department of Labor
DQO	Data Quality Objectives
DRMO	Defense Reutilization and Materials Office

EC	Emergency Coordinator
EM	Engineering Manual
EMM	earth moving machinery
EMS	Emergency Medical System
EMT	Emergency Medical Technician
EOD	explosive ordnance disposal
EODT	EOD Technology, Inc.
EPA	Environmental Protection Agency
EP	Engineering Pamphlet
EPP	Environmental Protection Plan
ESS	Explosive Safety Submission
EZ	Exclusion Zone
GFCI	ground fault circuit interrupter
GFE	government furnished equipment
GPO	Geophysical Prove-Out
GIS	geographic information system
GS&M	geophysical surveying and mapping
GSI	geophysical survey instrument
HARC	historical, archeological, and cultural
HAZCOM	Hazard Communication
HAZWOPER	Hazardous Waste Operations and Emergency Response
HE	high explosives
HEAT	High Explosive Anti-tank
HTML	hypertext markup language
HTRW	hazardous toxic and radiological waste
IAW	in accordance with
IDLH	immediately dangerous to life and health
KO	Contracting Officer
LAW	Light Anti-Tank Weapon
LO/TO	Lockout/Tagout
MPM	Most Probable Munition
MSD	minimum separation distance
MSDS	Material Safety Data Sheet
MSP	Medical Surveillance Program
NC/CA	Nonconformance/Corrective Action

NCP	National Contingency Plan
NEW	Net Explosive Weight
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Technology.
NOFA	No Further Action
NTP	Notice to proceed
OE	Ordnance and Explosives
OERA	Ordnance and Explosives Risk Assessment
ORS	ordnance related scrap
OSHA	Occupational Safety and Health Administration
OSHM	Occupational Safety and Health Manager
OSIC	On-Scene-Incident-Commander
PM	Project Manager
PMP	Property Management Plan
PO	Purchase Order
POW	prisoner of war
PPE	personal protective equipment
QA	quality assurance
QASAS	Quality Assurance Specialist (Ammunition Surveillance)
QC	quality control
QCM	QC Manager
QCP	QC Plan
QCS	Quality Control Specialist
QP	Quality Program
RA	Removal Action
RCWM	Recovered Chemical Warfare Materiel
RR	range residue
S&H	Safety & Health
SOP	Standard Operating Procedure
SOW	Scope of Work
SSHP	Site Safety and Health Plan
STD	standard
SUXOS	Senior UXO Supervisor
SWP	Safe Work Practices
TCRA	time critical removal action

TEU	Technical Escort Unit
TLV	Threshold Limit Value
TM	Technical Manual
TPP	Technical Project Planning
UAC	Urban Assault Course
UL	Underwriter's Laboratory
USA	U.S. Army
USACE	U. S. Army Corps of Engineers
USAF	U.S. Air Force
USDA	U.S. Department of Agriculture
USFS	U.S. Forestry Service
UV	ultraviolet
UXO	unexploded ordnance
UXOQCS	UXO Quality Control Specialist
UXOSO	UXO Safety Officer
UXOSO/QCS	UXO Safety Officer/Quality Control Specialist
UXOT2	UXO Technician II
UXOT3	UXO Technician III
VHA	Vehicle Holding Area
WA	weather and atmosphere
WBGT	wet-bulb, globe temperature
WDCMP	Work Data and Cost Management Plan
WP	Work Plan
WZ	work zone

CHAPTER 1: INTRODUCTION

1.1 GENERAL INFORMATION

1.1.1 Project Authorization and Background

This Work Plan (WP), with its associated appendices, describes the procedures, sequence, and resources that EOD Technology, Inc. (EODT) will utilize while conducting the Ordnance and Explosives (OE) Engineering Removal Action at Former Camp Hero, Montauk, New York. Authorization for performance of this work is contained in Task Order No. 0024, under Contract DACA87-00-D-0037, which was issued by the U.S. Army Engineering and Support Center (CEHNC), Huntsville, Alabama, on 14 March 2003.

1.1.2 General Statement of Work

EODT will perform a removal action of ordnance and explosives (OE) at the Former Camp Hero. EODT will safely locate, identify, and dispose of all OE material and OE-related scrap in Area H, an upland area comprising approximately six (6) acres, and Revised Area K, a nearshore/beach area comprising approximately nine (9) acres. Required removal depths vary, and are defined as eleven (11) times the diameter of the specific OE object, up to a depth of 4 feet below ground surface (bgs). All OE scrap will be inspected, collected, and transported to an offsite foundry or smelter for permanent disposal.

1.1.3 Objective

The project objective is to clear the site (Area H and revised Area K) in conformance with quality acceptance criteria in a manner which minimizes impacts to the local land use (recreation) and the environment. Former Camp Hero is located within the Montauk State Park Complex, which supports a wide variety of recreational uses from May through November. The objective of this WP is to delineate the management structure, operational plan, technical approach, safety considerations, and environmental concerns that EODT will utilize in completing the OE Removal Action. This WP encompasses all aspects of the work to be conducted at Former Camp Hero under Task Order 0024 and includes all of the requirements stated in the SOW. All site activities will be conducted IAW this plan, and any deviation from this plan will require the prior approval of both the EODT Project Manager (PM) and CEHNC.

1.1.4 Changes to the Work Plan

It is recognized that circumstances will arise which may necessitate 'on-the-fly' adjustments to optimize the removal effort while maintaining required safety margins. Accordingly, the WP has been written in a fashion that minimizes the need for revision which may be caused by these field adjustments. The text, therefore, is not literal or overly prescriptive with respect to every

operational or geographical detail, but does set forth the operating and coordination procedures which will be applied in making project decisions.

In the event that unforeseen circumstances do arise that could result in a modification of the WP, the following procedures will be followed:

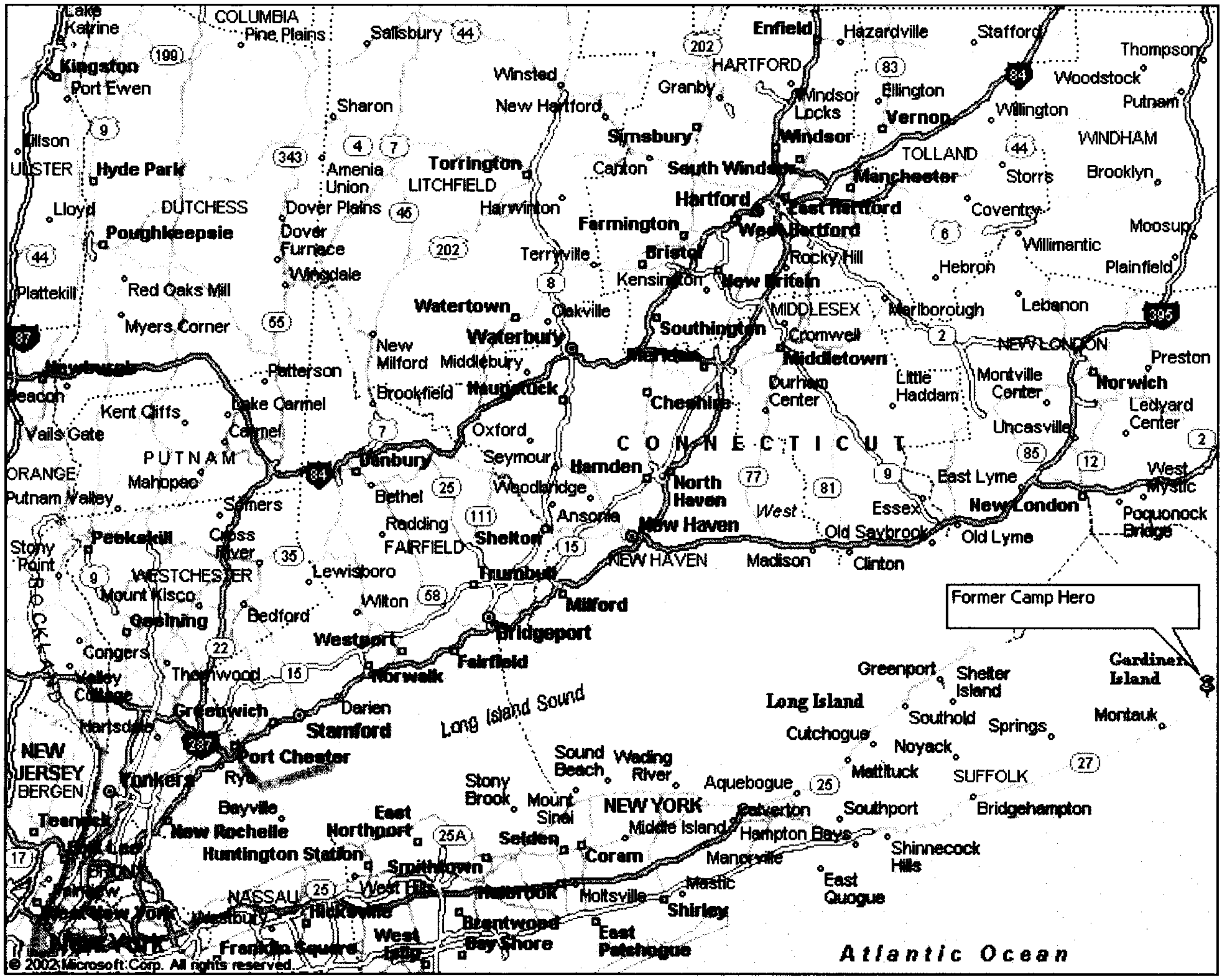
- The Senior UXO Supervisor (SUXOS) will immediately notify the on-site CEHNC OE Safety Specialist (OSS) and the EODT PM of any recommended operational changes and the rationale for these changes. The recommended changes will initially be conveyed verbally. At this time, the EODT PM and CEHNC TM, in consultation with the SUXOS and OSS, will determine whether a WP revision is required.
- In the event that a revision to the WP is required, the task(s) affected by the change will be suspended until written procedures are approved by CEHNC, unless directed otherwise by the CEHNC Contracting Officer.
- The EODT PM, in conjunction with the SUXOS and UXO Safety Officer (UXOSO) and UXO Quality Control Specialist (UXOQCS), as appropriate, will develop the WP changes in conjunction with the CEHNC PM, and submit them to the Contracting Officer for approval.
- Upon approval of any change(s), the changes will be incorporated into the WP, and site personnel will be briefed prior to implementation.

The WP has been divided into Chapters, Appendices, and Attachments, as detailed in Data Item Description (DID) OE-005-01.01. In addition, a Table of Contents and a list of Acronyms appear in the front of the document for ease of use and location of pertinent chapters.

1.2 SITE LOCATION

The former Camp Hero, consisting of 468.69 acres, is located on the extreme eastern tip of the south fork of Long Island, New York, approximately 5 miles east of the Village of Montauk (See Figure 1-1). The Camp is bounded by Montauk Highway (Route 27) to the north, the Atlantic Ocean to the south, Montauk Point State Park to the east, and an undeveloped nature preserve owned by the state to the west. Main access to the site is from Route 27; the project site itself is accessed via park roads. The Camp is located in Suffolk County, NY. A general layout map of the Former Camp Hero is provided on Figures B-1 through B-5 in Appendix B.

Figure 1-1
Site Location Map



1.3 SITE HISTORY

1.3.1 Pre-WWI

Military site history at the former Camp Hero begins well before the World War I era. Revolutionary War and War of 1812 American and British warships reportedly used the "Montauk Bluffs" for firing practice with cannons. Teddy Roosevelt and his Rough Riders, part of an estimated 29,500 men force returning from the Cuba, Puerto Rico, and Florida campaigns of the Spanish American War in 1898, camped in the Fort Pond Bay area of Montauk. Their camp was called Camp Wikoff and served as a quarantine station for these returning soldiers. Camp Wikoff was active for only a few months.

1.3.2 WWI - WWII

Between WWI and WWII, a Navy observation post housing two reconnaissance blimps were stationed at a hangar adjacent to the current Montauk Tower, and a number of oceangoing seaplanes were positioned at a Naval Base on Fort Pond Bay. From about 1921 until around 1923, thousands of soldiers from Regular Army, National Guard, and Citizen Military Training Corps Field Artillery units camped and trained in the Montauk area. A campsite on the east side of Fort Pond Bay, presumably named Camp Walsh, was chosen to accommodate the training units. From 1936 through the 1970s, Army Air Corps planes conducted bombing target practice on an island off of Montauk Point known as Gardiner's Point. This island also contained an abandoned Spanish American War Fort known as Fort Tyler. In 1942, the Department of the Navy built a facility on Fort Pond Bay to develop and test torpedo propulsion systems. This facility remained in existence until the end of WWII.

1.3.3 WWII

The former Camp Hero was established in early 1942 as a Coastal Defense Installation to defend the approaches to New York and was named in honor of Major General Andrew Hero. Three self sufficient batteries (Battery 112, 113, and 216) and supporting facilities were constructed which included barracks, mess halls, hospital facilities, a motor repair shop, a recreation facility, sentry boxes, and water supply and sewage facilities. A total of 600 enlisted men and 37 officers were stationed at the Camp. Battery 216 contained two M1903A2 6-inch shielded guns that were delivered to the battery in January 1943. Battery 113 (also known as Battery Dunn) consisted of two Navy MKIIM1 16-inch casemated guns that were completed on June 5, 1943. The guns of Battery 112 were identical to Battery 113 and were completed on January 12, 1944. Additionally, 105mm weapons and .50-caliber antiaircraft weapon platoons were assigned to protect the Camp from air attack. The Camp's weaponry was periodically fired to practice over water but was never fired as a result of an act of hostility.

1.3.4 Post WWII

The Camp was placed on inactive status on July 31, 1947 and ultimately declared surplus by the Department of the Army on December 31, 1949. Simultaneously a portion of the former Camp Hero lands was also transferred to the Department of the Air Force for an aircraft control and warning station. On January 24, 1951 the former Camp Hero was withdrawn from surplus and designated for use as a firing range and field exercise area for antiaircraft artillery (AAA) from Fort Totten, NY. Arrangements were made for the permanent Army AAA cadre at the Camp. 90mm and quad .50 caliber antiaircraft artillery began firing exercises from firing positions established in the southern bluff overlooking the Atlantic Ocean. In 1952 the Air Force property was renamed the Montauk Air Force Station and was occupied by the 773rd Aircraft Control and Warning Squadron (ACWS). Training continued using 90mm and 120mm guns, 3.5-inch rockets, and .50 caliber guns until 1957. The facility was inactive until October 1958 when the 773rd ACWS was redesignated as the 773rd Radar Squadron with a new mission to provide surveillance data of air traffic in the area. In order to accomplish this mission, an advanced Specific Frequency Diversity Search Radar was built in late 1960. The facility was closed in 1982. Between 1974 and 1984 all site lands were transferred to State, Local, and other Federal agencies.

1.4 SITE TOPOGRAPHY

The entire project area land rises abruptly along the oceanfront and then gradually slopes northward. Several high points are in the area, and in general the land contour consists of numerous ridges and depressions. Most of the general topography drains into swamps, situated throughout the area. There is also approximately 5,500 feet of man-made drainage ditches on the site. The entire area, with the exception of the developed structures, roadways, oceanfront, and southern bluff area, is covered with a dense growth of scrub oak and brush. Oyster Pond is situated to the north of the former Camp Hero, and larger Lake Montauk is to the west.

1.5 SITE CLIMATE

The former Camp Hero is subjected to warm, humid summers and mild winters. The annual average rainfall is approximately 46 inches with rain evenly distributed throughout the calendar year. The former Camp Hero is sometimes subject to coastal tropical storms occurring in the late summer or fall capable of producing high winds and heavy rains. Average yearly snowfall is 23 inches, with most of the snow falling from December through March. The average annual temperature is 52.2 degrees F. The average winter months (December through February) temperature is 30.9 degrees F, and the average summer months (June through August) is 71.1 degrees F.

TABLE 1-1: SITE CLIMATE

MONTH	HIGH	LOW	PRECIPITATION
JANUARY	36	21	R: 3.7 - S: 6.7
FEBRUARY	38	22	R: 3.5 - S: 5.9
MARCH	46	31	R: 4.1 - S: 4.4
APRIL	57	40	R: 4.2 - S: 1.1
MAY	67	49	R: 3.9 - S: T
JUNE	75	59	R: 3.8 - S: 0
JULY	81	66	R: 3.5 - S: 0
AUGUST	81	65	R: 4.0 - S: 0
SEPTEMBER	73	60	R: 3.5 - S: 0
OCTOBER	63	46	R: 3.6 - S: 0
NOVEMBER	52	36	R: 4.2 - S: 0.9
DECEMBER	42	27	R: 4.1 - S: 3.7

CHAPTER 2: TECHNICAL MANAGEMENT PLAN

2.1 GENERAL

2.1.1 OE Operational Guidance, Regulations

This technical management plan is developed IAW CEHNC DID OE-005-02.01. It presents the approach and procedures that EODT will use to meet the objectives of the TO. Because the exact nature and sequence of the work will not be fully known until field activities commence, the Technical Management Plan is written in a manner that establishes operational and regulatory guidance, but defers to the daily Site Execution Team conferences (see Section 2.1.6) to set and maintain detailed operational procedures and work sequences.

2.1.2 Recovered Chemical Warfare Materiel Discovery

EODT does not anticipate encountering any Recovered Chemical Warfare Materiel (RCWM). In the event that RCWM is encountered, EODT personnel shall immediately secure the area, withdraw upwind from the work area, and notify the on-site OE Safety Specialist, the Huntsville Center Project Manager, and the Huntsville Center Safety Office. In the interim, EODT personnel will secure the site and place two UXO technicians in an upwind position with an unobstructed view of the suspect RCWM.

2.1.3 Special UXO Contingencies

Ordnance items found during excavations, on the surface, or in the target hulls that have been positively identified and classified as "acceptable to move" may be relocated and disposed of by detonation. If UXO that cannot be moved is encountered in the targets and range scrap, EODT will dispose of the UXO by "blow-in-place" (BIP) detonation. If UXO is located that cannot be identified, or requires an increase in the safety distances, EODT field personnel will stop work and will inform the OE Safety Specialist.

2.1.4 Summary of Technical Scope

EODT will locate, identify, and remove all OE material and OE-related scrap from two areas within the Former Camp Hero property: (1) Area H, a six-acre upland tract; and (2) Revised Area K, a nine-acre area along the shoreline. Revised Area K adjoins, and is downslope from, Area H. OE material will be removed up to a depth equal to eleven times the diameter of the item, but no deeper than four feet below ground surface. As summarized in Table 2-1, UXO operations at Camp Hero will be conducted utilizing one (1) SUXOS; one (1) 'dual-hatted' UXOSO/UXOQCS; and one field team consisting of a UXOT3 Team Lead and four (4) UXOT2's. Due to the limited scope and short duration of the field effort, no Field Office Administrator (FOA) will be needed.

2.1.4.1 Grid Size

The grid network will consist of 100 ft. x 100 ft. grids where possible.

2.1.4.2 Grid Layout

A network of grids will be established to delineate the search area in Area H and consist of 100 ft. x 100 ft. grids where possible. In the Revised Area K, the grids will be 100 ft. long with varying widths. In the Beach Zone (the area between the toe of the beach cliffs and the high tide mark) a subsurface clearance will be conducted. In the Boulder Zone (the area from the high tide mark to the low tide mark a surface clearance only will be conducted. Each grid will be assigned a unique alpha-numeric designation for tracking purposes.

2.1.4.3 Search Lane Width

Search lanes five feet wide or less will be established with a series of ropes, cones, or other marking systems, as determined by the SUXOS.

2.1.4.4 Tools and Techniques

UXO personnel will use the Schonstedt Magnetometer, Model GA-52 Cx to assist in surface searches and to conduct all subsurface searches. All searches will be performed within search lanes laid within a grid. Plastic pin flags may be used to mark subsurface anomalies prior to excavation. Subsurface anomalies will be excavated with shovels. Each anomaly located/detected will be excavated and identified unless the anomaly is deeper than 4 feet. In the event that the excavation reaches the clearance depth of 4 feet, EODT will document the location on the grid sheet in local coordinates (x-y-z) measured from the southwest corner of the grid. All UXO will be marked with crossed pin flags until detonated.

2.1.4.5 Detection System

The detection system EODT has selected to detect subsurface anomalies is based on the type of ordnance items expected at the site. These items are all ferrous metal, which a magnetometer can detect. EODT will bury an inert 105mm projectile at depths of 16 and 36-inches and an inert 3.5 inch rocket at depths of 16 and 38.5-inches, or metallic items similar in size, shape, and metallic signature, to test the detection capability of each magnetometer. Two test areas will be set up. One area will be on the bluff and one on the beach to reflect these different environments.

2.1.4.5.1 Local Geology

Former Camp Hero is located on an Island (Long Island) just off the coast of New York State in the Atlantic Ocean. The local geology consists of bedrock, loam, sand, and clay.

2.1.4.5.2 Local Topography

The topography at the site consists of hills, slopes, cliffs, beaches, and flat terrain.

2.1.4.5.3 Terrain Limitations

The face of the cliffs may present limitations for access and excavations. Excavations will only be performed on slopes where personnel can stand without hand contact for balance (generally <40° slope). EODT personnel will reach with the hand-held magnetometers as far up the cliff face as practicable to detect potential buried items. The clearance requirement and approach for any potential items located beneath the cliff face, such as could constitute a safety hazard due to cave-in from above, will be discussed with the CEHNC Onsite Safety Specialist (OSS) before any clearance actions are taken. Similarly, EODT personnel will maintain a 5-foot buffer from the edge of the cliffs when walking in Area H, so as to avoid causing any cave-ins. EODT personnel will reach as far as practicable to the edge of the cliff with the hand-held magnetometers to detect potential buried items, and confer with CEHNC OSS before any clearance actions are taken. In addition, the two acres of wetlands within Area H will not be investigated.

2.1.4.5.4 Soil Types

The soils of Suffolk County are a complex mixture of weathered mineral material, organic matter, water, air, and living organisms. The mineral material, mainly granite, is a result of glacial till deposited during the Wisconsin Age. The glacial till, together with the water or wind-deposited silt, clay, and sand, combined to form Suffolk County soils. Those soils are of the Bridgehampton, Escarpment, Montauk, Muck, Wallington, and Whitman series.

2.1.5 Change of Site Conditions

In the event that site conditions change due to weather, fire, etc., the SUXOS will notify the EODT PM who will notify the CEHNC TM.

2.1.6 Project Organization

2.1.6.1 Management Roles and Responsibilities

In addition to EODT personnel, the project team will consist of Mr. Jerry Kresge, the CEHNC Technical Manager. Table 2-1 depicts the overall on-site organization and shows the key EODT personnel assigned to the project. All EODT personnel assigned to this project meet the CEHNC training and experience requirements for the positions to which they are assigned. In addition to the project management responsibilities presented in this chapter, additional quality control (QC) and safety responsibilities have been given to specific key personnel, as detailed in the WP and Site Safety and Health Plan (SSHP) of this WP (see Appendix D). Resumes for key EODT personnel are presented in Appendix H.

2.1.6.1.1 Program Manager

Mr. William Pearse is the Program Manager for this project, and is responsible for the overall implementation of this project. He will manage the EODT resources needed for site operations. Mr. Pearse has over 20 years of technical and business management experience, and 10 years of management experience with U.S. Army Corps of Engineers (USACE) UXO projects.

2.1.6.1.2 Project Manager

Mr. William Pearse is the EODT Project Manager for this project. He has substantial experience in the management of U.S. Army Corps of Engineers (USACE) projects, with over 10 years experience managing OE projects. As the PM for this project, Mr. Pearse has the following management responsibilities:

- Managing the funding, manpower, and equipment necessary to conduct site operations
- Acting as the point of contact for CEHNC project personnel, and communicating with the CEHNC through the CEHNC TM
- Overseeing the overall performance of all EODT individuals assigned to the project
- Reviewing the SOW, and ensuring that the necessary elements are addressed in project plans
- Coordinating all contract and subcontract work, and controlling costs and schedules

2.1.6.1.3 Senior UXO Supervisor

The SUXOS will be responsible for the daily supervision of all site activities, which include the following:

- Managing the EODT on-site manpower and equipment necessary to conduct site operations
- Identifying problems, and coordinating with the EODT PM to institute corrective measures
- Ensuring that all site activities are conducted according to this WP and relevant CEHNC regulations
- Conducting on-site training sessions for EODT personnel
- Acting as the lead technical consultant for all on-site OE-related matters
- Interfacing with, and relaying concerns to, the CEHNC OE Safety Specialist

- Coordinating site operations and activities with range control on a daily basis

2.1.6.1.4 Occupational Safety and Health Manager (OSHM)

Dr. Charles Phillips, the EODT OSHM, is an American Board of Industrial Hygiene Certified Industrial Hygienist (CIH), with over 30 years of industrial hygiene, safety, and hazardous waste experience, including over eight years of experience with sites contaminated with OE. Dr. Phillips has completed the Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) site worker and supervisor training requirements IAW 29 CFR 1910.120.

2.1.6.1.5 UXO Safety Officer/Quality Control Specialist (UXOSO/QCS)

In addition to the safety and health responsibilities listed in Section 2 of the SSHP, the UXOSO/QCS is responsible for these activities:

- Issuing and/or approving "Stop Work" orders for safety and health reasons
- Conducting on-site safety-, health-, and ordnance-related training for EODT personnel
- Identifying and evaluating any known or potential safety problems that may interfere with, or interrupt, site operations and endanger site personnel
- Consulting with the SUXOS on identifying and implementing any necessary safety related corrective actions
- Coordinating with the SUXOS for the implementation of the safety requirements in the SSHP
- Ensuring that all site activities are conducted IAW this WP and all relevant federal, state, and local regulations

2.1.6.1.6 UXOSO/QCS Responsibilities

The UXOSO/QCS will be responsible for ensuring that all site operations are conducted IAW recognized performance criteria and will check all fieldwork prior to CEHNC quality assurance (QA) inspections. Chapter 10 of this WP contains a detailed listing of the quality control (QC) responsibilities, in addition to the performance criteria that will be met during this project.

2.1.6.1.7 Quality Control Manager

Mr. Stephen Voland is the Quality Control Manager (QCM) for this project. As the QCM, Mr. Voland has the responsibility for ensuring that all site deliverables meet the requirements of the SOW and the QC Plan (QCP) presented in Chapter 10 of this WP.

2.1.6.2 Functional Relationships

The EODT PM will interact with and report directly to Mr. Jerry Kresge, the CEHNC TM, for all matters concerning management and the SOW. All contract-related issues will be reported directly to the CEHNC Contracting Officer (KO) for consideration and/or approval. The EODT SUXOS will report directly to the EODT PM for all matters concerning site operations. EODT Team Leaders (UXOT3's) will report directly to the SUXOS, and the team members (UXOT2's or other field team personnel) will report directly to their respective UXOT3. Regarding safety issues, the UXOSO/QCS will have direct access to and will report functionally to the OSHM. For matters concerning quality control, the UXOSO/QCS will have direct access to and will report functionally to the EODT QCM. The UXOSO/QCS will report administratively to the SUXOS.

2.1.6.3 Composition and Management of Field Teams

2.1.6.3.1 UXO Sweep Teams

EODT will mobilize one (1) SUXOS, one (1) UXOSO/QCS, one (1) UXOT3, and four (4) UXOT2's to the site. Additional EODT personnel may be mobilized to, or demobilized from the project as production dictates. All UXO personnel will be approved by CEHNC prior to mobilization. Initial site mobilization will occur upon receipt of work plan approval and notice to proceed (NTP) from CEHNC.

2.1.6.3.2 Geophysical Teams

EODT will not use a specific Geophysical Team for this project.

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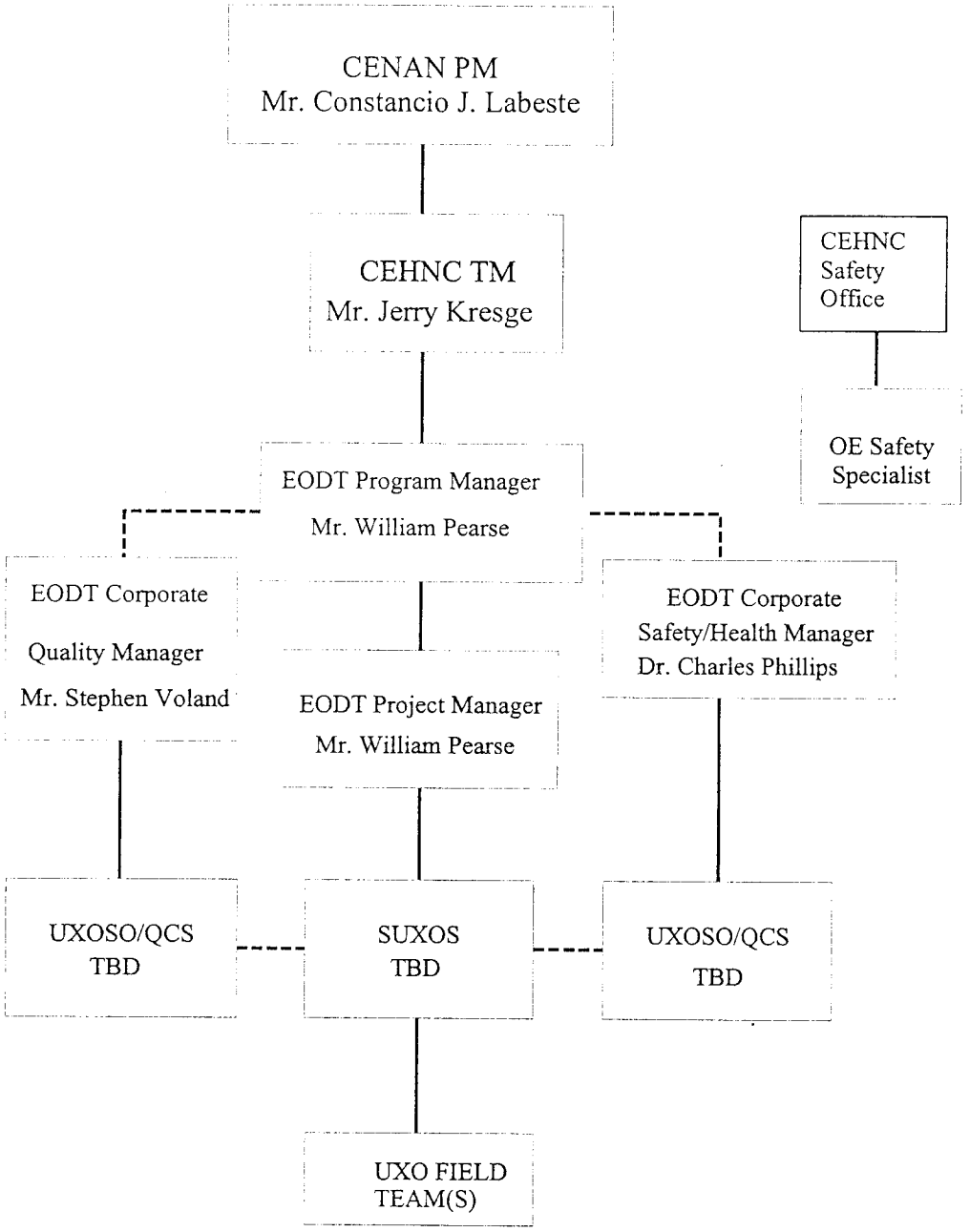
Figure 2-1
Project Organizational Chart



2.1.7 Mobilization Plans, Office Setup, and Preliminary Activities

2.1.7.1 Mobilization of Personnel

EODT will commence pre-mobilization upon written notification of WP approval, to include the "Notice to Proceed" from the Contracting Officer. EODT will schedule the arrival of the workforce in a manner designed to facilitate immediate productivity. All EODT personnel

mobilized to the site will meet the requirements for Occupational Safety and Health Administration (OSHA) hazardous waste operations training and medical surveillance requirements, as specified in the SSHP.

2.1.7.2 Equipment

All equipment will be inspected as it arrives to ensure that it is in proper working order. Any equipment found damaged or defective will be repaired or returned to the point of origin, and a replacement will be obtained. All instruments and equipment that require routine maintenance and/or calibration will be checked initially upon arrival, and then checked again prior to use each day. This system of checks ensures that the equipment is functioning properly. If an equipment check indicates that any piece of equipment is not operating correctly and field repair cannot be made, the equipment will be tagged and removed from service. A request for replacement equipment will be placed immediately. Replacement equipment will meet the same specifications for accuracy and precision as the equipment removed from service. As part of the initial equipment set-up and testing, EODT will also install and test its communication equipment, which includes the following:

- Hand-held portable radios used to maintain communications between field personnel
- Cellular telephones will be used as back-up communications

2.1.7.3 Field Office Set Up

Due to the short duration of this project EODT will not establish a field office. Administrative activities will be performed by the SUXOS in the field and from his hotel room

2.1.7.4 Site-specific Training

As part of the mobilization process, EODT will perform site-specific training for all on-site personnel assigned to this project. The purpose of this training is to ensure that all on-site personnel fully understand the operational procedures and methods to be used by EODT at the Camp Hero site. Individual responsibilities and safety and environmental concerns associated with operations will also be covered in the training. The SUXOS and the UXOSO/QCS will conduct training sessions that will include the topics identified below:

1. Field equipment operation, including the safety and health precautions, field inspection, and maintenance procedures that will be used
2. Interpretation of relevant sections of this WP and SSHP, as they relate to the tasks being performed
3. Personnel awareness of potential site and operational hazards associated with site-specific tasks and operations

4. Public relations to ensure that personnel do not make any public statements to the media without prior coordination with, and approval of, CEHNC
5. Environmental concerns and sensitivity, including endangered/threatened species and historical, archeological, and cultural (HARC) issues
6. Additional OSHA or CEHNC training, as required by the SSHP
   Identification features, hazards, and disposal methods of ordnance that may be encountered

2.1.7.5 Coordination with Local Agencies

During mobilization, the SUXOS and UXOSO/QCS will coordinate with local service providers and agencies to ensure the availability of resources that may be needed during the course of the project. Communication will be initiated and maintained with local organizations, to include:

- The CEHNC TM, for confirmation of priorities and schedules, and identification of changes to the SOW
- Local vendors and suppliers
- Local fire, medical, and police agencies

2.1.7.6 Optional Preliminary Activities

No additional preliminary activities are anticipated.

2.1.8 Site Preparation

2.1.8.1 Vegetation Removal and Brush Trimming

Vegetation removal and brush trimming will be performed only when necessary to complete search activities and anomaly excavations. No tress larger than 2-inches in diameter will be cut. Any brush trimming that does occur will be within Area H, and only after thorough coordination with the New York State Office of Parks, Recreation and Historic Preservation local Office. No burns will be conducted. EODT will meet with a park ranger to confer prior to beginning field activities to review EODT's procedures and ensure all field activities are have minimal affect on the park and visitors.

2.1.8.2 Geophysical Test Strip

Prior to any removal activities at Former Camp Hero, EODT will bury an inert 105mm projectile at depths of 16 and 36 inches and an inert 3.5 inch rocket at depths of 16 and 38.5 inches, or metallic item similar in size, shape, and metallic signature, to test the detection capability of a Schonstedt and Whites Magnetometer. Two instruments will be tested to determine which provides the best detection capability. Two test areas will be set up. One area will be on the

bluff and one on the beach to reflect these different environments. Any magnetometer that does not detect the buried item will not be used.

2.1.8.3 Surface Sweeps

EODT will conduct surface sweeps concurrently with subsurface removal actions.

2.1.9 Statistical Sampling

Statistical sampling is not applicable to this project.

2.1.10 Detailed Procedures for Field Activities

2.1.10.1 Reporting

UXO personnel are responsible for safely locating, identifying, and recording UXO/OE located, and for proper management and disposal of any OE items. OE scrap, if determined to present no explosive hazard, will be inspected, certified, and transported to a smelter for final disposition.

2.1.10.2 Disposition of OE

All UXO located will be positively identified. All UXO will be disposed of by detonation. UXO determined acceptable to move may be moved within the gird and consolidated with other UXO for detonation. This will be done IAW CEHNC *Procedures for Demolition of Multiple Rounds (Consolidated Shots) on Ordnance and Explosive Sites*, dated August 1998 (updated March 2000).

2.1.10.3 Responsibilities of UXO Personnel

All UXO personnel are responsible for safely locating, identifying, and recording UXO/OE located. The UXO team will be supervised by an UXOT3, who will ensure compliance with the WP and SSHP. Positive identification of UXO/OE will be confirmed by the UXOT3 supervising the team.

2.1.10.4 Overall Safety Precautions

EODT will conduct safety and operational briefings daily. In addition, the SUXOS or the UXOSO/QCS may hold a safety stand-down at any time that a deviation/degradation of safety warrants a complete review.

1) **Daily Tailgate Safety Briefing**: Each day, prior to the commencement of work, a tailgate safety briefing will be conducted for all site personnel by the UXOSO/QCS or SUXOS. A written record of this training will be maintained in the *EODT Safety Meeting Attendance Log* found in Appendix F. The briefing will focus on specific daily hazards, potential hazards, risks that

may be encountered, and the safety measures that should be used to eliminate or mitigate those hazards. Additionally, detailed specific training review of site-specific training topics (i.e., specific safety equipment, emergency medical procedures, accident forms, and notification procedures) will be included in this brief once a week. *The Certification of Task Hazard Assessment Form* (Appendix D, Attachment A) will be used to conduct daily briefings by individual team leaders. These team-leader briefings will provide teams with task-specific known or potential hazards associated with conducting specific tasks related to the day's operation. These forms also delineate the required personal protection equipment (PPE).

2) **Visitor Safety Brief**: All visitors entering the site must report to the SUXOS and sign the visitor's log. Visitors shall be given a safety briefing, as outlined in the SSHP, prior to entering any work area. Visitors shall be escorted at all times by an UXO-qualified individual. Operations will be suspended per Paragraph 6.4 of Appendix D prior to entering the Exclusion Zone (EZ).

3) **Environmental Concerns**: The promotion of environmental sensitivity will be an ongoing part of the daily safety and operational briefs.

4) **OE Refresher Training**: All UXO personnel will be given UXO refresher training by the UXOSO/QCS or SUXOS. The refresher will include topics related to the ordnance that may be encountered on site, including the identification of the OE, the hazards, and the disposal methods.

5) **Additional Training**: Appendix D of this WP details additional on-site training.

2.1.10.4.1 Compliance with Plans and Procedures

All personnel will adhere strictly to the approved plans and established procedures. If operational parameters change and there is a corresponding requirement to change procedures or routines, careful evaluation of such changes will be conducted by on-site supervisory personnel, in close liaison with the CEHNC OE Safety Specialist. Any new course of action or desired change in procedures will be submitted in writing, along with justification for approval. Approved written changes will be implemented in a manner that will ensure procedural uniformity and end-product quality.

2.1.10.4.2 General Site Practices

All operational activities at Camp Hero will be performed under the supervision and direction of qualified UXO personnel. Throughout the entire project, EODT personnel will adhere to the following general practices:

1. **Work Hours:** Operations will be conducted only during daylight hours. EODT intends to work four (4) 10-hour days. In no case will personnel work more than 10 hours in any day, or more than forty hours in any week. Additionally, a minimum 48-hour rest period will be provided before the start of the next work week.
2. **Basic UXO Procedures and EODT Standard Operating Procedures:** During all operations with the potential for encountering UXO/OE, EODT personnel will strictly adhere to the general UXO procedures outlined in the CEHNC Pamphlet EP385-1-95a, "Basic Safety Concepts and Considerations for Unexploded Ordnance (UXO) Operations," dated 21 June, 2001. This document is attached to EODT Standard Operating Procedure (SOP) 120A, presented in Appendix I of this WP.
3. **Site Access:** EODT will control access to all work areas. Access will be limited to only those personnel required to accomplish specific operations, or to those personnel who have a specific purpose and authorization to be on the site. No hazardous OE operations will be conducted when non-UXO or unauthorized personnel are inside the defined Minimum Separation Distance (MSD).
4. **Handling of OE:** Only UXO-qualified personnel will handle OE items.
5. **Visitor Safety:** All visitors entering the site will report to the SUXOS or UXOSO/QCS and sign the visitor's log. All site visitors shall receive a safety briefing, as outlined in the SSHP, and will be escorted at all times by UXO personnel when inside an UXO/OE area.

2.1.10.4.3 Safety and Operational Training and Briefings

EODT will conduct safety and operational training on a daily basis, starting with the morning briefing. Safety training will typically be conducted by the UXOSO/QCS; however, with regards to safety, EODT solicits and welcomes comments and input from all employees. The SUXOS will also conduct operational training sessions and briefings. This training will address team assignments, potential problems, their respective resolutions, and productivity status.

2.1.10.4.4 Site Control During OE Operations

For the purpose of this WP, an OE operation is defined as any activity conducted where personnel are excavating, investigating, inspecting, or handling any OE or explosive materials. Once an OE operation commences in an area, only those UXO-qualified personnel involved in the on-site activities will be permitted into the MSD. Prior to initiation of on-site OE operations, all non-essential personnel will move to a location outside the MSD that is equal to the safe blast and fragmentation distance for the Most Probable Munition (MPM) listed in Table 2-2 and identified in the SOW. The MPM is the OE item with the greatest MSD, based on the blast and fragmentation distances. In the event that an item with a larger MSD is located during on-site activities, the CEHNC OE Safety Specialist will be notified, and a new MSD will be calculated. During OE operations, the MSD will also be the boundary for the EZ.

TABLE 2-1: MPM

Date	Work Area	MPM	MSD
Project Start	All	105mm	1,939 Feet

NOTE: Prior to commencing demolition operations, access roads to the site(s) will be blocked. Avenues of ingress will not be opened without the express permission of the SUXOS. A constant state of vigilance will be maintained to prevent intrusions into the MSD.

2.1.10.5 UXO Identification

The UXO identification process will start when a suspected UXO is located. The UXOT2 locating the item will identify the item. Identification will be confirmed by the UXOT3. If the item cannot be identified, the EODT SUXOS and UXOSO/QCS will be notified. If EODT cannot make a positive identification of the item, the OE Safety Specialist will be notified.

2.1.10.6 Transportation of OE

Fuzed OE items will not be moved or transported. For those items that are not fuzed and are identified as being acceptable to move, the SUXOS will determine the desirability and safety requirements associated with moving UXO.

2.1.10.7 Safe Holding Area

The need for a safe holding area is not anticipated. If it is later determined that a safe holding area is required for this project, the SUXOS will coordinate with the CEHNC OSS to designate, prepare, and secure a temporary holding area. This will require KO approval.

2.1.10.8 Demolition Operations

All demolition operations will be supervised by the SUXOS, coordinated with the CEHNC OE Safety Specialist, and conducted IAW the procedures outlined in Technical Manual (TM) 60A-1-1-31 and the EODT SOP in Appendix I for Disposal/Demolition Operations.

2.1.10.8.1 Demolition Operations

Demolition operations will be performed on an as-needed basis. Demolition charges will be catered to the site and can be delivered within four hours of notice to the supplier. Any UXO that cannot be detonated the same day as its discovery (generally, if found after 1:00 p.m. will be guarded overnight with a private security service. Whenever possible, all demolition operations shall be scheduled to allow for the execution of multiple shots. Multiple shots can be executed without compromising safety, since the State Park will be closed, which will eliminate public access. Demolition operations at Camp Hero will be conducted IAW the steps outlined below:

1. **Supervision:** Demolition operations will be performed under the direction of the demolition supervisor designated by the SUXOS. This designated UXOT3 will be charged with the responsibility of ensuring that the procedures contained in this WP and the referenced documents are followed. The UXOSO/QCS will observe the demolition procedures and monitor compliance with the requisite safety measures. In the event of a noncompliance, the UXOSO/QCS has the authority to stop or suspend operations. Disposal activities are inherently hazardous and require strict adherence to approved safety and operational procedures. IAW Chapter 6, violations of procedures will typically result in immediate removal from this project, and termination of employment or a reprimand, as appropriate.
2. **Site Security and Notification:** Prior to the start of any explosive disposal activities, the SUXOS will verify that an exclusion zone (EZ) has been established and that all non-essential personnel are outside the MSD for the MPM listed in Table 2-2 or DoD 6055.9 STD, Chapter 5 with change dated July, 2000. The SUXOS will also ensure that the requisite Camp Hero contacts have been informed of the impending disposal shot.
3. **Equipment:** Standard demolition equipment will be used. Procedures will follow the guidelines dictated by TM 60A-1-1-31 and this WP. EODT will utilize explosives and detonators connected to detonating cord in its demolition shots. Multiple shots will be connected using a detonating cord.

4. **Explosive Storage, Accountability, and Transportation:** EODT will procure explosives and maintain total control of explosives while on site, IAW the company's SOP's. EODT will comply with the requirements listed below:
   a. Strict accountability of explosives will be maintained at all times. EODT will maintain an explosives accountability record (Magazine Data Card), found in Appendix F of this WP, and will reconcile amounts upon receipt, at time of withdrawal, and weekly.
   b. Only UXO personnel will be issued explosives and allowed to transport explosive materials once they have been delivered by the explosives vendor.
   c. All vehicles transporting explosives will be properly inspected, equipped, and placarded prior to the loading of explosives onto the vehicle, and DD Form 626 will be completed.
5. **Disposal Shots.** While preparing OE for detonation, the UXOSO/QCS will ensure that the number of personnel on site is kept to the minimum required to safely accomplish the disposal mission. Authority to initiate demolition operations will rest solely on the UXOSO/QCS. The UXOSO/QCS will be responsible for ensuring that all personnel have been accounted for, and that the area is secure prior to authorizing the SUXOS to proceed with the detonation of explosive charges. The SUXOS will ensure that all pertinent parties have been notified of an impending demolition shot. Prior to priming the demolition shots, the team will direct all personnel not involved in the priming process to evacuate the area and assemble at the designated assembly point. The UXOSO/QCS will ensure that any necessary roadblocks have been established.

2.1.10.9 After Detonation Activities

After detonation, the demolition supervisor, with assistance from a UXOT2, will visually inspect the disposal shot hole. While one of these individuals performs a visual inspection of the disposal site(s), the other 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 provided there are no residual hazards, the demolition supervisor will notify the SUXOS who authorizes the resumption of site operations for any teams affected by the operation. All detonation holes shall

be backfilled per the SOW, Paragraph 3.5.4. In the event that an additional shot is required, the team will again conduct demolition operations as described above.

2.1.11 Scrap Management

2.1.11.1 Scrap Inspection

All inspection of OE/AEDA scrap will be conducted IAW EODT SOP 120G. The five-step process starts with the UXOT2 in the field, who locates the OE/AEDA material. The UXOT2 performs the initial determination as to item status (i.e., contains OE, does not contain OE, may contain OE).

2.1.11.1.1 The UXO Supervisor

The UXO Supervisor (UXOT3) will perform the second inspection of all items recovered by the team to ensure the proper segregation of scrap from OE/AEDA, and to confirm the condition of those items classified as free of dangerous fillers or residue. The SUXOS will determine the segregation requirements of material recovered (i.e., scrap resembling ordnance, by metal types, OE/AEDA requiring processing, etc.), deliver all scrap to the appropriate area, and secure it to prevent commingling with inspected and certified scrap. Only personnel who are qualified UXO personnel, per CEHNC Contract DID OE-025.01, will perform these inspections.

2.1.11.1.2 Quality Control

The UXOSO/QCS will be involved in the scrap process, conducting quality surveillances of the procedures used by UXO teams and individuals for processing OE/AEDA scrap throughout the field operations. He will inspect and document a minimum of 10% (100% in some cases) random sampling of all OE/AEDA collected and sorted by the various teams to ensure that no items of a dangerous or explosive nature are identified as hazard-free. All quality surveillance will be documented in daily/weekly reports. The UXOSO/QCS will perform these random checks to verify that the OE/AEDA is free from any explosive hazards, as necessary for certification and completion of the required documentation. He will inspect the prepared documentation including, but not limited to, the Form DD 1348-1A, Requisition and Turn-in document, and EODT's AEDA/Range Residue (RR) Inspection, Certification, and Chain of Custody Form 120-G.

2.1.11.1.3 The UXOSO/QCS

The UXOSO/QCS will ensure that the specific procedures and responsibilities for processing OE/AEDA for certification are being followed and performed safely. The UXOSO/QCS will confirm that operations are compliant with the SSHP, and consistent with applicable regulations and guidance IAW the CEHNC-approved WP. The UXOSO/QCS will also perform random

checks of processed OE/AEDA to ensure that items being identified as scrap are safe and free from any explosive hazards.

2.1.11.1.4 The Senior UXO Supervisor

The Senior UXO Supervisor will be responsible for ensuring that the Work Plan (WP) and Quality Control Plan (QCP) specify the procedures and responsibilities for processing OE/AEDA to its final disposition as scrap metal. He is directly responsible for ensuring the adherence of all personnel to the requirements of the WP. He will also ensure that a DD Form 1348-1A is completed for all OE/AEDA to be transferred. The DD 1348-1A must clearly indicate the following for scrap metal:

1. Basic material content (Type of metal; e.g., steel, aluminum, brass, or mixed)
2. Estimated weight
3. Unique identification of each of the containers and seals stated as being turned over
4. Location where OE scrap was obtained (Site or Range Number)
5. Seal identification, if different from the unique identification of the sealed container
6. Printed name, organization, signature, and phone number of the person certifying the inspection
7. The following certification will be entered in each DD 1348-1A for turn over of scrap generated from the removal of targets and range scrap:

   "This certifies and verifies that the AEDA residue, Range Residue, OE Scrap and/or Explosive Contaminated property listed has been 100 percent properly inspected and to the best of our knowledge and belief, are inert and/or free of explosives or related material."
8. The SUXOS will sign as the certifier and the CEHNC OE Safety Specialist will sign as the verifier.

2.1.11.1.5 Random Scrap Inspections

The SUXOS will perform random checks to ensure that the OE/AEDA is free from explosive hazards, as necessary to complete Form DD 1348-1A. The SUXOS will, on a daily basis, inspect all scrap metal generated as free of explosive hazards or other dangerous material, and will be responsible for ensuring that inspected materials are secured in a closed, labeled, sealed container and documented IAW EODT's SOP 120G, to ensure that AEDA scrap is not mixed with other types of material. At the end of the field phase of the project, the SUXOS will certify and attest by signature, CEHNC OSS, will sign, in order to verify that the OE/AEDA is free of explosive hazards prior to shipment off site for recycling. An AEDA/RR Inspection,

Certification, and Chain of Custody EODT Form 120-G-1, which documents positive chain of custody, will be provided to the customer and scrap disposal company. The following information for each container will be provided: weight of container, location where AEDA/RR was obtained, name of contractor, names of certifying and verifying individuals; unique container identification; and seal identification, if required.

2.1.11.1.6 Transportation and Processing of OE/AEDA and Non-OE/AEDA Scrap
Transportation of OE/AEDA scrap will be accomplished utilizing the following safety precautions:

1. No scrap items will be transported until properly inspected and deemed safe to move by qualified UXO personnel.
2. All transportation personnel will observe applicable safe distances from the scrap inspection team.
3. Personnel utilizing heavy equipment and cutting implements will wear the proper PPE, as outlined in the specific operator's guide, SSHP, and applicable Task Hazard Assessment sheet.
4. All UXO/OE will be disposed of before the transportation of scrap.

2.1.11.2 Final Disposition

EODT will maintain transport hauler's licenses, personnel qualifications, etc., to be used; facility names, licenses, etc., for recycling facilities to be used; and permitting and licensing requirements of all recycling facilities. The licenses and permits can be found in Appendix F. All OE scrap will be shipped to Phillips Metals of Nashville, Tennessee for recycling.

2.1.11.2.1 Chain of Custody

The containers of scrap must be under the control and custody of EODT from the time each is inspected and certified free from explosive hazard until each is turned over to the smelter or recycler for final disposition. EODT Form 120-G-1 will be used to document this chain of custody. It identifies the quantity, composition, origin, routing, and destination of each container/hopper or item during its handling and transportation life cycle, and provides evidence that all containers/lots were properly segregated and secured at all times until final disposition. At random times during the scrap process, photographs of a representative sample of containers/lots will be taken by EODT personnel, to verify that this SOP is being followed. This process has been used successfully at numerous CEHNC projects by EODT.

2.1.11.2.2 Release of Scrap

The certified and verified OE/AEDA scrap will only be released to an organization that will:

1. Upon receiving the unopened, labeled containers, each with its unique identified and unbroken seal ensuring a continued chain of custody, and after reviewing and concurring with all the provided supporting documentation, sign for having received and agreeing with the provided documentation that the sealed containers contained no explosive hazards when received. This shall be signed on company letterhead stating that the contents of these sealed containers will not be sold, traded, or otherwise given to another party until the contents have been smelted and are only identifiable by their basic content.
2. Send notification and supporting documentation to EODT that the contents of the sealed containers have been smelted and are now only identifiable by their basic content.
3. This document will be incorporated into the interim reports as documentation of the final disposition of this scrap metal.

2.2 ADDITIONAL TASKS AND PROCEDURES

The SUXOS will maintain a detailed account of activities performed, and will include, at a minimum, information pertaining to the following:

- Date and time that operations began
- Team composition, and personnel names and positions
- Date and time that operations were completed
- Any event that impacted the day's operations
- Quantities of UXO, along with its identification, condition, disposition, location, and estimated weight recovered, by grid location

2.2.1 Public Affairs and Community Relations

EODT shall not make available or publicly disclose any data generated or reviewed under this contract or any subcontract, unless directed to do so by the CEHNC TM. When approached by any person or entity requesting information about the subject of this or any subcontract, EODT shall defer to the CEHNC TM for response. EODT shall incorporate a similar condition in all subcontracts, which states the following: "The subcontractor shall not make available or publicly disclose any data generated or reviewed under this subcontract, unless specifically authorized by the prime contractor. When approached by any person or entity requesting information about the subject of this subcontract, the subcontractor shall defer to the prime contractor for response."

2.2.2 Dissemination of Data

Reports and data generated under this contract shall become the property of the U.S. Government, and distribution to any other source by the contractor is prohibited, unless authorized by the CEHNC KO.

2.2.3 Final Report

At the conclusion of the field activities at Camp Hero, EODT will submit a Draft Report to the CEHNC for comment. Once EODT receives, reviews, and incorporates the CEHNC comments into the Draft Report, EODT will submit the Draft Final Report for approval. The Final Report will meet the requirements of DID OE-030.01 Site Specific Final Report and contain the following items:

2.2.4 Weekly Reports

EODT complete a weekly progress report in accordance with DID OE-085.01 each week and post the report to EODT's web site in a password protected project folder. The CEHNC project manager will be given the password and may provide the password to others.

2.2.5 Monthly Project Status Report

EODT will complete and distribute a monthly project status report in accordance with DID OE-080.01 specific to the project.

2.2.6 Project Close-Out

All temporary facilities will be removed and all work sites returned, as nearly as possible, to their original condition. Demolition holes and excavations will be filled in, as required.

2.2.6.1 Removal of the Workforce

EODT will demobilize site personnel as activities are completed and workforce reduction is warranted.

2.2.6.2 Close-out of Accounts

Following the completion of operations, EODT's SUXOS will take action to close all accounts with local vendors and suppliers. Final billing for these accounts will be forwarded to the EODT Lenoir City, TN office for payment.

2.2.6.3 Removal of Equipment

As part of the demobilization process, EODT will remove and return all equipment used at the Camp Hero Site. The equipment will be in a clean and operable condition, and will either be returned to the EODT corporate office in Lenoir City or shipped to another project. The SUXOS

will document the equipment transfers.

- Detailed accounting of all UXO and OE-related materials located and destroyed
- Daily journals of all activities associated with the job site
- A recapitulation of exposure data, including the total number of man-hours worked on site, the total motor vehicle mileage, the total number of flying hours, and total number of flights
- QC documentation
- DD Form 1348-1A turn-in documentation
- Color photographs depicting major action items

CHAPTER 3: EXPLOSIVES MANAGEMENT PLAN

3.1 INTRODUCTION

This plan addresses issues associated with the requisition, receipt, transportation, and use of demolition material at the Former Camp Hero site in Montauk, New York. This plan incorporates local, state, and federal laws and regulations, including the Bureau of Alcohol, Tobacco, and Firearms (BATF) Pamphlet ATFP 5400-7, which is an excerpt from 27 CFR Part 55; DOD 6055.9-STD Ammunition and Explosives Safety Standards; Department of Transportation (DOT) Regulations; Army Regulations (AR) 190-11, EM 385-1-1; and EODT Policies and Procedures. A copy of the EODT BATF license is in Appendix F, and will be available on site.

3.2 ACQUISITION

3.2.1 Description and Estimated Quantity of Explosives

EODT will utilize jet perforators, detonating cord, and electric detonators for demolition shots, which will ensure positive control of the operation and reduce the net explosive weight (NEW) to be used. The demolition materials anticipated for use at Former Camp Hero are presented in Table 3-1.

TABLE 3-1: EXPLOSIVE DEMOLITION MATERIALS

Description	DOT Hazard Class	UN Number	Quantities
Det Cord, 80 grain	1.4 D	0289	as required
Jet Perforators	1.4 S	0441	as required
Electric Detonators	1.4 B	0255	as required

3.2.2 Acquisition Source

EODT will receive the demolition materials from Fireworks by Grucci, Brookhaven, New York (631) 286-0088, on an as-needed basis.

3.3 INITIAL RECEIPT

3.3.1 Receipt Procedures

Demolition material will be received on an as-needed basis in accordance with the SOP (SOP # 120-F) for Explosives Acquisition, Storage, and Accountability, located in Appendix I of the WP. The EODT SOP for Explosives Acquisition, Storage, and Accountability describes the procedures for receipt and issuance of demolition materials. Demolition materials will be provided by Fireworks by Grucci, Brookhaven, New York (631) 286-0088 and delivered, as

needed, to coincide with explosive demolition operations. Either the UXOSO/QCS or the SUXOS will sign for, and maintain custody of, the explosives.

3.3.2 Discrepancy Reconciliation Procedures

In the event that there is a discrepancy during the initial receipt of explosive items, EODT will not accept the shipment. If the shortage affects the operation of the project, the EODT PM will be notified immediately.

3.4 STORAGE

EODT will not store explosives on site.

3.4.1 Establishment of Explosive Storage Facility

EODT will not store explosives on site; therefore, an explosives storage facility will not be established.

3.4.2 Physical Security

Fireworks by Grucci will provide physical security for all explosives while in their possession. EODT's UXOSO/QCS or the SUXOS will sign for, and maintain custody of the explosives after receipt until they are expended.

3.4.3 Construction Support

Not applicable for this project.

3.5 TRANSPORTATION

3.5.1 Procedures for Transporting Explosives

EODT will hand carry the explosives from the delivery vehicle to the detonation site.

3.6 INITIAL RECEIPT AND ISSUING PROCEDURES

Initial receipt of demolition material will be conducted IAW the EODT Explosives Acquisition, Storage, and Accountability SOP (SOP # 120-F), which is located in Appendix I.

3.6.1 Responsibilities

3.6.1.1 Senior UXO Supervisor

The SUXOS is responsible for identifying demolition material requirements in sufficient time for the materials to be delivered, for maintaining the accountability of explosives, and for immediately reporting any losses or discrepancies to BATF, CEHNC, and EODT.

3.6.1.2 Individual Responsibilities

All EODT employees are responsible for ensuring the safe handling, use, and control of demolition materials. In addition, these personnel are responsible for the return and correct inventory/annotation of the magazine data cards.

3.6.1.3 Authorized Personnel

Only those UXO qualified personnel authorized by EODT are permitted to receive and issue explosives. EODT will generate an access roster with the Name, Social Security Number, and Phone Number of personnel authorized access to explosives.

3.7 INVENTORY

An explosive inventory is not applicable for this project.

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CHAPTER 4: EXPLOSIVES SITING PLAN

4.1 SAFETY CRITERIA TO BE EMPLOYED DURING OE OPERATIONS

EODT will order and receive blasting caps, as needed, from Fireworks by Grucci. Binary explosive compounds and detonation cord will be maintained on site.

4.1.1 Magazine Type

Not Applicable.

4.1.2 Magazine Contents

Not Applicable.

4.1.3 Quantity Distance Criteria

Not Applicable.

4.1.4 Engineering Controls for Public Exposures

Not Applicable.

4.2 PLANNED OR ESTABLISHED DEMOLITION AREAS

It is expected that all OE Encountered will be blown-in-place. In the event that large amounts of OE which are "acceptable to move" are encountered, then they may be consolidated within the grid for disposal. The MPM for this site has been established as a 105mm projectile with a MSD of 1,939 feet. This MSD will be used for all demolition operations.

4.3 FOOT PRINT AREA

4.3.1 Blow-in-Place (BIP)

Safe separation distance for all personnel during BIP operations will be the minimum separation distance (MSD) for the munition being detonated.

4.3.2 Collection Points

EODT expects to BIP all UXO located on the Former Camp Hero and no collection points will be established. Should the need arise to establish a collection point, it will be at the discretion of the SUXOS, with concurrence of the CEHNC OE Safety Specialist.

4.3.3 Consolidated Shots

If consolidated shots are performed, they will be conducted IAW CEHNC publication *Procedures for Demolition of Multiple Rounds (Consolidated Shots) on Ordnance and*

Explosives Sites, dated August, 1998 (updated March, 2000). The reference will be available on the site.

CHAPTER 5: GEOPHYSICAL PROVE-OUT PLAN AND REPORT

This plan is not required for this Task Order.

CHAPTER 6: GEOPHYSICAL INVESTIGATION PLAN

This plan is not required for this Task Order.

CHAPTER 7: LOCATION SURVEYS AND MAPPING PLAN

7.1 GENERAL

All location surveys and mapping will be conducted IAW DID OE-005-07.01. EODT will utilize a Professional Land Surveyor registered in the State of New York to locate and/or establish two (2) control points (if possible, one in Area H and the second in Revised Area K). EODT will stake a network of grids within the boundaries of the two areas using GPS.

7.1.1 Numbering

Each grid will be uniquely numbered and identified on the map/drawing and the coordinate shown to the closest one foot. The southwestern corner stake of the grid network (100 ft. x 100 ft.) for Area H will be marked with a unique alpha-numeric designation that has been surveyed within the network. Grids within Revised Area K may be somewhat irregular in size due to the ocean, although each will be 100 ft. long (i.e., oriented along the beach). Ordnance location x and y coordinates will be performed using GPS or tape and line from the 100' grid stakes.

7.2 UXO SAFETY PROVISIONS

During all field and intrusive operations, UXO personnel shall accompany the survey crew. The UXO person(s) shall perform a visual UXO survey for surface ordnance prior to the survey crew entering the area. The UXO person will perform a magnetometer survey of each intrusive activity site, to ensure that the survey/staking point is free of anomalies prior to the survey crew setting monuments, driving stakes, or establishing other points.

7.3 CONTROL POINTS

EODT will set up two control monuments in accordance with DID OE-005-07.01, and referenced to NAD 83.

7.3.1 Accuracy

A tabulated list of all control points and monuments, showing their final adjusted coordinates to the nearest one-foot established and/or used for survey, will be generated. A tabulated list of each individual boundary corner and each grid corner shall also be provided showing the adjusted coordinates to the nearest one-foot.

7.3.2 Monument Caps

Monument caps will be marked in accordance with local surveying requirements.

7.3.3 Plotting

All control points used at Former Camp Hero will be plotted and referenced to NAD 83, on a planimetric map.

7.3.4 Description Cards

A "Report on Establishment of Survey Mark" (Description Card) will be generated for each permanent control monument established and/or used for surveying. In addition to the name and number of a monument, the cards shall contain the adjusted coordinates (to the nearest one-foot and 0.01 foot), a written description for locating each monument from a well-known and easily identified point, and a sketch showing how to locate the monument.

7.4 MAPPING

All final mapping shall be created using Computer-Aided Design and Drafting (CADD) software. Mapping deliverables (two-dimensional design files) will be in Microstation 5.0 format (or a format approved by the Government), and submitted on CD-ROM. Site maps plotted from these design files shall be provided in an electronic version and referenced to UTM Coordinates. The location, identification, and coordinates of all control points, boundary corners, grid corners, and corners of the concrete pads recovered and/or established at each site shall be plotted on the reproducible (mylar) maps. Each control point shall be identified on the map by its name or number and the final adjusted coordinate (to the nearest one-foot).

7.5 DIGITAL DATA AND COMPUTER REQUIREMENTS

7.5.1 Design File Requirements

Maps shall be drawn on reproducible Mylar® generated by the CADD system.

7.5.2 Survey/Mapping Data

All location survey and mapping shall be performed in accordance with the basic contract, and DID OE-005-07.01. EODT will locate and map all the corners of individual grids (or other size as deemed appropriate for the conditions of this site), which are within the project site areas (see Appendix B, Figure B-1). The project site area shall be shown on the final drawing and plotted on the drawing based on NAD83. The map will be sealed by a New York State Registered Land Surveyor and included in the Final Removal Report.

CHAPTER 8: WORK, DATA, AND COST MANAGEMENT PLAN

8.0 GENERAL

The purpose of this Work Data and Cost Management Plan (WDCMP) is to ensure the effective management of allocated funds, manpower, and equipment. All work will be accomplished in the order set forth in Task Order 0024. This WDCMP describes the organizational structure that EODT will use to manage the project, the sequence in which operations will be performed, and the projected costs specified at operational milestones.

8.1 PROJECT MANAGEMENT

8.1.1 Controls

Effective management is essential for delivery of a quality product. EODT is committed to providing a management structure that ensures quality and is tailored to the operational requirements of this project. This structure provides an appropriate level of management and oversight of safety and quality for the project. Additionally, the management structure ensures that the work performed will be executed in an efficient, safe, and effective manner.

8.1.2 Subcontractors

EODT does not plan to use any subcontractors for this project.

8.2 PROJECT SCHEDULE

Draft ESS	Submitted
Final ESS	Submitted
Draft Type II Work Plan	20 May 2003
Final Type II Work Plan	14 days after receipt of comments
Draft Removal Report	30 days after completion of field work
Draft Final Removal Report	14 days after receipt of comments
Final Removal Report	14 days after receipt of comments

NOTE: A complete Project schedule depicted in MS Project will be included in the final version of this work plan.

8.3 COST CONTROL AND TRACKING

8.3.1 Cost Control

EODT has an approved Purchase Order (PO) system that requires the PM/SUXOS to submit a PO request for any expenditure for a single item in excess of $25.00. In addition, the PM/SUXOS is given a copy of the approved spreadsheet, specified by contract line item number (CLIN). Expenditures approved by the PM/SUXOS must remain within the line item totals, or the PM/SUXOS must seek approval to exceed the amount..

8.3.2 Tracking

EODT uses Microsoft Excel spreadsheets to track the costs and schedule on all projects. An accurate daily and weekly cost can be tracked in this manner, and the 85% spend-threshold accurately determined.

8.4 RECURRING DELIVERABLES

8.4.1 Weekly Project Status Report

This weekly project status report will be completed and submitted to CEHNC on a weekly basis.

8.4.2 Monthly Project Report

A monthly project report will be completed and submitted to CEHNC on a monthly basis.

8.4.3 No other recurring deliverables are required at this time

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CHAPTER 9: PROPERTY MANAGEMENT PLAN (PMP)

This plan is not required for this Task Order.

CHAPTER 10: QUALITY CONTROL PLAN

10.1 GENERAL

This Quality Control Plan (QCP), as a component of the Quality Program (QP), provides procedures for controlling and measuring the quality of all work performed during site activities at the Former Camp Hero site in Montauk, New York. All QC activities will be performed and documented IAW ISO9001:2000 based standards, all applicable professional and technical standards, and the CEHNC requirements. This site-specific QCP is designed to provide procedures for:

- Testing and calibrating equipment used to perform work tasks
- Evaluating the effectiveness of work performed
- Inspecting the maintenance and accuracy of site records
- Determining compliance with this plan, site safety, environmental, and operational plans

10.2 DEFINITIONS

10.2.1 Accuracy

Accuracy is the degree of agreement of a measurement, or the average of several measurements with an accepted reference, or "true" value, which is a measure of bias in the system.

10.2.2 Precision

Precision is the degree of mutual agreement among individual measurements of a given parameter under the same conditions.

10.2.3 Completeness

Completeness is a measure of the amount of valid data obtained form a measurement system compared to the amount expected to be obtained under normal conditions.

10.2.4 Corrective Action

Corrective actions are those actions taken when a process or product does not meet the previously agreed upon and approved results. These actions include, but are not limited to, product re-work, development of new work procedures, and retraining of personnel.

10.2.5 Inspection

Inspections are conducted on worked product to discover its level of conformity to previously approved results, and to validate the procedures used to work or create the product. Inspections

will consist of sampling up to and including 100 percent. No less than a 10 percent inspection shall occur on any product being inspected. Inspection activities are usually conducted by the project UXO Quality Control Specialist (UXOQCS). Because this project is of short duration (4 weeks) and the workforce is small (7-9 field personnel), EODT will combine the duties of the UXO Safety Officer (UXOSO) and the UXOQCS. This person will be known as the UXOSO/QCS.

10.2.6 Noncompliance

A noncompliance exists when it is discovered that a process or procedure is either not being properly followed or is discovered to be inadequate to achieve previously agreed upon results. Noncompliances are usually discovered as a result of quality surveillance activities or quality audits.

10.2.7 Nonconformance

A nonconformance exists when a worked product fails any aspect of a quality inspection.

10.2.8 Process

A process is a set of work instructions used to accomplish project goals. Processes may be written or verbal, and can be formal or informal.

10.2.9 Product

Product can be any physical item, area (grid), or deliverable worked or created as part of the conduct of the project.

10.2.10 Root Cause Analysis

A Root Cause Analysis is an in-depth analysis of procedures and conditions that lead to a noncompliance or nonconformance. The goal of a root cause analysis is to discover why a nonconformance or noncompliance occurred, and how to prevent the same and similar problems from reoccurring. The root cause analysis is a medium to collect lessons learned, and can be useful in determining preventative actions, as well.

10.2.11 Surveillance

A surveillance is a process-/procedure-verification activity, usually conducted by the project UXOSO/QCS, to determine whether a team/function is performing its activities in accordance with (IAW) the approved Work Plan, SOW, or other approved procedures, and/or whether the procedures themselves are adequate to meet requirements.

10.3 QUALITY MANAGEMENT STRUCTURE

The following section describes the structure of the quality management team for EODT's operations at the Former Camp Hero site. Personnel were selected based on previous experience and their familiarity with the EODT QA/QC system.

10.3.1 QC Manager

Mr. Stephen Voland is the EODT QC Manager, and has the ultimate responsibility for the EODT QC Program. Mr. Voland reports directly to Mr. James Burger, President of EODT. The QC Manager's responsibilities include:

- Preparing all QC policies and procedures
- Establishing guidelines to assist in the development of program-, project-, site-, and task-specific QC policies and procedures
- Reporting regularly to the President of EODT on the adequacy, status, and effectiveness of the QC program
- Conducting periodic field audits of the programs, projects, and sites, and submitting a report of findings to the President with courtesy copies to the SUXOS and EODT's PM
- Training the site UXOSO/QCS in the performance of his duties

10.3.2 Site UXO Safety Officer/Quality Control Specialist

The EODT UXOSO/QCS will have the responsibility and authority to enforce the EODT and site-specific QC plans and procedures. His responsibilities include:

- Coordinating with the CEHNC OE Safety Specialist to ensure that QC objectives appropriate to the project are set, and that all personnel are aware of these objectives
- Coordinating with the EODT QC Manager to ensure that QC procedures are being followed, and are appropriate for achieving data validity sufficient to meet QC objectives
- Conducting periodic QC surveillances of all site activities, and recording same in the QC Surveillance Report and QC Surveillance Log
- Conducting inspections of all ORS placed in the roll-on/off to ensure that there are no explosive components, and documenting these inspections on the QC Inspection Report and QC Inspection Log

- Reporting noncompliance with QC criteria to the SUXOS and EODT's QC Manager and PM, and documenting these non-conformances on the QC Nonconformance/Corrective Action Report and the QC Inspection Log
- Coordinating with the responsible parties to initiate the proper corrective actions to be taken in the event of a QC deviation, and documenting these actions on the Nonconformance/Corrective Action Report and Log
- Ensuring that Lessons Learned are documented on the QC Surveillance Report and forwarded to the EODT QC Manager for analysis

10.4 CRITICAL ISSUES/ACTIVITIES

EODT has identified the following issues/activities as being critical to the delivery of a quality product:

- Employee qualifications
- Employee training
- Compliance with plans (e.g., safety, UXO operations, environmental, cost management)
- Availability of publications
- Testing and calibration of equipment
- Maintenance and accuracy of reports and records
- Deliverable accuracy and timeliness

The following paragraphs describe the QC criteria that EODT will apply to these critical issues/activities and the methods that EODT will use to monitor quality:

10.4.1 Employee Qualifications

Prior to the employee's initial assignment or any change in duties/assignment, the QC Manager will physically review the employee's licenses, training records, and certificates to ensure that the employee is qualified. The SUXOS or their designee will maintain personnel files on each employee. These records will include copies of licenses, training records, and certificates of qualifications that support the employee's placement and position.

10.4.2 Training

Employee training is an integral part of producing quality products. EODT conducts site-specific employee training prior to the start of operations, and supplements this initial training, as necessary, throughout the remainder of the project. Training is conducted by the UXOSO/QCS and the SUXOS, and records of attendance will be recorded. At a minimum, EODT personnel will receive the following types of training:

- **OSHA**: Current certification IAW 29 CFR 1910-120(e)(f)
- **Safety**: Review of Chapter 6, with specific emphasis on the hazards known to exist on site
- **Equipment Operator's Training**: Tailored to the experience level of the operator and objectives of the project
- **Daily Safety Training**: Tailgate briefings outlining the day's activities, unique hazards, and safety precautions, as well as other operational issues related to the project
- **Weekly Safety Meetings**: On the first workday of each week, a topic will be selected and elaborated on at the tailgate briefings.
- **Visitor Training**: All site visitors shall receive general and site-specific training as a portion of their in-briefing.

10.4.3 Publications

EODT has conducted a technical review of the SOW and other pertinent data, and compiled a list of publications that may be applicable to the project. Prior to the start of operations, and periodically throughout the project, the UXOSO/QCS will check to ensure that the required publications are available. Results of this inspection will be recorded and reported. The currently identified publications include:

- Copy of Task Order 0024
- EODT Corporate Safety and Health Program
- OSHA, 29 CFR 1910, Occupational Safety and Health Standards
- CEHNC EM 385-1-1, Safety and Health Requirements Manual
- CEHNC ER 385-1-92, Safety and Occupational Health Document Requirements for Hazardous Waste Remedial Actions
- DOD 4145.26-M, Contractor's Safety Manual for Ammunition and Explosives
- DOD 6055.9-STD, DOD Ammunition and Explosives Safety Standards
- DA PAM 385-64, Ammunition and Explosives Safety Standards

- AR 385-64, Ammunition and Explosives Safety Standards
- AR 200-1, Environmental Protection and Enhancement
- AR 385-10, The Army Safety Program
- AR 385-16, System Safety Engineering and Management
- AR 385-40 w/supplement, Accident Reporting and Records
- TM 9-1300-200, Ammunition General
- TM 9-1300-214, Military Explosives
- TM 60A-1-1-31
- ATF P 5400-7
- Material Safety Data Sheets (MSDS) for hazardous substance used on site
- EODT Standard Operating Procedures

10.4.4 Equipment Calibration and Tests

Measurement equipment utilized on site will be checked for operational reliability and calibration IAW the manufacturer's specifications.

10.4.4.1 EODT has reviewed the equipment requirements of this delivery order, and identified the equipment listed below as requiring daily tests and/or calibration. Calibration/testing of these instruments will be accomplished as follows:

- **Communications Equipment:** Each morning, prior to commencing operations, radios and cellular phones will be checked. Radios will be function-checked to ensure that batteries are charged and the radio is operational. Cellular phones will be checked to ensure that off-site communications are working. If communications are lost, either between teams and the command post or off-site to emergency services, work will cease until communications are restored.
- **Sound Level Meter:** The sound level meter will be calibrated prior to each use, IAW the manufacturer's recommendations.
- **Galvanometer:** Prior to demolition operations, the galvanometer will be checked by placing a metal object across the two terminal posts and observing the LED readout, which should be the number one (1). Any other reading may indicate a defective instrument, at which time the manufacturer's suggested checks will be followed.

If there is no reading, the battery must be replaced, and the continuity check performed again.

- **Blasting Machine:** Prior to demolition operations, the blasting machine will be checked IAW the manufacturer's suggested sequence.
- **Schonstedt Magnetometer:** Before-operation checks shall include a battery check to ensure that the batteries are correctly installed and a sharp shake to ensure that there are no loose parts in the instrument. Loose parts are cause for rejection. The Schonstedt CX52 Magnetometer will be tested for proper operation and response by turning the sensitivity setting to high, then moving the tip of the instrument over the buried inert 105mm projectile or simulant and noting the response. The operator will then move the instrument to an anomaly free area and hold it in a vertical position with the tip of the instrument resting on the ground. With the sensitivity on high, hold the instrument by the shaft just below the battery case and, with the free hand, rotate the instrument 360 degrees (90 degrees at a time), and listen for a significant increase or decrease in tone. A significant change in tone is cause for rejection.

10.4.4.2 All equipment used at the site will be dedicated solely to the project until the project is completed. The UXOSO/QCS is specifically responsible for ensuring that equipment is calibrated and checked by the SUXOS, or his designee, prior to being placed into operation. Records of these checks will be documented on the QC Surveillance Report and logged on the QC Surveillance Log. If equipment field checks indicate that any piece of equipment is not operating correctly, and field repair cannot be made, the equipment will be tagged by the SUXOS, or his designee, and removed from service. EODT's Equipment Manager will be notified, and a request for replacement equipment will be placed immediately. Replacement equipment will meet the same specifications for accuracy and precision as the equipment removed from service.

10.4.5 Maintenance Program

1) **Preventive Maintenance:** The assigned operator of each piece of equipment will perform scheduled, and when necessary, unscheduled maintenance to ensure that the equipment is maintained in a satisfactory operating condition. Preventive

maintenance consists of before-, during-, and after-maintenance checks, and documentation of these activities either in the operator's log book or in the team leader's field log book.

2) **Routine Repair and Adjustment:** Routine repair and adjustment is based on the manufacturer's schedule for adjustment, calibration, or replacement.

3) **Emergency Repair:** Emergency repair includes any unscheduled repair. This type of repair will be conducted using manufacturer-required replacement parts to ensure the continued integrity of the equipment.

4) **Included Equipment:** Equipment included in the maintenance program will be checked as follows: NOTE: equipment not specifically mentioned will be checked before use for case integrity, sufficient battery voltage, and general operation.

   a) **Radios/Cellular Phones:** Before-operation checks shall include verification of a complete battery charge and a communications check to ensure that the unit is operating properly. During-operation checks shall include checks to ensure that the battery charge remains adequate, and a communications check shall be conducted once an hour for the radios and once a day for the cellular phones. After-operation maintenance shall include a communications check, cleaning, turning off the equipment, and placing it in a battery charger.

   b) **Vehicles:** Before-operation checks shall include an operator general inspection of the entire unit, to include fluid levels, safety equipment operation, and tire condition. During-operation checks shall include frequent checks of the dials and gauges, and a tire check at breaks. After-operation checks shall include topping off of any fluids that are low, a general cleaning, and a recheck of all safety-related equipment.

   c) **Monitoring Equipment**: Before-operation checks shall include calibration IAW manufacturer's guidance and, if applicable, a battery charge check.

During-operation use will include frequent checks to ensure that the unit is operating properly and the battery charge is sufficient. After-operation checks shall include a general cleaning, turning off the unit, and placing in a battery charger, if applicable.

d) **Demolition Equipment**: Before-operation checks shall include a check of all batteries in the blasting machines and galvanometers. Some blasting machines do not contain batteries, so a check will be made to ensure that they operate properly. A metal object will be placed over the galvanometer terminal to ensure that it registers a normal reading. During-operation checks shall include an inspection of the terminals and condition of the units. After-operation checks shall include a general cleaning and battery removal, if applicable.

10.4.6 Logs and Records

For all site work, field personnel will use log books with numbered pages. The field log books will be used to record the daily activities of the field team, provide sketch maps and locations of UXO and other pertinent items, and note any observations that might affect the quality of data. Specific forms and records to be used on site are identified in Appendix F of this WP, and will be provided to the field team on CD-ROM. The field log books and site records are utilized to record the following:

1) **Daily Journal**: The SUXOS will maintain the daily journal. This journal will provide a summary of all operations conducted, to include information on weather conditions, problem areas, work plan modifications, injuries, start/stop times, tailgate safety briefs, equipment discrepancies, UXO/OE located, training conducted, visitors, and any additional items deemed appropriate.

2) **Field Log Books**: The UXOT3 will maintain a field log book. These log books will be maintained in a neat and legible manner, and will provide a historic record of site activities. These log books will include the respective team's daily activities, to include start/stop times.

3) **OE Accountability Log**: The UXO supervisors will prepare individual records for each work area at the site. The records will

consist of a series of sheets that will be used to record data on OE items encountered. Each OE item will be given a unique identifying number to differentiate it from all others. For example, the third OE item encountered in Area A-1 would be A-1-3. These sheets will be consolidated into one log organized by day.

4) **Safety Log Book**: The UXOSO/QCS will maintain this log. The log will be used to record all safety matters associated with the specific project, such as safety briefings/meetings, including items covered and attendees; safety training; safety audits; near-misses/accidents/incidents; cause and corrective action taken; weather conditions; and any other matters encompassing safety.

5) **Training Records**: The SUXOS will maintain training records for all site personnel. These records will contain training certificates, licenses, and other qualifying data for an individual's duty position.

6) **Quality Control Logs**: The results of all surveillance, inspection, and nonconformance/corrective action activities will be recorded on the appropriate report and logged in the appropriate log, as required by the QC SOP's. These reports and logs will be kept on site and copies sent to the EODT QCM for analysis.

7) **Visitors Log Book**: The SUXOS will maintain this log. All personnel that are not directly involved in the project site activities are identified in this log by name, company, date, time in/out, and a contact phone number. Safety briefings and training for visiting personnel will also be recorded in this log.

8) **Photographic Log**: The SUXOS will maintain a photographic log. This log will be used to record all video recordings and photographs taken to document work and/or site conditions. Photographs and videotapes will be marked with a unique identifying number relating back to the photographic log, and will be maintained on file until the end of the project. Photographic negatives and duplicate copies of videotapes will be forwarded to the EODT corporate office in Lenoir City for safekeeping.

9) **Site Maps**: The SUXOS will maintain a current working map of the operating areas throughout execution of this project. These maps will be used to document UXO finds, task progression, and other pertinent activities and locations.

10) **Document Control Log**: The UXOSO/QCS will maintain this log, which will include numbers and the name of the responsible party for all logs and any other documents of importance.

10.4.6.1 Log books and records will be inspected by the UXOSO/QCS on a weekly basis. These inspections will focus on the completeness, accuracy, and legibility of the entries and records. Results of these inspections will be documented on the QC Surveillance Report, logged on the QC Surveillance Log, and forwarded to the SUXOS and EODT QCM. The log keeper's immediate supervisor will review and initial in the log book his concurrence with the log book entries on a daily basis.

10.5 ORDNANCE VERIFICATION, ACCOUNTABILITY, AND CONTROL

A qualified UXOT3 and UXOT2 will positively identify all UXO items located. The UXOT3 and UXOT2 will also determine the condition of the item (i.e., misfire, unfired, dud) and associated hazards (high explosives {HE}, fragmentation, white phosphorus, ejection, chemical, etc.). The identification, condition, and associated hazards of all items will be verified by the SUXOS and the UXOSO/QCS, who establishes a four-point inspection process. If the item cannot be moved, the UXOT3, in conjunction with the SUXOS and the on-site CEHNC OE Safety Specialist, will determine an appropriate course of action, which will then be recorded by the SUXOS, or his designee.

10.6 GRID SIZES

EODT will use a 100 ft. x 100 ft. grid system as a basis for the grid network in Area H. Search lanes will be established with a series of ropes, cones, or other marking systems as determined by the SUXOS. Lane width will not exceed 5 feet. Grids within Revised Area K will be 100 ft. long (i.e., oriented along beach) and of varying width.

10.7 QA/QC AUDITS AND SURVEILLANCE

As part of the EODT QC program for work performed at specific sites, EODT will conduct both internal and external audits and surveillances at the site. This is to ensure that all procedures and protocols are being followed, and that the resulting data is accurate and defensible. Field surveillances will concentrate both on scrap inspection procedures and documentation, and on checks of resulting data for completeness and accuracy within established QC limits.

10.8 QUALITY CONTROL PROCEDURES

To ensure that quality work is conducted, QC activities will be accomplished in the following manner:

10.8.1 Daily, Weekly, and Monthly QC Surveillances

The UXOSO/QCS, IAW the EODT QC SOP, will conduct team/function surveillance activities. These surveillance activities will ensure that all work conducted at the New School Site is being carried out IAW this WP. Functions to be inspected include project documentation, OE avoidance/disposal activities, debris/scrap processing and demolition procedures. These surveillances will be documented on the EODT QC Surveillance Report and logged on the EODT Surveillance Log IAW the EODT QC Surveillance SOP. These surveillance activities are designed to capture lessons learned and promote continual process improvement. Documentation of surveillance activities will be kept on site by the UXOSO/QCS, and copies will be forwarded via fax, e-mail, or postal mail to the EODT QCM for review. These procedures are in compliance with EODT's ISO 9001:2000 Quality System.

10.8.2 QC Inspections

As part of the EODT AEDA/Range Residue inspection process, the UXOSO/QCS is responsible for inspection of AEDA/Range Residue. The QCS will perform a minimum of 10% random sampling of all scrap metal to ensure that no items of a dangerous or explosive nature are improperly identified as scrap metal. All inspections will be documented on the EODT QC Inspection Report and on the QC Inspection Log IAW the EODT QC Inspection SOP. The inspection reports and logs will be kept on site and copies forwarded to the EODT QCM for review.

10.8.3 Scheduled Audits

Audits of various project functions will be accomplished by the UXOSO/QCS and QCM. These functions include, but are not limited to, site documentation, scheduled reports, OE accountability, man hours, and costing data.

10.8.4 Pass/Fail Criteria

During QC or QA inspections, any UXO, OE, or OE Scrap found, which is the diameter of a 105mm projectile, at a depth less than eleven (11) times the diameter of that item, shall constitute a unit failure. Any deviation of Paragraph 10.8.2 will constitute a process failure, and will require corrective action(s) and root cause analysis IAW Paragraph 10.9 of this plan. Any grid failing QC or QA inspection shall be reworked and re-QC'd and re-QA'd. In the event that an item fails QC inspection for explosive contamination, all items inspected and approved that day, up to the point of the failure, will be re-inspected by the production team under the supervision of the QCS. If necessary, the QCS may halt production until such time as the re-inspection is completed and a level of assurance is met that no further failures will be found. If any item fails QC inspection the QCS may conduct re-training activities to ensure that all team members fully

understand all required procedures. During the course of CEHNC's or EODT's QC/QA Surveillance and Inspection activities, any process or product not in compliance or conformance with the approved Work Plan shall fail that respective surveillance or inspection, and Nonconformance/Corrective Action procedures will be initiated.

10.9 NONCONFORMANCE/CORRECTIVE ACTION

Any non-compliance/nonconformance to contractual requirements must be documented and reported. Nonconformance includes:

- Delivery of items or services by EODT that do not meet the contractual requirements
- Errors made in following work instructions or improper work instructions
- Unforeseeable or unplanned circumstances that result in items or services that do not meet quality/contractual/technical requirements
- Technical modifications to the project by individuals that do not have the responsibility and authority
- Errors in craftsmanship and trade skills

10.9.1 Immediately upon discovery of a non-compliance/nonconformance item, the UXOSO/QCS will take the following actions:

- Initiate a Nonconformance/Corrective Action Report IAW the EODT Nonconformance/Corrective Action SOP.
- Assign a responsible individual and a corrective action due date.
- Issue the NC/CA to the responsible individual, and coordinate any corrective actions.
- Ensure that any corrective actions are appropriate to the nonconformance.

10.9.2 Immediately upon receipt of a Nonconformance/Corrective Action Report, the SUXOS will take the following actions:

- Identify the impact that the nonconformance may have on other project activities.
- Identify and implement the actions required to bring the project/activity back into compliance.

- Conduct a root cause analysis to determine the cause of the nonconformance or non-compliance, and develop procedures to preclude recurrence. These procedures will be presented to the UXOSO/QCS for concurrence prior to implementation.

10.10 PROJECT CORRESPONDENCE

All written and verbal (telephone) correspondence will be documented and routed to the EODT PM. All written communications from the CEHNC, or designee, must be addressed to the EODT PM. Incoming written communications will be annotated with the date received. Telephone communications to field personnel must be logged by site personnel into the daily activity logs. Telephone communications to office personnel must be recorded on a *Telephone Conversation/Correspondence Record Form.* Of critical importance is the documentation of activities that stop work or require communication with the CEHNC.

10.10.1 Delivery Order Correspondence

Correspondence concerning delivery orders is to be sent to Mr. Matt Kaye:

Mailing Address:	Federal Express Address:
EOD Technology, Inc.	EOD Technology, Inc.
PO Box 24173	2229 Old Hwy 95
Knoxville, Tennessee 37933-2173	Lenoir City, Tennessee 37771

10.10.2 Project Manager's Address

The EODT PM is Mr. William Pearse. He can be contacted through the following:

Mailing Address:	Federal Express Address:
EOD Technology, Inc.	EOD Technology, Inc.
PO Box 24173	2229 Old Hwy 95.
Knoxville, Tennessee 37933-2173	Lenoir City, Tennessee 37771
Telephone	(865) 988-6063
Cellular	(865) 310-9267
Facsimile	(865) 988-6067
Electronic mail	wmpearse@eodt.com

10.11 PROJECT RECORDS

Project records will be maintained in separate project files for each Delivery Order. Each project file will be maintained with the following categories:

Category	File Content
A1	Internal correspondence
A2	Outgoing correspondence
A3	Incoming correspondence
A4	Outgoing to CEHNC
A5	Incoming from CEHNC
A6	Chronological communications log
B	Not used
C	Original typed copies of the Removal Report
D	Copies of Delivery Order, cost estimates for any additional work to be performed under Delivery Order (add-ons), copy of subcontractor work agreement or contract, copies of cost quotations from suppliers and subcontractors
E	Original Field Activity Daily Logs and subcontractor daily field log bound books, Ordnance Accountability Log, Working Map(s), and equipment status log
F	Not used
G	Not used
H	Copies of Removal Report
I	Original photographic log and negatives (prints need not be maintained)
J	Not used
K	Not used
L	Copies of DD Form 1348-1A, if required
M	Not used
N	Not used
O	Check prints of drawings submitted with the Removal Report
P	Not used
Q	QC Audits, Inspections, Surveillances, and Nonconformance Reports
R	Site-Specific Safety and Health (S&H) Records, including Tailgate Safety meeting documents
S	Field administration records, including subcontractor and contractor work time hours, expense reports, travel mileage, and time
T through Z	are not used at this time

CHAPTER 11: ENVIRONMENTAL PROTECTION PLAN (EPP)

11.1 ENDANGERED/THREATENED SPECIES WITHIN THE PROJECT SITE

There are no known endangered or threatened species within the project site.

11.2 WETLANDS WITHIN THE PROJECT SITE

Wetlands of approximately two (2) acres are located within Area H. This wetlands area supports a variety of flora and fauna. It has not been determined whether this wetlands area has been afforded any special protection status over and above regulations associated with Executive Order 13088. EODT will not conduct any OE activities within the boundaries of the wetlands area.

11.3 CULTURAL, ARCHAEOLOGICAL AND WATER RESOURCES ON SITE

11.3.1 Historic Structures

The former Camp Hero site includes several locations of potential historic, archaeological, religious or cultural (HARC) significance, including the Montauk Point lighthouse; the coastal gun batteries in the western portion of the park property (specifically, Battery 112 and Battery 113); as well as structures associated with the Former Camp Hero cantonment area.

11.3.2 Water Resources

The wetlands area is bounded on the east and west by two wet weather streams.

11.4 COASTAL ZONES WITHIN THE PROJECT SITE

Revised Area K is a coastal zone bounded by the Atlantic Ocean. The area is undeveloped. The beach is comprised of stones, cobbles and boulders with very little sand below the high tide line. A bluff approximately 20-40 ft. high separates the beach proper from the upland areas. Many of the bluffs have been undercut by storm action and wind erosion, and preservation of the bluffs (from sloughing) is a concern locally. The edge of the bluffs is also a potential safety hazard, as it may not support the weight of an adult without collapsing.

11.5 TREES AND SHRUBS THAT WILL BE REMOVED

Vegetation removal will be limited to only that necessary to maintain safety. This will be performed using a combination of a hand-held brush-trimming equipment and hand tools. In no event will trees over 2" in diameter be removed without KO approval.

11.6 EXISTING WASTE DISPOSAL SITES ON SITE

There are no authorized waste disposal sites on site; however, there is numerous litter and debris (including hazardous materials such as lead-acid batteries) from previous housing on site. This will be removed during brush-clearing. The debris will be stockpiled on site in an area cleared of OE. Any hazardous materials identified will be provided to the landowner for disposal. Non-OE scrap will be either stockpiled or taken off site, at the landowner's discretion.

11.7 ENVIRONMENTAL MITIGATION PROCEDURES

11.7.1 Manifesting, Transportation, and Disposal of Wastes

No hazardous wastes are expected to be generated as a result of site activities. Sanitary trash will be bagged and disposed of properly off site. OE (and non-OE, if desired by the landowner) scrap will be placed into roll-offs and transported off site for recycling. EODT will utilize its nationwide contract with Phillip Metals for scrap recycling.

11.7.2 Burning Activities

No burning activities will be allowed on site.

11.7.3 Dust and Emission Control

Due to the limited about of disturbed area anticipated during the project, it is not anticipated that dust or emissions controls will be needed on site. If necessary, limited dust control will be implemented using a water spray. The water will come from municipal or fire protection water available on site.

11.7.4 Spill Control and Prevention

EODT will not store fuel, oil, paint, or similar materials on site. In the event of a spill in an area cleared of UXO/OE, shovels will be used to remove any contaminated soils, which will be containerized and properly disposed of. If the area has not yet been cleared of UXO/OE, the clearance will be performed before soil removal occurs. A spill kit containing absorbent, rags, shovels, and latex gloves will be available on site.

11.7.5 Storage and Temporary Facilities

Due to the short duration of the project, EODT does not anticipate on site storage facilities. If these facilities are deemed necessary, a conex-type box will be placed on site in an area cleared of UXO/OE.

11.7.6 Access Routes

Access to the site will be via existing park roads. No roads will need to be created for the project. Access to Revised Area K will be on foot.

11.7.7 Restoration of Blast Holes

EODT will return any blast holes to a condition as existed before the demolition activity. Stones and cobbles on the beach, often completely rounded by erosion, will be removed by hand and then re-placed after demolition operations are complete.

11.7.8 Control of Water Run-on and Run-off

Due to the limited amount of disturbed area expected on site, run-on and run-off control is not anticipated.

11.7.9 Decontamination and Disposal of Equipment

No hazardous materials (other than UXO/OE) are expected on site. Decontamination will consist of performing a dry-decon of equipment (including scraping dirt and mud from the equipment) before demobilization. Disposal of equipment consumed during the project will include the draining and capturing for disposal of any hazardous materials (such as fuel and oil) within the equipment, and disposal in a sanitary landfill.

11.7.10 Minimizing Areas of Disturbance

Due to the low number of expected anomalies requiring excavation, and the manual digging methods, it is expected that the areas of disturbance will be limited in nature. If possible, the topsoil will be segregated during anomaly excavation and replaced as the hole is backfilled.

11.8 POST-ACTIVITY CLEANUP

At the completion of activities, all equipment and materials brought on site will be removed. All excavations will be backfilled with native material, and EODT will conduct a final walk-through with the OESS to ensure that no remaining clean-up items exist.

11.9 AIR MONITORING PLAN

Not Applicable.

11.10 PROJECT ENVIRONMENTAL SPECIFICATION

EODT will prepare a brief Project Environmental Specification detailing all project environmental control measures.

CHAPTER 12: INVESTIGATIVE DERIVED WASTE PLAN

This plan is not required for this Task Order.

CHAPTER 13: GEOGRAPHIC INFORMATION SYSTEMS (GIS) PLAN

13.1 GEOGRAPHICAL INFORMATION SYSTEM

13.1.1 Overview

EODT has established and is managing a Project GIS in accordance with DID OE-005-14.01 Geographical Information Systems Plan and as further directed in the SOW. As directed by the SOW, EODT will submit the GIS Data in ESRI Shapefiles, which are compatible with the ESRI Arcview/ArcInfo System. Other tabular data will be managed in Microsoft Access or Microsoft Excel as appropriate. DID OE-005-14.01, the Project GIS data structure is compliant with proposed OEGIS SDSFIE data standards.

13.1.2 GIS Data

EODT has developed data layers from the EE/CA and commercial sources sufficient to serve as an initial base for the Project GIS and will serve as the initial Conceptual Site Model (See Figure 3 in Appendix B). The following table indicated the status of that is or will be maintained in the GIS:

Table 13-1. Project GIS Data Status

Layer	Vector Data	Imagery
GIS Data Group 1: Site Basic Geographic Information		
Site topography		■
Man-made features (e.g., buildings, roads, etc.)	■	
Natural terrain features (e.g., beach, bluff, wetlands, streams, forest, etc.)	■	■
Property ownership and access information	NA	
Historical photo analysis	NA	
USGS quad sheets		■
GIS Data Group 2: Site Use		
Training ranges	NA	
Target areas	NA	
Wildlife refuges	■	
Trails, camping areas, public access	■	
Endangered species habitats	NA	
Archaeological site	■	
Anticipated future use	NA	
GIS Data Group 3: OE Investigation Areas		
OE Risk Zones	NA	

Location/size of each transect/meandering path, with survey data and field notes	NA	
Location/size of each grid, with survey data and field notes	■	
TCRA Information	NA	
GIS Data Group 4: Geophysical Mapping Data (by grid)	**NA**	
Raw geophysical data		
Raw geophysical data – grid data notes and quality control data		
Processed geophysical data – profiles		
Processed geophysical data – maps		
GIS Data Group 5: Anomaly Data (by grid)		
Collection data	■	
Reacquisition data	■	
GIS Data Group 6: Project Management Data		
Project progress maps		■
Productivity/forecasting		■
GIS Data Group 7: Action Data		
Investigation Results		
Cost Analysis	NA	

13.1.3 Field Data Collection

The GIS Manager will be responsible for locating and incorporating the remaining background GIS data layers as listed in GIS Data Groups 1, 2 and 3 from the table above. The Field OE Removal Teams will collect Grid, Anomaly and OE Item Data using EODT HandHeld Data Collection System (HDC). Each field removal team will be outfitted with an EODT HDC that has been preloaded with GIS layers including the Grid Layout where they will be working. GIS layers in the HDC include roads, streams, grids, Anomalies and OE Items. The HDC is sufficient to record all spatial and OE identification data for this removal action.

13.1.3.1 Grid Data

The Survey Team will layout the location of 200 ft. by 200 ft. grids in Area H, and 200 ft by variable width grids in Revised Area K. The southwest corner of each grid and the site boundary will be surveyed. The Field OE Removal Team Lead will record the date of each action on the grid as well as the number of anomalies and total OE Related and Non-OE related scrap. The GIS layer "GRID_AREA.SHP" will store the Grid data.

13.1.3.2 Anomaly Data

The Team Lead will record the location of each anomaly found either using the GPS location or entering the local X and Y distance of located anomalies from the South-West corner of the grid. Additionally, data sufficient to characterize the anomaly is entered. The anomaly data will be managed and stored in the "Anomaly_Point" shapefile. If the anomaly is OE Related, the Team Lead will be prompted to enter the OE Item Data.

13.1.3.3 OE Item Data

If the anomaly is determined to by OE Related, the Team Lead will enter the information sufficient to fully characterize the OE Item(s). The OE Item data will be managed and stored in the "OEItem_Point" shapefile.

13.1.3.4 Geophysical Data

The Geophysical QC Team Lead will collect geophysical data sufficient to QC grids in 'open' areas after the grids have been cleared. Geophysical data will be processed by the geophysics department at EODT's main office. Processed Geophysical data will be represented by a geo-referenced geophysical results image which the GIS team will incorporate into the project GIS and overlay it with other spatial data. If any anomalies are identified by the Geophysical QC, they will be cleared and recorded as stated above.

13.1.4 Field Data Processing

Data collected during the field operations will be synchronized with Field Office Computer and transferred to EODT Master Project GIS in the EODT main office at the end of each day.

13.1.5 GIS Reporting

The Project GIS will be updated daily with the previous day's field data. Once loaded into the Project GIS, the data will be immediately available via the project E-GIS. The project E-GIS can be accessed at: http://www.eodt.com/CampHero/Hero_Maps. This site utilizes JAVA and MapObjects technology. Users will be directed to load the appropriate internet browser plug-ins in order to access the site's GIS functionality. The E-GIS is secured using EODT's Internet Security System. Requests for access to the project E-GIS will be made through the CEHNC Technical Manager. Report figures will be generated for each grid identifying anomaly locations, OE Item locations and Geophysical Data as appropriate.

CHAPTER 14: REFERENCES

This plan is not required for this Task Order.

APPENDIX A

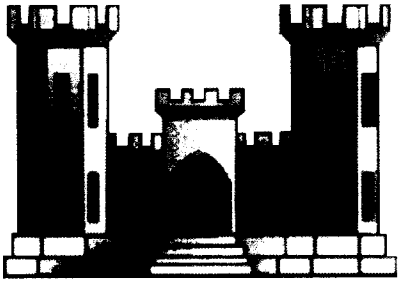
TASK ORDER SCOPE OF WORK

FOR THE

OE ENGINEERING REMOVAL ACTION
FORMER CAMP HERO
MONTAUK, NEW YORK

Prepared For:

Contracting Agency:
U.S. Army Engineering & Support Center, Huntsville
4820 University Square
Huntsville, Alabama 35816-1822



Contract Number: DACA87-00-D-0037
Task Order: 0024
Project Number: C2NY002404

Prepared By:

EODT
EOD TECHNOLOGY, INC.

2229 Old Highway 95
Lenoir City, Tennessee 37771

June 2003

jab 02/21/03

REVISED STATEMENT OF WORK
OE ENGINEERING REMOVAL ACTION
FORMER CAMP HERO
MONTAUK, NEW YORK
PROJECTS NO. C2NY002404
Initial SOW: 26 February 2003

Revision 1: 12 June 2003

Revision 1: *Increase* funds for increased hotel costs above the local per diem rate due to the height of the summer vacation period (3.3, 4, 5), *reduces* scope and funds for not working in area noted as a wetland 3.3, 4, 5), *adds* scope and funds for providing public support logistics and draft public documents (3.8.6), *adds* scope and funds for establishing an Administrative Record for the project that is expandable at the District Office (3.8.7), remove scope and funds for establishing a web site for the project (3.6) , and *make* administrative corrections to the scope (various marked locations)

1.0 OBJECTIVE

The objective of this task order is to perform a removal action of ordnance and explosives (OE) for the former Camp Hero. The contractor shall safely locate, identify, and dispose of all OE material and OE-related scrap located in the Area H and Revised Area K. The specific areas shall be cleared to the depth of four (4) feet. The site contains approximately 17 acres.

2.0 BACKGROUND

The work required under this Scope of Work (SOW) falls under the Defense Environmental Restoration Program - Formerly Used Defense Sites (DERP-FUDS). Ordnance and Explosives (OE) exists on property formerly owned or leased by the Department of Army.

2.0.1 Explosive ordnance is a safety hazard and may constitute an imminent and substantial endangerment to site personnel and the local populace, thus the applicable provisions of 29 CFR

1910.120 apply. During the removal action it is the Government's intent that the contractor destroy all OE encountered on-site and that the contractor's work is to be performed in a manner consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section 104 and the National Contingency Plan (NCP), Sections 300.120(d) and 300.400(e).

2.0.2 Due to the inherent risk in this type of operation, the contractor shall be limited to a 40-hour work week: either five 8-hour days or four 10-hour days. UXO personnel shall not perform OE-related tasks more than 10 hours per day.

2.0.3 Chemical Warfare Materiel (CWM)

The site is not suspected to contain Chemical Warfare Materiel (CWM). However, if suspect CWM is encountered during any phase of site activities the Contractor shall withdraw upwind from the work area, secure the site and contact the Corps of Engineers, CEHNC-OE Safety for assistance and guidance.

2.1 GENERAL SITE INFORMATION

2.1.1 Location

The former Camp Hero is located in Suffolk County in Montauk, New York, at the easternmost tip of the southern fork of Long Island. The former Camp encompasses approximately 468.69 acres.

2.1.2 History

See Camp Hero EE/CA dated October 2001 and Action Memorandum dated August 2002 for site history and current use.

2.1.3 Potential Ordnance

Documented ordnance items found during the EE/CA were 3.5-inch rockets , 105 mm projectiles, and frag from large projectiles (size unknown).

3.0 SPECIFIC REQUIREMENTS

The contractor's proposal shall detail the technical approach(es) that they will be using to meet the requirements of each task

3.1 (TASK 1) SITE VISIT & DOCUMENTATION REVIEW (FFP)

3.1.1 Site visit

A post award site visit will be allowed for this project. The Contractor will be allowed up to 3 persons for 2 days plus travel. The Contractor shall notify the CEHNC OE, Technical PM (Mr. Jerry Kresge 256-895-1158) 14 days before the planned visit. The Contractor shall prepare an Abbreviated Site Safety and Health Plan (ASSHP) before traversing the site. The ASSHP shall be submitted to Contracting Officer for review and approval prior to the site visit. The Contractor shall ensure that all members of the site visit team maintain compliance with the ASSHP. An example ASSHP may be obtained from CEHNC-OE-S (Mr. Greg Parsons at 256-895-1589).

3.1.2 Project Document Review

The Contractor shall review all pertinent project data and documentation to familiarize project staff with the project.

3.2 (TASK 2) - REMOVAL WORK PLAN (FFP)

The Contractor shall prepare a Conventional OE Removal Type II Work Plan in accordance with (IAW) DID OE-005-01.01.

3.3 (TASK 3) BRUSH CLEARING (FFP)

Brush clearing shall be kept to a minimum due to public environmental concerns. The Contractor shall perform the minimum amount of work necessary to clear paths or areas of

vegetation, which impede the progress, effectiveness or safety of workers. Brush-clearing requirements, procedures, and restrictions shall be coordinated with the New York State Office of Parks, Recreation and Historic Preservation before field work commences. Trees two (2) inches in diameter or greater (measured at chest height) shall not be cut unless specifically approved in writing by the Contracting Officer. For planning, the contractor shall assume a maximum of 86 acres of brush clearing.

3.4 (TASK 4) LOCATION SURVEYS AND MAPPING (FFP)

Location surveying and mapping shall be IAW DID OE-005-07.01 and the approved Work Plan. The coordinate system used for the Task Order shall be the New York State Plane coordinate system. All data submitted shall be in the New York State Plane Coordinate system.. All survey work shall be performed under the direction of a Professional Land Surveyor licensed in the State of New York. OE locations shall be located to the nearest 1 foot The Contractor shall locate and/or establish a minimum of 2 (two) control monuments for the site. Survey data shall be submitted as follows:

Control Monument Data	With project status report following completion of work
Site grid Data	With project status report following completion of work
OE location Data	With project status report following completion of work

Survey data may be submitted by CD or electronically via email. Other methods of submittal must be proposed and approved by the contracting officer. The site grid data shall include a map of the entire site with grids shown and other pertinent features. A tabulated list of grid corners in New York State Plane coordinates shall be submitted in a Microsoft Excel Spreadsheet version 98 or higher. OE location data shall be submitted in a Microsoft Excel Spreadsheet version 98 or higher. Data shall include a grid number where found, item number assigned, type of item, location in New York State Plane coordinates to nearest foot, and depth below ground surface. All survey data shall be included in the Removal Report.

3.5 (TASK 5) REMOVAL ACTION (FFP)

jah 02/21/03

The Contractor shall, utilizing UXO qualified personnel as outlined in DID OE-025.01, implement the removal action as specified in the approved Work Plan, approved ESS and facilitate OE destruction and scrap removal from the site.

3.5.1 AREA H

The contractor shall provide all necessary personnel and equipment to perform a clearance to a maximum depth of 4 feet as specified in the approved Action Memorandum for OE clearance operations at AREA H. The size of AREA-H is approximately 86 acres and includes the slope

3.5.2 REVISED AREA K

The contractor shall provide all necessary personnel and equipment to perform a clearance to a maximum depth of 4 feet as specified in the approved Action Memorandum for OE clearance operations at Revised AREA-K. The size of Revised AREA-K is approximately 9 acres and is near shore to include the toe of the slope.

3.5.3 Hazardous OE Destruction

The Contractor shall be responsible for the destruction of all OE encountered during site activities utilizing qualified personnel and in accordance with all aspects of the project Work Plan. The Contractor shall establish in the Work Plan a method of disposal for all OE.

3.5.4 Backfilling Excavations

All access/excavation/detonation holes shall be backfilled by the Contractor. The Contractor shall restore such areas to their prior condition. Erosion on the slope area is a concern of the stakeholders. The Contractor shall take the necessary precautions to prevent erosion on the site resulting from intrusive activities, which may include but not limited to, reseeding, sodding, installing erosion control matting or other means to prevent erosion. Erosion control methods shall be specified in the WP.

3.5.5 OE Accountability

The Contractor shall maintain a detailed accounting of all OE items/components encountered. This accounting shall include the amounts of OE, the identification and condition, depth located, disposition and location. The accounting system shall also account for all demolition materials utilized to detonate OE on site. This accounting shall be a part of an appendix to the Final Report.

3.5.6 DD Form 1348-1A

The Contractor shall complete a DD Form 1348-1A as turn-in documentation. The following statement shall be included on the form

> **"This certifies and verifies that the AEDA residue, Range Residue, and/or Explosive Contaminated Property listed has been 100 percent properly inspected and to the best of our knowledge and belief, are inert and/or free of explosives or related material."**

(Note: AEDA is defined as ammunition, explosives and dangerous articles) Instructions or completing this form are contained in the Defense Utilization and Disposal Manual, DoD 4160.21-M. The DD 1348-1A shall be signed with dual signatures. The first signature (certifier) shall be the Senior UXO Supervisor (SUXOS). The second signature (verifier) shall be the USACE OE Safety Specialist.

3.5.7 Disposal of OE Scrap

All OE scrap shall be disposed of at a foundry and/or recycler where it will be processed through a smelter or furnace prior to resale or release. It is the intent that the OE scrap is disposed of permanently. Disposal in a landfill or to a scrap dealer where it may sit in a scrap pile is unacceptable. The contractor shall document the transport of the scrap and the transfer of the scrap to the next responsible party. All OE scrap shall be secured in a lockable container as soon as possible after discovery. All containers shall remain locked until such time as it is delivered to, and signed for by a foundry/recycler. The method/location of disposal shall be detailed in the

WP. The Contractor shall also include in the WP a written statement from the dealer that the scrap will be processed through a smelter, or furnace, prior to resale or release.

3.5.8 Quality Control

The Contractor shall develop a Quality Control (QC) Program IAW DID OE-005-11.01 that shall ensure a quality product from all aspects of the project to include any work performed by a subcontractor on the project. The Contractor shall develop QC procedures and submit those procedures, for all phase and types of work, in the project work plan(s). The Contractor shall ensure that documentation is maintained and provided in the final report that supports the QC process. In addition to the QC process by the contractor, the Government may perform Quality Assurance (QA) on all phases and types of work performed. Any work that fails the Government QA process shall be re-done by the Contractor at no cost to the Government. The Contractor shall provide full documentation to the USACE detailing what failed the QA process, why it failed, and how the problem was corrected.

The criterion for accepting grids that have been completed by the contractor is:

Area H No ferrous objects with a width (diameter) inclusive of and between a 3.5 inch rocket motor (which is 51mm diameter) and a 105 mm projectile at a depth of less than 11 diameters of the object.

Area K No ferrous objects with a width (diameter) inclusive of and between a 3.5 inch rocket warhead and a 105 mm projectile at a depth of less than 11 diameters of the object.

3.5.9 UXO Quality Control (QC) Specialist

The individual performing the UXO QC shall not be involved in the performance of other OE field tasks. UXO QC shall be a separate function. The UXO QC Specialist shall meet the requirements as shown DID OE-025.01. The Contracting Officer must approve any exceptions.

3.6 (TASK 6) ESTABLISHMENT AND MANAGEMENT OF GIS (FFP)

The Contractor shall establish and manage a GIS IAW DID OE-005-14.01 Geographical Information System Plan. The Contractor shall submit the GIS data in a format compatible to the ESRI (arcview/arcinfo) system. ~~The Contractor shall create and maintain a website for this project. The Contractor shall post on the website the Final EE/CA Report, the signed Action Memorandum, the Work Plan and Work Plan review comments, and the Final Removal Report. This site shall be maintained through project delivery order close out date. The website shall also make available to the Government and supporting Contractors for this project all supporting geophysical, surveying and mapping, and all other removal action data generated as part of the field activities.~~

3.7 (TASK 7) REMOVAL REPORT (FFP)

The Contractor shall prepare and submit a Site Specific Final Removal Report in accordance with CEHNC guidance documents and DID OE-030.01. The Contractor shall also prepare a recurring review plan in accordance with DID OE-110.01. This plan shall be included in the Final Removal Report as an appendix.

3.8 (TASK 8) PROJECT MANAGEMENT (FFP)

The Contractor shall perform project management activities necessary to maintain project control, to include but not limited to the following. The expected closeout date is December 31, 2003

3.8.1 Schedule

The Contractor shall submit a proposed Project Schedule in Microsoft Project. The schedule shall be adjusted and refined during project planning meeting(s). The contractor shall update the schedule IAW DID OE-085.01 Project Status Report. A final schedule shall be submitted a minimum of 30 days before commencing field work (i.e. GPO plot).

3.8.2 Telephone Conversations/Correspondence Records

The Contractor shall keep a record of each phone conversation and written correspondence concerning this Task Order IAW DID OE-055.01. A copy of this record shall be attached to the Project Status Report.

3.8.3 Monthly Status Report

The Contractor shall prepare and submit a monthly status report IAW DID OE-080.01 and include any other items required in the SOW.

3.8.4 Project Status Reports

During fieldwork the Contractor shall prepare and submit weekly status report IAW DID OE-085.01 and include any other items required in the SOW. The CEHNC TM shall be included on the distribution list for the Project Status Report. Others may be added during the duration of the project.

3.8.5 Meetings

The Contractor shall be prepared to attend and participate in 2 project meetings to be held in Montauk, NY. Contractor personnel shall not exceed 2 people for 1 plus travel for each meeting.

3.8.6 Public Support

The contractor shall provide public support by way of providing a draft newspaper article on the removal actions and date of the public meeting scheduled for the evening of July 10, 2003 and at the Park Service Management/Golf Complex. The contractor shall further provide the required materials and equipment for the public presentation. The contractor shall provide short presentation on his planned field activities and assist the NY District Project Manager answer questions. **Cost for Public Meeting is already included as second meeting originally bid.**

3.8.7 Administrative Record

The Contractor shall establish and maintain an Administrative Record for the on-going project in accordance with the guidance given in EP 1110-3-8, Chapter 4 (Establishing and Maintaining Administrative Records). This task requires close coordination with the CENAN and CEHNC to secure all required documents to support the Administrative Record. The Contractor will secure a place to establish and house the Admin Record in the local city or community of the project. The Contractor shall provide all final documents in the Administrative Record on CD to the USACE Rock Island District for placement onto the Project Information Retrieval System (PIRS).

3.9 (TASK 9) CONVENTIONAL EXPLOSIVES SAFETY SUBMISSION (ESS) (FFP)

The contractor shall develop a Conventional Explosives safety submission IAW DID OE-060.01. The ESS shall describe, in detail, the safety criteria involved in an OE removal operation. The ESS shall be approved prior to site mobilization. The Contractor shall coordinate with CEHNC OE-CX Wayne Shaw (256-895-1513) for ESS approval. The Contractor shall keep the CEHNC OE Technical PM informed of any correspondence concerning the ESS.

4.0 SUBMITTALS AND CORRESPONDENCE

4.1 Format of Engineering Reports

Any and all reports and/or plans not covered by a specific DID shall be prepared according to the following guidelines. The front cover of the report or plan shall be prepared IAW Attachment 1 of DID OE-030.01 and shall bear the following statement in addition to other requirements. *"The views, opinions, and/or findings contained in the report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other documentations."* The cover shall also denote which version of the report/plan presented (e.g. Draft, Draft Final or Final). All data, including raw analytical and

electronic data, generated under this task order are the property of the DoD and the government has unlimited rights regarding its' use.

4.2 Computer Files

All final text files generated by the Contractor under this contract shall be furnished to the Contracting Officer in Microsoft Word 6.0 or higher software. Spreadsheets shall be in Microsoft EXCEL. All final CADD drawings shall be in Microstation 95 or higher. All GIS data shall be in ESRI (Arcview/Arcinfo) format.

4.3 HTML or PDF Deliverables

In addition to the paper and digital copies of submittals, the final version of any and all reports and/or plans shall be submitted, uncompressed, on CD ROM in hypertext markup language (HTML) or PDF along with a linked table of contents, linked tables, linked photographs, linked graphs and linked figures, all of which shall be suitable for viewing on the Internet.

4.4 Review Comments

Various reviewers will have the opportunity to review submittals made by the Contractor under this contract. The Contractor shall review all comments received through the CEHNC OE Technical Project Manager and evaluate their appropriateness based upon their merit and the requirements of the SOW. The Contractor shall issue to the OE Technical Project Manager a formal, annotated response to each comment IAW the established schedule in this SOW. In the event the Contractor does not concur with a comment, the issue shall be discussed with the CEHNC OE Technical PM. If the OE Technical PM is not available, then the Contractor shall contact the Lead Technical ~~Manager~~Engineer.

4.5 Identification of Responsible Personnel

Each report shall identify the specific members and title of the Contractor's staff and subcontractors that had significant and specific input into the reports' preparation or review.

~~jab 02/21/03~~

4.6 Public Affairs

The Contractor shall not publicly disclose any data generated or reviewed under this contract. The Contractor shall refer all requests for information concerning site conditions to ~~the local Corps of Engineers Public Affairs Office (New York District) with a copy furnished to~~ the CEHNC OE Technical Project Manager. Reports and data generated under this contract are the property of the DoD and distribution to any other source by the Contractor is prohibited, unless authorized by the Contracting Officer.

4.7 Submittals

The contractor shall submit copies of the plans, maps, and reports as identified in paragraph 4.8, or as specified in this SOW, to each addressee listed below in the quantities indicated. The Contractor shall submit 1 copy on CD with each copy of the Final versions of all submittals (WPs, Reports, Plans, etc) IAW section 4.2. The Contractor shall submit 1 copy on CD of the Final Versions of all submittals (WPs, Reports, Plans, etc) IAW section 4.3. For purposes of the SOW all days are considered calendar days.

ADDRESSEE	COPIES
US Army Engineering and Support Center, Huntsville ATTN: CEHNC-OE-DC (Mr. Jerry Kresge) PO BOX 1600 Huntsville, Alabama 35807-4301	4
Commander US Army District, New York Attn CENAN-PP-E (Mr. Constancio Labeste) ~~Attn: CENAN-PP-E~~	5

jnb-02/21/03

26 Federal Plaza
Room 21081811
NW, NW 10278

4.8 Submittals and Due Dates:

SUBMITTAL	DUE DATES
ASSHP	10 days prior to site visit
Draft ESS	TBD
Final ESS	14 days after receipt of comments
Proposed schedule	7 days after award
Draft Type II Work Plan	TBD
Final Type II Work Plan	14 days after receipt of comments
Draft Removal Report	30 days after completion of field work
Draft Final Removal Report	14 days after receipt of comments
Final Removal Report	14 days after receipt of comments

5.0 REFERENCES:

References are contained in the basic contract. Below are references that are not in the basic contract.

5.1 Federal Acquisition Regulation (FAR) Clause 52.236.13, Accident Prevention

5.2 Camp Hero EE/CA

5.3 Camp Hero EE/CA Work Plan

5.4 Camp Here Action Memorandum

5.5 Data Item Descriptions

The Data Item Descriptions (DID) are part of the basic contract and are available at the following URL: http://www.hnd.usace.army.mil/ocw/dids.asp

APPENDIX B

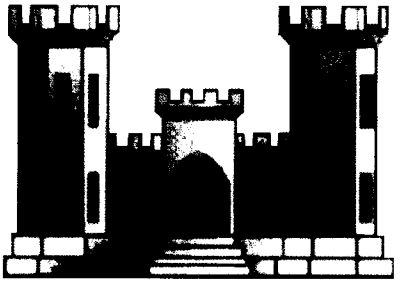
SITE MAPS

FOR THE

OE ENGINEERING REMOVAL ACTION
FORMER CAMP HERO
MONTAUK, NEW YORK

Prepared For:

Contracting Agency:
U.S. Army Engineering & Support Center, Huntsville
4820 University Square
Huntsville, Alabama 35816-1822



Contract Number: DACA87-00-D-0037
Task Order: 0024
Project Number: C2NY002404

Prepared By:

EODT
EOD TECHNOLOGY, INC.

2229 Old Highway 95
Lenoir City, Tennessee 37771

June 2003

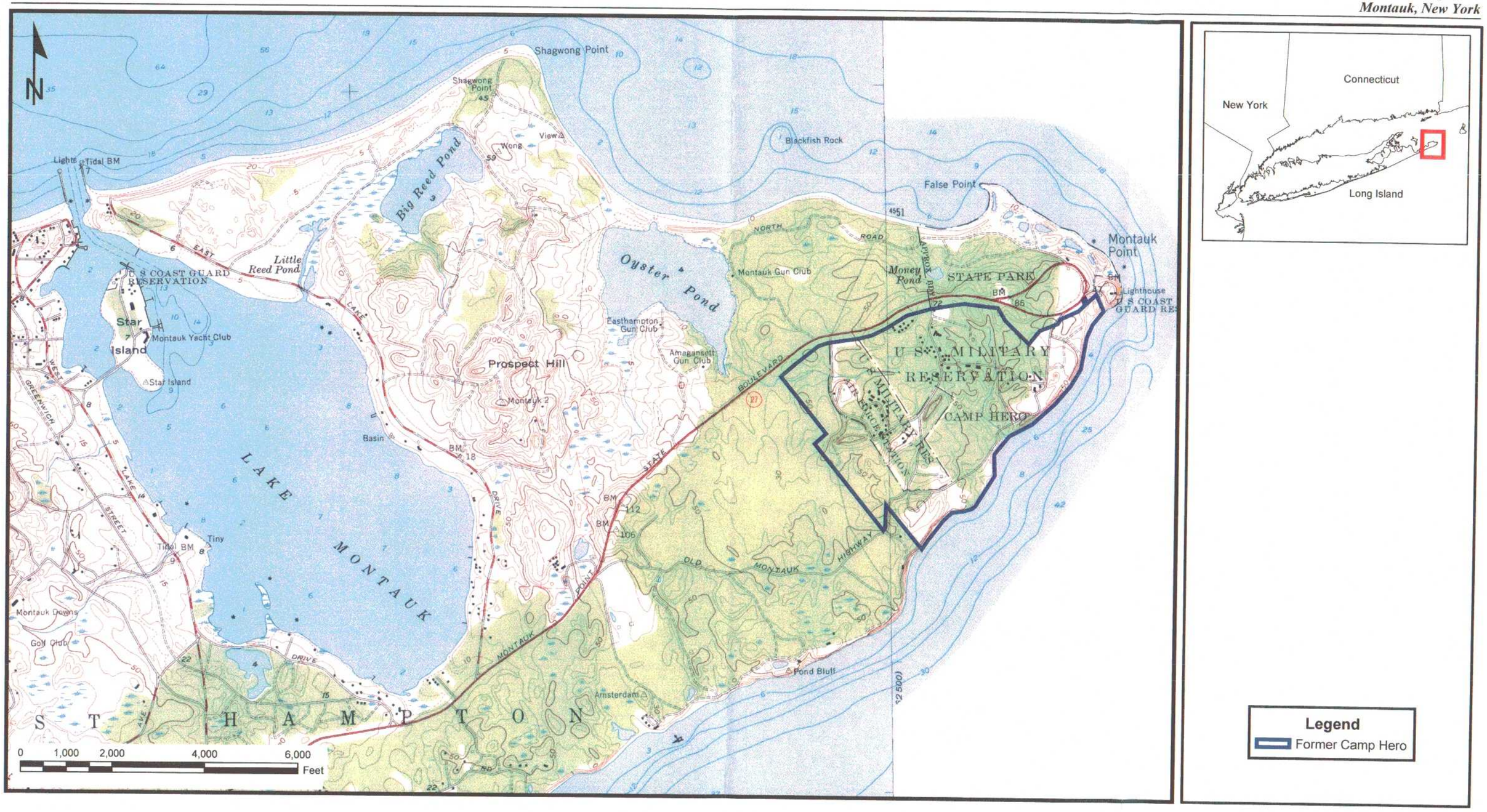


Figure B-1 Regional Map

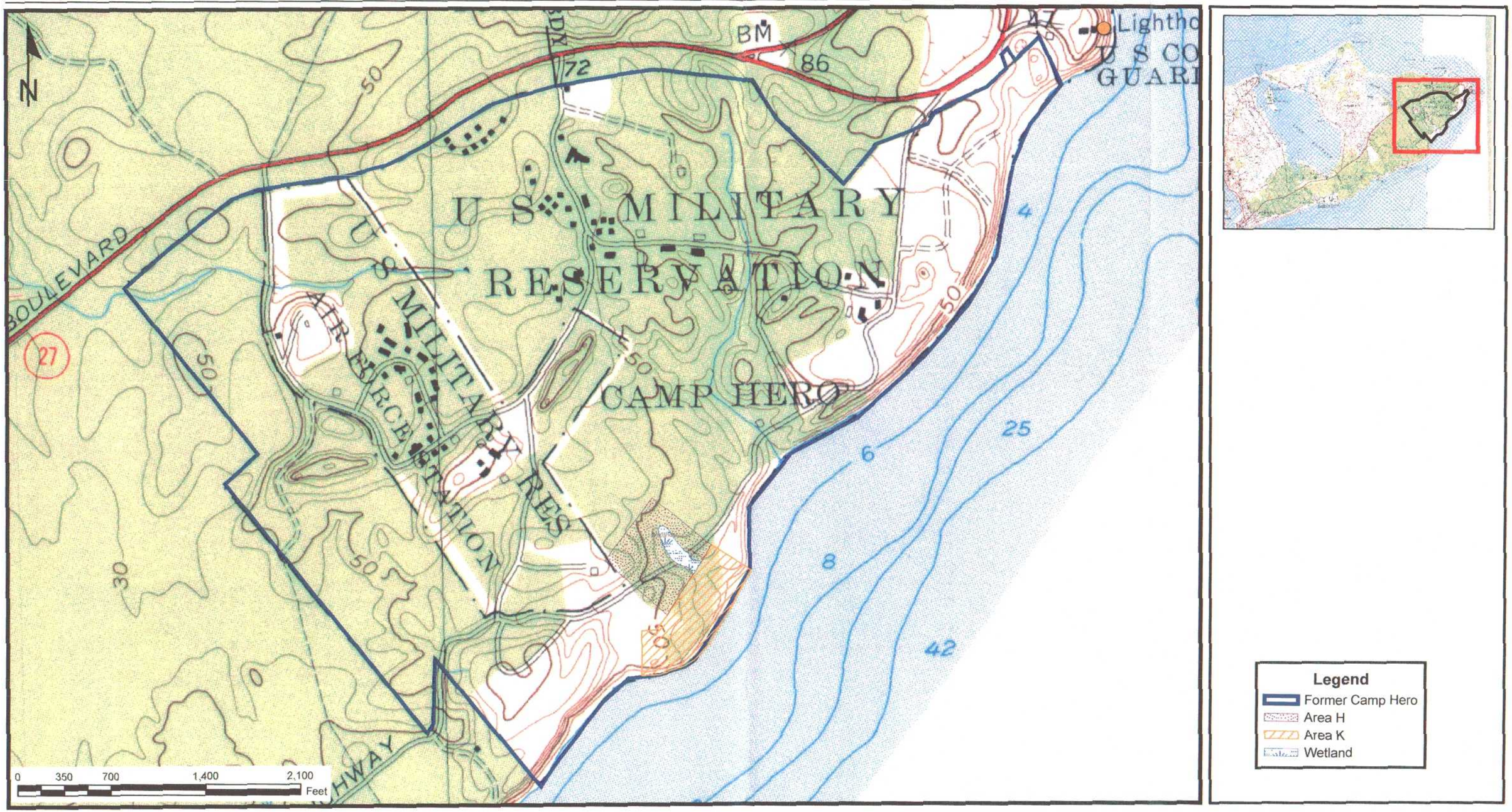


Figure B-2 Site Map

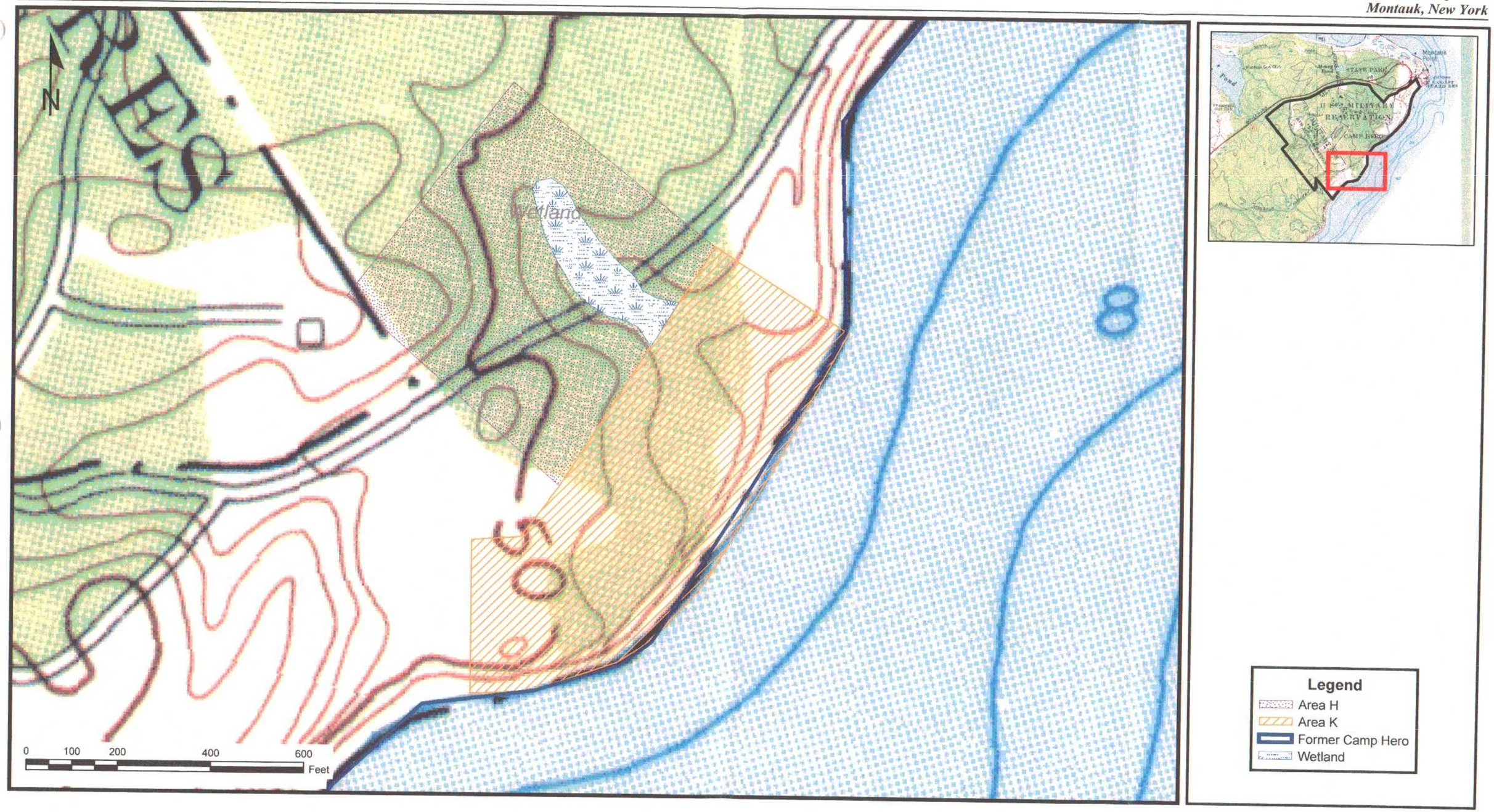


Figure B-3 OE Removal Areas

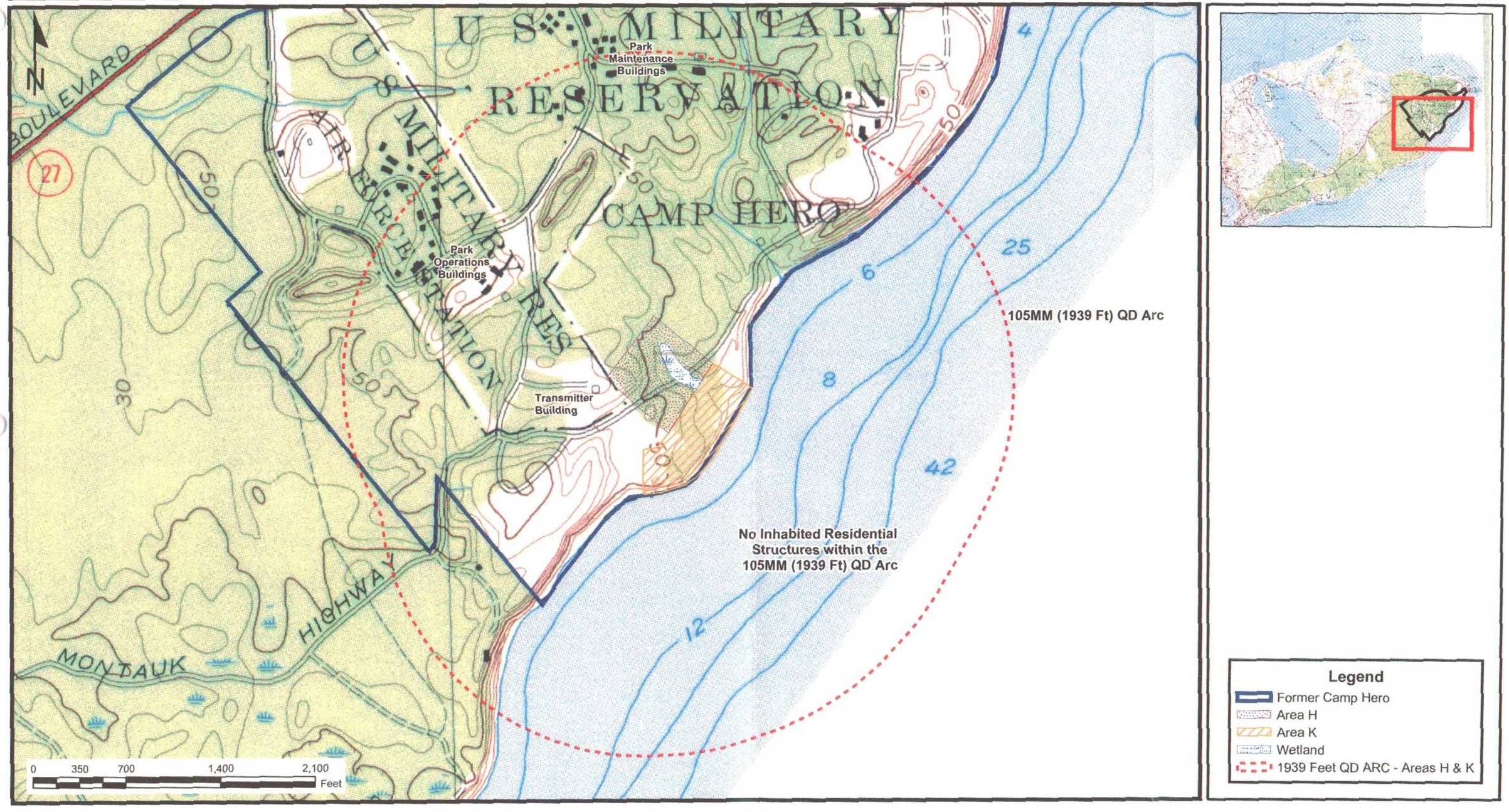


Figure B-4 105mm Projectile (1939 Feet) QD Arc Map

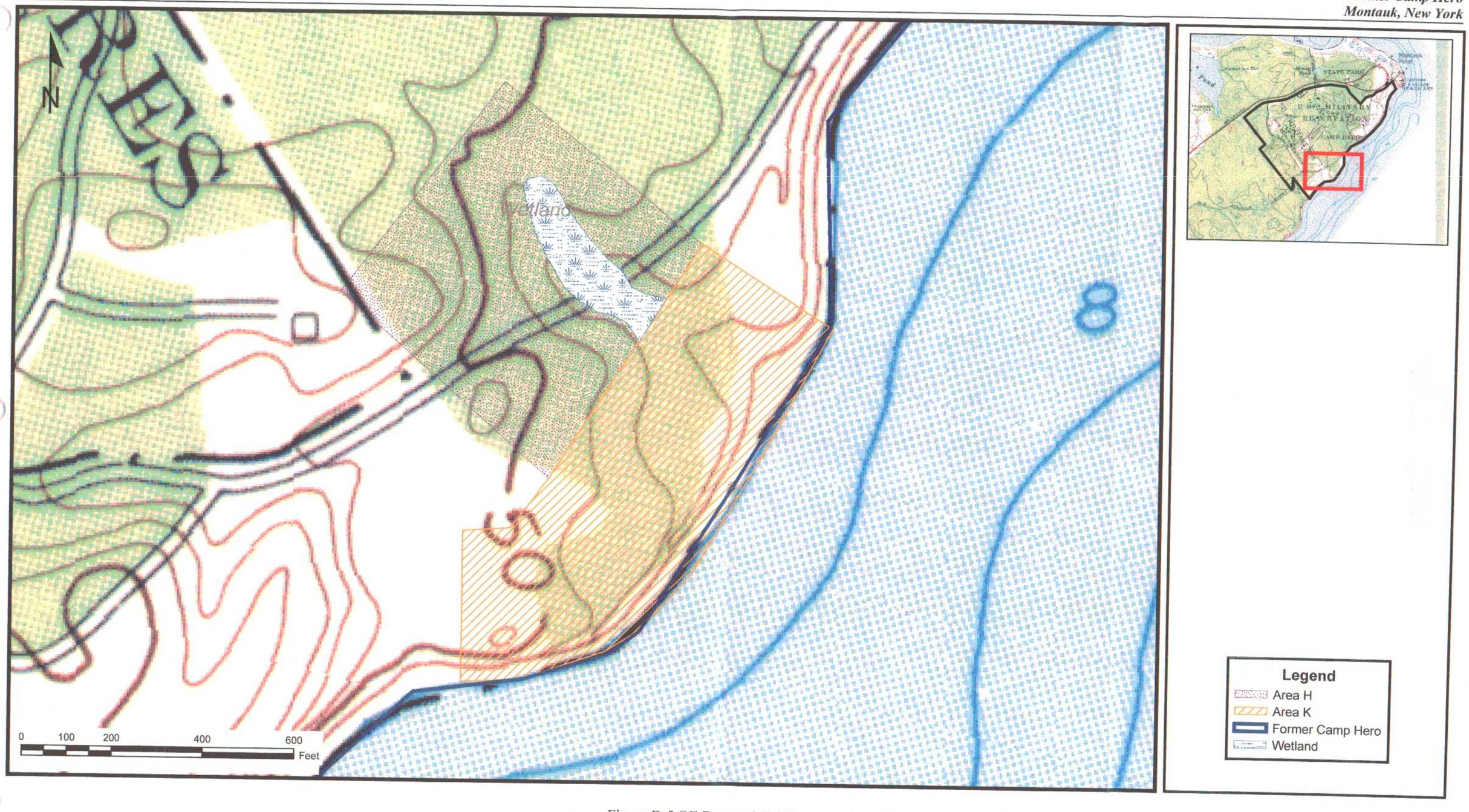


Figure B-5 OE Removal Grid Layout - Area H

APPENDIX C

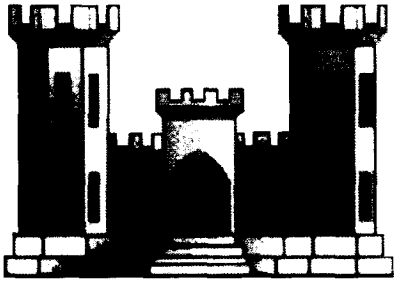
LOCAL POINTS OF CONTACT

FOR THE

OE ENGINEERING REMOVAL ACTION
FORMER CAMP HERO
MONTAUK, NEW YORK

Prepared For:

Contracting Agency:
U.S. Army Engineering & Support Center, Huntsville
4820 University Square
Huntsville, Alabama 35816-1822



Contract Number: DACA87-00-D-0037
Task Order: 0024
Project Number: C2NY002404

Prepared By:

EODT
EOD TECHNOLOGY, INC.

2229 Old Highway 95
Lenoir City, Tennessee 37771

June 2003

APPENDIX C
LOCAL POINTS OF CONTACT

EMERGENCY TELEPHONE NUMBERS

Service/Contact	Agency/Position	Telephone Number
Police	Montauk Department	911/631-668-3709
Fire	Amagansett Fire Department	911/631-267-3300
Ambulance	Stonington Ambulance Service	911/860-535-3721
Air Ambulance	Life Star	
Hospital	Southampton Hospital Emergency room	631-283-6000
USEPA	Emergency Response Center	215-596-1260
National Response Center	EPA	800-424-9300
Mr. Tom Dess	Montauk State Park Superintendent	631-668-2765
Poison Control Center	Poison Control Center	800- 282-5846
CEHNC Safety Office	Mr. Wayne Galloway or Mr. Greg Bayuga	256-895-1582 or 1596
Mr. Jerry Kresge	CEHNC Project Manager	256-895-1158
Mr. Jason Burcham	CEHNC Technical Manager	256-895-1289
Ms. Lydia Tadesse	CEHNC Contracting Officer	256-895-1169
TEU	CWM Support	410-436-4381
EOD Support	63rd Battalion (EOD), Ft. Dix NJ	609-562-5940
Mr. Bill Pearse	EODT Program Manager; EODT Project Mgr	865-988-6063, 865-310-9267
Mr. Phil Curry	EODT SUXOS	865-988-6063, 865-721-8009
Mr. Stephen Voland	Corporate Quality and Training Manager	(865) 988-6063, cell 207-9887
Dr. Charles Phillips, CIH	Corporate Occup. Safety and Health Mgr.	(865) 988-6063

APPENDIX D

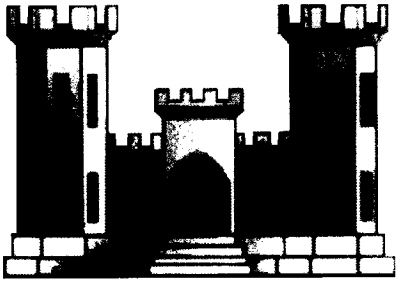
SITE SAFETY AND HEALTH PLAN

FOR THE

OE ENGINEERING REMOVAL ACTION
FORMER CAMP HERO
MONTAUK, NEW YORK

Prepared For:

Contracting Agency:
U.S. Army Engineering & Support Center, Huntsville
4820 University Square
Huntsville, Alabama 35816-1822



Contract Number: DACA87-00-D-0037
Task Order: 0024
Project Number: C2NY002404

Prepared By:

2229 Old Highway 95
Lenoir City, Tennessee 37771

June 2003

APPENDIX D
SITE SAFETY AND HEALTH PLAN

SITE SAFETY AND HEALTH PLAN APPROVAL FOR THE OE ENGINEERING REMOVAL ACTION, FORMER CAMP HERO, MONTAUK, NEW YORK

Project: OE Engineering Removal Action, Former Camp Hero, Montauk, New York

Site: Former Camp Hero **Site Location:** Montauk, New York

Contract Number: DACA87-00-D-0037 **Task Order Number:** 0024

The Site Safety and Health Plan (SSHP) presented as Appendix D of this OE Engineering Removal Action Plan was developed for the U.S. Army Engineering and Support Center, Huntsville (CEHNC) in support of the Scope of Work for the above referenced Task Order. The signatures provided below indicate that the SSHP has been reviewed by the referenced EODT personnel and approved for implementation at the above referenced project site once EODT has received Work Plan approval from the CEHNC Contracting Officer. Changes to this SSHP will be provided in writing by EODT and submitted to the CEHNC Contracting Officer for approval. On-site implementation of changes may be initiated prior to inclusion of the formal written changes if the CEHNC On-site OE Safety Specialist provides documented approval to EODT.

Work Plan Approval: Date: 06/27/03

Mr. William M. Pearse
EODT Project Manager
Office (865) 988-6063, Cellular (865) 310-9267

Date: 06/27/03

Mr. Stephen C. Voland
Corporate Quality Control Manager
Office (865) 988-6063; Cellular (865) 207-9887

Site Safety and Health Plan Approval: Charles C Phillips Date: 06/27/03

Dr. Charles Phillips, MS, MPH, PhD, CIH
EODT Occupational Safety and Health Manager
Office (865) 988-6063

LIST OF ACRONYMS AND ABBREVIATIONS

ACGIH	American Conference of Government Industrial Hygienists
ALARA	as low as reasonably achievable
ALS	Advance Life Support
ANSI	American National Standards Institute
APUV	all purpose utility vehicle
AR	Army regulations
BBP	Bloodborne pathogens
BIP	blown in place
CEHNC	U.S. Army Engineering and Support Center, Huntsville
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CMIR	Conventional Munitions Impact Range
CO	Contracting Officer
COC	chain-of -command
COR	Contracting Officer's representative
CPR	cardiopulmonary resuscitation
CTHA	Certification of Task Hazard Assessment
CSHP	Corporate Safety and Health Program
CSIT	Corporate Safety Inspection Team
CWM	Chemical Warfare Materiel
DA	Department of the Army
dBA	decibels-A weighted
DID	data item description
DOD	Department of Defense
EC	Emergency Coordinator
EM	Engineering Manual
EMM	earth moving machinery
EMT	Emergency Medical Technician
EOD	explosive ordnance disposal
EODT	EOD Technology, Inc.
EPA	Environmental Protection Agency
EP	Engineering Pamphlet
EZ	Exclusion Zone
FCH	Former Camp Hero
FM	Factory Mutual Engineering Corp.

GFCI	ground fault circuit interrupters
GPO	Geophysical Prove-Out
GS&M	geophysical surveying and mapping
HAZCOM	Hazard Communication
HAZWOPER	Hazardous Waste Operations and Emergency Response
HE	high explosives
HTRW	hazardous toxic and radiological waste
IAW	in accordance with
IDLH	immediately dangerous to life and health
KO	Contracting Officer
LO/TO	Lockout/Tagout
MSD	minimum separation distance
MSDS	Material Safety Data Sheet
MSP	Medical Surveillance Program
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Technology.
NOFA	No Further Action
OE	Ordnance and Explosives
ORS	ordnance related scrap
OSHA	Occupational Safety and Health Administration
OSHM	Occupational Safety and Health Manager
OSIC	On-Scene-Incident-Commander
PM	Project Manager
POW	prisoner of war
PPE	personal protective equipment
QA	quality assurance
QC	quality control
QCS	Quality Control Specialist
S&H	Safety & Health
SOP	Standard Operating Procedure
SOW	Scope of Work
SSHP	Site Safety and Health Plan
SUXOS	Senior UXO Supervisor
STD	standard
SWP	Safe Work Practices
TCRA	time critical removal action
TEU	Technical Escort Unit

TLV	Threshold Limit Value
UL	Underwriter's Laboratory
USA	U.S. Army
USACE	U. S. Army Corps of Engineers
USAF	U.S. Air Force
USDA	U.S. Department of Agriculture
USFS	U.S. Forestry Service
UV	ultraviolet
UXO	unexploded ordnance
UXOT2	UXO Technician II
UXOT3	UXO Technician III
UXOQCS	UXO Quality Control Specialist
UXOSO	UXO Safety Officer
WA	weather and atmosphere
WBGT	wet-bulb, globe temperature
WP	Work Plan
WZ	work zone

APPENDIX D
SITE SAFETY AND HEALTH PLAN (SSHP)

Section **Page**

FIGURES

TABLES

APPENDIX D
SITE SAFETY AND HEALTH PLAN

1.0 INTRODUCTION

1.1 SAFETY AND HEALTH PROGRAM

1.1.1 General

The EODT Corporate Policy and Procedures Manual mandates that EODT utilize all feasible cost-effective hazard control techniques, when there is a potential for personnel exposure to chemical, physical, or biological hazards. To implement this policy, EODT has developed, and successfully administers, a comprehensive pro-active Corporate Safety and Health Program (CSHP). This program has been designed and developed by EODT's full-time Occupational Safety and Health Manager (OSHM), with the support and consultation of EODT's senior UXO-qualified personnel. The EODT CSHP was developed to comply with the requirements of the Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) Standards found in 29 CFR 1910.120 and 29 CFR 1926.65. The EODT CSHP meets all applicable OSHA requirements, as well as the applicable requirements of the standards, regulations, and references listed below in Section 2.0.

2.0 SITE SAFETY AND HEALTH PLAN (SSHP)

2.1 SCOPE

The SSHP Approval form for the SSHP is presented at the beginning of the document. The signatures of the EODT PM and the EODT OSHM on the approval form indicate that the SSHP presented in this WP chapter has been approved by EODT for application to the OE Engineering Removal Action, Former Camp Hero, Montauk, New York.

2.2 OBJECTIVE

The primary objective of this SSHP is to provide EODT with an effective tool for the anticipation, identification, evaluation, and control of recognized safety and health hazards anticipated for the OE operations to be conducted at the Former Camp Hero (FCH) site. The secondary objective of this SSHP is to provide EODT with an effective communication medium for providing site personnel the task-specific and site-specific hazard information, as well as hazard control information, that they will use to safely and efficiently perform their assigned duties. For those emergencies that may reasonably occur, contingency plans and emergency response procedures have been developed and are presented in this SSHP.

2.3 ACCIDENT PREVENTION

2.3.1 General

This purpose of this paragraph is to address all content requirements of the Accident Prevention Plan, as specified in EM 385-1-1, that are not otherwise addressed in this SSHP. Included in this section are: EODT's statement of safety and health policy; EODT's safety program and accident prevention goals; EODT's policies and procedures for safety violations and SSHP non-compliance; and EODT's plan for the prevention of alcohol and drug abuse.

2.3.2 Statement of Safety and Health Policy

It is the policy of EODT to maintain personnel exposures to hazardous OE and chemical, physical, or biological hazards at levels that are As Low As Reasonably Achievable (ALARA). The ALARA policy is followed from the project planning phase through to project completion, and will apply to all phases of site operation. For each project and task, ALARA procedures will be developed by the OSHM, PM, and SUXOS; written into the site plans; approved by the client; and implemented during site operations. All site personnel will be required to adhere to the established ALARA procedures, and the ALARA procedures shall be reassessed and updated if the anticipated site conditions change during the course of the project. ALARA procedures include: the SWP's and engineering controls presented in this SSHP for hazard control; procedures for ensuring the proper training of personnel; use of good personal hygiene practices; and, when required, use of PPE.

2.3.3 EODT's CSHP and Accident Prevention Goals

The goal of EODT's CSHP is to provide the safety and health guidelines needed to ensure that EODT personnel are provided with a work environment that is free of uncontrolled, recognized safety and health hazards. It is also the goal of the EODT CSHP to comply with all federal, state, and local regulations and with client-specific safety and health requirements. Since its founding, EODT has never experienced an OE-related accident and has never been cited for a regulatory non-compliance. This safety and health record has been maintained through the following: 1) EODT's meticulous attention to identifying project safety and health hazards; 2) EODT's careful design and effective implementation of appropriate hazard control measures and procedures; and 3) the thorough knowledge and extensive experience of EODT's field personnel. For this project, the OSHM, PM, and SUXOS will be responsible for working closely with the CEHNC OE Safety Specialists, and for ensuring the project-wide implementation of EODT's CSHP requirements to ensure the continuance of EODT's safety record and the achievement of the safety and health policies stated previously.

2.4 PPE AND SAFE WORK PRACTICES

The levels of PPE and the safe work practices (SWP's) specified in this plan are based on the best available information from archival data, anticipated site conditions, and EODT professional experience. The PPE and SWP requirements may change, due to actual on-site implementation of project tasks. Any changes or additions to this SSHP will be approved by the EODT OSHM and PM, and the CEHNC KO. All changes will be submitted in writing for approval by the CEHNC KO, and will be incorporated into the SSHP upon CEHNC approval.

2.5 PERSONNEL RESPONSIBILITIES

All EODT, subcontractor, and CEHNC personnel involved in this project shall carefully read this document prior to participation in any on-site tasks that involve potential exposure to on-site safety or health hazards. Questions related to the information in this SSHP will be addressed to, and resolved by, the EODT UXOSO. After reading this SSHP, site personnel will complete the SSHP Review and Approval form located at the end of this appendix, indicating their understanding of, and willingness to comply with, the requirements in this SSHP. All site personnel will exercise reasonable caution at all times, and shall immediately report to the UXOSO any site conditions which may pose a safety or health hazard to site personnel.

2.6 NON-COMPLIANCE POLICIES AND PROCEDURES

2.6.1 General Requirements

As outlined in Section 2.5 of this SSHP, designated corporate and on-site personnel have been tasked with the overall responsibility of ensuring the safe and healthful conduct of site operations. Additionally, EODT has expended significant energy and resources toward the design and development of written programs and procedures used to safeguard site personnel from the hazards associated with this project. It is imperative that site personnel realize that their compliance with established safety and health procedures is of paramount importance in the prevention of accidents and emergencies that could compromise their safety and health and also the well being of other site personnel, the environment, and the public. Since violations of the safety and health procedures and programs outlined in this SSHP can result in serious personal injury, illness, or environmental insult, EODT has developed policies and procedures concerning safety and health violations and disciplinary actions to resolve and remedy any occurrences of safety or health non-compliance with this SSHP. These policies and procedures are described in Chapter 15, Paragraph 15.1-15.2 of the Corporate Safety and Health Program (see Appendix I).

2.6.2 Substance Use and Abuse

2.6.2.1 Introduction

The Drug-Free Workplace Act of 1988 set as a goal the elimination of the effects of illegal drugs

in the workplace. Due to the inherently hazardous nature of the work performed by EODT personnel, the importance of creating and maintaining a safe drug-free working environment is paramount. The performance of every employee must, at all times, support the company's mission to conduct site operations with a high level of productivity, reliability, judgment, and safety.

2.6.2.2 EODT's Position on Drug Use

The management of EODT is thoroughly committed to providing a drug-free workplace for all employees. Drug and/or alcohol use and abuse are incompatible with EODT's high standards of performance, safety, and quality. As a term of employment, maintenance of these standards is expected of all employees, and all employees will refrain from the use, distribution, possession, manufacture, or dispensing of a controlled substance, and drug and/or alcohol abuse. Violation of this policy will result in administrative action to include the possible termination of employment.

2.6.2.3 Substance Use and Abuse Policy

Employee drug or substance use or abuse testing/screening conducted by EODT in support of this policy will be conducted at no expense to the employee and, except for drug/substance use testing conducted for pre-employment, employees will receive reasonable compensation for the time required for participation in any drug or substance testing/screening. The drug or substance use for which EODT may conduct testing includes, but is not limited to: amphetamines, barbiturates, cocaine metabolites, methadone opiates, phencyclidine (PCP), and ethyl alcohol. As a matter of policy, EODT will strictly implement and enforce the policies listed below:

1. No employee will report for work, or will work, impaired by any authorized or controlled substance, except with management's prior approval. Such approval will be limited to lawful medications, based strictly on an assessment of the employee's ability to perform his/her regular or other assigned duties safely and efficiently.
2. No employee will use any alcohol or controlled substance that could result in impaired performance, except with the knowledge and approval of the OSHM, SUXOS, or UXOSO.
3. Applicants for employment are subject to substance abuse screening as part of their baseline or pre-assignment physical examinations. Refusal to submit to such screening will disqualify an applicant from employment.
4. All EODT employees are subject to substance abuse screening at any time, as directed by the OSHM, or on a random, non-

discriminatory basis. Refusal to submit to such screening will result in removal from the project site and/or termination of employment. Substance use or abuse screening may be conducted in these circumstances listed below:

a. Whenever there is reasonable evidence to suspect any employee has reported to work in an impaired condition or is working impaired
b. When an employee is involved in either a job-related accident or job-related incident involving the apparent use or abuse of any substance listed in this section.

2.6.2.4 Prescription Medications

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

1. The prescription medication has been prescribed by an authorized medical practitioner for the current use (within the past 12 months) of the employee in possession of the medication, and the medication is in its original container, with a valid pharmacy label which includes the employee's name and the physician's name.
2. The employee does not consume the prescribed, or an over-the-counter, medication in quantities greater than, or more frequently than, that prescribed by the container label.
3. Employees in possession of prescribed medications shall not allow any other person to consume any amount of their prescribed medication.
4. In the event that the prescribed medication could cause adverse side effects, or where the medication indicates warnings relevant to side effects affecting the operation of equipment or machinery, the employee shall inform the SUXOS and/or UXOSO prior to engaging in project operations while under the influence of the medication (i.e., having taken the medication within the past 12 hours).

2.6.2.4.1 Safety Practices for Prescriptions and Medications

While the on-site use of prescription and over-the-counter medications are authorized under the requirements listed above, EODT reserves the right to have a licensed physician determine if the

employee's use of the medication could adversely affect the individual or could increase the potential for injury or illness to the employee or other site personnel. If consumption of the medication could lead to adverse safety or health effects, the OSHM may, on the advice of a licensed physician, limit or suspend the employee's work activities for as long as the licensed physician indicates that the medication may adversely affect the employee. Any employee who has been limited or suspended from work activities may seek from the prescribing physician a substitute medication that will not adversely affect the potential for injury or illness to the employee or other site personnel. If a suitable substitute can be prescribed, and is approved, the OSHM may lift the work activity suspension or limitation.

2.6.2.5 Suspicion Inspections and Testing

For the purposes of ensuring compliance with the prohibition against the unauthorized possession of controlled substances, employees will be subject to random and reasonable suspicion inspections and testing. An employee's company clothing, locker, closet, work area, desk files, company motor vehicle, and similar areas are subject to inspection. Similarly, an employee's privately owned vehicle, lunch box, and like containers are subject to such inspections when brought to any work site. At no time will an employee be physically touched during an inspection, and only outer clothing will be required to be removed for inspection or search. No person or property search (except for searches of EODT-owned, rented, or leased properties), urine drug test, or Breathalyzer test will be conducted without the employee's consent. Refusal to submit to a legal inspection, or request for testing, will result in employee removal from participation in site activities until further inspection or testing can determine the potential for prohibited drug or substance use or abuse.

2.6.2.6 Drug Convictions

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

2.6.2.7 Treatment for Drug and Substance Use

EODT will encourage affected individuals to seek medical help voluntarily at an early stage, and will assist supervisors in dealing with associated problems related to work performance. Additionally, supervisors and fellow employees will be discouraged from "covering up" for the affected individual and may face disciplinary action for doing so. Any employee who feels that he/she may have an alcohol or other drug problem, and voluntarily seeks the advice and help of a private physician or any agency in this field, may obtain medical treatment, at his/her own expense, in the form of rehabilitation therapy. An employee may be referred by EODT to a regional health center, or other type of medical facility, for medical help because of deteriorating job performance or excessive absenteeism associated with abuse of alcohol or drugs. Failure to follow prescribed medical treatment or to improve performance to an acceptable level will be justification for termination of employment on the same basis as any other employee whose work performance is unsatisfactory.

2.7 REGULATIONS AND GUIDELINES

Following all applicable requirements and regulations listed in the following publications will ensure the safety and health of on-site personnel and the local community:

1. Occupational Safety and Health Administration (OSHA) General Industry Standards, 29 Code of Federal Regulations (CFR) 1910 and Construction Standards, 29 CFR 1926
2. Engineering Manual (EM) 385-1-1, Safety and Health Requirements Manual
3. EODT Corporate Safety and Health Program (CSHP)
4. Army Regulation 385-40 (with USACE Supplement 1), Accident Reporting and Records
5. DOD 6055.9 STD, Ammunition and Explosives Safety Standards, July, 1999
6. U.S. Environmental Protection Agency (EPA) Hazardous Waste Management, 40 CFR 260-276, latest edition
7. AR 385-64, U.S. Army Explosives Safety Program

2.8 REFERENCES

In addition to the publications and regulations previously listed, the following documents were used as reference material in the preparation of this document:

1. EP 385-1-95a Basic Safety Concepts and Considerations for Ordnance and Explosives Operations, 29 June 2001

2. Occupational Safety and Health Guidance for Hazardous Waste Site Activities, U.S. Department of Health and Human Services, National Institute of Occupational Safety and Health (NIOSH), October, 1985
3. TLV's and BEI's, American Conference of Governmental Industrial Hygienists (ACGIH), 2002

3.0 STAFF ORGANIZATION, QUALIFICATIONS, AND RESPONSIBILITIES

3.1 GENERAL

All personnel who may be exposed to on-site hazards will comply with this SSHP. No site operations/tasks will be performed in a manner that conflicts with the safety, health, or environmental precautions expressed in this SSHP. EODT staffs all projects with highly skilled and trained personnel who are intimately familiar with OE hazards and the measures needed to protect resources from the OE hazards. Ensuring site safety is a joint effort promoted by all site personnel. However, the personnel listed in Paragraphs 3.2 through 3.5 have been given key safety-related responsibilities, and are involved with the on-site project personnel chain of command (COC), as depicted in Figure 3-1.

3.2 PROJECT MANAGER

Mr. William Pearse is the EODT PM for this project, and is responsible for the overall management of this project. In this role, Mr. Pearse will be responsible for the management of the EODT resources needed to ensure the safe implementation of site operations. As the PM for this project, he will:

1. Report directly to the EODT Program Manager for all project matters. In this case, as Mr. Pearse is also EODT's CEHNC Program Manager, reporting will be made to the Vice President.
2. Manage the funding, manpower, and equipment to safely conduct site operations.
3. Review this SSHP and have a thorough understanding of its requirements.
4. Furnish copies of the WP and SSHP to site personnel for their review.
5. Coordinate with the OSHM to ensure that all anticipated project-specific safety and health issues have been addressed in this SSHP.

6. Coordinate the assignment of subcontractors, and ensure that subcontractor personnel and equipment meet the requirements of the WP and SSHP.
7. Relay safety and health concerns to the CEHNC PM
8. Coordinate with the OSHM to ensure site compliance with the SSHP and the CSHP.

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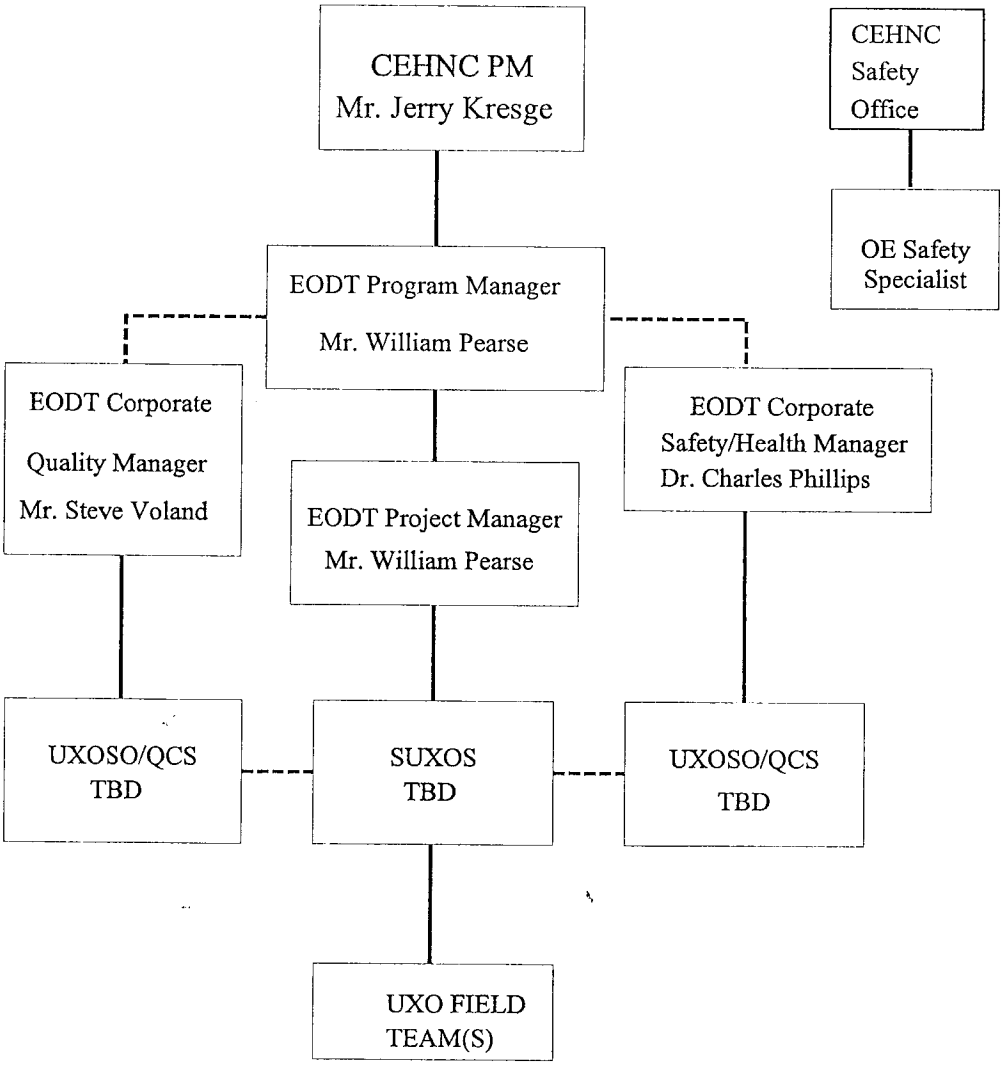
FIGURE 3-1
PROJECT PERSONNEL ORGANIZATION



3.3 OCCUPATIONAL SAFETY AND HEALTH MANAGER

Dr. Charles Phillips, CIH, the EODT OSHM, is an American Board of Industrial Hygiene CIH with over 30 years of industrial hygiene, safety, and hazardous waste experience, including over eight years of experience with sites contaminated with OE. Dr. Phillips has completed the OSHA HAZWOPER site worker and supervisor training requirements IAW 29 CFR 1910.120. He will provide occupational safety and health technical support to the UXOSO and other project personnel. As the OSHM, he will:

1. Report directly to the EODT President regarding safety and health issues.
2. Develop, approve, and seal this SSHP.
3. Coordinate with the EODT UXOSO for field implementation of this SSHP.
4. Communicate and consult with the PM, Senior UXO Supervisor (SUXOS), and UXOSO.
5. Evaluate and authorize any changes to this SSHP.
6. Conduct, or assist in the presentation of, site-, task- and hazard-specific training.
7. Directly interface with, and relay safety and health concerns to, the CEHNC.
8. Conduct periodic site safety and health audits.
9. Ensure site and personnel compliance with the EODT CSHP.

3.4 SENIOR UXO SUPERVISOR

The SUXOS will be responsible for addressing and managing all OE and non-OE operational and safety issues. The SUXOS will have graduated from an approved EOD school, as specified in DID OE-025.01, and will have over 15 years military and civilian EOD/UXO experience, with 10 years of that experience in supervisory positions. The SUXOS will also have completed the OSHA HAZWOPER 40-hour general site worker training and the 8-hour Supervisor/Manager training. In relation to safety and health issues, the SUXOS will:

1. Manage the on-site resources needed to safely perform site operations.
2. Fully understand the WP, this SSHP, and any other relevant documents.
3. Provide copies of the WP to project personnel for their review.
4. Review the SOW and ensure that the safety and health issues have been addressed.

5. Act as the lead technical consultant for all on-site OE-related safety matters.
6. Schedule and present the operational portion of the daily tailgate safety briefing.
7. Enforce compliance with this SSHP and the WP.
8. Directly interface with, and relay safety concerns to, the CEHNC OE Safety Specialist.

3.5 UXO SAFETY OFFICER

The UXOSO for this project will be responsible for the on-site implementation of the safety and health requirements presented in this SSHP. The UXOSO will have graduated from an approved EOD school, as specified in DID OE-025.01, and will have over 10 years of military and civilian EOD/OE experience. This individual will also have completed the OSHA 40-hour HAZWOPER site worker training and the 8-hour Supervisor/Manager training requirements IAW 29 CFR 1910.120. As required by CEHNC DID OE-025.01, the UXOSO will have received specific safety and health training, and possess the specific knowledge and experience needed to implement this SSHP and other applicable federal, state, and local safety and health regulations. To ensure on-site safety and health, the UXOSO will:

1. Initiate and authorize a "Stop Work" order for any imminent safety or health concerns.
2. Implement and enforce the requirements outlined in this SSHP.
3. Conduct the safety portion of the daily tailgate briefings.
4. Conduct and document site training related to site-specific hazards.
5. Specify proper levels of PPE IAW the requirements of this SSHP.
6. Implement and enforce the EODT Alcohol/Drug Abuse Policy.
7. Investigate injuries, illnesses, accidents, incidents, and near misses.
8. Conduct visitor orientation, daily safety inspections, and weekly safety audits.
9. Ensure field implementation of the EODT CSHP.
10. Conduct sampling as required by the SSHP in coordination with the EODT OSHM.

3.6 GENERAL SITE PERSONNEL

Even though specific EODT personnel have been given distinct responsibilities for site safety, ensuring the safe and healthful conduct of site operations is the responsibility of all personnel assigned to the site. Any EODT site personnel may stop work of his or her team if a potentially serious safety issue is observed.

All project personnel involved in site activities will:

1. Comply with this SSHP and all other required safety and health guidelines.
2. Take all necessary precautions to prevent injury to themselves and fellow site personnel.
3. Identify any potentially harmful situation and immediately inform the Team Leader or UXOSO.
4. Perform only those tasks that they can do safely and for which they have received appropriate training.
5. Notify the UXOSO of any special medical conditions (i.e., allergies, contact lenses, diabetes) or medications, which could affect their ability to safely, perform site operations.
6. Prevent the spillage and splashing of environmentally hazardous materials.
7. Practice good housekeeping by keeping the work area neat, clean, and orderly.
8. Immediately report all injuries, no matter how minor, to the UXOSO.
9. Maintain equipment in working order and report defects to the UXOSO.
10. Properly inspect and use the PPE required by the SSHP or the UXOSO.

3.7 SSHP DEVELOPMENT

This SSHP has been developed and overseen by a board-certified Industrial Hygienist and will be implemented by a fully trained and experienced UXOSO.

3.8 SUBCONTRACTOR

Any subcontractor operating on site shall be responsible for providing site personnel who have read, understand, and will comply with this SSHP. The subcontractor must provide documentation that the personnel assigned to the project have the training and medical surveillance required by this SSHP. The subcontractor shall also be responsible for providing equipment that is in good repair, safe for operations, and free from any obvious hazards.

3.8.1 Subcontractor Safety Meeting Attendance

All subcontractor personnel performing work at the site shall attend a safety meeting as required by and held by the UXOSO each day prior to the start of work. The UXOSO will monitor all subcontractor operations to ensure compliance with the SSHP.

4.0 SITE DESCRIPTION AND CONTAMINATION CHARACTERIZATION

4.1 SITE LOCATION

The former Camp Hero (FCH), consisting of 468.69 acres, is located on the extreme eastern tip of the south fork of Long Island, New York, approximately 5 miles east of the Village of Montauk (Figure 2-1). The Camp is bounded by Montauk Highway (Route 27) to the north, the Atlantic Ocean to the south, Montauk Point State Park to the east, and an undeveloped nature preserve owned by the state to the west. The Camp is located in Suffolk County, NY. The actual work site area will encompass 17 acres of FCH as designated by CEHNC.

4.2 SITE DESCRIPTION

4.2.1 Terrain and Vegetation

The entire project area land rises abruptly along the oceanfront and then gradually slopes northward. Several high points are in the area, and in general the land contour consists of numerous ridges and depressions. Most of the general topography drains into swamps, situated throughout the area. There is also approximately 5,500 feet of man-made drainage ditches on the site. The entire area, with the exception of the developed structures, roadways, oceanfront, and southern bluff area, is covered with a dense growth of scrub oak and brush. Oyster Pond is situated to the north of the former Camp Hero, and larger Lake Montauk is to the west.

4.2.2 Geologic and Soil Conditions

The soils of Suffolk County are a complex mixture of weathered mineral material, organic matter, water, air, and living organisms. The mineral material, mainly granite, is a result of glacial till deposited during the Wisconsin Age. The glacial till, together with the water or wind-deposited silt, clay, and sand, combined to form Suffolk County's soils. Those soils are of the Bridgehampton, Escarpment, Montauk, Muck, Wallington, and Whitman series.

4.2.3 Climate

The former Camp Hero is subjected to warm, humid summers and mild winters. The annual average rainfall is approximately 46 inches with the most rain falling in March, April, and August. The former Camp Hero is sometimes subject to coastal tropical storms occurring in the

late summer or fall capable of producing high winds and heavy rains. Average yearly snowfall is 29 inches, with most of the snow falling from December through March. The average annual temperature is 52.2 degrees F. The average winter months (December through February) temperature is 30.9 degrees F, and the average summer months (June through August) is 71.1 degrees F.

4.3 PAST AND CURRENT LAND USE

4.3.3 Site History

4.3.1.1 Pre-WWI

Military site history at the former Camp Hero begins well before the World War I era. Revolutionary War and War of 1812 American and British warships reportedly used the "Montauk Bluffs" for firing practice with cannons. Teddy Roosevelt and his Rough Riders, part of an estimated 29,500 men force returning from the Cuba, Puerto Rico, and Florida campaigns of the Spanish American War in 1898, camped in the Fort Pond Bay area of Montauk. Their camp was called Camp Wikoff and served as a quarantine station for these returning soldiers. Camp Wikoff was active for only a few months.

4.3.1.2 WWI - WWII

Between WWI and WWII, a Navy observation post housing two reconnaissance blimps were stationed at a hangar adjacent to the current Montauk Tower, and a number of oceangoing seaplanes were positioned at a Naval Base on Fort Pond Bay. From about 1921 until around 1923, thousands of soldiers from Regular Army, National Guard, and Citizen Military Training Corps Field Artillery units camped and trained in the Montauk area. A campsite on the east side of Fort Pond Bay, presumably named Camp Walsh, was chosen to accommodate the training units. From 1936 through the 1970s, Army Air Corps planes conducted bombing target practice on an island off of Montauk Point known as Gardiner's Point. This island also contained an abandoned Spanish American War Fort known as Fort Tyler. In 1942, the Department of the Navy built a facility on Fort Pond Bay to develop and test torpedo propulsion systems. This facility remained in existence until the end of WWII.

4.3.1.3 WWII

The former Camp Hero was established in early 1942 as a Coastal Defense Installation to defend the approaches to New York and was named in honor of Major General Andrew Hero. Three self sufficient batteries (Battery 112, 113, and 216) and supporting facilities were constructed which included barracks, mess halls, hospital facilities, a motor repair shop, a recreation facility, sentry boxes, and water supply and sewage facilities. A total of 600 enlisted men and 37 officers were stationed at the Camp. Battery 216 contained two M1903A2 6-inch shielded guns that

were delivered to the battery in January 1943. Battery 113 (also known as Battery Dunn) consisted of two Navy MKIIM1 16-inch casemated guns that were completed on June 5, 1943. The guns of Battery 112 were identical to Battery 113 and were completed on January 12, 1944. Additionally, 37mm weapons and .50-caliber antiaircraft weapon platoons were assigned to protect the Camp from air attack. The Camp's weaponry was periodically fired to practice over water but was never fired as a result of an act of hostility.

4.3.1.4 Post WWII

The Camp was placed on inactive status on July 31, 1947 and ultimately declared surplus by the Department of the Army on December 31, 1949. Simultaneously a portion of the former Camp Hero lands was also transferred to the Department of the Air Force for an aircraft control and warning station. On January 24, 1951 the former Camp Hero was withdrawn from surplus and designated for use as a firing range and field exercise area for antiaircraft artillery (AAA) from Fort Totten, NY. Arrangements were made for the permanent Army AAA cadre at the Camp. 90mm and quad .50 caliber antiaircraft artillery began firing exercises from firing positions established in the southern bluff overlooking the Atlantic Ocean. In 1952 the Air Force property was renamed the Montauk Air Force Station and was occupied by the 773rd Aircraft Control and Warning Squadron (ACWS). Training continued using 90mm and 120mm guns, 3.5-inch rockets, and .50 caliber guns until 1957.

4.3.1.5 Air Surveillance

The facility was inactive until October 1958 when the 773rd ACWS was redesignated as the 773rd Radar Squadron with a new mission to provide surveillance data of air traffic in the area. In order to accomplish this mission, an advanced Specific Frequency Diversity Search Radar was built in late 1960.

4.3.1.6 Facility Closure

The facility was closed in 1982. Between 1974 and 1984 all site lands were transferred to State, Local, and other Federal agencies.

4.3.2 Current Land Use

The overall Former Camp Hero Site comprises 468.69 acres, and includes the following current landowners.

- State of New York, Office of Parks, Recreation, and Historic Preservation (415.35 acres);
- Town of East Hampton (46.19 acres);

- Montauk Historical Society Lighthouse Commission, leased for 30 years from the Department of Transportation, U.S. Coast Guard (6.29 acres); and
- 0.86 acres of unresolved real estate ownership, attributed to erosion or poor survey techniques at the time of land procurement.

Future land use is anticipated to remain the same.

4.3.2.1 New York State Office of Parks, Recreation, and Historic Preservation

The State of New York, Office of Parks, Recreation, and Historic Preservation, owns the largest land parcel which is designated as limited access public park land. Controlled public access is allowed on the southern bluff area by permit only to fisherman during season. Vehicular traffic is restricted in most areas. Camping or overnight parking is not allowed within the Park without permit, although it does occur. Several areas, mostly due to safety concerns associated with old structures, are fenced and restricted from public access. Following removal of any former military hazards, future land use is for unrestricted public use including hiking, fishing, camping, and other recreational uses. Development is under consideration by the Park in support of increased recreational use such as construction of cabins, although the proposal is controversial.

4.3.2.2 Town of East Hampton

The 46.19 acres owned by the Town of East Hampton are used for low-income housing, which consists of 27 former Air Force housing units and a small amount of East Hampton Town-owned undeveloped property. Future land use is anticipated to remain the same.

4.3.2.3 U.S. Coast Guard

The U.S. Coast Guard operates an automated beacon light atop the old lighthouse. The property around the lighthouse is leased to the Montauk Historical Society and includes the old Camp Hero Fire Control/37mm AAA Station. The area is regularly open to the public.

4.4 PROJECT AREAS

4.4.1 Area H – Bluff Area

4.4.1.1 General

Area H encompasses an approximately 8-acre square area in the southeastern portion of the Camp and is bounded by a bluff overlooking the Atlantic Ocean. Area H is adjacent to and uphill from Area K. The area is characterized by a central wetland and heavy scrub oak vegetation. Area H was designated as an ordnance destruction range during the ASR, although no historical documentation was located to confirm past military usage. The basis for this designation included the presence of a diversity of ordnance-related debris on the ground surface,

most of which was not indicative of the types of ammunition used at the Camp. Furthermore, evaluation of the larger projectile fragments indicated the ammunition had not been fired.

4.4.1.2 Land Use

Area H is entirely under the jurisdiction of the NY Office of Parks, Recreation, and Historic Preservation. The Park is mostly undeveloped and open to the public for pedestrian-based passive recreation including bird watching, beach combing, walking/hiking, photography, and seasonal surf fishing (with permit). Vehicular traffic is restricted in most areas. Camping or overnight parking is not allowed within the Park without permit, although it does occur. Development is under consideration by the Park in support of increased recreational use such as construction of cabins, although the proposal is controversial.

4.4.2 Revised Area K – Near-Shore Area

4.4.2.1 General

The Near-Shore Ordnance Area (Area K) encompasses the southern shore of the Camp lands directly south and southeast of Area H. Much of the approximately 9-acre parcel is a rocky beach, although Area K also includes the steep bluff area between the beach and the upland Area H.

4.4.2.2 Land Use

Area K is entirely under the jurisdiction of the NY Office of Parks, Recreation, and Historic Preservation. The beach is undeveloped and open to the public for pedestrian-based passive recreation including bird watching, beach combing, walking/hiking, photography, and seasonal surf fishing (with permit). Surf fishing is extremely popular during the late summer and fall. There is no vehicular traffic on the beach.

4.5 SUMMARY OF PREVIOUS STUDIES

4.5.1 Hazardous Materials Survey

In June 1998 Cashin Associates, P.C. of Hauppauge, New York, conducted a Feasibility Study and Hazardous Materials Survey Preliminary Report for the New York Office of Parks, Recreation, and Historic Preservation, Babylon, New York. The report identified several areas which had an actual or potential HTW presence based on buildings and refuse found on-site. In addition to the HTW, projectile fragments were discovered along the southern bluffs of the site (Area K), indicating the potential presence of OE.

4.5.2 Archive Search Report

In February of 2000 the USACE, Rock Island District, conducted a records search and site inspection for the Camp. The final report, the ASR, documents the extent and nature of their finds of OE/UXO contamination. The Camp was divided into 13 areas (A through M) for evaluation purposes. Areas H, K, and L were classified as having "confirmed" ordnance present. Areas A through G, I, J, and M were classified as "No Ordnance Presence."

4.5.2.1 Revised Area K

The ASR recommended an EE/CA investigation of Area K based on the confirmed presence of OE items. These items included items similar to those encountered in Area H and also included a 90mm projectile, historic cannon balls, WWI/WWII vintage projectiles, fuzes, a hand grenade, a live 3.5-inch rocket, and several unidentifiable OE . The majority of the OE scrap observed in Area K appears to have originated from erosion of the bluffs from the adjoining Area H and the remainder of the OE scrap is likely to have come from the ocean after severe storms.

4.5.2.2 Area H

The ASR recommended an EE/CA investigation be conducted in Area H based on the confirmed presence of OE items. These items included projectile fragments, functioned fuzes, and .50 caliber casings and bullets. In the northern portion of Area H additional OE was observed including a fragmentation bomb body, projectile fragments and bases, and a 3.5-inch rocket. An inspection of the southern portion of this area during the ASR reconnaissance revealed that OE items were moving to the adjacent Near-Shore Ordnance Area (Area K) as a result of bluff erosion.

4.5.3 Engineering Evaluation/Cost Analysis (EE/CA)

In December 2000 an investigation team from Parsons ES visited the former Camp Hero. The purpose of the Site Visit was to survey the former Camp Hero for familiarity, visually inspect areas identified as confirmed or potentially contaminated with OE in the ASR, photograph the Areas of Interest for potential EE/CA, and meet with local regulatory agencies.

4.5.3.1 Revised Area K

A total area of 9.58 acres was surveyed in Area K during this EE/CA investigation (excluding "mag and dig" survey). The geophysical survey resulted in the identification of 1171 anomalies. A total of 409 anomalies (35%) were reacquired and intrusively investigated. The recovered items from the intrusive investigation included ordnance-related scrap and non ordnance-related scrap. A total of 16 OE scrap items were identified from ten unique anomaly locations. Nine of the ten locations are immediately adjacent to the bluffs adjoining and below Area H; the tenth

was located outside of the current Area K. All the OE scrap items were found between 0 and 12 inches bgs. No UXO items were identified in Area K. Non ordnance-related scrap material identified consisted of pipes, wires, nails, rods, and sign posts. The distribution of OE scrap items in Area K indicates that the OE presence is almost exclusively below the adjoining Area H bluff and is likely the result of displacement from erosion as opposed to an artifact of military training activity at the location. This speculation is supported by the lack of OE scrap items in other locations within Area K.

4.5.3.2 Area H

Approximately 3.29 acres were surveyed during the EE/CA investigation in Area H. A large wetland area, approximately 2 acres in extent, occurs in the eastern and central portion and was not surveyed. Difficult terrain in the north and a chain-link fence along the northwest corner restricted geophysical survey activities. A total of 334 anomalies were identified from the geophysical data. Of this total, 127 anomalies (38%) were selected for reacquisition and intrusively investigated. The recovered items from the intrusive investigation of anomaly locations at Area H included ordnance-related scrap and non ordnance-related scrap. A total of 21 OE scrap items (from 19 unique anomalies) were recovered from Area H. The items included OE scrap from 3.5-inch practice rockets and 105mm M1 HE projectiles. In addition to these OE scrap items, some unidentifiable fragments (suspected as OE scrap) were also recovered. All the OE scrap items were found between 0 and 18 inches below ground surface (bgs) in the south/southeastern portion of Area H. Non ordnance-related scrap items including nails, metal wires, cables, and fence debris were recovered from anomaly locations at Area H. During the intrusive investigation, no UXO items were found at Area H.

4.6 CONTAMINATION CHARACTERIZATION

The information presented previously regarding site description, history, climate, topography, and previous studies has provided EODT with a means of compiling a summary of hazardous substances and safety and health hazards likely to be encountered on FCH during operations.

4.6.1 Recovered Chemical Warfare Materiel (RCWM)

4.6.1.1 Potential for Encountering RCWM

Due to the historical use of the site, the potential for encountering RCWM during site operations at FCH is not anticipated.

4.6.1.2 Procedures When Encountering Suspected RCWM

In the event that site personnel find OE suspected of containing RCWM, all site personnel within 500 meters of the work area will immediately evacuate the site to a safe location upwind of the

RCWM item. The area will then be secured, and two UXO-qualified personnel will be positioned 50-meters upwind so that they can view the site at all times. The CEHNC OE Safety Specialist will be contacted immediately, who will in turn request military EOD/TEU support. EODT personnel will then assist the EOD/TEU support personnel as requested by the KO/COR, and will continue site operations as directed by the KO/COR.

4.6.2 Hazardous Substance Contamination

As defined by the Environmental Protection Agency (EPA), hazardous substances are those materials that can threaten human health and/or environmental well being if the substance has been improperly disposed of or uncontrollably released into the environment. Therefore, this phrase is used to describe chemical contamination that results from the release or burial of hazardous wastes capable of causing harm to site personnel if encountered during site operations. Past archival research of the site has indicated that no such hazardous substances exist in the areas to be investigated in this removal action.

4.6.3 UXO/OE Contamination

Historical records indicate that 105mm HE projectiles and 3.5 inch practice rockets were burned or detonated at FCH. The Most Probable Munition (MPM), based on previous site visits, is the 105mm HE projectile.

5.0 HAZARD ANALYSIS AND RISK ASSESSMENT

5.1 COMPLETE DESCRIPTION OF ON-SITE WORK TO BE PERFORMED

The on-site tasks to be performed by EODT personnel for this project will include those tasks necessary to successfully meet the requirements of the SOW. To ensure that site personnel are fully informed of the hazards associated with each on-site task, descriptions of each primary field task and discussions of the hazards associated with the tasks are presented below in this section. Additionally, Certification of Task Hazard Assessment (CTHA) forms for each task, sub-task, or group of similar tasks are presented in Attachment A of this appendix. For each task hazard listed, site personnel will utilize the procedures and SWP's outlined in Section 17 of this SSHP, to control or eliminate the hazards. Any SOW tasks that are not discussed in this section are not related to on-site operations and are, therefore, not subject to this SSHP. Preliminary field operations for the FCH OE Engineering Removal Action are expected to start in July 2003, and are expected to continue through August 2003. Specific operational procedures associated with these field tasks are presented in Chapter 2 of this WP, with the safety and health issues associated with the tasks being outlined below.

5.1.1 Tree/Brush Removal and Surface Clearance (Task 5)

EODT will perform the minimum work necessary to achieve tree/brush removal and surface clearance of all UXO, OE, and scrap in designated areas. All OE removal operations will be conducted IAW applicable sections of the WP, and all vegetation removal will be conducted IAW this SSHP and procedures outlined in the WP. Vegetation will be removed using chain saws, fuel powered brush cutters, and walk behind mowers. Personnel will use the procedures found in Paragraph 17 of this SSHP. The hazards that may be encountered during this task include:

- Heat stress
- Hazardous plants and animals
- Inclement weather
- Hand and power tools
- Physical exertion
- High noise
- Flying debris from powered equipment
- Equipment service and maintenance
- Material handling and lifting
- Slips, trips, and falls

5.1.2 Location Surveying and Mapping (LS&M)

LS&M will be conducted for all areas to be investigated under this SOW. Survey personnel will utilize the surveying equipment and procedures outlined in this WP to mark control points along the transect pathway. A magnetometer check will be performed at all points where survey stakes, posts, markers, or monuments are to be installed. If the personnel on the LS&M team are not UXO qualified, at least one UXO Technician II (UXOT2) will accompany the LS&M team to pre-clear the areas accessed by the LS&M team. If suspect OE is located during the visual or magnetometer clearance sweeps, the UXOT2 will report the encounter to the EODT UXOSO, and will mark the item/anomaly with a pin flag for avoidance. This task may require the use of hand and powered tools to remove excess vegetation that interferes with the operations. For those hazards listed below, site personnel will utilize the procedures and SWP's outlined in Paragraph 17 of this SSHP to control or eliminate the hazards. The task hazards that may be encountered during location surveying and mapping include:

1. Surface and sub-surface UXO/OE
2. Heat stress
3. Hazardous plants and animals
4. Inclement weather and temperature extremes

5. Hand tools
6. Physical exertion
7. Slips, trips, and falls

5.1.3 Intrusive Investigations (SOW Task 5)

EODT personnel will use ordnance locators (Schonstedt Model GA-52Cx Magnetometer or a Whites Spectrum XLT) and either location surveying equipment (i.e., GPS) or hand measurements, to reacquire the marked anomalies. This task will also involve the excavation, assessment, and disposal of anomalies, to include hazardous OE, and the backfilling of excavated areas. All anomalies identified within Areas H and K will be dug to a specified depth (eleven times the diameter of the item, to a maximum depth of four (4) feet below the land surface). Additionally, EODT personnel will inspect and certify OE scrap as a part of this SOW task. To conduct the intrusive investigations, EODT personnel will follow the operational procedures outlined for this task in Chapter 2 of this WP.

5.1.3.1 Inspection and Certification of Range Residue

Operational procedures for the conduct of OE scrap removal are located in Chapter 2 of the WP. To facilitate the removal of Range Scrap, EODT personnel will conduct the following sub-tasks:

1. **Establish a Staging and Operations Area Near the Scrap Pile:** The boundary of the staging and operations area will be clearly demarcated to prevent non-UXO personnel from entering potentially hazardous areas. The staging and operations area, tentatively located near Area H, will be used for staging equipment and supplies, for the final inspection of scrap, and for staging of inspected scrap and scrap containers.
2. **Initial Inspection and Removal of Scrap:** UXO-qualified personnel will inspect the scrap for ordnance and explosives (OE) and OE related material. The method of scrap removal will be dependent upon the size and weight of the item(s), but will typically involve the hand-carrying of five-gallon buckets from the point of collection to the staging area. If torch cutting is required, all precautions in the EODT Welding and Cutting SOP 121, CSHP, in Appendix I will be followed.
3. **Final Disposition of Range Scrap:** Once a scrap item is delivered to the staging area, it will again be inspected for OE hazards, and the hazards (if any) will be removed. Procedures for the removal/disposal of hazardous OE from the target/scrap are

specified in Chapter 2 of the WP. OE-related material will be segregated from non-OE related scrap, and secured in a lockable container in the staging area. The non-OE related scrap will be staged in a separate area and secured. Minimal processing, such as sizing or separation of metallic components, will be conducted in this area as needed. Once the material is processed, it will be placed in lockable container(s). These containers will be placed as close to the processing area as possible, but at a location that will not interfere with processing or ingress and egress by transport trucks.

4. **Removal of Scrap from the Staging/Storage Area:** The SUXOS will coordinate with the scrap contractor to schedule pickup of full containers and drop-off of empty containers so that it does not cause a delay in removal of the processed scrap.

5.1.3.2 Task Hazards

The type and degree of hazard associated with subtasks of Task 5 operations will be dependent upon the subtask being conducted, and will also depend upon the ambient temperature and weather conditions. For hazards that are weather dependent (i.e., biological hazards and heat stress), the UXOSO/QCS is responsible for briefing site personnel when specific hazard control measures are to be implemented. The UXOSO/QCS will make the determination for these hazards based upon the procedures in the relevant SOP's in Appendix I, CSHP CD, and the presence or absence of the hazards. The subtasks for Task 5 of the SOW, and their anticipated hazards, are identified in Table 5-1, and are also presented in the CTHA forms in Appendix F of the WP. The CTHA forms tasks will be used during the initial site training required by Section 7.0 of the SSHP, and will be used by the UXOSO/QCS and the team leaders to remind personnel of the hazards and hazard control procedures associated with their assigned duties. The procedures for hazard control are specified in Section 17 of the SSHP and the SOPs contained in Appendix I, CSHP of the WP.

5.2 OE DESTRUCTION

EODT UXO-qualified personnel will dispose of all hazardous OE items located within the range scrap. All UXO will be blown-in-place (BIP) unless determined to be acceptable to move. Demolition of hazardous OE will be supervised by the SUXOS, in coordination with the CEHNC OE Safety Specialist, and conducted IAW the procedures outlined in TM 60A-1-1-31, EODT SOP 120D for Disposal/Demolition Operations in Appendix I, CSHP of this WP.

TABLE 5-1: SUBTASK HAZARDS FOR SOW TASK 5

SUBTASK	ANTICIPATED SUBTASK HAZARDS	
Scrap inspection and certification	• Physical exertion • Material handling and lifting • Use of hand tools	• Heat stress • Cut/laceration from sharp objects • Inclement weather
OE Removal	• Physical exertion • Heat stress • UXO	• Slips, trips, and falls • Inclement weather
Cutting torch operations	• Physical exertion • Heat stress • Slips, trips, and falls • Inclement weather • Hand tools	• Fire and sparks • Heavy items/lifting • Compressed gas • Ultra violet radiation • Inhalation of cutting fumes
Powered cutoff saws	• Physical exertion • Heat or Cold stress • Slips, trips, and falls • Inclement weather • Hand tools	• Fire and sparks • Heavy items/lifting • Flying objects and debris • Residual energy (LO/TO) • Ultra violet radiation

5.3 ESTABLISHMENT OF EXCLUSION ZONE

To protect unauthorized personnel, as well as site personnel, an exclusion zone (EZ) equal to the MSD for a particular site will be established prior to initiating activities where an unintentional detonation may occur. Further detail related to the MSD is included in Site Control presented in Section 11.0.

5.4 HAZARDS THAT MAY BE ENCOUNTERED

For those hazards listed below, site personnel will utilize the procedures and SWP's outlined in Section 17.0 of this SSHP to control or eliminate the hazards. The hazards that may be encountered during this project include:

1. Surface and subsurface UXO/OE
2. Heat stress
3. Biological hazards
4. Inclement weather
5. Hand tools
6. High noise
7. Physical exertion

8. Material handling and lifting
9. Slips, trips, and falls

5.5 ACTION LEVELS

No chemical exposure action levels are required for this project.

5.6 INTRODUCTION AND GENERAL REQUIREMENTS

5.6.1 Risk of Potential Hazard Exposure

All known or potential chemical, physical, biological, and safety hazards that may pose a threat to the well being of site personnel have, to the extent possible, been identified and the risk of exposure to each assessed. Emphasis has been placed on identifying situations and tasks that have known, or may create Immediately Dangerous to Life and Health (IDLH) conditions, or any other condition with the potential for serious safety or health affects. As discussed previously, the nature of past site activities and the current land usages indicate that the overall level of hazard due to chemical exposure is low, as is the risk of chemical exposure. However, due to the potential for exposure to OE and other safety, physical and biological hazards, the overall hazard level for this project is high and the risk of exposure to safety, physical, and biological hazards is high.

5.6.2 Hazard Analysis and Risk Assessment

While this hazard analysis and risk assessment has been made using the best available data, all site personnel must understand that the evaluation of site characteristics and hazards is an ongoing process in which they play a major role, and which will continue throughout the duration of the project. All site personnel shall be vigilant in identifying hazards in the work place and bringing them to the attention of the team leader, the UXOSO, and the SUXOS. If changes occur in the level or types of hazards present for a currently evaluated task, or if a new task is added to the WP, the UXOSO will inform the OSHM/CIH of the change. If needed, a new Certification of Task Hazard Assessment form will be completed which outlines the new hazards, control methods, and PPE for the task. Any additions to the approved SSHP will be reviewed and approved by the responsible EODT personnel, submitted to the CEHNC KO/COR, and added as attachments to the SSHP, once approved by the CEHNC.

5.7 CHEMICAL, UXO, PHYSICAL, AND BIOLOGICAL HAZARDS

5.7.1 Chemical Hazards

As discussed in Paragraphs 5.6.1 and 5.6.2, EODT does not anticipate that site personnel will encounter any on-site chemical contamination that may cause adverse chemical exposures. However, during the course of FCH operations some site personnel may be required to

handle/use products that contain potentially hazardous materials. The products that may be used which contain hazardous materials include: gasoline, diesel fuel, two-stroke engine oil/gasoline mixtures, spray paints, and demolition materials. During the use of these products, personnel exposures will be minimized, because limited quantities will be used at any one time and because the products will be used in well-ventilated, outdoor conditions. Additionally, the safe work practices and PPE outlined in this SSHP will be used to further reduce or eliminate the potential for personnel exposure to these hazardous materials. If site activities are modified, or if evidence of environmental chemical contamination is found, the potential for chemical exposure will be re-evaluated.

5.7.2 UXO Hazards

The hazards associated with UXO include the possibility of personal injury or death caused by explosion, fire, and fragmentation or over-pressurization that may result if OE/UXO are not properly located, identified, handled, transported, or remediated. The risk of personnel exposure to OE/UXO during this project is high, primarily due to the nature and amount of ordnance training conducted previously in the site area. While there is no guaranteed "safe" procedure for dealing with UXO, maximum safety in any UXO operation can be achieved through adherence to applicable safety precautions, a systematically planned and executed remediation approach, and intensive supervision. For all site operations with the potential for exposure to UXO/OE, only those personnel essential to the operation shall be allowed in the restricted area/exclusion zone.

5.7.3 Physical Hazards

Due to the nature of the planned site operations, the potential and risk for exposure to physical hazards is high for this project. Physical hazards that may be encountered during site operations include:

1. Flammable/explosive materials used for fueling power tools
2. Material-lifting hazards, such as back strain, pulled muscles and tendons, pinched/crushed fingers and toes, and cuts/lacerations from sharp surfaces on objects to be lifted
3. Hazards associated with the operation of hand and power tools, including cuts/lacerations and flying objects
4. Slip, trip, and fall hazards associated with beach cobbles, slopes, ground cover, exposed tree/brush stumps, uneven terrain, rocks, and vegetation growth
5. Inclement weather, such as heavy rain, thunder/lightning storms, tornados, and fog

6. Sharp objects, including OE fragments, nails, broken glass, and exposed tree/brush stumps
7. Excessive noise levels, from the operation of powered hand tools and heavy equipment

5.7.3.1 Personnel Duties Regarding Physical Hazards

Site personnel will be instructed to remain alert to the presence of potential physical hazards, and to immediately report the observance of any physical hazards to their Team Leader, who will in turn notify the SUXOS and the UXOSO. The EODT UXOSO shall be responsible for thoroughly evaluating each day's field operations, with respect to potential physical hazards. Any suspect or known physical hazards, and the specific procedures to control them, shall be reviewed during the daily tailgate safety briefing. General procedures for reducing or eliminating the physical hazards are discussed in Section 12 of this SSHP.

5.7.4 Biological Hazards

Since the project site activities will be conducted in heavily vegetated areas, there is a high probability that site personnel will encounter biological hazards. The biological hazards anticipated for this project include: stinging insects, like bees, wasps, and hornets; poisonous plants, such as poison ivy, oak, and sumac; ticks; mosquitoes and spiders. Poisonous snakes are not expected to be found on the FCH site. Employee awareness and the safe work practices outlined in EODT SOP 101, CSHP, will be used to reduce, or eliminate, the risks associated with these hazards.

5.7.5 Heat Stress

5.7.5.1 Introduction to Heat Stress

During activities conducted on UXO and waste sites, hot environmental conditions can create serious safety and health threats to site workers. Heat stress is one of the most common (and potentially serious) illnesses that can affect site personnel during spring, summer, and fall weather conditions. Factors that may predispose a worker or increase susceptibility to heat stress include:

- Environmental factors, such as air temperature, humidity, air movement, and radiant heat
- Difficulty of work causing heavy metabolic rates and an increase in body heat production
- Use of PPE that interferes with the evaporation of perspiration
- Lack of physical fitness and lack of acclimatization to hot environments

- Degree of hydration before and during work in hot environments
- Level of obesity
- Current health status (i.e., having an infection, chronic disease, diarrhea, etc.), alcohol consumption, or prescription drug use
- The worker's age and sex
- Consumption of alcohol the day/night prior to work

5.7.5.2 Heat Stress

Heat stress disorders, such as heat rash, heat cramps, heat syncope, heat exhaustion, and heat stroke may be a risk when performing field activities. EODT SOP 111, CSHP, will be followed to monitor, reduce, and/or eliminate heat stress risks. Employees will be trained on this SOP during the SSHP training.

5.7.5.3 Evaluation and Control of Heat Stress

Control of heat stress is generally maintained through proper acclimatization, adequate hydration, and by conducting personnel, monitoring when conditions are such that monitoring is required. Detailed information related to acclimatization, hydration, and other forms of heat stress prevention is also presented in EODT SOP 111 in Appendix I of the WP. Site personnel will read and consult this SOP for steps that they need to take to minimize the effects of heat stress. Additionally, the requirements for heat stress monitoring are discussed in Section 16 of this SSHP.

5.7.6 Cold Stress

In that the project will be carried out in the July-August time frame cold stress injury will not be a potential hazard.

5.7.7 Inclement Weather

Inclement weather, such as severe thunder/lightning storms and high winds, can have a significant impact on personnel safety and the safe performance of site operations. Site personnel will be briefed each morning to inform them of any potential weather hazards that may be present during the day, and will remain alert to the onset of inclement weather. The hazards associated with inclement weather and actions to be taken are detailed in Section 13.5.4 of this SSHP.

6.0 TRAINING

6.1 GENERAL INFORMATION

All personnel assigned to, or regularly entering, the FCH project site shall receive the training required by this chapter prior to participation in assigned site activities, which pose a potential for exposure to safety or health hazards. Site personnel shall also receive the training outlined in this appendix as applicable to their assigned duties. All personnel involved in OE investigation, handling, transportation, or disposal operations shall meet one of the prerequisites listed below:

1. Graduate of the Naval Explosive Ordnance School, Indian Head, Maryland or Eglin AFB, FL
2. Graduate of the U.S. Army Bomb Disposal School, Aberdeen Proving Grounds, Maryland
3. Graduate of the EOD Assistant's Course, Redstone Arsenal, Alabama, with a minimum of five years of military EOD and/or commercial OE experience
4. Graduate of the EOD Assistant's Course, Eglin Air Force Base, Florida, with a minimum of five years of military EOD and/or commercial OE experience

6.2 CFR 1910.120 TRAINING REQUIREMENTS

6.2.1 40-Hour General Site Worker Training

All EODT and subcontractor personnel with the potential for exposure to hazardous substances or other safety and health hazards must obtain 40 hours of off-site HAZWOPER training. This training must be completed and documentation presented before personnel are to participate in site activities involving exposure to site hazards.

6.2.2 24-Hour Occasional Site Worker Training

This type of training will not be applicable to personnel participating in field activities associated with the FCH SOW or will only have access to the Support Zone (SZ) of the project site.

6.2.3 On-site Training

All EODT on-site and subcontractor personnel shall be given a minimum of three days of actual on-site field experience under the direct supervision of a trained and experienced supervisor. This training will be used to familiarize site personnel with the site-specific organization, PPE, and emergency response procedures. The three-day on-site training is site-specific and shall be documented using the On-site Training Form. The UXOSO will generate and maintain this form, and will ensure that all personnel receive this training and sign the form.

6.2.4 8-Hour Refresher Training

All EODT and subcontractor personnel, to include management/supervisory personnel shall receive a minimum of eight hours of refresher training annually. This training will cover relevant topics from the 40-hour HAZWOPER and the 8-hour management/supervisor courses, as well as critiques of any incidents that have occurred in the past year and any other related topics.

6.2.5 Supervisor Training

Managers and other personnel who are directly responsible for the performance of hazardous waste operations, or who directly supervise on-site personnel, shall have 8 additional hours of specialized supervisory training, as specified in 29 CFR 1910.120(e).

6.3 SITE-SPECIFIC AND HAZARD INFORMATION TRAINING

6.3.1 Site-specific Information Training

Site-specific Information Training shall be used to provide site personnel with important information related to site operations. This training shall apply to the three-day on-site training requirements outlined in Section 7.0 of this SSHP, and cover the site-specific training topics listed below:

1. Site history and background
2. Site organization and COC
3. Proper use, maintenance, and cleaning of required PPE
4. Emergency response procedures, assignments, and contacts
5. SSHP requirements generally

6.3.2 Hazard-specific Information Training

Hazard information training shall be presented utilizing the EODT Hazard Information Program that meets the requirements specified in 29 CFR 1910.120 (i) and the training required by EM 385-1-1. This training shall be presented to all personnel involved in site operations, and shall be used to inform personnel as to the degree, nature, and level of exposure likely to occur as a result of participation in site activities. This training, as a minimum, will cover the following topics:

1. A complete description of physical and toxicological properties of any hazardous materials to be found on the site.
2. A complete description of the physical hazards associated with site operations, including those hazards listed for the site tasks as outlined in paragraph 6.2 of this SSHP.

3. A description of the biological hazards which may be encountered on site, to include identification and protective methods, and what to do if exposure occurs.
4. The SWP's or other hazard control techniques that will be used to minimize exposure.

6.4 VISITOR TRAINING

Site visitors are defined as persons who: 1) are not employed at the project site, 2) do not routinely enter restricted work areas, and 3) spend short periods at the site (i.e., 1 to 2 days per visit). Site visitors may include client personnel; EODT personnel; commercial vendors; auditors or inspectors from federal, state, or local regulatory agencies; or political representatives. It is the responsibility of all site personnel to, whenever possible, maintain a watch for visitors approaching the site, and to immediately notify the SUXOS or UXOSO of the presence of the visitor. Visitors shall be required to comply with the general requirements listed in Paragraph 7.4.1, and shall meet the appropriate requirements as specified in Paragraphs 7.4.2 and 7.4.3, according to which area of the site they will be visiting.

6.4.1 General Requirements for All Site Visitors

Regardless of the purpose of the site visit or the control zones to be entered, the following requirements shall apply to all site visitors prior to their entry into the site:

1. The EODT SUXOS and UXOSO shall be notified of the nature and duration of the visit.
2. Visitors shall sign the Visitor Log and shall record their names, date of visit, and the name of the company or agency represented.
3. Site visitors shall be escorted by an EODT representative at all times while in the area.
4. Visitors shall comply with the applicable safety and health requirements described below.

6.4.2 Visitors Remaining Outside the EZ

Visitors wishing to observe site activities from outside the EZ shall receive general hazard information training which incorporates the following topics:

1. Location and description of potential hazards and risks
2. A short briefing about the chemical hazards found on site
3. Areas of the site that are closed to visitors
4. The site evacuation plan and emergency procedures
5. Other topics as deemed appropriate

6.4.3 Visitors Entering the EZ

UXO-qualified site visitors requesting entry into the EZ shall be subject to the same site-specific and hazard information training as specified in Section 7.0 of this SSHP. This training shall be conducted prior to the visitor entering the EZ. Visitors requesting entry into an EZ shall also be required to present documentation of OSHA hazardous waste training and medical surveillance consistent with the requirements for the general site employees. When a visitor enters the EZ, all OE-related operations shall cease.

6.5 OE RECOGNITION TRAINING

All non-UXO-qualified personnel who will be involved in on-site operations will be given OE Recognition Training. This training will be used to familiarize non-UXO-qualified personnel with the appearance and components associated with the ordnance that may be found on site. This training will include EODT's "No Touch" policy, which states that non-UXO-qualified personnel will not touch any ordnance-related items unless they have been inspected by UXO-qualified personnel and deemed ORS or inert ordnance.

6.6 OE REFRESHER TRAINING

All UXO-qualified site personnel shall receive site-specific OE training that covers the ordnance items that are known, or expected, to be on site. The topics to be covered in the OE refresher training shall include: type of ordnance, fuzing, fillers, hazards, and handling and disposal procedures.

6.7 FIRST AID AND CARDIOPULMONARY RESUSCITATION TRAINING

At least two full-time EODT site employees shall be trained and certified in first aid and cardiopulmonary resuscitation (CPR). Whenever possible, the UXOSO will be one of the two site personnel. The training shall be equivalent to that provided by the American Red Cross. Once trained, these employees will be tasked with the responsibility of initial first aid response to injured employees whenever other medical support personnel are not immediately available on site.

6.8 BLOODBORNE PATHOGEN TRAINING

The EODT first aid-trained personnel will primarily be responsible for rendering aid in the event of an injury or accident. The first aid/CPR trained personnel, who have a potential for occupational exposure to blood or other potentially infectious body fluids, shall receive training as outlined in the 29 CFR 1910.1030(g)(2) and EM 385-1-1 and the EODT Bloodborne Pathogens (BBP) Exposure Control Plan. Whenever feasible, all on-site EODT personnel will receive the same level of BBP training as specified above.

6.9 PPE TRAINING

A detailed discussion related to the training required prior to personnel using PPE is presented in Section 8.5 of this SSHP. This material has been placed there since the DID OE-0005-06.01 specifically designated that PPE training be included in the PPE section of the SSHP.

6.10 HAZARD COMMUNICATION TRAINING

In order to comply with the requirements of the OSHA Hazard Communication (HAZCOM) Standard, 29 CFR 1910.1200, HAZCOM training shall be provided for all site personnel who will use products containing hazardous substances. This training shall be provided upon initial assignment to the site and prior to use of the product. Supplemental HAZCOM training shall be scheduled and presented whenever a new hazardous substance is introduced into the work area or employee changes job locations where new products are encountered. HAZCOM training shall comply with the specifications outlined in EODT SOP 110 in Appendix I of the WP. Training shall be documented on the HAZCOM documentation form.

6.11 FIRE EXTINGUISHER TRAINING

All EODT site personnel will be trained in the general principles of fire extinguisher selection and use, as well as the hazards associated with first-stage fire fighting (i.e., fighting a fire that has just begun). This training will be provided at initial mobilization and annually thereafter, and will follow EODT SOP 109, CSHP.

6.12 CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)

All site personnel involved in the use of lockout/tagout (LO/TO) devices for the control of hazardous energy will receive on-site training in the proper implementation of the LO/TO SOP. All training shall comply with 29 CFR 1910.147 and Section 12 of EM 385-1-1. EODT training requirements for LO/TO are presented in EODT SOP 113 in Appendix I of the WP.

6.13 DAILY TAILGATE SAFETY MEETINGS

Prior to commencing operations each day, all EODT, contractor, and subcontractor personnel shall be given a tailgate safety briefing by the UXOSO. This briefing shall, as a minimum, follow and encompass topics outlined in EODT SOP 127 and/or utilize the EODT tailgate safety briefing ZIP cards assigned to the UXOSO.

6.14 WEEKLY SAFETY BRIEFING

Once per week (usually Monday), a weekly safety briefing will be presented in conjunction with the tailgate safety briefing. This briefing will consist of information about site hazards or general safety/health issues relevant to the site personnel, and will be presented by the UXOSO or a

speaker selected by the UXOSO. All site personnel will attend the training, and the UXOSO shall document this training on the EODT Documentation of Training Form.

6.15 DDITIONAL REQUIRED OSHA TRAINING

Additional OSHA-required training, as deemed necessary by the OSHM or UXOSO, shall be provided as needed.

6.16 OCUMENTATION OF OSHA TRAINING

All on-site and management/supervisory personnel shall present documentation or certification of training prior to participating in site activities. Without appropriate documentation, personnel shall be prohibited from entering hazardous areas or engaging in hazardous site activities.

7.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

7.1 USE OF ENGINEERING CONTROLS

According to OSHA 1910.120(g), 1910.132, and 1910.134, whenever occupational exposures to chemical or physical hazards exist at levels in excess of established action levels; the primary objective will be to apply accepted engineering controls. However, when feasible engineering controls are not available, a reasonable combination of safe work practices and PPE will be used. For site operations at FCH, the feasible engineering controls to be used include blade guards on brush cutters and other machinery guards installed on equipment or tools by the manufacturer. Guards of this nature will be removed only for the purposes of conducting equipment maintenance, and will be replaced prior to operation of the equipment or machinery.

7.2 REGULATORY GENERAL REQUIREMENTS AND SPECIAL CONSIDERATIONS

All personnel performing operations on site shall be required to use the appropriate level of PPE, as specified in the CTHA forms found in Attachment A of this appendix. This SSHP makes provisions for use of Level D and Modified Level D PPE according to the hazards associated with the SOW tasks. The PPE levels presented in this chapter will be reassessed, and the EODT OSHM will be contacted if any of the following occur:

1. Appearance of previously unidentified chemicals or conditions
2. Changes in ambient weather conditions impact the use of assigned PPE
3. Introduction of new task or expansion of a previously assigned/evaluated task
4. Discovery and confirmation of CWM

For project tasks assigned after the approval of this SSHP, the EODT OSHM, in conjunction with the UXOSO, will assess the task hazards, assign the appropriate PPE level, complete a CTHA form, and forward it for approval to the CEHNC KO. Upon approval, the new form will be incorporated as an attachment of this SSHP.

7.3 SPECIAL CONSIDERATIONS

The following special considerations shall be observed in the selection and use of PPE for the levels discussed below:

1. Hard hats are required only when working around heavy equipment or when an overhead or head impact hazard exists, and will meet ANSI Z89.1 most current edition requirements.
2. Steel toe/shank boots are not required during surface/subsurface location of anomalies unless a serious toe hazard exists, whereupon a fiber safety toe will be used meeting ANSI Z41 current edition requirements.
3. Safety glasses will be required only when an eye hazard exists; for example, when around flying dirt/debris, using hand tools, etc. The safety glasses selected will provide protection from impact hazards and, if necessary, ultraviolet (UV) radiation (i.e., sunlight), and meet ANSI Z88.1 most current edition requirements.
4. Personnel using or dispensing products that contain materials that present a skin contact hazard will wear chemical-resistant gloves as defined in the CTHA forms. See SOP 123 Table 1, CSHP for glove selection for chemical protection.

7.4 HAZARD-SPECIFIC AND TASK-SPECIFIC PPE SELECTION

7.4.1 Task-specific PPE Assignments

Table 2 presents a listing of the anticipated site tasks, sub-tasks, and the initial level of PPE that will be worn during the performance of each task. Modifications to Table 2 may be required, and levels of PPE may be upgraded or downgraded according to the results of on-site monitoring discussed in Section 10 of this SSHP. Revisions to this table will only be made after approval by the EODT OSHM.

TABLE 7-1: TASK-SPECIFIC PPE ASSIGNMENTS

Task to be performed	Level of PPE
Task 1: Site Visit and Documentation Review	D
Task 3: Brush Clearing	D
Task 4: Location Survey and Mapping	D
Task 5: Removal Action	D
Reacquisition of Anomalies	D
Investigation of Anomalies	D
OE Disposal Operations	D
Scrap Inspection and Handling	D
Vehicle Operation and Maintenance	D

7.4.2 Level D PPE

The PPE listed below will be the initial PPE worn during all site activities. The Level D PPE to be used will consist of the following:

1. Work clothes or coveralls (cotton)
2. Leather work gloves (as needed to protect hands from cuts and abrasions)
3. Work boots
4. Safety glasses (as required for eye protection from impact and UV hazards)
5. Ear plugs or muffs (as required by the CTHA forms for high noise hazards)
6. Hard hat (as required by the CTHA forms for work with heavy equipment)
7. Protective footwear (as required by the task-specific CTHA forms for scrap handling and working around heavy equipment)

7.4.3 Modified Level D PPE

The following PPE will be worn for those tasks requiring Modified Level D PPE:

1. Same as Level "D", but with the following additions:
2. Hard-hat with face shield (wire or nylon mesh)
3. Leather anti-vibration, full-finger work gloves
4. Steel-toed boots or metal toe-caps (required for chainsaw operations only)

5. Kevlar chaps (only required for chainsaw operations) or snake leggings (for brush cutter use)
6. Earmuffs in conjunction with earplugs
7. Nitrile gloves for dispensing fuels

7.5 PPE TRAINING

As specified by 29 CFR 1910.132, all site personnel who are required to use PPE shall be given training in the use, care, and limitations of the PPE they are to use. Prior to PPE use, the affected personnel shall demonstrate an understanding of the training and their ability to properly use the assigned PPE. Upon completion of this training, affected personnel will be retrained if the level or type of PPE being used changes. PPE training shall address the following topics:

1. PPE selection decisions, including when and what PPE is needed
2. How to properly don, doff, adjust, and wear PPE
3. The limitations of specific pieces/types of PPE
4. The proper care, maintenance, limitations, and disposal of PPE

7.6 ACTION LEVELS FOR UP/DOWN GRADING

Action levels for PPE up/down grading are presented with the monitoring criteria in Table 7-1.

7.7 PPE INSPECTION, MAINTENANCE, AND STORAGE

IAW SOP 123, site personnel using PPE will keep their PPE in clean, working condition. EODT shall provide cleansing wipes, wash sprays and cloths, towelettes, or equivalent cleaning supplies to allow personnel to surface clean PPE. Additionally, EODT will establish a PPE storage area where field personnel may store their PPE during non-use times. All site personnel will be responsible for daily inspections of 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 UXOSO.

7.8 EMERGENCY RESPONSE EQUIPMENT

For this project, no additional or special levels of PPE are being specified for emergencies. For all site operations, first aid supplies that have been approved by the consulting physician at Concentra Medical will be available on site. Each field team will have and maintain first aid supplies consisting of:

1. A 16-unit first aid kit
2. Portable eye wash bottles, for use during transportation to the 15 minute eye wash station
3. Burn kit with bandages
4. Trauma bandages

5. A fire blanket

7.9 EMERGENCY EQUIPMENT AREAS

Each team will have a fire extinguisher in the site vehicle, and additional fire extinguishers will be used for any temporary fuel storage areas established. The emergency eye wash station that complies with ANSI Z-358.1 will be available in the equipment storage trailer located at the site perimeter. No safety showers will be required, since there is no potential for personnel being drenched with hazardous substances that can pose a threat to the skin. Additional information related to fire extinguisher types, sizes, and spill response equipment that must be available is presented in Table 5 and Section 13.8.2 of this SSHP.

8.0 MEDICAL SURVEILLANCE

8.1 PURPOSE AND SCOPE

EODT has established a comprehensive Medical Surveillance Program (MSP) designed to assist in the prevention, diagnosis, and treatment of occupational illnesses and injuries sustained during operations on hazardous waste sites. The medical surveillance requirements of this section shall apply to all site personnel with exposure potential to significant safety and health hazards.

8.2 GENERAL REQUIREMENTS

Medical examinations of personnel as required by the MSP shall be conducted by, or under the supervision of, a licensed physician, who is board-certified in occupational medicine or has had extensive experience in the recognition, evaluation, and treatment of occupational diseases. The EODT MSP is managed by the OSHM with administrative consultation from the following:

Dr. Timothy Oesch
Concentra Medical Services
1030 Oak Ridge Turnpike
Oak Ridge, Tennessee 37830
Phone: (865) 425-4640, Fax: (865) 425-4646

8.2.1 Designation of Alternate Physician

If, due to geographic or logistical restrictions, it is not feasible for the above-mentioned physician to conduct the physical examinations required by this section, the OSHM may locate and designate an alternate physician to conduct the health assessments. The alternate physician must meet requisite OSHA qualification requirements. The alternate physician shall be responsible for performing examinations equivalent to those outlined in the MSP.

8.3 PHYSICIANS STATEMENT

Upon completion of a health assessment, the physician shall provide the results of the examination to the employee, and a written physician's statement shall be provided to EODT. The physician's statement shall, as a minimum, include the following: 1) the employee's name and social security number; 2) a statement that the employee is qualified to participate in HTRW-related site activities; 3) the physician's recommended limitations upon the employee's assigned work, if any; and 4) any supplemental or follow-up examinations or tests which the physician believes are required to complete the assessment.

8.4 MEDICAL SURVEILLANCE EXAMINATIONS

8.4.1 Pre-assignment Health Assessment

The pre-assignment health assessment shall be conducted prior to personnel participation in site activities involving potential exposure to chemical or physical hazards. The pre-assignment health assessment shall have been conducted within the past 12 months and will, as a minimum, include the following elements and medical tests:

1. A complete medical and occupational history
2. A complete physical examination
3. Laboratory studies, including complete blood count with differential, and liver and kidney function tests
4. Urinalysis
5. Blood Chemistry panel, to include BUN and Blood Lead Zinc Protoporphryn
6. PPE evaluation and pulmonary function testing, and respirator quantitative fit testing
7. Audiometric and vision testing
8. Chest X-ray
9. Electrocardiogram (as determined by the physician)
10. Drug screening

8.4.2 Supplemental Examination

Any site worker who has been injured, received a health impairment, developed signs or symptoms from possible overexposure, or received an overexposure without the use of respiratory protection shall undergo a supplemental examination. The physician will determine the contents of this examination and shall certify the employee's fitness to return to work prior to reassignment. The physician shall specify in writing any work restrictions required.

8.4.3 Follow-up Health Assessments

The physician will notify EODT and the employee, if a work-related condition is detected during an examination that requires additional testing or assessment. Upon conclusion of the follow-up health assessment, a statement regarding the employee's fitness for work will be provided.

8.5 HEALTH CARE ADMINISTRATIVE SERVICES

In support of the EODT MSP, Concentra Medical Services has been designated for the establishment and maintenance of any medical records related to this project and the EODT MSP. These records will be treated as private and confidential information.

8.6 EMERGENCY AND NON-EMERGENCY MEDICAL TREATMENT

Prompt and effective non-emergency and emergency medical treatment will be provided for site personnel who require medical attention resulting from injuries or illnesses occurring during site operations. The treatment requirements of this section are not designed to provide for the diagnosis or treatment of non-occupational injuries or illnesses, unless immediate medical attention is needed to prevent loss of life, relieve suffering, or preclude permanent injury which would result if treatment were delayed.

8.6.1 Treatment of Minor Injuries

For minor injuries, the two on-site EODT personnel with first aid/CPR training will provide the initial first aid response. If additional/advanced medical treatment is required, the UXOSO will determine whether the injured person should be transported using a site vehicle or an ambulance is required. If the UXOSO determines that a site vehicle may be used, a first aid-trained attendant will accompany the driver and injured person for the trip to the hospital designated for non-critical injuries. Primary treatment for illnesses or injuries, which could occur on site, will be provided by Southampton Hospital, Long Island. A map and directions to the hospital is located at the end of this appendix.

8.6.1.1 Ambulance Services

If ambulance service is required, the UXOSO will contact Stonington Ambulance Service, and arrange for an ambulance to meet the EODT site vehicle for continued transportation of the injured person. For injuries requiring ambulance transportation, an on-board Emergency Medical Technician (EMT) will provide advanced life support (ALS) and other care as required by the nature of the injury.

8.6.2 Treatment of Serious Injuries

In the event that the UXOSO requests ALS, the EODT first aid personnel will provide initial support, in an effort to stabilize the injured person, while the ambulance service are contacted and summoned. Once on site, the ambulance EMT personnel will not only provide ALS services, but will also determine the mode of transportation. EMT personnel may elect to use ground transportation or summon helicopter air ambulance service for transporting the injured person. Air ambulances are staffed with qualified medical personnel who will stabilize and treat the injured person en route. Treatment of serious injuries will also be provided by Southampton Hospital. This hospital is rated as a Trauma Emergency Center, indicating that it has emergency room physicians present 24-hours a day.

9.0 RADIATION DOSIMETRY AND CHEMICAL WARFARE MATERIEL (CWM)

No detailed procedure for the remediation of radiological materials or CWM is required for this project. Available archival data has no indication that any radiological materials or CWM materials were ever tested or fired on this facility.

10.0 ENVIRONMENTAL AND PERSONAL MONITORING

10.1 GENERAL

On-site monitoring will be conducted during specified site activities to evaluate potential physical hazards that may be encountered. The on-site monitoring will assist in determining the effectiveness of control measures, the need for upgrading or downgrading PPE requirements, and the effectiveness of safe work practices. Calibrated direct-reading, real-time instruments will be used whenever possible, or required, to detect and quantify site hazards. If a reading is achieved which exceeds the action levels specified in Table 3, the EODT UXOSO will take the steps outlined in this chapter or other referenced Sections to correct the situation or minimize the exposure.

10.2 PERIMETER MONITORING REQUIREMENTS

No perimeter monitoring will be required for this project, since no site operations will be conducted which would result in the release of toxic materials in gas, vapor, or particulate form.

10.3 PERSONAL MONITORING REQUIREMENTS

10.3.1 Real-time Direct-reading Monitoring

The guidelines presented in Table 3 represent the initial real-time, direct-reading monitoring requirements. All monitoring equipment must be available at the site during mobilization and

throughout duration of project. Monitoring frequency may be escalated or reduced based upon the results of previous monitoring or the detection of factors that indicate a potential for exposure. The monitoring equipment to be used to assess exposure hazards for this project will include:

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

10.3.2 Integrated Breathing Zone Sampling

Integrated breathing zone sampling is not applicable to this project since site operations will not involve the potential for personnel receiving an exposure to air borne hazardous substances.

10.4 MONITORING SCHEDULE AND FREQUENCY

Exposure monitoring will focus on the potential for exposure to physical hazards (including OE) during excavation trenching and characterization sampling. Table 3 identifies the type of monitoring equipment to be used, the frequency at which the monitoring will be conducted, monitoring method to be employed, action level, and the action to be taken if the action level is exceeded.

10.5 TEMPERATURE EXTREME MONITORING

Heat stress monitoring will be conducted IAW the guidelines presented in Table 3 and EODT SOP 111 or at the direction of, the UXOSO, and will be used to minimize physiological effects in the event that temperature extremes are experienced during site operations. The guidance presented in Table 3 will be used by the UXOSO to determine when and what type of heat stress monitoring will be conducted.

10.6 NOISE MONITORING PROCEDURES

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 (only if required by OSHM) 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 10-1 will be consulted to determine the type, amount, and frequency of noise monitoring.

TABLE 10-1: SITE MONITORING SCHEDULE AND ACTION LEVELS

Hazard	**Equipment***	**Monitoring Frequency/Location**	
Heat Stress	WBGT Meter	Daily on the ½ hr. when ambient temperatures are expected to exceed 78.8°F for acclimatized workers, 72.5°F for workers not acclimatized, and 70.0°F for workers using impermeable or semi-impermeable clothing	
		Action Level	**Action to be Taken**
		Above ACGIH screening criteria as outlined in SOP 111 in Appendix I	Institute physiological monitoring and appropriate controls (up grade Level of protection to include cooling devices) as outlined in Paragraph 5.4 of SOP 111 in Appendix I
Hazard	**Equipment**	**Monitoring Frequency/Location**	
Noise	Sound Level Meter w/A-weighted filter	Conducted during initial operation of high noise equipment, and periodically thereafter, according to the recommendations of the EODT OSHM	
		Action Level	**Action to be Taken**
		Whenever noise levels in the hearing zone exceed 85 dba action level.	Conduct noise dosimetry as outlined below if required by OSHM. Issue hearing protection devices to effected personnel.
	Equipment	**Monitoring Frequency/Location**	
	Noise Dosimeter If Required by OSHM	Whenever noise levels in the hearing zone exceed 85 dBA	
		Action Level	**Action to be Taken**
		Noise readings greater than 85 dBA 8-hour time-weighted average	Report dosimeter readings to the OSHM to ensure hearing protection are adequate for the level of noise experienced.

* Monitoring equipment will be at the site upon mobilization

10.7 MONITORING EQUIPMENT CALIBRATION AND MAINTENANCE

All sampling and monitoring instrumentation used on site will be calibrated to NIST traceable standards and 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 and replaced with functional equipment.

11.0 SITE CONTROL

11.1 CENTER OF OPERATIONS

Because this project is of such short duration EODT will not establish a field office. The hotel room of the SUXOS shall double as the field office.

11.2 SECURITY PROCEDURES

11.2.1 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. Site access control will be required to establish the MSD exclusion zone (EZ) where only those personnel deemed essential to site operations may gain access. All others will be considered visitors to the site, and as such, the provisions of Paragraph 7.4 will apply. For the purpose of this plan, a work zone (WZ) is defined as any location where EODT personnel are conducting any of the site tasks associated with the SOW. For operations conducted down range where exposure to UXO occurs, the WZ is defined as the team separation distance as specified in Chapter 2 of the WP. For all operations outside the range the WZ will be determined by the SUXOS in conjunction with the CEHNC OE Safety Specialist.

11.2.2 Work Zone Access Control and Security

A Work Zone (WZ) is any location where EODT or subcontractor personnel are conducting site tasks as specified in Paragraph 6.3 of this SSHP. Entry into the various WZ's will be limited to only those personnel required to safely conduct the task at hand. Ensuring that a WZ is secure will be the primary duty of the WZ Team Leader, but will also be the responsibility of all personnel in the WZ. During operations, access to WZ's will be controlled by the use of periodic visual surveys of the surrounding area to ensure that no hikers, recreational vehicles, or cattle have wandered into the MSD for the site.

11.2.3 Site Control During Demolition Operations

11.2.3.1 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. All OE requiring demolition will be disposed of using the operational procedures outlined in Chapter 2 of the Former Camp Hero WP. Demolition operations will be performed under the direction and supervision of the SUXOS and/or UXOSO/QCS and in the event of any noncompliance, the SUXOS and UXOSO/QCS have the authority to stop or suspend operations.

11.2.3.2 Prior to priming the demolition shots, the SUXOS will ensure that local fire and police departments 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.

11.2.3.3 Upon completion of the demolition shot, the SUXOS or the UXOSO/QCS will conduct a visual inspection of each disposal shot and site security will be maintained until the demolition operations are secured by the SUXOS. While the inspection is conducted of the disposal site(s), the UXOSO/QCS 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 OE Safety Specialist, and no off-site disposal of OE will be conducted.

11.2.4 Equipment Storage and Security

During non-working periods, all project equipment used on site, to include hand tools, will be stored in a temporary storage trailer (lockable Conex box) to be located near the site.

11.3 SITE MAPS

Prior to initiation of site activities, a site map will be available which will detail the following information: site sizes and shapes, restricted areas, designated assembly points, the site access routes, demolition areas, staging areas, and any other information deemed necessary by the SUXOS or UXOSO. The site map will be used by the UXOSO during site safety training and the daily tailgate safety briefings. Maps of the project site are included in Appendix B of the WP.

11.4 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:

1. On-site communications between teams and the site office will consist of hand-held portable radios with a range of more than three miles. Air horns, bullhorns, sirens, or hand signals will also be used, as needed, for WZ communications.
2. Off-site communications will be accomplished by telephone from the field office with cellular telephones provided to each team as a back up to both on- and off-site communications.

11.4 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. At all times buddies should:

1. Observe his/her 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 his/her buddy at all times.
4. Notify the team leader and/or field office if emergency assistance is needed.

12.0 PERSONNEL AND EQUIPMENT DECONTAMINATION

12.1 PERSONNEL HYGIENE AND DECONTAMINATION

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.

12.1.1 Level D and Modified Level D Decontamination

No hazardous chemical decontamination procedures for the Level D and Modified Level D PPE will be needed for this project. However, in the event that personnel come in contact with poison ivy, oak, or sumac, personnel will use barrier crèmes and a wash solution designed for the removal or deactivation of the plant toxins prior to each break, before leaving the site each afternoon, or whenever site personnel are aware of skin contact with the poisonous plants. This may include the use of degreasing soaps to remove the toxin, or may include other products designed to deactivate the oily toxin. Personnel will also use a detoxifying solution to spray their

boots and clothing prior to entering a site vehicle if they believe their boots or clothing have been contaminated with the toxic plant oils.

12.1.2 Emergency Personnel Decontamination Station

Due to the lack of hazardous chemical contaminants being located on site, and the fact that no personal protective clothing (i.e., Tyvek® suits, chemical over boots, or other protective clothing) is needed for daily site operations, no emergency personnel decontamination station will be needed for this project.

12.2 EQUIPMENT HYGIENE OR DECONTAMINATION

Tools and equipment used on site will be kept free of accumulations of soil and other debris and will be cleaned of such prior to removal from the EZ. Equipment used in the field, and PPE, shall be cleaned and inspected at the end of each workday to ensure that the equipment is maintained in safe operating condition.

12.2.1 Prevention of Equipment Contamination

To prevent the contamination of vehicle interiors and to minimize contamination of personnel, the portions of hand tools and personal and crew-served portable equipment that has come in contact with poison ivy/oak will be cleaned with a commercial poison oak/ivy cleaner prior to being placed into team vehicles. Equipment of this nature will, as a minimum, be sprayed with the cleanser in those areas that have contacted the plants, and, when feasible, the items will also be scrubbed with poison ivy/oak cleanser.

12.2.2 Defective Equipment

During inspections, any equipment found to be defective would be brought to the attention of the SUXOS or UXOSO. Any equipment that has been exposed to poison ivy, oak, or sumac will be decontaminated with a degreasing soap or a detoxifying solution prior to being placed inside any site vehicle, to prevent the vehicle surfaces from being contaminated with the toxin.

13.0 EMERGENCY RESPONSE AND CONTINGENCY PROCEDURES

13.1INTRODUCTION

Thorough pre-planning, proper design, and implementation of the required emergency response contingencies can dramatically reduce the frequency and severity of emergencies. If an emergency does occur, quick and decisive action will be required, since even short delays can create or escalate life-threatening situations. 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.

13.2 PRE-EMERGENCY PLANNING

Prior to the conduct of site operations, EODT site personnel will have contacted and met with appropriate local authorities to inform them 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 public. The SUXOS and UXOSO will confirm information from the local authorities related to the type of emergency services available, including any contact phone numbers or procedures needed to summon the services. The UXOSO will be responsible for ensuring that the telephone numbers and procedures for contacting local emergency services are posted IAW the requirements of this chapter.

13.2.1 Identification of Potential Emergencies

During the development of this SSHP, great attention was given to identifying potential safety and health hazards associated with the planned site activities. These hazards were then assessed to determine the nature and type of emergencies they could cause. Contingency plans for responding to the potential emergencies have been developed and are included in this section. The potential emergencies that 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 physical or biological hazards
3. Fire
4. Inclement weather
5. Spill of hazardous materials (small quantities of fuel [<5 gallons] or oil)

13.2.2 Identification/Coordination of Emergency Services

Prior to the initiation of site activities, the UXOSO will contact local emergency services to verify the availability of requisite services, and to confirm the means used to summon the services. 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. The telephone numbers for all emergency services and contacts are presented in this plan, and will be posted in the office/break area and in all site vehicles. All site personnel shall be aware of the procedures for obtaining off-site emergency services.

13.2.3 Initial Incident Reporting Procedures

Once an emergency has occurred, team members will sound the air horn alarm. The respective

team leader will establish radio contact with the UXOSO and the SUXOS to initiate site evacuation and mobilization of EODT first aid/CPR response personnel. Once informed of the emergency, the SUXOS will ensure notification to the CEHNC OE Safety Specialist, and the UXOSO will ensure that all teams are cognizant of the situation and are involved in the proper response procedures. The sounding of the air horn alarm and the initial radio notification 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 up and simplify communication
4. The initiation of emergency and/or evacuation procedures

13.3 PERSONNEL ROLES, AUTHORITY, AND COMMUNICATIONS

13.3.1 On-scene Incident Commander

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

13.3.2 Emergency Coordinator

Upon notification of an on-site emergency, the SUXOS will 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 United States and local regulatory and response agencies.

13.3.3 On-site Emergency Response Personnel

During site activities, EODT personnel will act, to the greatest extent possible, in the role of on-site emergency response personnel. The personnel assigned to these tasks will be designated by the EODT SUXOS and UXOSO 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, and may be directed, to perform during a site emergency.

13.3.4 Off-site Emergency Response Services

The off-site emergency response services which may be needed in the event of a site emergency include: land-based 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 be contacted in the event of an emergency by the OSIC or EC by calling the emergency numbers presented in Table 4.

13.3.5 Communications

Emergency communications will be available and maintained during all on-site operations. As previously discussed, radio and cellular phone, communications will be used between the field teams and the project office. The project office will have hard line communication to off-site services, and this office will be manned at all times when on-site operations are being conducted.

13.4 POSTED INSTRUCTIONS AND EMERGENCY CONTACTS

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 that all site personnel are familiar with this information. A hospital route map and the list of emergency contacts presented in Table 13-1 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.

1.	Amagansett Fire Department	631-267-3300
2.	Ambulance: Stonington Ambulance Svc	860-535-3721
3.	Medical Care: Southampton Hospital	631-283-6000
4.	Montauk Police Department	631-668-3709
5.	CEHNC Ordnance Safety Office	256-895-1582
6.	CEHNC System Safety	256-895-1581/1583
7.	National Response Center	800-424-9300
8.	EPA Emergency Response Team (ERT)	215-596-1260
9.	USEPA Hazardous Waste Hotline	800-621-3191
10.	Dr. Charles Phillips, EODT Safety and Health Manager	865-988-6063
11.	Mr. Bill Pearse, EODT Project Manager	727-424-2949

TABLE 13-1: EMERGENCY TELEPHONE NUMBERS

Service/Contact	Agency/Position	Telephone Number
Police	Montauk Department	911/631-668-3709
Fire	Amagansett Fire Department	911/631-267-3300
Ambulance	Stonington Ambulance Service	911/860-535-3721
Air Ambulance	Life Star	
Hospital	Southampton Hospital Emergency room	631-283-6000
USEPA	Emergency Response Center	215-596-1260
National Response Center	EPA	800-424-9300
Mr. Tom Dess	Montauk State Park Superintendent	631-668-2765
Poison Control Center	Poison Control Center	800- 282-5846
CEHNC Safety Office	Mr. Wayne Galloway or Mr. Greg Bayuga	256-895-1582 or 1596
Mr. Jerry Kresge	CEHNC Project Manager	256-895-1158
Mr. Jason Burcham	CEHNC Technical Manager	256-895-1289
Ms. Lydia Tadesse	CEHNC Contracting Officer	256-895-1169
TEU	CWM Support	410-436-4381
EOD Support	63rd Battalion (EOD), Ft. Dix NJ	609-562-5940
Mr. Bill Pearse	EODT Program Manager; EODT Project Mgr	865-988-6063, 865-310-9267
Mr. Phil Curry	EODT SUXOS	865-988-6063, 865-721-8009
Mr. Steve Voland	Corporate Quality and Training Manager	(865) 988-6063, cell 207-9892
Dr. Charles Phillips, CIH	Corporate Occup. Safety and Health Mgr.	(865) 988-6063

13.5 EMERGENCY RECOGNITION AND PREVENTION

13.5.1 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 UXOSO/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 trained 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 OE Safety Specialist. 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 an incident report will be initiated.

13.5.2 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 UXOSO/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 OE Safety Specialist. 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 an incident report will be initiated.

13.5.3 Explosion

In the event of an unintentional explosion, all personnel shall evacuate and help secure the site. The OSIC, SUXOS, and CEHNC OE Safety Specialist 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 13.3. 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 OE Safety Specialist, will determine what actions will be taken to resolve the situation, and, once resolved, the OSIC will initiate an investigation and incident report 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.

13.5.4 Inclement Weather

In the event of inclement weather, such as heavy precipitation, electrical storms, high winds, snowstorms, dense fog, or extremely cold weather, it may be necessary to cease site operations and evacuate the site. The UXOSO shall be responsible for obtaining the local weather 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.

1. **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 UXOSO to ensure that site conditions are safe for re-entry and continuation of operations.
2. **Thunderstorms**: Thunderstorms, with their associated lightning, present a significant hazard to site personnel. If a thunderstorm is noticed in the area, the UXOSO will observe the storm to determine its direction and speed. If the storm approaches the site, the UXOSO 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 UXOSO determines that it is unsafe to remain on site, the UXOSO 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. Additionally, work will be halted by the UXOSO if lightning is detected within ten miles of the team locations.

3. **High Winds**: High winds can create conditions that threaten the safety and health of site personnel. If the UXOSO 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 UXOSO may even require the evacuation of the entire site until conditions improve. The determination to restart operations will be the responsibility of the SUXOS, in consultation with the UXOSO, to ensure that 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 40km (25 miles) per hour.

13.6 SITE TOPOGRAPHY AND PREVAILING WEATHER CONDITIONS

General site topography and prevailing weather conditions have been discussed previously in Paragraph 5.2. It is not expected that these conditions will significantly impact emergency response at the site, with the exception of the remote nature of the site. Due to this, pre-emergency planning by the UXOSO with the local response agencies will be made to address the evacuation of injured personnel from remote areas. This will entail the UXOSO and local agencies coming to agreement with the locations on the site where EODT personnel could meet the ambulance. Once this information has been detailed, all site personnel will be briefed on the procedures, and the assembly points will be annotated on a site map to be included in each team vehicle.

13.7 CRITERIA AND PROCEDURES FOR SITE EVACUATION

13.7.1 Emergency Alerting Procedures

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 using telephone service to the responsible support agencies. The telephone numbers for all emergency services and contacts are listed in Table 4. These phone numbers shall be posted in the office/break area, in vehicles and all site personnel shall be aware of the procedures for obtaining off-site emergency services.

13.7.2 Employee Alarm System

13.7.2.1 Alerting On-site Team Members

To alert on-site team members, each team leader and the UXOSO will have an air horn that will be sounded to inform 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.

13.7.2.2 Alerting Work Zone Personnel

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 of 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.

13.7.3 Evacuation Routes and Assembly Points

Once on site, and prior to the initiation of site operations, the UXOSO, in conjunction with the SUXOS, will identify the evacuation routes and assembly points for the various areas on the site. These routes and assembly points will be identified on the site map, and will be communicated each morning to site personnel during the tailgate safety briefing.

13.7.4 Site Security and Control During Emergencies

13.7.4.1 Team Leader Responsibilities

During an emergency, site security and control will be paramount to controlling the possible negative effects of the emergency. Upon notification of an emergency, each team leader will initially be responsible for locating, assembling, counting, and controlling their team personnel. If the team leader is unable to perform this role, the duty will be passed on to another team member. Once the team has evacuated the site to the given assembly point, each team leader will maintain control over their team's personnel until the OSIC takes control of the personnel and verbally informs the team leader that the control has been transferred. This level of personnel control is needed to ensure no personnel are forgotten and that no personnel attempt any response action on their own without the knowledge of the team leader or OSIC.

13.7.4.2 Site Access Control and Security

Site access control and security will initially be conducted by EODT personnel directed to do so by the OSIC. If EODT personnel are needed for other response actions, the OSIC will request assistance from the CEHNC OE Safety Specialist. The CEHNC OE Safety Specialist will then be responsible for requesting security and access control services from the local Montauk Police Department.

13.8 DECONTAMINATION AND TREATMENT OF INJURED PERSONNEL

13.8.1 General

It is not anticipated that personnel decontamination will be required prior to, or along with, the treatment of injured personnel. This determination is made based upon the nature of the site and the lack of site contaminants that would require the use of chemical protective clothing. The one minor exception is the chemical-resistant gloves that are required for refueling operations. These gloves will simply be removed prior to, or during, initial treatment if the removal can be accomplished without exacerbating the injury. Blunt-nosed scissors may be used to cut the chemical-resistant glove prior to its removal.

13.8.2 Assessing the Emergency

A key element to the successful treatment of an injured worker is the effective assessment of the emergency prior to the initiation of action. 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 to identify and record vital information about the site and situation. This data will be passed on to response personnel and will include, to the extent possible, the items listed below:

1. What happened (i.e., type of incident; cause of incident; the time the incident occurred; extent of chemical release, including route of migration; and extent of damage to structures, equipment, and terrain).
2. Where on the project site the incident has occurred.
3. Personnel/casualties involved, such as number, location, and condition of victims; treatment that may be required; and missing personnel.
4. What could happen from this point (i.e., potential for fire or explosion, coupled with release of hazardous materials; location of all personnel in relation to hazardous areas; and potential for emergency affecting the general public or the environment).
5. Steps needed to resolve the situation, such as equipment and personnel needed for rescue and hazard mitigation, number of

uninjured personnel available for response, resources available on site, resources available from off-site response groups and agencies, time needed for off-site response resources to reach the site, and hazards involved in rescue and response.

13.8.3 Rescue and Response Actions

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. Based on the information collected during the emergency assessment, the OSIC will select the relevant response and rescue actions that will be taken. The rescue actions that may be needed are listed below, with some actions possibly being performed concurrently and some of the actions not being required:

1. Evacuate personnel to a safe location 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 to rescue and initiate incident response operations.
7. Control the situation and use measures to prevent the situation from migrating further.
8. Assign PPE IAW the nature and type of emergency.
9. 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.
10. Stabilize injured personnel and administer any medical procedures that are necessary before the victims can be moved.
11. Assist victims and extricate them from the area.
12. Transport the affected personnel via the predetermined mode as determined by their injury.

13. Record the incident occurrence, 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.

13.8.4 Treatment of Injured/Ill Personnel

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 if they are 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 accessed, 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. If deemed necessary by the emergency service 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 UXOSO, or a designated person, may transport the affected person to the designated medical facility.

13.8.5 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 US 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 on the job heart attacks, any fatalities, or three 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, UXOSO, and CEHNC OE Safety Specialist, shall conduct an accident investigation to determine the cause of the emergency and what preventative measures shall be taken to ensure that the emergency does not occur again.
4. The EODT PM and OSHM, in conjunction with the SUXOS, UXOSO, and CEHNC OE Safety Specialist, 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.
6. Review and revise, as needed, the site operational and emergency response procedures and, if necessary, update the SSHP to reflect the new procedures.

13.8.6 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 that 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
6. A recording of the injuries or illnesses which occurred as a result of the emergency

13.9 ROUTE MAPS TO MEDICAL TREATMENT FACILITY

13.9.1 General Instructions

The EODT UXOSO will give site-specific instructions and review the hospital route map for departing the project site. During the daily tailgate safety briefing, the UXOSO will also review the instructions for obtaining medical attention and transporting site personnel to the hospital. All site vehicles shall be provided with copies of the directions provided in Section 13.11, along with the hospital route map presented at the end of this SSHP. Prior to the initiation of site activities, and periodically thereafter, the hospital route will be driven by the UXOSO to ensure that the route to the hospital is free of unanticipated delays.

13.10 DIRECTIONS TO THE SOUTHAMPTON HOSPITAL

Primary treatment for illnesses or injuries, which could occur on site, will be provided by the Southampton Hospital, Long Island. A map to this hospital is presented in at the end of this appendix. To reach the Southampton Hospital (see map directions), proceed west on Montauk Highway/NY-27 for 26.2 miles. Turn left onto Old Town Road and go 0.4 miles. Turn right onto Meetinghouse Lane and go 0.1 miles. Total distance is approximately 27 miles. Estimated travel time is 1 hour 15 minutes. See attached Maps.

13.11 COMMUNITY ALERT PROGRAM

It is not anticipated that any on-site actions will require the activation of the procedures outlined in this paragraph. To alert the community, the OSIC will notify the CEHNC OE Safety Specialist that site hazards may migrate off the site. The CEHNC OE Safety Specialist will then determine the degree of community alert that will be required, and will request the appropriate assistance from local law enforcement.

14.0 CONFINED SPACE ENTRY

14.1 CONFINED SPACE ENTRY

No confined space operations are anticipated for this project. However, any excavation trenches will be continually monitored by the UXOSO to ensure that confined space program requirements are followed in accordance with EODT's SOP 103 contained in Appendix I.

15.0 SPILL CONTAINMENT

15.1 SPILL RESPONSE SUPPLIES

A portable spill response kit containing oil/solvent absorbent pillows/pads, non-sparking shovel, PPE, and disposal supplies or equivalent 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 UXOSO, or a party designated by the UXOSO, will transport this kit to the spill site for use by EODT personnel in the cleanup of the spilled materials.

15.2 SPILL RESPONSE

It is not anticipated that site operations will involve handling large containers of hazardous waste that 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 that 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 so that they are readily available to the spill response personnel.
5. Spill response personnel will take measures to stop the spill and if applicable, use an absorbent material or adsorbent substance to collect the spilled material.
6. Using non-sparking tools, EODT personnel will collect the contaminated soil, place it in a plastic bag, and place the bag in an approved container.
7. The SUXOS will notify the CEHNC OE Safety Specialist that the spill occurred, and will brief the CEHNC OE Safety Specialist as to the cleanup actions that were taken by EODT personnel.
8. The SUXOS will notify the EODT PM, who will contact the CEHNC KO, who will provide guidance on disposal of the contaminants and other actions that must be taken.

16.0 HEAT STRESS MONITORING

To monitor heat stress, EODT will utilize the procedures outlined in the ACGIH TLV Booklet (latest edition). The procedures for monitoring heat stress are located in EODT SOP 111, CSHP in Appendix I.

17.0 STANDING OPERATING PROCEDURES, ENGINEERING CONTROLS, AND WORK PRACTICES

17.1 GENERAL

This chapter outlines the engineering controls, SWP's, and Standing Site Orders which will be followed by all site personnel to eliminate, or reduce, the risk of exposure to recognized 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. For reference, a CD copy of the EODT Corporate Safety and Health Program will be available on site, as will the EODT task-specific Standard Operating Procedures (SOP's) see Appendix I this WP. Since the SOPs are generic in nature and are intended to compliment this SSHP, many of the SOP's may contain information that is superfluous to this project. Prior to and during site operations, the UXOSO and SUXOS will carefully read the SOPs and determine which SOP provisions apply to this project. As a 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 UXOSO any conditions that do not comply with, or are not addressed by, this SSHP.
3. Site personnel will wear the PPE as specified in Section 8.4 of this SSHP.
4. All investigation, handling, transportation, and demolition of OE found on site will be conducted IAW EP 385-1-95a Basic Safety Concepts and Considerations for Ordnance and Explosives Operations, 29 June 2001.
5. Any bites or stings received from wildlife will be reported to the UXOSO, 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, hazardous or poisonous plants.
7. Site personnel shall inform the UXOSO of any known medical conditions that 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.

17.2 ENGINEERING CONTROLS

When personnel exposure to site hazards is unavoidable, OSHA regulations specify that engineering controls be used whenever feasible to remove the potential for personnel exposure. Due to the dynamic and complex nature of site operations on an OE site, the effective design and implementation of engineering controls is typically not feasible. However, during project activities, the following feasible engineering controls will be used:

1. All guards located on heavy equipment will be maintained in place unless removal is needed for maintenance. Removal of guards for maintenance will require assessment by the UXOSO for potential application of LO/TO procedures.
2. All powered hand tools will be operated with the manufacturer's guards in place.

17.3 SITE RULES/PROHIBITIONS

17.3.1 Buddy System Procedures

All work at this site shall be performed using the buddy system IAW Paragraph 11.5.

17.3.2 Eating, Drinking, and Smoking Restrictions

Eating and drinking during on-site operations will be conducted only in designated areas, at designated break times, and only after personnel have washed their face and hands using available towelettes or other sanitary means. The exception to this is the use of hydration packs that allow personnel to carry drinking fluids on their back, which are consumed through a tube attached to the bladder in the pack. Due to the possibility of hot and humid weather during the term of field activities, site personnel will be allowed to use hydration packs to mitigate the hazards of heat stress. When these packs are needed for heat stress, site personnel may fill their packs outside of the grid and then consume fluids from the hydration pack during operations in the grid. At no time will personnel smoke while conducting any operations within the grid.

17.3.3 Standing Site Rules

To maintain safety and health awareness, a list of standing site rules has been developed which outlines the practices that must be followed at all times. These standing orders will be enforced by the UXOSO, 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 6 and 7.

17.3.4 Material Handling Procedures

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)
3. Movement manually with protective equipment (i.e., lifting belt or lifting monitor)

17.4 LIFTING PROCEDURES

The lifting fundamentals and requirements are presented in EODT SOP 114 in Appendix I of the WP. The lifting procedures in this SOP will be followed whenever personnel are required to lift objects.

17.5 . DRUM/CONTAINER HANDLING PROCEDURES AND PRECAUTIONS

No drum or container handling is anticipated for this project, and, therefore, procedures for these operations have not been included in this document.

17.6 CONFINED SPACE ENTRY PROCEDURES

No confined space entry operations will be conducted. At no point will EODT personnel enter a trench or excavation that is greater than five feet in depth without the excavation first being inspected by the UXOSO to determine its potential for being classified as a confined space.

17.7 HOT WORK, FIRE PROTECTION/PREVENTION, AND ELECTRICAL SAFETY

17.7.1 Hot Work Practices

The range scrap may have to be cut into smaller pieces to allow them to be placed into roll-on/roll-off containers for the scrap dealer. Therefore, EODT personnel will be using a cutting torch to accomplish this. EODT has thoroughly researched this task and determined that a gasoline-fueled cutting torch will be best suited for this application. The gasoline torch is safer, uses less fuel, and cuts faster and better than either acetylene or propane torches. To minimize the potential for personnel to inhale the cutting fumes, a four-foot long torch will be used to add distance between the operator and the cutting tip. Hot Workers will be required to wear a half - face P100 respirator during all cutting operations per EM 385 1-1, Paragraph 10.A.06.e. Personnel assigned to the use of this equipment will be given training on its use, care, maintenance, and inspection prior to actual on-site use. The SSO will provide training and the UXOT3 will be responsible for the inspection and maintenance of the equipment. The UXOSO/QCS will do random checks to ensure that all maintenance is being performed. During operation of the cutting torch, a trained fire watch will be stationed to observe the cutting operator and operation. This fire watch will be maintained for at least 30-minutes after the cutting has been completed. All recommended manufacturer safety specifications will be followed as outlined in the manufacturer's instruction manual, as well as those specified in the Welding and Cutting SOP presented in Appendix I of the WP. A fire extinguisher rated not less than 2-A:20-B:C shall be available at all locations where heating devices and melting kettles are in use. A Hot work permit shall be required per SOP 121, CSHP.

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TABLE 17-1: GENERAL SITE RULES AND PROHIBITIONS

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 UXOSO.
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 UXOSO prior to leaving the site and 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 UXOSO to any changes that 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, or contamination.

Remember, "When in doubt, don't." Ask questions first.

TABLE 17-2: WORK ZONE RULES AND PROHIBITIONS

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 UXOSO.
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 will be allowed in the WZ 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 UXOSO.
8. Verbal communication shall be immediately available at all times between the WZ and off-site emergency resources.

Remember: Site Safety and Health Is Everyone's Responsibility. Do your part.

17.7.2 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. Potential causes of explosions/fires include:

1. Ignition of explosive/flammable gases or vapors by external ignition sources
2. Agitation of shock- or friction-sensitive compounds
3. Sudden release of materials under pressure
4. Combustion of grass or brush due to contact with the hot exhaust system when site vehicles are parked in dry brushy/grassy areas

17.7.3 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 in EODT SOP 109 and EM 385-1-1, Section 9, to prevent fires and explosions.

17.7.4 Fire Protection

To ensure adequate fire protection, the UXOSO will inspect the site to ensure that all flammable and combustible materials are being safely stored in appropriately configured storage areas and containers. The UXOSO 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 away from storage areas. Portable fire extinguishers shall be located on site IAW the requirements in Paragraph 13.8.2 of this SSHP.

17.7.5 Electrical Safety Procedures

For this project, no electrical wiring installation is anticipated. However, the use of electrical tools and apparatus safety will be conducted IAW OSHA Standard 29 CFR 1910.137(2), and EM 385-1-1, Section 11. These requirements include, but are not limited to:

1. All electrical equipment will be of a type listed by Underwriters Laboratories (UL) or Factory Mutual Engineering Corp. (FM) for the specific application.
2. Flexible cord passing through work areas will be covered or elevated to protect it from damage by foot traffic, vehicles, sharp corners, or pinching.
3. Patched, oil-soaked, worn, or frayed electric cords or cables will not be used.

4. Extension cords or cables will not be fastened with staples, hung from nails, or suspended by wire.
5. Portable and semi-portable electrical tools and equipment will be grounded by a multi-conductor cord having an identified grounding conductor and a multi-contact polarized plug-in receptacle.
6. Semi-portable equipment, floodlights, and work lights will be grounded, and the protective ground will be maintained during moving unless supply circuits are de-energized.
7. Tools protected by an approved system of double insulation, or its equivalent, need not be grounded.
8. UL listed ground fault circuit interrupters (GFCI's), calibrated to trip within the threshold values of 5 ma $\pm$ 1 ma, are required on all circuits used for portable electric tools.
9. Flexible cord sets will be UL-listed, contain the number of conductors required for the service plus an equipment ground wire, and will be classified as hard usage or extra-hard usage (identified by "outdoor" or "WA" printed on the jacket).

17.8 EXCAVATION AND TRENCHING SAFETY

To ensure the safety of EODT personnel during excavation and trenching operations, the precautions listed in EODT SOP 107 will be used during intrusive operations at FCH. The precautions in SOP 107, as well as any additional specifications in EM 385-1-1, Section 25, and Subpart P of 29 CFR 1926, will be followed when anomaly investigations are conducted where EODT personnel must enter the excavation to inspect the anomaly.

17.9 MACHINERY 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.

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 restored.

17.10 LOCKOUT/TAGOUT

While LO/TO procedures are not typically needed for OE operations, there is a potential that some maintenance operations on equipment and facilities will require the control of energized systems. Energized systems are defined as those systems that contain residual or stored energy, or are connected to an energy source. Site operations involving the construction, installation, set up, adjustment, modification, inspection, maintenance, or servicing of machines or equipment may require the use of LO/TO procedures, to ensure the protection of site personnel. These activities may include the lubrication, cleaning, or un-jamming of machines or equipment, and making adjustments where site personnel are exposed to the unexpected energization, or startup, of the equipment or the release of hazardous energy. During the initial startup of site operations, the OSHM and UXOSO will determine what potential site operations may require the use of LO/TO procedures to control energized systems. The UXOSO will then have the responsibility of applying the EODT LO/TO SOP 113 presented in Appendix I.

17.11 FALL PROTECTION

Fall protection measures will not be required for this project, since no personnel will be conducting operations at a height of greater than four feet from the ground. EODT personnel will only work as far up the sand bank (between beach and bluff) as possible to stand steadily without hand contact on the ground. While care must be exercised, no fall protection is necessary. In addition, no EODT worker will be allowed to stand or work on the overhangs on the extreme south end of Area H (along edge of bluff).

17.12 HAZARD COMMUNICATION

The requirements of the EODT Hazard Communication SOP 110 in Appendix I will be met for all personnel involved with the use of products containing hazardous substances. EODT subcontractors will also comply with the requirements presented above, and will supply the EODT UXOSO with copies of the MSDS's contained in Attachment B for any materials brought on site by the subcontractor which contain hazardous substances.

17.13 ILLUMINATION

In order to control the potential for injury or illness involved with situations where site personnel have limited visibility, EODT personnel, as a general rule, will conduct on-site operations during the time period from 30 minutes after sunrise to 30 minutes before sunset. All office and storage facilities will be supplied with adequate artificial or ambient light, so as to ensure the safe performance of operations within the facility.

17.14 SANITATION

17.14.1 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, 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.
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.
4. Use of non-potable water is not anticipated; however, if containers of such water are used, they will be conspicuously labeled "Caution: water unfit for drinking, washing, or cooking."

17.14.2 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.

17.14.3 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, handy wipes and field-expedient soap and rinse water will be provided for on-site hand and face washing.

17.14.4 Site Housekeeping

All work areas will be maintained in a clean/neat fashion and 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.

17.15 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.

17.16 POWER AND HAND TOOL OPERATION

17.16.1 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; EM 385-1-1, Chapter 13; and the safe work practices listed in the EODT Power and Hand Tool Operation EODT SOP 119 contained in Appendix I of the WP will be followed.

17.17 BIOLOGICAL HAZARDS

Since this project is scheduled for mid summer, the potential for contact with biological hazards will be high. The anticipated hot weather conditions will significantly increase the possibility of encountering biological hazards, such as: stinging insects, such as bees, wasps and hornets; biting arthropods, such as spiders, ticks, and chiggers. Poisonous snakes are not expected to be found on the site. There will be a higher potential for contacting, and experiencing adverse effects from, hazardous plants, such as poison ivy, oak, and sumac, and thorn bushes. Therefore, a discussion of the hazards associated with these types of plants is presented in this section. However, the UXOSO/QCS and site personnel will refer to the EODT Biological Hazards SOP 101 CSHP in Appendix I for data related to potential biological hazards, if weather conditions or on-site sightings indicate a potential hazard. The UXOSO/QCS will be responsible for providing briefings and selecting from the Biological Hazards SOP the requisite controls for any biological hazards identified. Employee awareness and the safe work practices outlined below and in the Biological Hazards SOP of Appendix I should reduce the risk associated with these hazards.

17.17.1 Plants Causing Skin and Tissue Injury

The plants presenting the greatest degree of risk to site personnel (i.e., potential for contact versus effect produced) are those that produce tissue injury and skin reactions. Contact with splinters, thorns, or sharp leaf edges are of special concern to site personnel. This concern stems from the fact that punctures, cuts, and even minor scrapes caused by accidental contact may result in non-infectious 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 UXOSO for initial care and continued observation of the injury.

17.17.2 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 one to two weeks in cases of mild exposure, and up to three 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, and other exposed areas at the beginning of each break period and at the end of each workday.
3. Avoid contact with contaminated tools, equipment, and clothing, and wash contaminated tools, equipment, and clothing on a daily basis.
4. Barrier creams, detoxification/wash solutions, and orally administered desensitization may prove effective, and should be tried in order to find the best preventative solution.

17.18 OE HAZARDS

17.18.1 General OE Site SWP's

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 EP 385-1-95a.
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 acceptable 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 UXOSO or team leader, and then only in designated areas.

17.18.2 Debris Removal Activities

EODT UXO-qualified personnel will use the procedures listed below for the characterization of debris and potential OE at FCH:

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 acceptable 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 unacceptable to move by EODT personnel, the item will be left in place and disposed of using BIP procedures IAW the WP procedures and guidance from the CEHNC OE Safety Specialist.

17.18.3 OE SWP's for Non-UXO-Qualified Personnel

Non-UXO-qualified personnel on site shall follow the SWP's 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 within the EZ.
3. Non-UXO-qualified personnel shall not touch or disturb any object that could potentially be OE-related, and shall immediately notify the nearest UXO-qualified person of the presence of the object.

17.19 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 SWP's listed below and the requirements of the EODT SOP 110 presented in Appendix I:

1. The handling and transportation of explosive materials used for OE disposal will be conducted in strict compliance with the SOP's that will be maintained in the site office with the CSHP. 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 SOP's 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 Section 8.4 of this SSHP when dispensing the material.
5. Only those personnel, who have received appropriate HAZCOM training as outlined in Section 7.10 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.

17.20 DAILY SAFETY INSPECTIONS

Daily inspections shall be conducted by the UXOSO 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 UXOSO 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.

17.21 PERIODIC CORPORATE SAFETY AND HEALTH INSPECTIONS

During the course of this project, the EODT OSHM/CIH will make periodic inspections of the project to ensure the continued compliance of the project with applicable OE, safety, and health regulations. During these inspections, the OSHM/CIH will be escorted by the UXOSO, and together the two will comprise the Corporate Safety Inspection Team (CSIT). EODT views the audits conducted by the OSHM/CIH to be essential to the safe and healthful performance of site operations and, as such, the CSIT will be permitted the same site access as other site teams. During the inspection of site operations by the CSIT, UXO operations will not be suspended since the CSIT will maintain the same team separation distance as other on-site teams. In the event that the CSIT requests access to a team WZ, UXO operations will be suspended while the CSIT is within the UXO team separation distance and will resume once the CSIT has retreated outside the UXO team separation distance. The CSIT will spend no more than one hour inspecting each team on site.

18.0 ACCIDENT PREVENTION

This Site Safety and Health Plan is the accident prevention plan to be followed by EODT in the field and encompasses all the requirements of Appendix A, EM 385- 1-1. This plan will be enforced through daily inspections by the UXOSO.

19.0 EMERGENCY PPE AND EQUIPMENT

19.1 General Requirements

The emergency equipment listed in Table 19-1 shall be on site, stored in the location indicated, and available for use during the operation specified. Emergency equipment assigned to a team will be maintained in proper working order by the team, as directed by the team leader. The UXOSO will conduct an inspection of all emergency equipment at least weekly to ensure completeness and proper working order.

19.2 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 UXOSO 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 7.5 to 23 meters (25 to 75 feet) of the storage area.
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 door.
4. Temporary offices or support locations shall be equipped with a fire extinguisher of not less than 10B units.
5. At least one portable fire extinguisher having a rating of not less than 20:B units shall be located at each WZ.

TABLE 19-1: EMERGENCY EQUIPMENT REQUIREMENTS

Emergency Equipment	No. Per Location	Area Where Item(s) Will Be Stored	Operation Requiring Specified Equipment
First Aid/Burn Kit Burn Blanket CPR Mask	1 ea.	Each team within the WZ	All operations
Portable Eye Wash Kit	1 ea.	Each team within the WZ	Operations involving hazardous materials
15-Minute Eye Wash	1 ea.	Field equipment trailer	All operations
Biohazard Kit	1 ea.	Each team within the WZ	All operations
Large Medical Kit with Trauma Supplies	1 ea.	1 in UXOSO vehicle and 1 in additional first aid provider's vehicle	All operations
Portable Stretcher	1 ea.	1 in UXOSO vehicle and 1 in field equipment trailer	All operations
Air Horn	1 ea.	Each team within the WZ	All operations
Spill Containment/Cleanup Supplies	1 ea minimum	Field equipment trailer	Operations involving hazardous materials
Fire Extinguisher	1 ea.	Each team, vehicle, and flammable storage area	All operations
Cellular Phone	1 ea.	Each team within the WZ	All operations
Lightning Meter	1 ea.	UXOSO	All operations

19.3 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. Standard 16-unit first aid kits will be located with each team, and two EMT-type trauma kits will be maintained on site. Additionally, all first aid kits will be provided with adequate water, gel burn bandages, and other supplies necessary to cleanse burns, wounds, or lesions. The first aid supplies listed in Table 5 have been assessed and approved by EODT's consulting licensed physician, and a copy of this approval will be maintained on site during operations.

19.4 Eye Washes

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

20.0 LOGS, REPORTS, AND RECORD KEEPING

20.1 SAFETY LOG

The UXOSO 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. At a minimum, the Safety Log should include: a reference to 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 and daily safety inspections; the reason for and duration of safety-related "stop work" orders; and any other issues pertaining to site or personnel safety or health.

20.2 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 LOG Form 300 needs to be completed, the UXOSO will forward the required information to the OSHM so that 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 UXOSO 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.

20.3 TRAINING LOG

The UXOSO 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 UXOSO shall maintain this log and any associated training forms on site.

20.4 VISITOR LOG

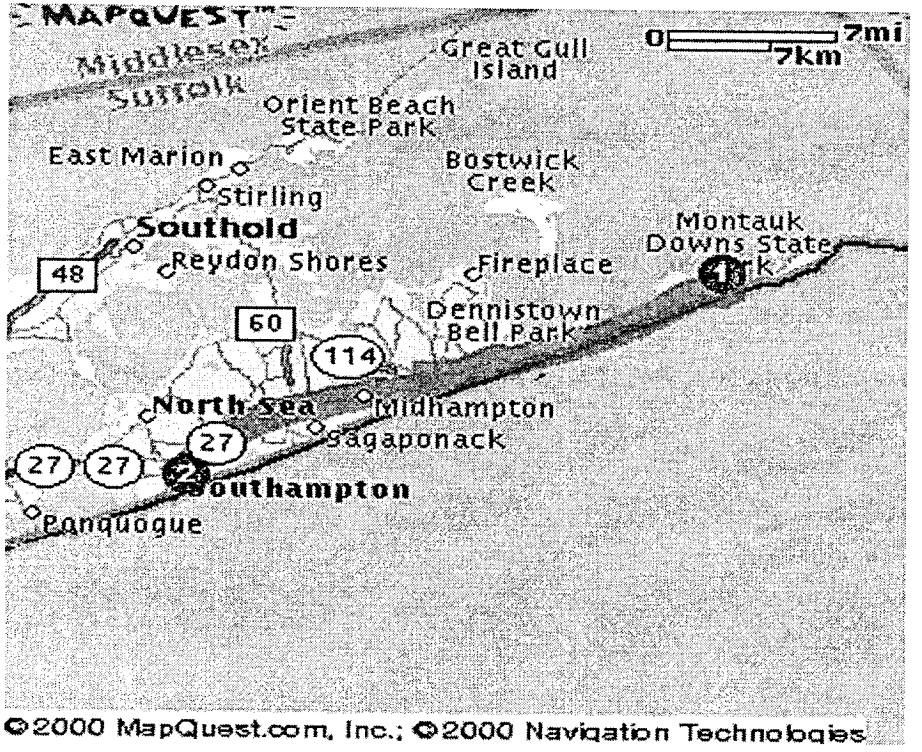
The UXOSO shall be responsible for maintaining the visitor log, which will be used to record the entry and exit of all visitors, including EODT; USACE visitors; or federal, state, or local officials who visit the site. This log shall utilize the EODT Site Visitors Log. All information required

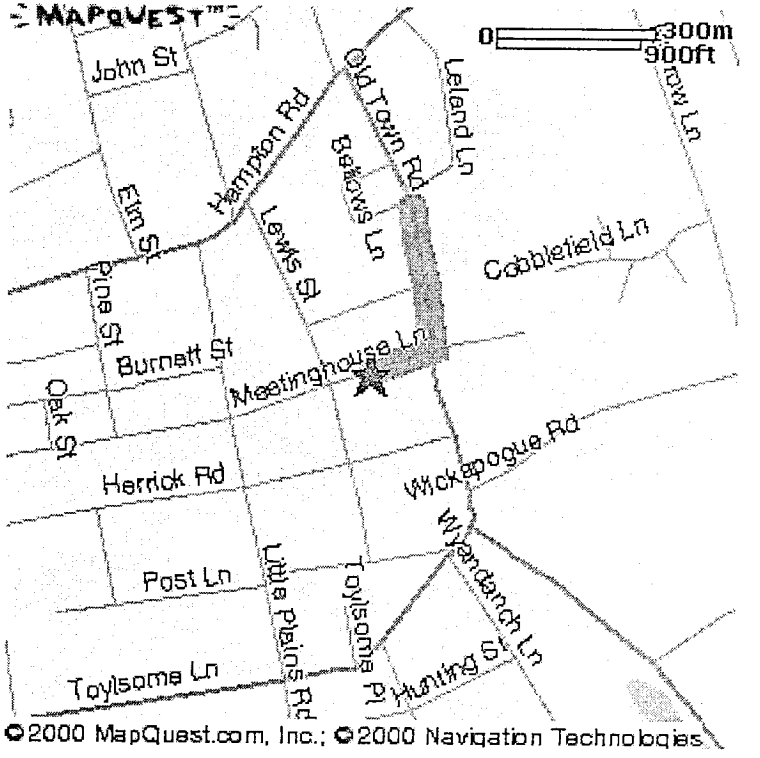
by the form will be completed by the site visitor and the UXOSO. No visitors will be allowed to enter the project site or WZ's without completing the required information.

WRITTEN DIRECTIONS TO THE SOUTHAMPTON HOSPITAL

To reach the Southampton Hospital from FCH, proceed west on Montauk Highway/NY-27 for 26.2 miles. Turn left onto Old Town Road and go 0.4 miles. Turn right onto Meetinghouse Lane and go 0.1 miles. Total distance is approximately 27 miles. Estimated travel time is 1 hour 15 minutes. See attached Maps.Proceed by sign to emergency room entrance.

HOSPITAL ROUTE MAP – SOUTHAMPTON HOSPITAL, LONG ISLAND





SITE SAFETY AND HEALTH PLAN
EMPLOYEE STATEMENT

My signature below indicates that I have read Appendix D, the SSHP and have received answers to any questions that I may have had regarding the SSHP. My signature further indicates my willingness to comply with the provisions and requirements of the SSHP.

Project Name/Location: Former Camp Hero, Montauk, New York			
Date:	Organization	Printed Name	Signature
	EODT		
	EODT		
	EODT		
	EODT		
	EODT		

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Mobilization & General Site Set-up **DATE:** June 27, 2003

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

[x] Physical exertion	[x] Lifting hazards	[] Confined space
[x] Heat Stress (Mid Summer)	[x] Slip, trip or fall	[x] Hazardous plants
[] Cold Stress (Late Fall - early Spring)	[] High noise (>85 dBA)	[x] Hazardous wildlife (Spring - Fall
[] Heavy equipment operations	[] Overhead utilities	[x] UV radiation (strong sunlight)
[x] Vehicle traffic in work area(s)	[] Underground utilities	[x] Hand/Power Tool use
[x] Fire hazards (underline)	[] Intrusive activity (underline)	[x] Rocky/Steep slopes
• Gasoline/Diesel use	• Soil drilling	[] Skin contact w/ hazardous materials
• Explosives handling/storage	• Soil excavation	[] Ordnance and explosives
• Explosive gases/vapors	• Setting stakes/rods/monuments	[] Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	[x] Low	[] Serious	**Phys./Bio. Hazard:**	[x] Low	[] Serious
	[] Moderate	[] Unknown		[] Moderate	[] Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

[x] Tailgate Safety Briefing	[x] PPE (see Section 4.0)	[] Decontamination
[x] Specialized Training	[] Air Monitoring	[x] Magnetometer Survey - Staging areas
[x] Safe Work Practices	[x] Site Control Zones	will be cleared before set-up

[] Engineering Controls:

[x] Applicable SOPs/Inspection & Training Programs: The SSHP and the SOPs selected below will be trained to and applied in controlling the hazards, identified above. All training will be documented in the SSO Log.

[x] 101-Biological Hazards	[x] 109-Fire Prev. & Protection	[x] 117-Sanitation & Illum.	[] 120F-Expl./OE Transportation
[] 102-Cold Stress Prev.	[x] 110-HAZCOM	[x] 118-Signs & Notices	[] 120G-ORS Inspection
[] 103-Confined Spaces	[x] 111-Heat Stress Prevention	[x] 119-Hand/Power Tool Ops	[] 121-Welding
[] 104-Drill Rig Operation	[] 112-Heavy Equip Operation	[] 120A-Gen UXO Safety	[x] 122-Motor Vehicle Operation
[] 105-Drum Handling	[] 113-Control of Haz Energy	[] 120B-UXO Sifting Ops	[x] 123-PPE Selection/Use
[] 106-Electrical Safety	[x] 114-Material Handling	[] 120C-UXO Excavation	[] 124-Contamination Control
[] 107-Excav. & Trenching	[] 115-Noise Control	[] 120D-UXO Demo/Disposal	[] -
[] 108-Fall Protection	[x] 116-Site Rules & Practices	[] 120E-Expl. Acct & Handling	[] -

[] Other:

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

Level of Protection	[] A [] B	[] C [x] D	[] Modified
Respiratory Protection	[] SCBA [] Escape SCBA - Size	[] Full face respirator [] ½ Face respirator	[] Cartridge – Type [x] No respirator required
Protective Clothing	[] Fully encapsulating suit [] Standard Tyvek	[] Saranex [] PE Tyvek	[x] Work clothing [] Other:
Gloves (Specify inner/outer)	[] Nitrile [] Butyl	[] Neoprene [] Latex	[⊥] Leather [] Rubber
Head/Face/Eye/Ear Protection	[!] Safety glasses [Δ] Ear plugs and ear muffs	[] Safety goggles [] Face shield	[?] Hard hat [] Other:
Foot/Leg Protection	[x] Work boots [] Steel-toed leather boots	[] Steel toe covers [] Snake leggings	[] Chemical over boots [] Kevlar™ Chaps

5.0 Modifications Allowed/Required/Inspection and Training Requirements: ⊥ - Required if a hand cut/abrasion hazard exists. ! - Required if eye hazard exits. ? - Required when working around heavy equipment or if an overhead or head impact hazard exists. Δ - Ear plugs (NRR of 31 or higher) required for exposures to noise greater than 85 dBA (ear muffs may also be required as determined by the UXOSO).

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 task-specific hazard assessment conducted by individual identified below.

Printed Name: Charles C. Phillips, MS/MPH,PHD,CIH **Signature:** Charles C Phillips

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Vegetation Removal with Hand Tools, Fuel-powered brush cutters/weed eater/chain saws **DATE:** June 27, 2003

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

[x] Physical exertion	[x] Lifting hazards	[] Confined space
[x] Heat Stress (Mid Summer)	[x] Slip, trip or fall	[x] Hazardous plants
[] Cold Stress (Late Fall - early Spring)	[x] High noise (>85 dBA)	[x] Hazardous wildlife (Spring - Fall
[] Heavy equipment operations	[] Overhead utilities	[x] UV radiation (strong sunlight)
[] Vehicle traffic in work area(s)	[] Underground utilities	[x] Hand/Power Tool use
[x] Fire hazards (underline)	[] Intrusive activity (underline)	[x] Uneven/Steep slopes
• Mixed fuel use	• Soil drilling	[x] Skin contact w/ hazardous materials
• Explosives handling/storage	• Soil excavation	[x] Ordnance and explosives
• Explosive gases/vapors	• Setting stakes/rods/monuments	[x] Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	[x] Low	[] Serious	**Phys./Bio. Hazard:**	[] Low	[] Serious
	[] Moderate	[] Unknown		[x] Moderate	[] Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

[x] Tailgate Safety Briefing	[x] PPE (see Section 4.0)	[] Decontamination
[x] Specialized Training	[] Air Monitoring	[] Magnetometer Survey-
[x] Safe Work Practices	[x] Site Control Zones	

[x] Engineering Controls: Machine guards on powered brush cutting machines will be removed only for maintenance purposes, and will be replaced prior to re-use.

[x] Applicable SOPs/Inspection & Training Programs: The SSHP and the SOPs selected below will be trained to and applied in controlling the hazards, identified above. All training will be documented in the SSO Log.

[x] 101-Biological Hazards	[x] 109-Fire Prev. & Protection	[x] 117-Sanitation & Illum.	[] 120F-Expl./OE Transportation
[] 102-Cold Stress Prev.	[x] 110-HAZCOM	[] 118-Signs & Notices	[] 120G-Scrap Inspection
[] 103-Confined Spaces	[x] 111-Heat Stress Prevention	[x] 119-Hand/Power Tool Ops	[] 121-Welding
[] 104-Drill Rig Operation	[] 112-Heavy Equip Operation	[x] 120A-Gen UXO Safety	[] 122-Motor Vehicle Operation
[] 105-Drum Handling	[] 113-Control of Haz Energy	[] 120B-UXO Sifting Ops	[] 123-PPE Selection/Use
[] 106-Electrical Safety	[] 114-Material Handling	[] 120C-UXO Excavation	[] 124-Contamination Control
[] 107-Excav. & Trenching	[x] 115-Noise Control	[] 120D-UXO Demo/Disposal	[] -
[] 108-Fall Protection	[x] 116-Site Rules & Practices	[] 120E-Expl. Acct & Handling	[] -

[x] Other: Site personnel operating fuel-powered equipment will be trained in the use and maintenance of the equipment. All fuel-powered equipment will be maintained IAW manufacturer's instructions. Vegetation will be cut no lower than 6-inches from the ground.

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

Level of Protection	[] A [] B	[] C [x] D1	[x] Modified
Respiratory Protection	[] SCBA [] Escape SCBA - Size	[] Full face respirator [] ½ Face respirator	[] Cartridge – Type [x] No respirator required
Protective Clothing	[] Fully encapsulating suit [] Standard Tyvek	[] Saranex [] PE Tyvek	[x] Work clothing [] Other:
Gloves (Specify inner/outer)	[*] Nitrile [] Butyl	[] Neoprene [] Latex	[⊥] Leather [] Rubber
Head/Face/Eye/Ear Protection	[x] Safety glasses [Δ] Ear plugs and ear muffs	[] Safety goggles [ϕ] Face shield ♦	[ϕ] Hard hat [] Other:
Foot/Leg Protection	[x] Work boots [♥] Steel-toed leather boots	[♥] Steel toe covers [] Snake leggings	[] Chemical over boots [♦] Kevlar™ Chaps

5.0 Modifications Allowed/Required/Inspection and Training Requirements: * - Required for dispensing fuels if fuel could be splashed on hands. ⊥ - Anti-vibration gloves will be required for operation of chain saw or fuel-powered brush cutter otherwise leather gloves will be adequate for the use of hand tools. ♦ - Additional PPE required for chain saw use.♥ - Either steel-toed boots or toe covers required for chain saw use. Inspection and training will be conducted IAW Appendix D of the WP.

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 task-specific hazard assessment conducted by individual identified below.

Printed Name: Charles C. Phillips, MS/MPH,PHD,CIH **Signature:** Charles C Phillips

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Surface Clearance of UXO **DATE:** June 27, 2003

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

[x] Physical exertion	[x] Lifting hazards	[] Confined space
[x] Heat Stress (Mid Summer)	[x] Slip, trip or fall	[x] Hazardous plants
[] Cold Stress (Late Fall - early Spring)	[] High noise (>85 dBA)	[x] Hazardous wildlife (Spring - Fall
[] Heavy equipment operations	[] Overhead utilities	[x] UV radiation (strong sunlight)
[] Vehicle traffic in work area(s)	[] Underground utilities	[x] Hand/Power Tool use
[] Fire hazards (underline)	[] Intrusive activity (underline)	[x] Uneven/Steep slopes
• Gasoline/Diesel use	• Soil drilling	[] Skin contact w/ hazardous materials
• Explosives handling/storage	• Soil excavation to one foot	[x] Ordnance and explosives
• Explosive gases/vapors	• Setting stakes/rods/monuments	[x] Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	[x]	Low	[]	Serious	**Phys./Bio. Hazard:**	[] Low	[x] Serious
	[]	Moderate	[]	Unknown		[] Moderate	[] Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

[x] Tailgate Safety Briefing	[x] PPE (see Section 4.0)	[] Decontamination
[x] Specialized Training	[] Air Monitoring	[x] Magnetometer Survey - Surface
[x] Safe Work Practices	[x] Site Control Zones	Clearance will be GSI assisted

[] Engineering Controls:

[x] Applicable SOPs/Inspection & Training Programs: The SSHP and the SOPs selected below will be trained to and applied in controlling the hazards, identified above. All training will be documented in the SSO Log.

[x] 101-Biological Hazards	[x] 109-Fire Prev. & Protection	[x] 117-Sanitation & Illum.	[x] 120F-Expl./OE Transportation
[] 102-Cold Stress Prev.	[] 110-HAZCOM	[] 118-Signs & Notices	[x] 120G-Scrap Inspection
[] 103-Confined Spaces	[x] 111-Heat Stress Prevention	[x] 119-Hand/Power Tool Ops	[] 121-Welding
[] 104-Drill Rig Operation	[] 112-Heavy Equip Operation	[x] 120A-Gen UXO Safety	[] 122-Motor Vehicle Operation
[] 105-Drum Handling	[] 113-Control of Haz Energy	[] 120B-UXO Sifting Ops	[] 123-PPE Selection/Use
[] 106-Electrical Safety	[x] 114-Material Handling	[] 120C-UXO Excavation	[] 124-Contamination Control
[] 107-Excav. & Trenching	[] 115-Noise Control	[x] 120D-UXO Demo/Disposal	[] -
[] 108-Fall Protection	[x] 116-Site Rules & Practices	[] 120E-Expl. Acct & Handling	[] -

[x] Other: See OE disposal CTHA for requirements during UXO demolition operations.

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

Level of Protection	[] A [] B	[] C [x] D	[] Modified
Respiratory Protection	[] SCBA [] Escape SCBA - Size	[] Full face respirator [] ½ Face respirator	[] Cartridge – Type [x] No respirator required
Protective Clothing	[] Fully encapsulating suit [] Standard Tyvek	[] Saranex [] PE Tyvek	[x] Work clothing [] Other:
Gloves (Specify inner/outer)	[] Nitrile [] Butyl	[] Neoprene [] Latex	[!] Leather [] Rubber
Head/Face/Eye/Ear Protection	[x] Safety glasses [] Ear plugs and ear muffs	[] Safety goggles [] Face shield	[] Hard hat [] Other:
Foot/Leg Protection	[x] Work boots [] Steel-toed leather boots	[] Steel toe covers [] Snake leggings	[] Chemical over boots [] Kevlar™ Chaps

5.0 Modifications Allowed/Required/Inspection and Training Requirements: ! - Leather gloves required if hand injury hazard exists, as determined by the UXOSO. Inspection and training will be conducted IAW Appendix D of the WP.

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 task-specific hazard assessment conducted by individual identified below.

Printed Name: Charles C. Phillips, MS/MPH,PHD,CIH **Signature:** Charles C Phillips

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Subsurface Clearance of UXO **DATE:** June 27, 2003

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

[x] Physical exertion	[x] Lifting hazards	[] Confined space
[x] Heat Stress (Mid Summer)	[x] Slip, trip or fall	[x] Hazardous plants
[] Cold Stress (Late Fall - early Spring)	[] High noise (>85 dBA)	[x] Hazardous wildlife (Spring - Fall
[] Heavy equipment operations	[] Overhead utilities	[x] UV radiation (strong sunlight)
[] Vehicle traffic in work area(s)	[] Underground utilities	[x] Hand/Power Tool use
[] Fire hazards (underline)	[x] Intrusive activity (underline)	[x] Uneven/Steep slopes
• Gasoline/Diesel use	• Soil drilling	[] Skin contact w/ hazardous materials
• Explosives handling/storage	• Soil excavation to one foot	[x] Ordnance and explosives
• Explosive gases/vapors	• Setting stakes/rods/monuments	[x] Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard: [x] Low [] Serious [] Moderate []Unknown

Phys./Bio. Hazard: [] Low [x] Serious [] Moderate [] Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

[x] Tailgate Safety Briefing	[x] PPE (see Section 4.0)	[] Decontamination
[x] Specialized Training	[] Air Monitoring	[x] Magnetometer Survey -
[x] Safe Work Practices	[x] Site Control Zones	

[] Engineering Controls:

[x] Applicable SOPs/Inspection & Training Programs: The SSHP and the SOPs selected below will be trained to and applied in controlling the hazards, identified above. All training will be documented in the SSO Log.

[x] 101-Biological Hazards	[x] 109-Fire Prev. & Protection	[x] 117-Sanitation & Illum.	[x] 120F-Expl./OE Transportation
[] 102-Cold Stress Prev.	[] 110-HAZCOM	[] 118-Signs & Notices	[x] 120G-Scrap Inspection
[] 103-Confined Spaces	[x] 111-Heat Stress Prevention	[x] 119-Hand/Power Tool Ops	[] 121-Welding
[] 104-Drill Rig Operation	[] 112-Heavy Equip Operation	[x] 120A-Gen UXO Safety	[] 122-Motor Vehicle Operation
[] 105-Drum Handling	[] 113-Control of Haz Energy	[] 120B-UXO Sifting Ops	[] 123-PPE Selection/Use
[] 106-Electrical Safety	[x] 114-Material Handling	[x] 120C-UXO Excavation	[] 124-Contamination Control
[] 107-Excav. & Trenching	[] 115-Noise Control	[x] 120D-UXO Demo/Disposal	[] -
[] 108-Fall Protection	[x] 116-Site Rules & Practices	[] 120E-Expl. Acct & Handling	[] -

[x] Other: See OE disposal CTHA for requirements during UXO demolition operations. Subsurface anomalies will be investigated to a depth of one foot. Anomalies beyond that depth may be marked and reported to the OSS to determine disposition. Excavation to the anomaly will occur to the side of the anomaly to ensure digging tools do not strike the anomaly. Once the hole has been dug to a sufficient depth to allow the determination of anomaly depth and location, the burden may be removed and hand excavation will then be used to access the anomaly.

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

Level of Protection	[] A [] B	[] C [x] D	[] Modified
Respiratory Protection	[] SCBA [] Escape SCBA - Size	[] Full face respirator [] ½ Face respirator	[] Cartridge – Type [x] No respirator required
Protective Clothing	[] Fully encapsulating suit [] Standard Tyvek	[] Saranex [] PE Tyvek	[x] Work clothing [] Other:
Gloves (Specify inner/outer)	[] Nitrile [] Butyl	[] Neoprene [] Latex	[x] Leather [] Rubber
Head/Face/Eye/Ear Protection	[!] Safety glasses [] Ear plugs and ear muffs	[] Safety goggles [] Face shield	[] Hard hat [] Other:
Foot/Leg Protection	[x] Work boots [] Steel-toed leather boots	[] Steel toe covers [V] Snake leggings	[] Chemical over boots [] Kevlar™ Chaps

5.0 Modifications Allowed/Required/Inspection and Training Requirements: ! - Safety glasses worn during anomaly investigation shall be secured to prevent the glasses from falling and striking the anomaly. Inspection and training will be conducted IAW Appendix D of the WP.

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 task-specific hazard assessment conducted by individual identified below.

Printed Name: Charles C. Phillips, MS/MPH,PHD,CIH **Signature:** Charles C Phillips

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Operation of Bulldozer, Front-end Loader, Dump Truck and Other Heavy Equipment **DATE:** June 27, 2003

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

[x] Physical exertion	[x] Lifting hazards	[] Confined space
[x] Heat Stress (Mid Summer)	[x] Slip, trip or fall (mounting or dismounting vehicle)	[] Hazardous plants
[] Cold Stress (Late Fall - early Spring)	[x] High noise (>85 dBA)	[] Hazardous wildlife (Spring - Fall
[x] Heavy equipment operations	[] Overhead utilities	[] UV radiation (strong sunlight)
[] Vehicle traffic in work area(s)	[] Underground utilities	[x] Hand/Power Tool use
[x] Fire hazards (underline)	[] Intrusive activity (underline)	[] Uneven/Steep slopes
• Gasoline/Diesel use	• Soil drilling	[] Skin contact w/ hazardous materials
• Explosives handling/storage	• Soil excavation	[x] Ordnance and explosives
• Explosive gases/vapors		[] Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard: [x] Low [] Serious [] Moderate [] Unknown

Phys./Bio. Hazard: [] Low [] Serious [x] Moderate [] Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

[x] Tailgate Safety Briefing	[x] PPE (see Section 4.0)	[] Decontamination
[x] Specialized Training	[] Air Monitoring	[x] Magnetometer Survey-Access lanes in range areas will be cleared to 1-foot.
[x] Safe Work Practices	[x] Site Control Zones	

[x] Engineering Controls: All manufacturer guards will be kept in place and removed only for maintenance or servicing. Guards removed for service maintenance will be replaced prior to operation.

[x] Applicable SOPs/Inspection & Training Programs: The SSHP and the SOPs selected below will be trained to and applied in controlling the hazards, identified above. All training will be documented in the SSO Log.

[x] 101-Biological Hazards	[x] 109-Fire Prev. & Protection	[x] 117-Sanitation & Illum.	[] 120F-Expl./OE Transportation
[] 102-Cold Stress Prev.	[] 110-HAZCOM	[] 118-Signs & Notices	[] 120G-Scrap Inspection
[] 103-Confined Spaces	[x] 111-Heat Stress Prevention	[x] 119-Hand/Power Tool Ops	[] 121-Welding
[] 104-Drill Rig Operation	[x] 112-Heavy Equip Operation	[] 120A-Gen UXO Safety	[] 122-Motor Vehicle Operation
[] 105-Drum Handling	[x] 113-Control of Haz Energy	[] 120B-UXO Sifting Ops	[] 123-PPE Selection/Use
[] 106-Electrical Safety	[x] 114-Material Handling	[] 120C-UXO Excavation	[] 124-Contamination Control
[] 107-Excav. & Trenching	[x] 115-Noise Control	[] 120D-UXO Demo/Disposal	[] -
[] 108-Fall Protection	[x] 116-Site Rules & Practices	[] 120E-Expl. Acct & Handling	[] -

[x] Other: Operators will be properly trained and experienced in the safe operation, inspection and maintenance of the heavy equipment to which they are assigned. Manufacturer's safety instructions will be followed. Equipment will be inspected prior to use each day and maintained according to manufacturer instructions. Refer to EODT SOP 112 for specific instructions. Refer to the CTHA for heavy equipment maintenance for to determine PPE and other requirements needed for maintenance activities.

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

Level of Protection	[] A [] B	[] C [x] D	[] Modified
Respiratory Protection	[] SCBA [] Escape SCBA - Size	[] Full face respirator [] ½ Face respirator	[] Cartridge – Type [x] No respirator required
Protective Clothing	[] Fully encapsulating suit [] Standard Tyvek	[] Saranex [] PE Tyvek	[x] Work clothing [] Other:
Gloves (Specify inner/outer)	[] Nitrile [] Butyl	[] Neoprene [] Latex	[x] Leather [] Rubber
Head/Face/Eye/Ear Protection	[] Safety glasses [Δ] Ear plugs and ear muffs	[] Safety goggles [] Face shield	[?] Hard hat [] Other:
Foot/Leg Protection	[x] Work boots [] Steel-toed leather boots	[] Steel toe covers [] Snake leggings	[] Chemical over boots [] Kevlar™ Chaps

5.0 Modifications Allowed/Required/Inspection and Training Requirements: ? - Hardhat will be worn in any area where personnel are at risk of head injury and will be worn by any personnel working near the equipment while in operation. Δ - Ear plugs (NRR of 31 or higher) will be worn if noise levels in cab are higher then 85 dBA. Inspection and training will be conducted IAW Appendix D of the WP.

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 task-specific hazard assessment conducted by individual identified below.

Printed Name: Charles C. Phillips, MS/MPH,PHD,CIH **Signature:** Charles C Phillips

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Maintenance/Servicing of Bulldozer, Front-end Loader and Other Heavy Equipment **DATE:** June 27, 2003

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

[x] Physical exertion	[x] Lifting hazards	[] Confined space
[x] Heat Stress (Mid Summer)	[x] Slip, trip or fall (mounting or dismounting vehicle)	[x] Hazardous plants
[] Cold Stress (Late Fall - early Spring)	[] High noise (>85 dBA)	[x] Hazardous wildlife (Spring - Fall
[x] Heavy equipment operations	[] Overhead utilities	[x] UV radiation (strong sunlight)
[] Vehicle traffic in work area(s)	[] Underground utilities	[x] Hand/Power Tool use
[x] Fire hazards (underline)	[] Intrusive activity (underline)	[] Uneven/Steep slopes
• Gasoline/Diesel use	• Soil drilling	[] Skin contact w/ hazardous materials
• Explosives handling/storage	• Soil excavation	[] Ordnance and explosives
• Explosive gases/vapors		[x] Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard: [x] Low [] Serious [] Moderate []Unknown

Phys./Bio. Hazard: [] Low [] Serious [x] Moderate [] Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

[x] Tailgate Safety Briefing	[x] PPE (see Section 4.0)	[] Decontamination
[x] Specialized Training	[] Air Monitoring	[] Magnetometer Survey-
[x] Safe Work Practices	[x] Site Control Zones	

[x] Engineering Controls: All manufacturer guards will be kept in place and removed only for maintenance or servicing. Guards removed for service maintenance will be replaced prior to operation.

[x] Applicable SOPs/Inspection & Training Programs: The SSHP and the SOPs selected below will be trained to and applied in controlling the hazards, identified above. All training will be documented in the SSO Log.

[x] 101-Biological Hazards	[x] 109-Fire Prev. & Protection	[x] 117-Sanitation & Illum.	[] 120F-Expl./OE Transportation
[] 102-Cold Stress Prev.	[x] 110-HAZCOM	[] 118-Signs & Notices	[] 120G-Scrap Inspection
[] 103-Confined Spaces	[x] 111-Heat Stress Prevention	[x] 119-Hand/Power Tool Ops	[] 121-Welding
[] 104-Drill Rig Operation	[x] 112-Heavy Equip Operation	[] 120A-Gen UXO Safety	[] 122-Motor Vehicle Operation
[] 105-Drum Handling	[x] 113-Control of Haz Energy	[] 120B-UXO Sifting Ops	[] 123-PPE Selection/Use
[] 106-Electrical Safety	[x] 114-Material Handling	[] 120C-UXO Excavation	[] 124-Contamination Control
[] 107-Excav. & Trenching	[x] 115-Noise Control	[] 120D-UXO Demo/Disposal	[] -
[] 108-Fall Protection	[x] 116-Site Rules & Practices	[] 120E-Expl. Acct & Handling	[] -

[x] Other: Operators will be properly trained and experienced in the safe inspection and maintenance of the heavy equipment to which they are assigned. Manufacturer's maintenance schedule and safety instructions will be followed. Maintenance activities with the potential for stored energy release or equipment start-up hazards will be assessed by the UXOSO for LO/TO concerns. Refer to the EODT SOP 113 for LO/TO requirements.

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

Level of Protection	[] A [] B	[] C [x] D	[] Modified
Respiratory Protection	[] SCBA [] Escape SCBA - Size	[] Full face respirator [] ½ Face respirator	[] Cartridge – Type [x] No respirator required
Protective Clothing	[] Fully encapsulating suit [] Standard Tyvek	[] Saranex [] PE Tyvek	[x] Work clothing [] Other:
Gloves (Specify inner/outer)	[] Nitrile [] Butyl	[] Neoprene [] Latex	[x] Leather [] Rubber
Head/Face/Eye/Ear Protection	[x] Safety glasses [Δ] Ear plugs and ear muffs	[] Safety goggles [] Face shield	[?] Hard hat [] Other:
Foot/Leg Protection	[x] Work boots [♥] Steel-toed leather boots	[♥] Steel toe covers [] Snake leggings	[] Chemical over boots [] Kevlar™ Chaps

5.0 Modifications Allowed/Required/Inspection and Training Requirements: ? - Hardhat will be worn if maintenance operations place personnel at risk for head injury, as determined by the UXOSO. .♥ - Either steel-toed boots or toe covers may be required for maintenance activities if the activity involves the removal or handling of heavy parts/objects that present a toe crush hazard. Δ - Ear plugs (NRR of 31 or higher) may be required if a maintenance activity generates noise greater than 85 dBA. Inspection and training will be conducted IAW Appendix D of the WP.

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 task-specific hazard assessment conducted by individual identified below.

Printed Name: Charles C. Phillips, MS/MPH,PHD,CIH **Signature:** Charles C Phillips

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Powered Cut-off Saw Operations **DATE:** June 27, 2003

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

[x] Physical exertion	[x] Lifting hazards	[] Confined space
[x] Heat Stress (Mid Summer - Fall)	[x] Slip, trip or fall (mounting or dismounting vehicle)	[] Hazardous plants
[] Cold Stress (Late Fall)	[x] High noise (>85 dBA)	[] Hazardous wildlife (Spring - Fall
[] Heavy equipment operations	[] Overhead utilities	[] UV radiation (strong sunlight)
[] Vehicle traffic in work area(s)	[] Underground utilities	[] Hand/Power Tool use
[x] Fire hazards (underline)	[] Intrusive activity (underline)	[] Uneven/Steep slopes
• Sparks	• Soil drilling	[x] Skin contact w/ hazardous materials
• Explosives handling/storage	• Soil excavation	[] Ordnance and explosives
• Explosive gases/vapors		[x] Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	[x] Low	[] Serious		**Phys./Bio. Hazard:**	[] Low	[] Serious	
	[] Moderate	[] Unknown			[x] Moderate	[] Unknown	

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

[x] Tailgate Safety Briefing	[x] PPE (see Section 4.0)	[] Decontamination
[x] Specialized Training	[] Air Monitoring	[] **Fire Resistant Clothing**
[x] Safe Work Practices	[x] Site Control Zones	

[x] Engineering Controls:

[x] Applicable SOPs/Inspection & Training Programs: The SSHP and the SOPs selected below will be trained to and applied in controlling the hazards, identified above. All training will be documented in the SSO Log.

[] 101-Biological Hazards	[x] 109-Fire Prev. & Protection	[x] 117-Sanitation & Illum.	[] 120F-Expl./OE Transportation
[] 102-Cold Stress Prev.	[x] 110-HAZCOM	[] 118-Signs & Notices	[] 120G-Scrap Inspection
[] 103-Confined Spaces	[x] 111-Heat Stress Prevention	[x] 119-Hand/Power Tool Ops	[] 121-Welding
[] 104-Drill Rig Operation	[x] 112-Heavy Equip Operation	[] 120A-Gen UXO Safety	[] 122-Motor Vehicle Operation
[] 105-Drum Handling	[x] 113-Control of Haz Energy	[] 120B-UXO Sifting Ops	[] 123-PPE Selection/Use
[] 106-Electrical Safety	[x] 114-Material Handling	[] 120C-UXO Excavation	[] 124-Contamination Control
[] 107-Excav. & Trenching	[x] 115-Noise Control	[] 120D-UXO Demo/Disposal	[] -
[] 108-Fall Protection	[x] 116-Site Rules & Practices	[] 120E-Expl. Acct & Handling	[] -

[x] Other: Saw operators will be properly trained and experienced in the safe operation, inspection and maintenance of cutting saw. Manufacturer's safety instructions will be followed at all times. All cutting equipment shall be inspected daily: defective equipment shall be removed from service, replaced or repaired, and re-inspected before again being placed in service.

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

Level of Protection	[] A [] B	[] C [x] D2	[] Modified
Respiratory Protection	[] SCBA [] Escape SCBA - Size	[] Full face respirator [x] ½ Face respirator N95	[] Cartridge – Type [] No respirator required
Protective Clothing	[] Fully encapsulating suit [] Standard Tyvek	[] Saranex [Σ] Welder jacket & chaps	[x] Work clothing [Σ] Flame resistant coveralls
Gloves (Specify inner/outer)	[] Nitrile [] Butyl	[] Neoprene [] Latex	[x] Leather gloves [] Rubber
Head/Face/Eye/Ear Protection	[x] Safety glasses [] Ear plugs and ear muffs	[] Safety goggles with #5 shade	[x] Hard hat [x] Clear Face shield
Foot/Leg Protection	[] Work boots [x] Steel-toed leather boots	[] Steel toe covers [] Snake leggings	[] Chemical over boots [] Kevlar™ Chaps

5.0 Modifications Allowed/Required/Inspection and Training Requirements: Σ - Either welding jacket and chaps will be worn or flame resistant coveralls. Inspection and training will be conducted IAW Appendix D of the WP.

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 task-specific hazard assessment conducted by individual identified below.

Printed Name: Charles C. Phillips, MS/MPH,PHD,CIH **Signature:** Charles C Phillips

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: OE Disposal Operations **DATE:** June 27, 2003

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

[x] Physical exertion	[x] Lifting hazards	[] Confined space
[x] Heat Stress (Mid Summer)	[x] Slip, trip or fall	[] Hazardous plants
[] Cold Stress (Late Fall - early Spring)	[] High noise (>85 dBA)	[] Hazardous wildlife (Spring - Fall
[] Heavy equipment operations	[] Overhead utilities	[x] UV radiation (strong sunlight)
[] Vehicle traffic in work area(s)	[] Underground utilities	[] Hand/Power Tool use
[x] Fire hazards (underline)	[] Intrusive activity (underline)	[x] Rocky/Steep slopes
• Gasoline/Diesel use	• Soil drilling	[] Skin contact w/ hazardous materials
• Explosives handling/storage	• Soil excavation	[x] Ordnance and explosives
• Explosive gases/vapors	• Setting stakes/rods/monuments	[x] Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	[x]	Low	[]	Serious	**Phys./Bio. Hazard:**	[] Low	[x] Serious
	[]	Moderate	[]	Unknown		[] Moderate	[] Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

[x] Tailgate Safety Briefing	[x] PPE (see Section 4.0)	[] Decontamination
[x] Specialized Training	[] Air Monitoring	[x] Magnetometer Survey-GSI check of demo area after shot
[x] Safe Work Practices	[x] Site Control Zones	

[] Engineering Controls:

[x] Applicable SOPs/Inspection & Training Programs: The SSHP and the SOPs selected below will be trained to and applied in controlling the hazards, identified above. All training will be documented in the SSO Log.

[x] 101-Biological Hazards	[] 109-Fire Prev. & Protection	[x] 117-Sanitation & Illum.	[x] 120F-Expl./OE Transportation
[] 102-Cold Stress Prev.	[x] 110-HAZCOM	[] 118-Signs & Notices	[] 120G-Scrap Inspection
[] 103-Confined Spaces	[x] 111-Heat Stress Prevention	[x] 119-Hand/Power Tool Ops	[] 121-Welding
[] 104-Drill Rig Operation	[x] 112-Heavy Equip Operation	[x] 120A-Gen UXO Safety	[] 122-Motor Vehicle Operation
[] 105-Drum Handling	[] 113-Control of Haz Energy	[] 120B-UXO Sifting Ops	[] 123-PPE Selection/Use
[] 106-Electrical Safety	[x] 114-Material Handling	[] 120C-UXO Excavation	[] 124-Contamination Control
[x] 107-Excav. & Trenching	[] 115-Noise Control	[x] 120D-UXO Demo/Disposal	[] -
[] 108-Fall Protection	[x] 116-Site Rules & Practices	[x] 120E-Expl. Acct & Handling	[] -

[] Other:

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

Level of Protection	[] A [] B	[] C [x] D	[] Modified
Respiratory Protection	[] SCBA [] Escape SCBA - Size	[] Full face respirator [] ½ Face respirator	[] Cartridge – Type [x] No respirator required
Protective Clothing	[] Fully encapsulating suit [] Standard Tyvek	[] Saranex [] PE Tyvek	[x] Work clothing [] Other:
Gloves (Specify inner/outer)	[] Nitrile [] Butyl	[] Neoprene [] Latex	[!] Leather [] Rubber
Head/Face/Eye/Ear Protection	[!] Safety glasses [] Ear plugs and ear muffs	[] Safety goggles [] Face shield	[] Hard hat [] Other:
Foot/Leg Protection	[x] Work boots [] Steel-toed leather boots	[] Steel toe covers [] Snake leggings	[] Chemical over boots [] Kevlar™ Chaps

5.0 Modifications Allowed/Required/Inspection and Training Requirements: ! - Required for hand protection if the potential exists for hand injury. Inspection and training will be conducted IAW Appendix D of the WP.

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 task-specific hazard assessment conducted by individual identified below.

Charles C Phillips

Printed Name: Charles C. Phillips, MS/MPH,PHD,CIH **Signature:** _____

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Final Inspection and Disposition of AEDA/Range Residue **DATE:** June 27, 2003

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

[x] Physical exertion	[x] Lifting hazards	[] Confined space
[x] Heat Stress (Mid Summer)	[] Slip, trip or fall	[x] Hazardous plants
[] Cold Stress (Late Fall - early Spring)	[] High noise (>85 dBA)	[x] Hazardous wildlife (Spring - Fall
[] Heavy equipment operations	[] Overhead utilities	[x] UV radiation (strong sunlight)
[] Vehicle traffic in work area(s)	[] Underground utilities	[] Hand/Power Tool use
[] Fire hazards (underline)	[] Intrusive activity (underline)	[] Rocky/Steep slopes
• Gasoline/Diesel use	• Soil drilling	[x] Skin contact w/ hazardous materials
• Explosives handling/storage	• Soil excavation	[x] Ordnance and explosives
• Explosive gases/vapors	• Setting stakes/rods/monuments	[x] Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	[x] Low	[] Serious		**Phys./Bio. Hazard:**	[] Low	[] Serious	
	[] Moderate	[] Unknown			[x] Moderate	[] Unknown	

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

[x] Tailgate Safety Briefing	[x] PPE (see Section 4.0)	[] Decontamination
[x] Specialized Training	[] Air Monitoring	[] Magnetometer Survey-
[x] Safe Work Practices	[] Site Control Zones	

[] Engineering Controls:

[x] Applicable SOPs/Inspection & Training Programs: The SSHP and the SOPs selected below will be trained to and applied in controlling the hazards, identified above. All training will be documented in the SSO Log.

[x] 101-Biological Hazards	[] 109-Fire Prev. & Protection	[x] 117-Sanitation & Illum.	[] 120F-Expl./OE Transportation
[] 102-Cold Stress Prev.	[x] 110-HAZCOM	[] 118-Signs & Notices	[x] 120G-Scrap Inspection
[] 103-Confined Spaces	[x] 111-Heat Stress Prevention	[] 119-Hand/Power Tool Ops	[] 121-Welding
[] 104-Drill Rig Operation	[] 112-Heavy Equip Operation	[x] 120A-Gen UXO Safety	[] 122-Motor Vehicle Operation
[] 105-Drum Handling	[] 113-Control of Haz Energy	[] 120B-UXO Sifting Ops	[] 123-PPE Selection/Use
[] 106-Electrical Safety	[x] 114-Material Handling	[] 120C-UXO Excavation	[] 124-Contamination Control
[] 107-Excav. & Trenching	[] 115-Noise Control	[] 120D-UXO Demo/Disposal	[] -
[] 108-Fall Protection	[x] 116-Site Rules & Practices	[] 120E-Expl. Acct & Handling	[] -

[] Other:

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

Level of Protection	[] A [] B	[] C [x] D	[] Modified
Respiratory Protection	[] SCBA [] Escape SCBA - Size	[] Full face respirator [] ½ Face respirator	[] Cartridge – Type [x] No respirator required
Protective Clothing	[] Fully encapsulating suit [] Standard Tyvek	[] Saranex [] PE Tyvek	[x] Work clothing [] Other:
Gloves (Specify inner/outer)	[] Nitrile [] Butyl	[] Neoprene [] Latex	[x] Leather [] Rubber
Head/Face/Eye/Ear Protection	[x] Safety glasses [] Ear plugs and ear muffs	[] Safety goggles [] Face shield	[] Hard hat [] Other:
Foot/Leg Protection	[x] Work boots [•] Steel or Fiber Toed boots	[•] Steel toe covers [] Snake leggings	[] Chemical over boots [] Kevlar™ Chaps

5.0 Modifications Allowed/Required/Inspection and Training Requirements: • - Protective toe required if handling scrap or working with containers that could injure the toes. Inspection and training will be conducted IAW Appendix D of the WP.

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 task-specific hazard assessment conducted by individual identified below.

Printed Name: Charles C. Phillips, MS/MPH,PHD,CIH **Signature:** Charles C Phillips

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Motor Vehicle Operation and Maintenance **DATE:** June 27, 2003

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

[x] Physical exertion	[x] Lifting hazards	[] Confined space
[x] Heat Stress (Mid Summer)	[] Slip, trip or fall	[] Hazardous plants
[] Cold Stress	[] High noise (>85 dBA)	[] Hazardous wildlife (Spring - Fall
[] Heavy equipment operations	[] Overhead utilities	[] UV radiation (strong sunlight)
[x] Vehicle traffic	[] Underground utilities	[x] Hand/Power Tool use
[x] Fire hazards (underline)	[] Intrusive activity (underline)	[] Rocky/Steep slopes
• Gasoline/Diesel use	• Soil drilling	[x] Skin contact w/ hazardous materials
• Explosives handling/storage	• Soil excavation	[] Ordnance and explosives
• Explosive gases/vapors	• Setting stakes/rods/monuments	[x] Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	[x]	Low	[]	Serious	**Phys./Bio. Hazard:**	[] Low	[] Serious
	[]	Moderate	[]	Unknown		[x] Moderate	[] Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

[x] Tailgate Safety Briefing	[x] PPE (see Section 4.0)	[] Decontamination
[x] Specialized Training	[] Air Monitoring	[] Magnetometer Survey
[x] Safe Work Practices	[x] Site Control Zones	

[] Engineering Controls:

[x] Applicable SOPs/Inspection & Training Programs: The SSHP and the SOPs selected below will be trained to and applied in controlling the hazards, identified above. All training will be documented in the SSO Log.

[x] 101-Biological Hazards	[] 109-Fire Prev. & Protection	[x] 117-Sanitation & Illum.	[] 120F-Expl./OE Transportation
[] 102-Cold Stress Prev.	[x] 110-HAZCOM	[] 118-Signs & Notices	[] 120G-Scrap Inspection
[] 103-Confined Spaces	[x] 111-Heat Stress Prevention	[x] 119-Hand/Power Tool Ops	[] 121-Welding
[] 104-Drill Rig Operation	[] 112-Heavy Equip Operation	[] 120A-Gen UXO Safety	[x] 122-Motor Vehicle Operation
[] 105-Drum Handling	[] 113-Control of Haz Energy	[] 120B-UXO Sifting Ops	[] 123-PPE Selection/Use
[] 106-Electrical Safety	[x] 114-Material Handling	[] 120C-UXO Excavation	[] 124-Contamination Control
[] 107-Excav. & Trenching	[] 115-Noise Control	[] 120D-UXO Demo/Disposal	[] -
[] 108-Fall Protection	[x] 116-Site Rules & Practices	[] 120E-Expl. Acct & Handling	[] -

[x] Other: Vehicles will be briefly inspected prior to use and thoroughly on a weekly basis. Vehicles will be maintained IAW manufacturer instructions.

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

Level of Protection	[] A [] B	[] C [x] D	[] Modified
Respiratory Protection	[] SCBA [] Escape SCBA - Size	[] Full face respirator [] ½ Face respirator	[] Cartridge – Type [x] No respirator required
Protective Clothing	[] Fully encapsulating suit [] Standard Tyvek	[] Saranex [] PE Tyvek	[x] Work clothing [] Other:
Gloves (Specify inner/outer)	[] Nitrile [] Butyl	[] Neoprene [] Latex	[⊥] Leather [] Rubber
Head/Face/Eye/Ear Protection	[!] Safety glasses [] Ear plugs and ear muffs	[] Safety goggles [] Face shield	[] Hard hat [] Other:
Foot/Leg Protection	[x] Work boots [] Steel-toed leather boots	[] Steel toe covers [] Snake leggings	[] Chemical over boots [] Kevlar™ Chaps

5.0 Modifications Allowed/Required/Inspection and Training Requirements: ⊥ - Required if a hand cut/abrasion hazard exists as a result of maintenance operations. ! - Required if maintenance activities present an eye hazard. Inspection and training will be conducted IAW Appendix D of the WP.

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 task-specific hazard assessment conducted by individual identified below.

Printed Name: Charles C. Phillips, MS/MPH,PHD,CIH **Signature:** Charles C Phillips

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Safety Officer and Quality Control Procedures **DATE:** June 27, 2003

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

[x] Physical exertion	[x] Lifting hazards	[] Confined space
[x] Heat Stress (Mid Summer)	[x] Slip, trip or fall	[x] Hazardous plants
[] Cold Stress (Late Fall - early Spring)	[] High noise (>85 dBA)	[x] Hazardous wildlife (Spring - Fall
[x] Heavy equipment operations	[] Overhead utilities	[x] UV radiation (strong sunlight)
[] Vehicle traffic in work area(s)	[] Underground utilities	[x] Hand/Power Tool use
[] Fire hazards (underline)	[] Intrusive activity (underline)	[x] Uneven/Steep slopes
• Gasoline/Diesel use	• Soil drilling	[] Skin contact w/ hazardous materials
• Explosives handling/storage	• Soil excavation	[x] Ordnance and explosives
• Explosive gases/vapors	• Setting stakes/rods/monuments	[x] Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	[x]	Low	[]	Serious	**Phys./Bio. Hazard:**	[] Low	[] Serious
	[]	Moderate	[]	Unknown		[x] Moderate	[] Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

[x] Tailgate Safety Briefing	[x] PPE (see Section 4.0)	[] Decontamination
[x] Specialized Training	[] Air Monitoring	[] Magnetometer Survey
[x] Safe Work Practices	[x] Site Control Zones	

[] Engineering Controls:

[x] Applicable SOPs/Inspection & Training Programs: The SSHP and the SOPs selected below will be trained to and applied in controlling the hazards, identified above. All training will be documented in the SSO Log.

[x] 101-Biological Hazards	[] 109-Fire Prev. & Protection	[x] 117-Sanitation & Illum.	[] 120F-Expl./OE Transportation
[] 102-Cold Stress Prev.	[x] 110-HAZCOM	[] 118-Signs & Notices	[x] 120G-Scrap Inspection
[] 103-Confined Spaces	[x] 111-Heat Stress Prevention	[x] 119-Hand/Power Tool Ops	[] 121-Welding
[] 104-Drill Rig Operation	[] 112-Heavy Equip Operation	[x] 120A-Gen UXO Safety	[] 122-Motor Vehicle Operation
[] 105-Drum Handling	[] 113-Control of Haz Energy	[] 120B-UXO Sifting Ops	[] 123-PPE Selection/Use
[] 106-Electrical Safety	[x] 114-Material Handling	[x] 120C-UXO Excavation	[] 124-Contamination Control
[] 107-Excav. & Trenching	[] 115-Noise Control	[] 120D-UXO Demo/Disposal	[] -
[] 108-Fall Protection	[x] 116-Site Rules & Practices	[] 120E-Expl. Acct & Handling	[] -

[] Other:

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

Level of Protection	[] A [] B	[] C [x] D	[] Modified
Respiratory Protection	[] SCBA [] Escape SCBA - Size	[] Full face respirator [] ½ Face respirator	[] Cartridge – Type [x] No respirator required
Protective Clothing	[] Fully encapsulating suit [] Standard Tyvek	[] Saranex [] PE Tyvek	[x] Work clothing [] Other:
Gloves (Specify inner/outer)	[] Nitrile [] Butyl	[] Neoprene [] Latex	[⊥] Leather [] Rubber
Head/Face/Eye/Ear Protection	[!] Safety glasses [] Ear plugs and ear muffs	[] Safety goggles [] Face shield	[] Hard hat [] Other:
Foot/Leg Protection	[x] Work boots [] Steel-toed leather boots	[] Steel toe covers [] Snake leggings	[] Chemical over boots [] Kevlar™ Chaps

5.0 Modifications Allowed/Required/Inspection and Training Requirements: ⊥ - Required for UXOQCS if digging anomalies and during scrap inspection. ! - Required if working in areas where an eye hazard may exist. Inspection and training will be conducted IAW Appendix D of the WP.

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 task-specific hazard assessment conducted by individual identified below.

Printed Name: Charles C. Phillips, MS/MPH,PHD,CIH **Signature:** Charles C Phillips

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Inspection of Explosives **DATE:** June 27, 2003

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

[x] Physical exertion	[x] Lifting hazards	[] Confined space
[x] Heat Stress (Mid Summer)	[x] Slip, trip or fall	[] Hazardous plants
[] Cold Stress (Late Fall - early Spring)	[] High noise (>85 dBA)	[] Hazardous wildlife (Spring - Fall
[] Heavy equipment operations	[] Overhead utilities	[x] UV radiation (strong sunlight)
[] Vehicle traffic in work area(s)	[] Underground utilities	[] Hand/Power Tool use
[x] Fire hazards (underline)	[] Intrusive activity (underline)	[x] Uneven/Steep slopes
• Gasoline/Diesel use	• Soil drilling	[] Skin contact w/ hazardous materials
• Explosives handling/storage	• Soil excavation	[x] Ordnance and explosives
• Explosive gases/vapors	• Setting stakes/rods/monuments	[x] Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	[] Low	[] Serious	**Phys./Bio. Hazard:**	[] Low	[] Serious
	[x] Moderate	[] Unknown		[x] Moderate	[] Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

[x] Tailgate Safety Briefing	[x] PPE (see Section 4.0)	[] Decontamination
[x] Specialized Training	[] Air Monitoring	[] Magnetometer Survey
[x] Safe Work Practices	[x] Site Control Zones	

[] Engineering Controls:

[x] Applicable SOPs/Inspection & Training Programs: The SSHP and the SOPs selected below will be trained to and applied in controlling the hazards, identified above. All training will be documented in the SSO Log.

[x] 101-Biological Hazards	[] 109-Fire Prev. & Protection	[] 117-Sanitation & Illum.	[x] 120F-Expl./OE Transportation
[] 102-Cold Stress Prev.	[] 110-HAZCOM	[] 118-Signs & Notices	[] 120G-Scrap Inspection
[] 103-Confined Spaces	[x] 111-Heat Stress Prevention	[] 119-Hand/Power Tool Ops	[] 121-Welding
[] 104-Drill Rig Operation	[] 112-Heavy Equip Operation	[x] 120A-Gen UXO Safety	[] 122-Motor Vehicle Operation
[] 105-Drum Handling	[] 113-Control of Haz Energy	[] 120B-UXO Sifting Ops	[] 123-PPE Selection/Use
[] 106-Electrical Safety	[x] 114-Material Handling	[] 120C-UXO Excavation	[] 124-Contamination Control
[] 107-Excav. & Trenching	[] 115-Noise Control	[] 120D-UXO Demo/Disposal	[] -
[] 108-Fall Protection	[x] 116-Site Rules & Practices	[x] 120E-Expl. Acct & Handling	[] -

[] Other:

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

Level of Protection	[] A [] B	[] C [x] D	[] Modified
Respiratory Protection	[] SCBA [] Escape SCBA - Size	[] Full face respirator [] ½ Face respirator	[] Cartridge – Type [x] No respirator required
Protective Clothing	[] Fully encapsulating suit [] Standard Tyvek	[] Saranex [] PE Tyvek	[x] Work clothing [] Other:
Gloves (Specify inner/outer)	[] Nitrile [] Butyl	[] Neoprene [] Latex	[⊥] Leather [] Rubber
Head/Face/Eye/Ear Protection	[!] Safety glasses [] Ear plugs and ear muffs	[] Safety goggles [] Face shield	[] Hard hat [] Other:
Foot/Leg Protection	[x] Work boots [] Steel-toed leather boots	[] Steel toe covers [] Snake leggings	[] Chemical over boots [] Kevlar™ Chaps

5.0 Modifications Allowed/Required/Inspection and Training Requirements: ⊥ - Required for UXOQCS if digging anomalies and during scrap inspection. ! - Required if working in areas where an eye hazard may exist. Inspection and training will be conducted IAW Appendix D of the WP.

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 task-specific hazard assessment conducted by individual identified below.

Printed Name: Charles C. Phillips, MS/MPH,PHD,CIH **Signature:** Charles C Phillips

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Transportation of Explosives **DATE:** June 27, 2003

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

[x] Physical exertion	[x] Lifting hazards	[] Confined space
[x] Heat Stress (Mid Summer)	[x] Slip, trip or fall	[] Hazardous plants
[] Cold Stress (Late Fall - early Spring)	[] High noise (>85 dBA)	[] Hazardous wildlife (Spring - Fall
[x] Heavy equipment operations	[] Overhead utilities	[] UV radiation (strong sunlight)
[x] Vehicle traffic in work area(s)	[] Underground utilities	[] Hand/Power Tool use
[x] Fire hazards (underline)	[] Intrusive activity (underline)	[] Uneven/Steep slopes
• Gasoline/Diesel use	• Soil drilling	[] Skin contact w/ hazardous materials
• Explosives handling/storage	• Soil excavation	[x] Ordnance and explosives
• Explosive gases/vapors	• Setting stakes/rods/monuments	[] Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	[]	Low	[]	Serious	**Phys./Bio. Hazard:**	[] Low	[] Serious
	[x]	Moderate	[]	Unknown		[x] Moderate	[] Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

[x] Tailgate Safety Briefing	[x] PPE (see Section 4.0)	[] Decontamination
[x] Specialized Training	[] Air Monitoring	[] Magnetometer Survey
[x] Safe Work Practices	[x] Site Control Zones	

[] Engineering Controls:

[x] Applicable SOPs/Inspection & Training Programs: The SSHP and the SOPs selected below will be trained to and applied in controlling the hazards, identified above. All training will be documented in the SSO Log..

[x] 101-Biological Hazards	[x] 109-Fire Prev. & Protection	[] 117-Sanitation & Illum.	[x] 120F-Expl./OE Transportation
[] 102-Cold Stress Prev.	[x] 110-HAZCOM	[] 118-Signs & Notices	[] 120G-Scrap Inspection
[] 103-Confined Spaces	[x] 111-Heat Stress Prevention	[] 119-Hand/Power Tool Ops	[] 121-Welding
[] 104-Drill Rig Operation	[] 112-Heavy Equip Operation	[x] 120A-Gen UXO Safety	[] 122-Motor Vehicle Operation
[] 105-Drum Handling	[] 113-Control of Haz Energy	[] 120B-UXO Sifting Ops	[] 123-PPE Selection/Use
[] 106-Electrical Safety	[x] 114-Material Handling	[] 120C-UXO Excavation	[] 124-Contamination Control
[] 107-Excav. & Trenching	[] 115-Noise Control	[] 120D-UXO Demo/Disposal	[] -
[] 108-Fall Protection	[x] 116-Site Rules & Practices	[] 120E-Expl. Acct & Handling	[] -

[] Other:

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

Level of Protection	[] A [] B	[] C [x] D	[] Modified
Respiratory Protection	[] SCBA [] Escape SCBA - Size	[] Full face respirator [] ½ Face respirator	[] Cartridge – Type [x] No respirator required
Protective Clothing	[] Fully encapsulating suit [] Standard Tyvek	[] Saranex [] PE Tyvek	[x] Work clothing [] Other:
Gloves (Specify inner/outer)	[] Nitrile [] Butyl	[] Neoprene [] Latex	[⊥] Leather [] Rubber
Head/Face/Eye/Ear Protection	[!] Safety glasses [] Ear plugs and ear muffs	[] Safety goggles [] Face shield	[] Hard hat [] Other:
Foot/Leg Protection	[x] Work boots [] Steel-toed leather boots	[] Steel toe covers [] Snake leggings	[] Chemical over boots [] Kevlar™ Chaps

5.0 Modifications Allowed/Required/Inspection and Training Requirements: ⊥ - Leather gloves required if hand injury hazard exists, as determined by the UXOSO. ! - Required if working in areas where an eye hazard may exist. Inspection and training will be conducted IAW Appendix D of the WP.

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 task-specific hazard assessment conducted by individual identified below.

Printed Name: Charles C. Phillips, MS/MPH,PHD,CIH **Signature:** Charles C Phillips

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: OE Avoidance **DATE:** June 27, 2003

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

[x] Physical exertion	[x] Lifting hazards	[] Confined space
[x] Heat Stress (Mid Summer)	[x] Slip, trip or fall	[x] Hazardous plants
[] Cold Stress (Late Fall - early Spring)	[] High noise (>85 dBA)	[x] Hazardous wildlife (Spring - Fall
[] Heavy equipment operations	[] Overhead utilities	[x] UV radiation (strong sunlight)
[] Vehicle traffic in work area(s)	[] Underground utilities	[x] Hand/Power Tool use
[] Fire hazards (underline)	[] Intrusive activity (underline)	[x] Uneven/Steep slopes
• Gasoline/Diesel use	• Soil drilling	[] Skin contact w/ hazardous materials
• Explosives handling/storage	• Soil excavation	[x] Ordnance and explosives
• Explosive gases/vapors	• Setting stakes/rods/monuments	[x] Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	[x]	Low	[]	Serious	**Phys./Bio. Hazard:**	[] Low	[x] Serious
	[]	Moderate	[]	Unknown		[] Moderate	[] Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

[x] Tailgate Safety Briefing	[x] PPE (see Section 4.0)	[] Decontamination
[x] Specialized Training	[] Air Monitoring	[x] Magnetometer Survey – Surface Clearance will be GSI assisted.
[x] Safe Work Practices	[x] Site Control Zones	

[] Engineering Controls:

[x] Applicable SOPs/Inspection & Training Programs: The SSHP and the SOPs selected below will be trained to and applied in controlling the hazards, identified above. All training will be documented in the SSO Log.

[x] 101-Biological Hazards	[] 109-Fire Prev. & Protection	[x] 117-Sanitation & Illum.	[] 120F-Expl./OE Transportation
[] 102-Cold Stress Prev.	[] 110-HAZCOM	[] 118-Signs & Notices	[x] 120G-Scrap Inspection
[] 103-Confined Spaces	[x] 111-Heat Stress Prevention	[x] 119-Hand/Power Tool Ops	[] 121-Welding
[] 104-Drill Rig Operation	[] 112-Heavy Equip Operation	[x] 120A-Gen UXO Safety	[] 122-Motor Vehicle Operation
[] 105-Drum Handling	[] 113-Control of Haz Energy	[] 120B-UXO Sifting Ops	[] 123-PPE Selection/Use
[] 106-Electrical Safety	[x] 114-Material Handling	[x] 120C-UXO Excavation	[] 124-Contamination Control
[] 107-Excav. & Trenching	[] 115-Noise Control	[x] 120D-UXO Demo/Disposal	[] -
[] 108-Fall Protection	[x] 116-Site Rules & Practices	[] 120E-Expl. Acct & Handling	[] -

[] Other:

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

Level of Protection	[] A [] B	[] C [x] D	[] Modified
Respiratory Protection	[] SCBA [] Escape SCBA - Size	[] Full face respirator [] ½ Face respirator	[] Cartridge – Type [x] No respirator required
Protective Clothing	[] Fully encapsulating suit [] Standard Tyvek	[] Saranex [] PE Tyvek	[x] Work clothing [] Other:
Gloves (Specify inner/outer)	[] Nitrile [] Butyl	[] Neoprene [] Latex	[⊥] Leather [] Rubber
Head/Face/Eye/Ear Protection	[x] Safety glasses [] Ear plugs and ear muffs	[] Safety goggles [] Face shield	[] Hard hat [] Other:
Foot/Leg Protection	[x] Work boots [] Steel-toed leather boots	[] Steel toe covers [] Snake leggings	[] Chemical over boots [] Kevlar™ Chaps

5.0 Modifications Allowed/Required/Inspection and Training Requirements: ⊥ - Leather gloves required if hand injury hazard exists, as determined by the UXOSO. Inspection and training will be conducted IAW Appendix D of the WP.

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 task-specific hazard assessment conducted by individual identified below.

Printed Name: Charles C. Phillips, MS/MPH,PHD,CIH **Signature:** Charles C Phillips

AMEREX -- ABC DRY CHEMICAL - EXTINGUISHER,FIRE,DRY CHEMICAL
MATERIAL SAFETY DATA SHEET
NSN: 4210008892492 Manufacturer's CAGE: 54905 Part No. Indicator: B
Part Number/Trade Name: ABC DRY CHEMICAL

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General Information

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Item Name: EXTINGUISHER,FIRE, DRY CHEMICAL
Company's Name: AMEREX CORP
Company's Street: 7595 GADSDEN HWY E
Company's P. O. Box: 81
Company's City: TRUSSVILLE
Company's State: AL
Company's Country: US
Company's Zip Code: 35173-0081
Company's Emerg Ph #: 205-655-3271
Company's Info Ph #: 205-655-3271
Distributor/Vendor # 1: ALL-SAFE INC (614-876-4041)
Distributor/Vendor # 1 Cage: 2X264
Record No. For Safety Entry: 002
Tot Safety Entries This Stk#: 003
Status: FE
Date MSDS Prepared: 01AUG91
Safety Data Review Date: 14NOV92
Supply Item Manager: AX
MSDS Serial Number: BPHNS
Specification Number: O-E-915
Spec Type, Grade, Class: TY 1 CL 1 SZ 20
Hazard Characteristic Code: G3
Unit Of Issue: EA
Unit Of Issue Container Qty: UNKNOWN
Type Of Container: EXTINGUISHER
Net Unit Weight: UNKNOWN

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Ingredients/Identity Information

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Proprietary: NO
Ingredient: MICA - SILICATES (< 1% CRYSTALLINE SILICA)
Ingredient Sequence Number: 01
Percent: UNKNOWN
NIOSH (RTECS) Number: VV8760000
CAS Number: 12001-26-2
OSHA PEL: 20 MPPCF
ACGIH TLV: 3 MG/M3 RDUST; 9293
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: KAOLIN
Ingredient Sequence Number: 02
Percent: UNKNOWN
NIOSH (RTECS) Number: GF1670500
CAS Number: 1332-58-7

OSHA PEL: 15 MG/M3 TDUST
ACGIH TLV: 2 MG/M3 TDUST; 9293
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: MONOAMMONIUM PHOSPHATE
Ingredient Sequence Number: 03
Percent: UNKNOWN
NIOSH (RTECS) Number: 1003065MP
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: AMMONIUM SULFATE (SOLUTION) (SARA III)
Ingredient Sequence Number: 04
Percent: UNKNOWN
NIOSH (RTECS) Number: BS4500000
CAS Number: 7783-20-2
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED
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Physical/Chemical Characteristics

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Appearance And Odor: YELLOW POWDER, NO CHARACTERISTIC ODOR
Specific Gravity: 0.85
Decomposition Temperature: UNKNOWN
Solubility In Water: NEGLIGIBLE
Percent Volatiles By Volume: NONE
Corrosion Rate (IPY): UNKNOWN
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Fire and Explosion Hazard Data

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Flash Point: NONE
Extinguishing Media: MEDIA APPROPRIATE FOR SURROUNDING FIRE.
Special Fire Fighting Proc: WEAR FIRE FIGHTING PROTECTIVE EQUIPMENT AND A FULL FACED SELF CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS WITH WATER SPRAY.
Unusual Fire And Expl Hazrds: NONE SPECIFIED BY MANUFACTURER.
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Reactivity Data

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Stability: YES
Cond To Avoid (Stability): NONE SPECIFIED BY MANUFACTURER.
Materials To Avoid: STRONG OXIDIZING AGENTS, STRONG ALKALIS
Hazardous Decomp Products: UPON DIRECT COMBUSTION OF CHEMICALS IN THE FIRE EXTINGUISHER MAY DECOMPOSE TO AMMONIA,CARBON MONOXIDE, & OXIDES OF N2.
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): NOT APPLICABLE

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Health Hazard Data

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LD50-LC50 Mixture: LD50 (ORAL RAT) IS NOT APPLICABLE.
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: YES
Route Of Entry - Ingestion: YES
Health Haz Acute And Chronic: ACUTE: MAY CAUSE SLIGHT IRRITATION TO SKIN AND EYES ON CONTACT. INHALATION OF DUST MAY IRRITATE RESPIRATORY SYSTEM. MAY BE HARMFUL IF SWALLOWED. CHRONIC: NONE SPECIFIED BY MANUFACTURER.
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: NONE OF THE COMPOUNDS IN THIS PRODUCT IS LISTED BY IARC, NTP, OR OSHA AS A CARCINOGEN.
Signs/Symptoms Of Overexp: INHALATION: COUGHING, WHEEZING, SNEEZING, SHORTNESS OF BREATH. EYES: REDNESS, TEARING, BLURRED VISION. SKIN: RASH, ITCHING. INGESTED: NAUSEA, VOMITING, DIARRHEA, ABDOMINAL PAIN.
Med Cond Aggravated By Exp: NONE SPECIFIED BY MANUFACTURER.
Emergency/First Aid Proc: INHALATION: REMOVE TO FRESH AIR. EYE: FLUSH WITH WATER FOR 15 MINUTES WHILE HOLDING EYELIDS OPEN. GET MEDICAL ATTENTION. SKIN: WASH WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. IF IRRITATION PERSISTS, GET MEDICAL ATTENTION. INGESTION: IF VICTIM IS CONSCIOUS, GIVE LARGE AMOUNT OF WATER. DO NOT INDUCE VOMITING. GET MEDICAL ATTENTION.

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Precautions for Safe Handling and Use

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Steps If Matl Released/Spill: CONTAIN AND SWEEP UP. PLACE IN A CONTAINER FOR LATER DISPOSAL.
Neutralizing Agent: NOT APPLICABLE.
Waste Disposal Method: DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
Precautions-Handling/Storing: PROTECT FIRE EXTINGUISHERS FROM PHYSICAL DAMAGE. STORE AWAY FROM EXTREME HEAT. KEEP EXTINGUISHERS VALVES CLOSED WHEN NOT IN USE AND WHEN EMPTY.
Other Precautions: DO NOT DEFACE LABELS. HANDLE FIRE EXTINGUISHERS AS FILLED CYLINDERS WITH PROPER CAUTION.

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Control Measures

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Respiratory Protection: NONE NORMALLY REQUIRED.
Ventilation: USE ADEQUATE MECHANICAL VENTILATION.
Protective Gloves: WORK GLOVES FOR HANDLING CYLINDERS.
Eye Protection: APPROVED SAFETY GLASSES OR FACE SHIELD.
Other Protective Equipment: NONE NORMALLY REQUIRED.
Work Hygienic Practices: OBSERVE GOOD PERSONAL HYGIENE PRACTICES AND RECOMMENDED PROCEDURES.
Suppl. Safety & Health Data: NONE

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Transportation Data

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Trans Data Review Date: 92319
DOT PSN Code: GHB
DOT Proper Shipping Name: FIRE EXTINGUISHERS
DOT Class: 2.2
DOT ID Number: UN1044
DOT Label: NONFLAMMABLE GAS
IMO PSN Code: HGH
IMO Proper Shipping Name: FIRE EXTINGUISHERS
IMO Regulations Page Number: 2141-1
IMO UN Number: 1044
IMO UN Class: 2(2.2)
IMO Subsidiary Risk Label: -
IATA PSN Code: LXU
IATA UN ID Number: 1044
IATA Proper Shipping Name: FIRE EXTINGUISHERS
IATA UN Class: 2.2
IATA Label: NON-FLAMMABLE GAS
AFI PSN Code: LXU
AFI Prop. Shipping Name: FIRE EXTINGUISHERS
AFI Class: 2.2
AFI ID Number: UN1044
AFI Basic Pac Ref: 6-6,6-12
N.O.S. Shipping Name: PROPELLANT IN FIRE EXTINGUISHER: NITROGEN
Additional Trans Data: SHIPPING NAMES AND UN 1044 PER MANUFACTURER.

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Disposal Data

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Label Data

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Label Required: YES
Technical Review Date: 14NOV92
Label Status: F
Common Name: ABC DRY CHEMICAL
Chronic Hazard: NO
Signal Word: CAUTION!
Acute Health Hazard-Slight: X
Contact Hazard-Slight: X
Fire Hazard-None: X
Reactivity Hazard-None: X
Special Hazard Precautions: CYLINDER MAY EXPLODE IN HEAT OF FIRE. MAY CAUSE SLIGHT IRRITATION TO SKIN AND EYES ON CONTACT. INHALATION OF DUST MAY IRRITATE RESPIRATORY SYSTEM. MAY BE HARMFUL IF SWALLOWED. PROTECT FROM PHYSICAL DAMAGE. STORE AWAY FROM EXTREME HEAT. KEEP VALVES CLOSED WHEN NOT FLUSH WITH WATER FOR 15 MINUTES WHILE HOLDING EYELIDS OPEN. GET MEDICAL ATTENTION. SKIN: WASH WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. IF IRRITATION PERSISTS, GET MEDICAL ATTENTION. INGESTION: IF VICTIM IS CONSCIOUS, GIVE LARGE AMOUNT OF WATER. DO NOT INDUCE VOMITING. GET MEDICAL

ATTENTION.
Protect Eye: Y
Protect Skin: Y
Protect Respiratory: Y
Label Name: AMEREX CORP
Label Street: 7595 GADSDEN HWY E
Label P.O. Box: 81
Label City: TRUSSVILLE
Label State: AL
Label Zip Code: 35173-0081
Label Country: US
Label Emergency Number: 205-655-3271
Year Procured: 1992

Jun—22—01 12:15
Austin powder Co
MATERIAL SAFETY DATA SHEET
CAST BOOSTERS

DATE SEPTEMBER 1995 MSDS NO. P-i

SECTION I Issued by the Safety and Compliance Dept.

AUSTIN POWDER COMPANY 25800 SCIENCE PARK DRIVE CLEVELAND, OHIO 44122 EMERGENCY PHONE DAY 216-464-2400 NIGHT 216-464-2407	TRADE NAME AND SYNONYMS ACP Boosters: Orange Cap, Red Cap, Black Cap, Brown Cap Green Cap, Purple Cap. White Cap, Gray Cap, etc. NDS Boosters, ADP Boosters, Gold Nugget, Silver Nugget, Diamond Nugget, DES SERIES. DES Pentolite Charges, Rock Crushers, 90 Grain, 150 Gram, DES Shaped Charges. Prime Gel*, Renforcatuers, HDP 150, HDP 400, HDP 400LP, HDP 450, Doubledet and Ringprime

SECTION II HAZARDOUS INGREDIENTS

Formulated with TNT and an explosive sensitizer such as PETN, RDX and/or HMX.

TNT, Trinitrotoluene. $C_7H_5N_3O_6$,	CAS No- 118-96-7	30% to 80%
PETN, Pentacrytliritol tetranitrate, $C_5H_8N_4O_{12}$	CAS No. 78-11-5	20% to 70% PETN, RDX, and/or HMX.
HMX, Cyclotetramethylene tetranifrainine, Octogen. $C_4H_8N_6O_8$.		CAS No. 261-41-0
RDX, Cyclotritnetbylene trinitiamine, Cyclonite, $C_3H_6N_6O_6$		CAS No. 121-824
Aluminum, AL	CAS No. 7429-90-5	0% - 20% Aluminum
Pentolite is a 50/50 mixture of PETN and TNT.	CAS No. 8066-33-9	

SECTION III PHYSICAL DATA

BOILING POINT	Decomposes	VAPOR PRESSURE (mm Hg)	Negligible at 20 °C
SPECIFIC GRAVITY (H_2O)	1.65	VAPOR DENSITY (Air - I)	N/A
PERCENT VOLATILE BY VOL. (%)	N/A	N/A	EVAPORATION RATE:
SOLUBIIITY IN WATER	0.15%		

APPEARANCE AND ODOR: Solid yellow-buff cast crystalline material. No odor

SECTION IV FIRE AND EXPLOSION DATA

FLASH POINT:	N/A
FLAMMABLE LIMITS:	N/A
EXTINGUISHING MEDIA:	See below
SPECIAL FIRE FIGHTING PROCEDURES:	Do not fight fires. Withdraw personnel immediately - Allow fire to burn itself out. Avoid toxic fumes from fire.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	May explode wben subjected to fire or shock.

SECTION V HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: ACGIH: TNT-Skin, 0.1 mg/M^3 PETN-None RDX-Skin, 1.5 mg/M^3 AL-10 mg/M^3

OSHA: TNT-Skin, 1.5 mg/M^3 PETN-None RDX-None AL-15 mg/M^3

EFFECTS OF OVEREXPOSURE: TNT ingestion may cause headache, weakness, anemia, or liver damage. Excessive skin contact may cause dermatitis and sensitization, PETN is a vasodilator. Ingestion of RDX may cause nervous system disorders or epiliptiform seizures.

EMERGENCY AND FIRST AID PROCEDURES:
FUMES: Remove to fresh air.
IF INGESTED: Obtain medical attention immediately

SECTION VI REACTIVTTY DATA

STABILITY: Stable under normal conditions. May explode when subjected to fire or shock.

INCOMPATIBILITY (MATERIALS TO AVOID): Avoid contact with strong acids or alkalies.

Do not exceed 150°F 66°C.

HAZARDOUS DECOMPOSITION PRODUCTS: Gaseous Nitrogen Oxides and Carbon Oxides SECTION VT! SPTLL OR LEAK PROCEDURES

SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Sweep up and dispose of alt spilled material immediately. Do not permit smoking or open flames near spill site

WASTE DISPOSAL METHOD: Dispose of under direct supervision of a qualified person according to local, slate and federal regulations. Call Austin Powder for recommendations and assistance. this material may become a hazardous waste under certain conditions and must be collected, labeled and disposed of per state and federal hazardous waste regulations.

TRANSPORTATION EMERGENCIES involving spills, leaks, fires or exposures in the United States: CALL CHEMTREC: 1-800-424-9300. For emergency calls originating outside the U. S. dial the U. S. access number followed by: 1-202-483-7616. All calls are recorded.

SECTION VII SPECTAL PROTECTION INFORMATION:

RESPIRATORY PROTECTION:	Avoid breathing fumes from detonation.
VENTILATION:	Not required under normal conditions.
PROTECTIVE GLOVES:	Not required for normal handling of boosters.
EYE PROTRCTION:	Not required under normal conditions.

SECTION IX SPECIAL PRECAUTIONS

COMPLY WITH "ALWAYS ANTD NEVER" AS ADOPTED BY THE INSTITUTE OF MAKERS OF EXPLOSIVES. TRANSPORTATION, STORAGE AND USE MUST COMPLY WITH OSHA SAFETY AND HEALTH STANDARDS 29CFR1910.109, APPLICABLE MSHA REGULATTONS, THE DOT AND HAZARDOUS MATERIALS REGULATIONS BATF REQUIREMENTS AND STATE AND LOCAL TRANSPORTATTON, STORAGE AND USE REGULATIONS AND ORDINANCES.

DOT or IMDG proper shipping description: Boosters without Detonator, 1.1D, UN 0042, PGII

None of the components are listed in the 1987 IARC Monographs, Group 1, 2A, or 2B as a known, probable or possible carcinogen, nor are they listed in the NTP annual report on carcinogens.

Prime Gel contains both a Cast Booster and Hydromite
Also see the Hydromite MSDS.

Austin powder Co

MATERIAL SAFETY DATA SHEET

ELECTRIC DETONATORS
NON ELECTRIC DETONATORS

DATE AUGUST 1996 MSDS NO. ED-i

SECTION I

Issued by the Safety and Compliance Dept.

AUSTIN POWDER 25800 SCIENCE PARK DRIVE CLEVELAND, OHIO 44122 EMERGENCY PHONE DAY 216-464-2400 NIGHT 216-464-2407	TRADE NAME AND SYNONYMS Coal* Star, Rock* Star, Time* Star, Coal Mine Delays, Seismlc* Star, Twin* Star Detonators, 3-D Star, Seismic Detonators and Shock* Star; In-Hole Delays, Surface Delay Connectors, Quick-Relay Connectors, Dual Delays, Shorty STD (Shock Tube with Detonators) and MS Connector. Electric Blasting Caps

SECTION II HAZARDOUS INGREDIENTS

Explosive components ate PETN (possibly TNT) and lead compounds sealed in a metal shell.

PETN. Pentaerythritol Tetranitrate. CAS No. 78-11-5

Lead Azide, $Pb(N_3)_2$ CAS No. 13424-46-9

Lead Stypimate, Lead Trimtroresorcinate, . $C_6H_3N_3O_9Pb$ CAS No. 15245-44-0

TNT, Trinifrotoluene, . $C_7H_5N_3O_6$ CAS No. 118-96-7 (May be included in some detonators)

SECTION III PHYSICAL DATA

BOILING POINT	N/A	VAPOR PRESSURE (mm Hg)	N/A
SPECIFIC GRAVITY (H_2O)	N/A	VAPOR DENSITY (Air 1)	N/A
PERCENT VOLATILE BY VOL. (%)	N/A	EVAPORATION RATE:	N/A
SOLUBILITY IN WATER	Insoluble		

APPEARANCE AND ODOR: Aluminum or copper shells with attached PVC coated copper or iron leg wires. No odor

SECTION IV FIRE AND EXPLOSION DATA

FLASH POINT:	N/A
FLAMMABLE LIMITS:	N/A
EXTINGUISHING MEDIA:	See below
SPECIAL FIREFIGI-ITING PROCEDURES:	Do not fight fire. Withdraw personnel immediately - Allow fire to burn itself out.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	May explode when subjected to flame, heat, impact, friction, electric current, electrostatic or radio frequency energy. Do not exceed ISO' F (66C). Avoid toxic fumes from fire.

SECTION V HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: ACGIH: 0.05 mg/M^3 TWA, lead, elemental, and inorganic compounds, as Pb. OSHA 50 µg/M^3 PEL as Pb. For additional information. see 29 CFR 1910.1025

EFFECTS OF OVEREXPOSURE: None likely when safe blasting practices are employed.

EMERGENCY AND FIRST AID PROCEDURES: Improper handling or misuse may cause detonation resulting in injuries from shrapnel. Lead and lead compounds are listed in the 1987 IARC Monographs as possible human carcinogens (Group 2B). Lead is not listed in the NTP annual report on carcinogens.

SECTION VI REACTIVITY DATA Issued by the Safety and Compliance Dep

STABILITY: May explode when subjected to flame, heat, impact, friction, electric currents, electrostatic or radio frequency energy. Avoid static charge build up. Keep lead wires shunted until wiring into circuit.

INCOMPATIBILITY (MATERIALS TO AVOID): Avoid contact with acids or alkalies.

HAZARDOUS DECOMPOSITION PRODUCTS: Gaseous Nitrogen Oxides. Carbon Oxides, and lead fumes HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Pick up containers or units by band. Avoid conditions affecting stability. DO NOT use damaged detonators.

WASTE DISPOSAL METHOD: Dispose of under direct supervision of a qualified person according to local, state and federal regulations. Call Austin Powder for recommendations and assistance. This material may become a hazardous waste under certain conditions and must be collected, labeled and disposed of per state and federal hazardous waste regulations.

TRANSPORTATION EMERGENCIES involving spills, leaks, fires or exposures in the United States: CALL CHEMTREC: I-800-424-9300. For emergency calls originating outside the U. S. dial the U. S. access number followed by: 1-202-483-7616. All calls are recorded.

SECTION VIII SPECIAL PROTECTION INFORMATION:

RESPIRATORY PROTECTION:	Avoid breathing fumes from detonation.
VENTILATION:	Not required.
PROTECTIVE GLOVES:	Not required.
EYE PROTECTION:	Not required.

SECTION IX SPECIAL PRECAUTIONS

COMPLY WITH "ALWAYS AND NEVER" AS ADOPTED BY THE INSTITUTE OF MAKERS OF EXPLOSIVES. TRANSPORTATION, STORAGE AND USE MUST COMPLY WITH OSHA SAFETY AND HEALTH STANDARDS 29CFR1910.109. APPLICABLE MSHA REGULATIONS. THE DOT ANT) HAZARDOUS MATERIALS REGULATIONS BATF REQUIREMENTS AND STATE AND LOCAL TRANSPORTATION. STORAGE AND USE REGULATIONS AND ORDNANCES.

THESE DETONATORS MAY BE SHIPPED UNDER ONE OF THE FOLLOWING DOT CLASSIFICATIONS:
DOT CLASSIFICATIONS or IMO HAZARD CLASS:

Detonators, Electric.	I 4B	UN*0255*	PG II	
Detonators, Electric,	I. ID	UN0030	PG II	
Detonator Assemblies, Non-Electric,	1.1B	UN0360	PG II	
Detonator Assemblies, Non-Electric,	1.4B	UN0361	PGII	
Articles, explosive, n.o.s.		1.4S UN0349		PGII

Consult IME Safety Library Publication No. 20, SAFETY GUIDE FOR THE PREVENTION OF RADIO FREQUENCY RADIATION HAZARDS IN THE USE OF ELECTRIC BLASTING CAPS, and Publication No-22, RECOMMENDATIONS FOR THE SAFE TRANSPORTATION OF DETONATORS IN A VEHICLE WITH CERTAIN OTHER EXPLOSIVE MATERIALS.

ALL PURE CHEMICAL -- GENERIC BLEACH 5.25%
MATERIAL SAFETY DATA SHEET
NSN: 681000N039976
Manufacturer's CAGE: 45202
Part No. Indicator: A
Part Number/Trade Name: GENERIC BLEACH 5.25%

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General Information

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Company's Name: ALL PURE CHEMICAL CO
Company's Street: 26700 SOUTH BANTA RD
Company's City: TRACY
Company's State: CA
Company's Country: US
Company's Zip Code: 95376
Company's Emergency Ph #: 209-835-5423; 800-424-9300(CHEMTREC)
Company's Info Ph #: 209-835-5423
Record No. For Safety Entry: 001
Tot Safety Entries This Stk#: 001
Status: SMJ
Date MSDS Prepared: 10JAN90
Safety Data Review Date: 17FEB93
MSDS Serial Number: BRLMY
Hazard Characteristic Code: NK

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Ingredients/Identity Information

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Proprietary: NO
Ingredient: HYPOCHLOROUS ACID, SODIUM SALT; (SODIUM HYPOCHLORITE) (SARA III)
Ingredient Sequence Number: 01
Percent: 5.25
NIOSH (RTECS) Number: NH3486300
CAS Number: 7681-52-9
OSHA PEL: N/K (FP N)
ACGIH TLV: N/K (FP N)

Proprietary: NO
Ingredient: SODIUM HYDROXIDE (SARA III)
Ingredient Sequence Number: 02
Percent: 1
NIOSH (RTECS) Number: WB4900000
CAS Number: 1310-73-2
OSHA PEL: 2 MG/M3
ACGIH TLV: C 2 MG/M3; 9293

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Physical/Chemical Characteristics

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Appearance And Odor: STRAW YELLOW LIQUID WITH CHARACTERISTIC ODOR OF BLEACH
Boiling Point: 230F,110C
Specific Gravity: 1.09 @ 20C
Solubility In Water: COMPLETE
Percent Volatiles By Volume: 74.5

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Fire and Explosion Hazard Data

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Extinguishing Media: DOES NOT BURN.
Special Fire Fighting Proc: DECOMPOSES AT 230F WITH LIBERATION OF HAZARDOUS GASES.
Unusual Fire And Expl Hazrds: NONE SPECIFIED BY MANUFACTURER.

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Reactivity Data

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Stability: YES
Condition To Avoid (Stability): EXPOSURE TO HEAT AND LIGHT WILL ACCELERATE DECOMPOSITION.
Materials To Avoid: MIXING WITH OTHER CHEMICALS AND OTHER CONSUMER PRODUCTS MAY CAUSE CHEMICAL RXN WITH LIBERATION OF HAZARDOUS GASES.
Hazardous Decomposition Products: TOXIC GASES GENERATED WHEN HEATED TO DECOMPOSITION OR WHEN REACTED WITH OTHER COMPOUNDS.
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): NOT RELEVANT.

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Health Hazard Data

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LD50-LC50 Mixture: LD50:(ORAL RAT):6200 MG/KG.
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: NO
Route Of Entry - Ingestion: NO
Health Haz Acute And Chronic: NO INFORMATION FOUND.
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: NOT RELEVANT.
Signs/Symptoms Of Overexp: NONE SPECIFIED BY MANUFACTURER.
Med Cond Aggravated By Exp: NO INFORMATION FOUND.
RINSE EYE FIRST, REMOVE CONTACT LENSES (IF APPLICABLE), AND CONTINUE FLUSHING WITH WATER FOR AT LEAST 15 MINUTES. GET MD. INGEST:DRINK LARGE QUANTITIES OF WATER. DO NOT GIVE VINEGAR OR OTHER ACIDS. DO NOT INDUCE VOMITING. GET MD IMMEDIATELY. INHAL:MOVE TO FRESH AIR. SUPPORT BREATHING (GIVE O*2/ARTF RESP) (FP N).

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Precautions for Safe Handling and Use

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Steps If Matl Released/Spill: NONE SPECIFIED BY MANUFACTURER.
Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.
Waste Disposal Method: DISPOSAL MUST BE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS (FP N).
Precautions-Handling/Storing: NONE SPECIFIED BY MANUFACTURER.
Other Precautions: NONE SPECIFIED BY MANUFACTURER.

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Control Measures

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Respiratory Protection: NIOSH/MSHA APPROVED RESPIRATOR APPROPRIATE FOR EXPOSURE OF CONCERN (FP N).

Ventilation: NONE SPECIFIED BY MANUFACTURER.
Protective Gloves: IMPERVIOUS GLOVES (FP N).
Eye Protection: CHEMICAL WORKERS GOGGLES (FP N).
Other Protective Equipment: NONE SPECIFIED BY MANUFACTURER.
Work Hygienic Practices: NONE SPECIFIED BY MANUFACTURER.
Suppl. Safety & Health Data: NONE SPECIFIED BY MANUFACTURER.

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Transportation Data

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Disposal Data

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Label Data

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Label Required: YES
Technical Review Date: 17FEB93
Label Date: 17FEB93
Label Status: G
Common Name: GENERIC BLEACH 5 1/4%
Chronic Hazard: NO
Signal Word: WARNING!
Acute Health Hazard-Moderate: X
Contact Hazard-Moderate: X
Fire Hazard-None: X
Reactivity Hazard-Moderate: X
Special Hazard Precautions: ACUTE: AN EYE IRRITANT. CORROSIVE AND IRRITATING BY INHALATION AND INGESTION (FP N). CHRONIC: NONE SPECIFIED BY MANUFACTURER.
Protect Eye: Y
Protect Skin: Y
Protect Respiratory: Y
Label Name: ALL PURE CHEMICAL CO
Label Street: 26700 SOUTH BANTA RD
Label City: TRACY
Label State: CA
Label Zip Code: 95376
Label Country: US
Label Emergency Number: 209-835-5423;800-424-9300(CHEMTREC)

MILES -- 121-33, CUTTER UNSCENTED INSECT REPELLANT (SUPDAT)
MATERIAL SAFETY DATA SHEET
MILES AS OF January 1999
NSN: 684000N061163
Manufacturer's CAGE: 62801
Part No. Indicator: A
Part Number/Trade Name: 121-33, CUTTER UNSCENTED INSECT REPELLANT (SUPDAT)
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General Information

Company's Name: MILES INC
Company's Street: 7123 WEST 65 ST
Company's City: CHICAGO
Company's State: IL
Company's Country: US
Company's Zip Code: 60638
Company's Emerg Ph #: 219-264-8400
Company's Info Ph #: 708-458-6100
Record No. For Safety Entry: 001
Tot Safety Entries This Stk#: 001
Status: SMJ
Date MSDS Prepared: 16MAR90
Safety Data Review Date: 11JUL95
MSDS Serial Number: BXXTW
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Ingredients/Identity Information

Proprietary: NO
Ingredient: ETHYL ALCOHOL; (ETHANOL)
Ingredient Sequence Number: 01
NIOSH (RTECS) Number: KQ6300000
CAS Number: 64-17-5
OSHA PEL: 1000 PPM
ACGIH TLV: 1000 PPM

Proprietary: NO
Ingredient: 5-NORBORNENE-2, 3-DICARBOXIMIDE, N-(2-ETHYLHEXYL)-; (N-OCTYL BICYCLOHEPTENE DICARBOXIMIDE)
Ingredient Sequence Number: 02
Percent: 3
NIOSH (RTECS) Number: RB8575000
CAS Number: 463-04-7
OSHA PEL: N/K (FP N)
ACGIH TLV: N/K (FP N)

Proprietary: NO
Ingredient: M-TOLUAMIDE, N,N-DIETHYL-; (N,N-DIETHYL-META-TOLUAMIDE) (DEET)
Ingredient Sequence Number: 03
Percent: 21.85
NIOSH (RTECS) Number: XS3675000
CAS Number: 134-62-3
OSHA PEL: N/K (FP N)
ACGIH TLV: N/K (FP N)

Proprietary: NO
Ingredient: P-TOLUAMIDE, N,N-DIETHYL-; (OTHER DEET ISOMERS) (O,P)
Ingredient Sequence Number: 04
Percent: 1.15
NIOSH (RTECS) Number: XS4025000
CAS Number: 2728-05-4
OSHA PEL: N/K (FP N)
ACGIH TLV: N/K (FP N)

Proprietary: NO
Ingredient: INERT INGREDIENTS
Ingredient Sequence Number: 05
Percent: 74
NIOSH (RTECS) Number: 1000082II
OSHA PEL: N/K (FP N)
ACGIH TLV: N/K (FP N)
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Physical/Chemical Characteristics

Appearance And Odor: CLEAR, COLORLESS OR PALE YELLOW LIQUID W/ETHANOLIC ODOR.
Boiling Point: 167F,75C
Vapor Pressure (MM Hg/70 F): 43 @ 20C
Vapor Density (Air=1): 1.6
Specific Gravity: 0.861
Evaporation Rate And Ref: 1 (BUOAC=1)
Percent Volatiles By Volume: 73
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Fire and Explosion Hazard Data

Flash Point: 50.0F,10.0C
Flash Point Method: CC
Lower Explosive Limit: 3.3%
Upper Explosive Limit: 19%
Extinguishing Media: CO*2, FOAM OR DRY CHEMICAL.
Special Fire Fighting Proc: USE NIOSH/MSHA APPROVED SCBA & FULL PROTECTIVE EQUIPMENT (FP N). FOR SM FIRES:USE CO*2 OR DRY CHEM EXTINGS. FOR LG FIRES:USE COPIOUS AMOUNTS OF WATER.
Unusual Fire And Expl Hazrds: NONE SPECIFIED BY MANUFACTURER.
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Reactivity Data

Stability: YES
Cond To Avoid (Stability): NONE SPECIFIED BY MANUFACTURER.
Materials To Avoid: MAY SOFTEN OR DAMAGE SOME SYNTHETICS SUCH AS RAYONS. MAY DAMAGE LEATHER.
Hazardous Decomp Products: NONE KNOWN.
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): NOT RELEVANT
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Health Hazard Data

LD50-LC50 Mixture: LD50:(ORAL,RAT) >500 MG/KG.
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: NO
Route Of Entry - Ingestion: NO

Health Haz Acute And Chronic: DESIGNED FOR USE DIRECTLY ON SKIN. ACUTE:MAY CAUSE EYE INJURY. MAY CAUSE SKIN REACTIONS IN RARE CASES. CHRONIC:NONE KNOWN.

Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: NOT RELEVANT

Signs/Symptoms Of Overexposure: SEE HEALTH HAZARDS.

Med Condition Aggravated By Exp: NONE KNOWN.

Emergency/First Aid Proc: INHALATION: REMOVE TO FRESH AIR. SUPPORT BREATHING (GIVE O*2/ARTF RESP) (FP N). EYES:IMMEDIATELY FLUSH W/WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION. INGEST:CALL MD OR POISON CONTROL. IF CONSCIOUS, GIVE ONE OR TWO GLASSES OF WATER & INDUCE VOMITING. IF UNCONSCIOUS:DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH TO UNCONSCIOUS PERSON. SKIN:WASH W/SOAP & WATER. GET MED ATTN IF IRRIT PERSISTS.

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Precautions for Safe Handling and Use

Steps If Matl Released/Spill: FLAMMABLE MATERIAL. REMOVE ALL POSSIBLE IGNITION SOURCES. WIPE UP W/ABSORBENT MATERIAL. WASH SMALL QUANTITIES AWAY W/SOAPY WATER. PREVENT BULK QUANTITIES FROM ENTERING OPEN SEWERS & WATERWAYS.

Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.

Waste Disposal Method: THIS MATERIAL IS FLAMMABLE & MUST BE DISPOSED OF I/A/W LOCAL, STATE & FEDERAL REGULATIONS. DO NOT PUNCTURE OR INCINERATE EMPTY CONTAINERS; DISPOSE OF PROPERLY.

Precautions-Handling/Storing: KEEP AWAY FROM HEAT, SPARKS OR OPEN FLAME. DO NOT EXPOSE TREATED SKIN TO FIRE, SPARKS OR FLAME UNTIL LIQUID HAS DRIED.
Other Precautions: DO NOT INGEST. KEEP OUT OF EYES. AVOID BREATHING MIST.

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Control Measures

Respiratory Protection: NIOSH/MSHA APPROVED RESPIRATOR APPROPRIATE FOR EXPOSURE OF CONCERN (FP N).

Ventilation: USE IN AREA W/ADEQUATE VENTILATION.

Protective Gloves: IMPERVIOUS GLOVES (FP N).

Eye Protection: ANSI APPROVED CHEM WORKERS GOGGS (FP N).

Other Protective Equipment: EYE WASH FOUNTAIN & DELUGE SHOWER WHICH MEET ANSI DESIGN CRITERIA (FP N).

Work Hygienic Practices: APPLY ONLY TO SKIN OR CLOTHING. FREQUENT REAPPLICATION OR SATURATION IS UNNECESSARY.
Supplemental. Safety & Health Data: MFR'S TRADE NAME/PART NO:SPRAY FORMULA MMI.

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Transportation Data

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Disposal Data

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Label Data

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Label Required: NO

Label Status: X

Common Name: LABEL COVERED UNDER EPA REGS - HAZCOM LABEL NOT AUTHORIZED

AMOCO OIL -- LS NO. 2 DIESEL FUEL - DIESEL FUEL
MATERIAL SAFETY DATA SHEET
NSN: 9140002865295
Manufacturer's CAGE: 15958
Part No. Indicator: A
Part Number/Trade Name: LS NO. 2 DIESEL FUEL

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General Information

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Item Name: DIESEL FUEL
Company's Name: AMOCO OIL COMPANY
Company's Street: 200 EAST RANDOLPH DRIVE
Company's City: CHICAGO
Company's State: IL
Company's Country: US
Company's Zip Code: 60601
Company's Emerg Ph #: 800-447-8735/800-424-9300
Company's Info Ph #: 312-856-3907
Distributor/Vendor # 2: SPENCER OIL CORP (810-775-5022)
Distributor/Vendor # 2 Cage: 5W753
Record No. For Safety Entry: 032
Tot Safety Entries This Stk#: 092
Status: SE
Date MSDS Prepared: 24SEP93
Safety Data Review Date: 07SEP94
Supply Item Manager: KY
MSDS Preparer's Name: DONALD M. BARKER,DIR
Preparer's Company: PRODUCT STWEARDSHIP & TOXICOLOGY, AMOCO
MSDS Serial Number: BJPSJ
Specification Number: VV-F-800
Spec Type, Grade, Class: DF-2
Hazard Characteristic Code: F4
Unit Of Issue: GL
Unit Of Issue Container Qty: 5 GALLONS
Type Of Container: CAN
Net Unit Weight: 35.4 LBS

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Ingredients/Identity Information

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Proprietary: NO
Ingredient: PETROLEUM DISTILLATE, NO. 2 FUEL OIL
Ingredient Sequence Number: 01
Percent: N/GIVEN
NIOSH (RTECS) Number: LS8930000
CAS Number: 68476-30-2
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: NAPHTHALENE (SARA III)
Ingredient Sequence Number: 02

Percent: 1
NIOSH (RTECS) Number: QJ0525000
CAS Number: 91-20-3
OSHA PEL: 10 PPM
ACGIH TLV: 10 PPM/15 STEL; 9394
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: XYLENES (O-,M-,P- ISOMERS) (SARA III)
Ingredient Sequence Number: 03
Percent: 1
NIOSH (RTECS) Number: ZE2100000
CAS Number: 1330-20-7
OSHA PEL: 100 PPM
ACGIH TLV: 100 PPM/150STEL;9394
Other Recommended Limit: NONE RECOMMENDED
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Physical/Chemical Characteristics

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Appearance And Odor: CLEAR, WATER SHITE TO BLUE-GREEN LIQUID.
Boiling Point: 340F,171C
Specific Gravity: 0.85-0.88
Solubility In Water: NEGLIGIBLE (1.8 CST
==========

Fire and Explosion Hazard Data

==========
Flash Point: 120F,49C
Flash Point Method: TCC
Lower Explosive Limit: 0.6
Upper Explosive Limit: 7.5
Extinguishing Media: AGENTS APPROVED FOR CLASS B HAZ (E.G. DRY CHEMICAL, CARBON DIOXIDE, HALOGENTATED AGENTS, FOAM, STEAM) OR WATER FOG.
Special Fire Fighting Proc: NONE SPECIFIED BY MFG; HOWEVER WEAR APPROPRIATE PROTECTIVE EQIPMENT.
Unusual Fire And Expl Hazrds: COMBUSTIBLE LIQUID.
==========

Reactivity Data

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Stability: YES
Cond To Avoid (Stability): KEEP AWAY FROM IGNITIN SOURCES (E.G. HEAT AND OPEN FLAMES).
Materials To Avoid: AVOID CHLORINE, FLUORINE, AND OTHER STRONG OXIDIZERS.
Hazardous Decomp Products: INCOMPLETE BURNING CAN PRODUCE CARBON MONOXIDE &/OR CARBON DIOXIDE AND OTHER HARMFUL PRODUCTS.
Conditions To Avoid (Poly): NONE SPEICIFED BY MFG.
==========

Health Hazard Data

==========
LD50-LC50 Mixture: LD50,ORAL FOR SIMILAR PRODUCT >5G/KG.
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: YES
Route Of Entry - Ingestion: NO

Health Haz Acute And Chronic: NO SIGNIFICANT EYE HEALTH HAZ IDENTIFIED.
CAN CAUSE SKIN IRRIT ON PROLONG/REPEAT CONTACT. NO SIGNIFICANT INHAL HEALTH HAZ IDENTIFIED FOR THE LIQUID FUEL.LOW VISCOSITY PRODUCT. HARMFUL OR FATAL IF SWALLOWED & THEN ASPIRATED INTO LUNGS CAUSING CHEM PNEUMONIA & DEATH. KIDNEY DAMAGE IN MALE RATS W/MATLS OF THIS TYPE.
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: PER MSDS NO INGRED PRESENT @ LEVELS FOR CARCINO.NIOSH RECOMMENDS WHOLE DIESEL EXHAUST REGARDED AS POTENTIAL OCCUP
CARCIN
Signs/Symptoms Of Overexp: INHAL OF VAPORS FROM HEATED MATL IN CONFINED AREA CAUSES DIZZINESS, HEADACHE, NAUSEA, POSSIBLE IRRIT OF EYE/NOSE/THROAT.
Med Cond Aggravated By Exp: NONE SPECIFIED BY MFG.
Emergency/First Aid Proc: EYE:FLUSH W/PLENTY OF WATER. SKIN:WASH W/ SOAP & WATER. REMOVE CONTAMIN CLOTHING/SHOE. INHAL:IF ADVERSE EFFECTS OCCUR REMOVE
TO UNCONTAMINATED AREA. INGEST:DO NOT INDUCE VOMIT. GET IMMED MED ATTN.

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Precautions for Safe Handling and Use

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Steps If Matl Released/Spill: REMOVE OR SHUT OFF ALL SOURCES OF IGNITION. PREVENT SPREADING BY DIKING, DITCHING, OR ABSORBING ON INERT MATERIALS. IF SPILLED INTO WATERS FO USA IT MAY BE REPORTABLE UNDER 33 CFR PART 153 IF IT PRODUCES A SHEEN.
Neutralizing Agent: NONE SPECIFIED BY MFG.
Waste Disposal Method: DISPOSAL MUST BE IN ACCORDANCE W/APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. ENCLOSED-CONTROLLED INCINERATIN IS RECOMMNENDED UNLESS DIRECTED OTHERWISE BY APPLICABLE ORDINANCES.
PRODUCT
EXEMPT FROM CERCLA REPORTING REQMTS UNDER 40CFRPART302.4.
Precautions-Handling/Storing: STORE IN COMBUSTILBLE LIQUIDS STORAGE AREA. STORE AWAY FROM HEAT, IGNITIN SOURCES, AND OPEN FLAME IN ACCORDANCE W/ APPLICABLE FED/STATE/LOC REGS.
Other Precautions: THE CONTAINER FOR THIS PRODUCT CAN PRESENT EXPLOSION OR FIRE HAZARDS, EVEN WHEN EMPTIED. TO AVOID RISK OF INJURY, DO NOT CUT, PUNCTURE OR WELD ON OR NEAR THIS CONTIANER.

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Control Measures

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Respiratory Protection: NONE SPECIFIED BY MFG. HOWEVER, USE WITH ADEQUATE VENTILATION. IF AIR CONTAMINANTS LEVEL ABOVE ESTABLISHED EXPOUSRE LIMITS USE APPROPRIATE NIOSH APPROVED RESP.
Ventilation: USE WITH ADEQUATE VENTILATION.
Protective Gloves: WEAR PROTECTIVE GLOVES.
Eye Protection: NONE REQUIRED;HOWEVER USE EYE PROTECTION
Other Protective Equipment: WEAR PROTECTIVE CLOTHING IF PROLONG/REPEAT CONTACT. EYE PROTECTION IS GOOD INDUSTRIAL PRACTICE.
Work Hygienic Practices: WASH HANDS AFTER HANDLING.PRACTICE GOOD PERSONAL HYGENIC PRACTICES.THOROUGHLY CLEAN & DRY CONTAMIN CLOTHING BEFORE REUSE
Suppl. Safety & Health Data: BOILING PT RANGE:340F-675F APPROX. FROM

SKIN-PAINTING STUDIES OF PETRO DISTILLATES OF SIMILAR COMPOSITION & DISTILLATE RANGE HAS BEEN SHOWN THESE MATLS OFTEN POSSES WEAK CARCINOGENIC
ACTIVITY IN LAB ANIMALS.MFG HAVE CHOSEN TO BE CAUTIOUS IN LIGHT OF FINDINGS W/OTHER DISTILLATED STREAMS.

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Transportation Data

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Trans Data Review Date: 94250
DOT PSN Code: EXF
DOT Symbol: D
DOT Proper Shipping Name: DIESEL FUEL
DOT Class: 3
DOT ID Number: NA1993
DOT Pack Group: III
DOT Label: NONE
IMO PSN Code: HIA
IMO Proper Shipping Name: FLAMMABLE LIQUID, N.O.S. o
IMO Regulations Page Number: 3345
IMO UN Number: 1993
IMO UN Class: 3.3
IMO Subsidiary Risk Label: -
IATA PSN Code: MCA
IATA UN ID Number: 1993
IATA Proper Shipping Name: FLAMMABLE LIQUID, N.O.S. *
IATA UN Class: 3
IATA Label: FLAMMABLE LIQUID
AFI PSN Code: JEV
AFI Symbols: D
AFI Prop. Shipping Name: DIESEL FUEL
AFI Class: 3
AFI ID Number: UN1202
AFI Pack Group: III
AFI Basic Pac Ref: 7-7
N.O.S. Shipping Name: FUEL OIL, NO.2
Additional Trans Data: PER MSDS:DOT SHIPPING DESCRIPTION DIESEL FUEL COMBUSTIBLE LIQUID NA1993, III. IMO & IATA DO NOT HAVE CODES FOR THIS THEREFORE USED FLAMM LIQ NOS, III.

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Disposal Data

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Label Data

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Label Required: YES
Technical Review Date: 07SEP94
Label Status: F
Common Name: LS NO. 2 DIESEL FUEL
Chronic Hazard: NO
Signal Word: WARNING!
Acute Health Hazard-Moderate: X
Contact Hazard-Moderate: X

Fire Hazard-Moderate: X
Reactivity Hazard-None: X
Special Hazard Precautions: WARANING! COMBUSTIBLE. NO SIGNIFICANT EYE HEALTH HAZ IDENTIFIED. CAN CAUSE SKIN IRRIT ON PROLONG/REPEAT CONTACT. NO SIGNIFICANT INHAL HEALTH HAZ IDENTIFIED FOR THE LIQUID FUEL. LOW VISCOSITY PRODUCT. HARMFUL OR FATAL IF SWALLOWED & THEN ASPIRATED INTO LUNGS CAUSING
FLUSH W/PLENTY OF WATER. SKIN: WASH W/SOAP & WATER. REMOVE CONTAMIN CLOTHING/SHOE. INHAL:IF ADVERSE EFFECTS OCCUR REMOVE TO UNCONTAMINATED AREA. INGEST: DO NOT INDUCE VOMIT. GET IMMED MED ATTN.
Protect Eye: Y
Protect Skin: Y
Protect Respiratory: Y
Label Name: AMOCO OIL COMPANY
Label Street: 200 EAST RANDOLPH DRIVE
Label City: CHICAGO
Label State: IL
Label Zip Code: 60601
Label Country: US
Label Emergency Number: 800-447-8735/800-424-9300

FENDALL -- EYESALINE SOLUTION, (SEE SUPPLEM FOR PART NO.) - EYESALINE SOLUTION MATERIAL SAFETY DATA SHEET
NSN: 6840013870008
Manufacturer's CAGE: 9S617
Part No. Indicator: A
Part Number/Trade Name: EYESALINE SOLUTION, (SEE SUPPLEM FOR PART NO.)

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General Information

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Item Name: EYESALINE SOLUTION
Company's Name: FENDALL CO
Company's Street: 5 E COLLEGE DR
Company's City: ARLINGTON HEIGHTS
Company's State: IL
Company's Country: US
Company's Zip Code: 60004
Company's Emerg Ph #: 708-577-7400
Company's Info Ph #: 800-543-4842
Record No. For Safety Entry: 001
Tot Safety Entries This Stk#: 002
Status: SE
Date MSDS Prepared: 17MAY94
Safety Data Review Date: 27OCT94
Supply Item Manager: CX
MSDS Serial Number: BVHNQ
Specification Number: UNKNOWN
Hazard Characteristic Code: N1
Unit Of Issue: BX
Unit Of Issue Container Qty: 4 PKG OF6-8OZ
Type Of Container: BOTTLES
Net Unit Weight: UNKNOWN

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Ingredients/Identity Information

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Proprietary: NO
Ingredient: ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDES
Ingredient Sequence Number: 01
Percent:

DEERE & COMPANY
John Deere Road, Moline, IL 61265
1-800-822-8262

Material Data Safety Sheet

JOHN DEERE PRODUCT NAME: Hy-Gard Transmission and Hydraulic Oil

DATA SHEET NO: 8503-40,100
LATEST REVISION DATE: 15 Aug. 1999
DEERE CODE: Y3, Y38, XN, Y4
JDM PART NO: AR69444, AR69445, TY6238, TY6354, TY22028, TY22062, TY22077, TY22078, TY22079, TY22080, TY22092, TY24496, TY24761
Part Nos. TY6237 TY6278 End 12/99

SECTION I - PRODUCT IDENTIFICATION

CHEMICAL NAME AND SYNONYMS: Lubricating Oil; Hydraulic Fluid; J20C
CHEMICAL FAMILY: Hydrocarbon FORMULA: Complex

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT	TLV/PEL	V.P.	CAS.#
Solvent refined, hydrotreated, heavy paraffinic distillate	50-60	5 mg/m^3*	-	64742547
Solvent refined, hydrotreated, middle distillate	0-25	5 mg/m^3*	-	64742467
Severely hydrotreated light naphthenic distillate	0-25	5 mg/m^3*	-	64742536
Polymeric additive in oil (poly-methacrylate)	10-15	None	-	None
Additive containing zinc dialkyl dithiophosphate	5- 6	None	-	Mixture

*for oil mists

SECTION III - PHYSICAL DATA

BOILING POINT: N.A.
% VOLATILE VOLUME: N.A.
VAPOR DENSITY: N.A.
APPEARANCE/ODOR: dark amber/slight odor
SP. GRAVITY (WATER=1): 0.89
EVAPORATION RATE: N.A.
SOLUBILITY IN WATER: Insoluble
N.A. - not available

SECTION IV - FIRE & EXPLOSION HAZARD DATA

FLASH POINT: 390° F C.O.C.
FLAMMABLE LIMIT - LEL: N.A.
EXTINGUISHING MEDIA: Water fog, foam, dry chemical, carbon dioxide, or halogenated agents.
SPECIAL FIRE FIGHTING PROCEDURES: Do not use a direct stream of water. Product will float and can be reignited on surface of water. Cool fire exposed containers with water. Use NIOSH approved self-contained breathing apparatus.
UNUSUAL FIRE & EXPLOSION HAZARDS: None

---------- SECTION V - HEALTH HAZARD DATA ----------
EXPOSURE LIMIT: See Section II - Hazardous Ingredients
EFFECTS OF OVEREXPOSURE: Exposure to vapors or mists of this product may cause mild upper respiratory tract irritation. Prolonged or repeated contact may cause various skin disorders such as dermatitis, oil acne, or folliculitis. Eye contact is minimally irritating. Effects of ingestion are expected to be relatively non-toxic. Exposure to product may aggravate preexisting skin and respiratory conditions.
EMERGENCY & FIRST AID: Eyes - flush with water 15 minutes. Skin - remove contaminated clothing; wash skin with soap and water; if material is injected under the skin, do not wait for symptoms to develop - get medical attention promptly to prevent serious damage. Inhalation - remove victim to fresh air and provide oxygen if breathing is difficult. Ingestion - do NOT induce vomiting. In all cases seek medical attention.

---------- SECTION VI - REACTIVITY DATA ----------
STABILITY: Stable
INCOMPATIBILITY: Avoid open flame, and oxidizing materials
HAZARDOUS POLYMERIZATION: Will not occur
DECOMPOSITION PRODUCTS: Dependent on combustion conditions. A complex mixture of airborne solid, liquid, and gas will evolve when this material undergoes pyrolysis or combustion. Oxides of carbon, sulfur, phosphorous, and other unidentified organic compounds may be formed.

---------- SECTION VII - SPILL OR LEAK PROCEDURE ----------
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Dike and contain. Use vacuum or an absorbent such as clay or sand to pick up. Flush area with water to remove trace residue. NOTE: This product is classified as an oil under the Clean Water Act. Spills, entering surface waters or any watercourse or sewer leading to surface waters, must be reported to the National Response Center 800-424-8802.
WASTE DISPOSAL METHOD: In accord with federal, state, and local regulations

---------- SECTION VIII - PROTECTIVE EQUIPMENT INFORMATION ----------
VENTILATION: Local exhaust to keep TLV/PEL below acceptable levels
RESPIRATOR: NIOSH approved as needed EYE WEAR: Recommended
GLOVES: Recommended to minimize skin contact OTHER:

---------- SECTION IX - SPECIAL PRECAUTIONS ----------
Minimize skin contact. Wash with soap and water before eating, smoking, or using toilet facilities. Launder contaminated clothing before reuse. Properly dispose of contaminated articles including shoes that cannot be cleaned. Store in a cool, dry place with adequate ventilation. Keep away from open flames. Keep away from children.

---------- SECTION X - DATA PREPARATION ----------

NAME: T. M. Snyder, CIH TITLE: Industrial Hygienist

SIGNATURE: DATE: October 7, 1999

KIDDE WALTER KIDDE DIV -- KIDDS ABC MULTIPURPOSE (CHEMICAL DRY POWDER) - EXTINGUISHER, FIRE
MATERIAL SAFETY DATA SHEET
NSN: 4210001654703
Manufacturer's CAGE: 61649
Part No. Indicator: A
Part Number/Trade Name: KIDDS ABC MULTIPURPOSE (CHEMICAL DRY POWDER)

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General Information

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Item Name: EXTINGUISHER, FIRE
Company's Name: KIDDE INC, WALTER KIDDE DIV
Company's Street: 1349 SOUTH THIRD STREET
Company's City: MEBANE
Company's State: NC
Company's Country: US
Company's Zip Code: 27302-9711
Company's Emerg Ph #: 919-563-5911, CHEMTREC 800-424-9300
Company's Info Ph #: 919-563-5911/FAX -3954
Distributor/Vendor # 1: INDUSTRIAL DE FOSFATOS S.A. DE C.V. DIV
Distributor/Vendor # 1 Cage: INDUS
Record No. For Safety Entry: 010
Tot Safety Entries This Stk#: 011
Status: SE
Date MSDS Prepared: 28JAN93
Safety Data Review Date: 12OCT94
Supply Item Manager: AX
MSDS Serial Number: BVGHK
Specification Number: A-A-393
Spec Type, Grade, Class: 1 TYPE, 1 CLASS
Hazard Characteristic Code: N1
Unit Of Issue: EA
Unit Of Issue Container Qty: 1
Net Unit Weight: UNKNOWN

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Ingredients/Identity Information

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Proprietary: NO
Ingredient: AMMONIUM PHOSPHATE MONOBASIC
Ingredient Sequence Number: 01
Percent: 55-90%
NIOSH (RTECS) Number: 1003633AP
CAS Number: 7722-76-1
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: AMMONIUM SULFATE (SARA III)
Ingredient Sequence Number: 02
Percent: 2-37%
NIOSH (RTECS) Number: BS4500000

CAS Number: 7783-20-2
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: MICA - SILICATES (< 1% CRYSTALLINE SILICA)
Ingredient Sequence Number: 03
Percent: 1-3%
NIOSH (RTECS) Number: VV8760000
CAS Number: 12001-26-2
OSHA PEL: 20 MPPCF; Z-3
ACGIH TLV: 3 MG/M3 RDUST; 9394
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: MAGNESIUM ALUMINUM SILICATE
Ingredient Sequence Number: 04
Percent: 1-3%
NIOSH (RTECS) Number: 1004392MA
CAS Number: 8031-18-3
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: SILICA GEL
Ingredient Sequence Number: 05
Percent: 0.5-2.5
NIOSH (RTECS) Number: VV7310000
CAS Number: 112945-52-5
OSHA PEL: 6 MG/M3
ACGIH TLV: 10 MG/M3
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: DIMETHYL, METHYL HYDROGEN POLYSILOXANE
Ingredient Sequence Number: 06
Percent: 0.3-1
NIOSH (RTECS) Number: 1009440DM
CAS Number: 68037-59-2
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED
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Physical/Chemical Characteristics

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Appearance And Odor: FINE YELLOW POWDER, ODORLESS.
Decomposition Temperature: UNKNOWN
Solubility In Water: NEGLIGIBLE
Corrosion Rate (IPY): UNKNOWN
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Fire and Explosion Hazard Data

Flash Point: NONE
Extinguishing Media: MEDIA APPROPRIATE FOR SURROUNDING FIRE.
Special Fire Fighting Proc: WEAR SELF-CONTAINED BREATHING APPARATUS AND BUNKER GEAR.
Unusual Fire And Expl Hazrds: PRODUCT IS USED AS FIRE EXTINGUISHER.

Reactivity Data

Stability: YES
Cond To Avoid (Stability): EXTREME HEAT
Materials To Avoid: NONE LISTED
Hazardous Decomp Products: AMMONIA, PHOSPHORUS OXIDE
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): NONE

Health Hazard Data

LD50-LC50 Mixture: ORAL LD50 (RAT) IS UNKNOWN
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: YES
Route Of Entry - Ingestion: NO
Health Haz Acute And Chronic: ACUTE: MAY IRRITATE NOSE, THROAT, SKIN AND EYES. CHRONIC: NONE LISTED.
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: NO INGREDIENT OF A CONCENTRATION OF 0.1% OR GREATER IS LISTED SA A CARCINOGEN OR SUSPECTED CARCINOGEN.
Signs/Symptoms Of Overexp: INHALED: COUGHING, WHEEZING, SNEEZING, CHEST DISCOMFORT. EYES: REDNESS, TEARING, DISCOMFORT. SKIN: RASH, ITCHING. INGESTION: ABDOMINAL PAIN, NAUSEA, VOMITING.
Med Cond Aggravated By Exp: RESPIRATORY DISEASE INCLUDING ASTHMA AND EMPHYSEMA.
Emergency/First Aid Proc: FIRST AID-INHALATION OF DUST, REMOVE TO FRESH AIR, PROVIDE CPR/OXYGEN AS NEEDED. EYE CONTACT: FLUSH WITH WATER FOR 15 MINUTES. IF REDNESS OR IRRITATION PERSIST CONTACT A DOCTOR. SKIN: WASH WITH SOAP AND WATER. INGESTION: DRINK 1-2 GLASSES OF WATER, GET MEDICAL HELP IMMEDIATELY. DO NOT INDUCE VOMITING.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: WEAR PROTECTIVE EQUIPMENT INCLUDING RESPIRATORY PROTECTION, SWEEP UP INTO DOT APPROVED WASTE CONTAINERS. KEEP OUT OF SEWERS AND WATERWAYS.
Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.
Waste Disposal Method: DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
Precautions-Handling/Storing: STORE IN A COOL, DRY AREA AWAY FROM ALKALINE MATERIALS. KEEP BAGS/DRUMS DRY. AVOID UNNECESSARY DUSTINESS.
Other Precautions: DO NOT CROSS CONTAMINATE WITH OTHER EXTINGUISHING

AGENTS. DO NOT CREATE DUST.

Control Measures

Respiratory Protection: IF REGULATORY LIMITS EXCEEDED; USE NIOSH/MSHA APPROVED RESPIRATOR WITH DUST CARTIDGE. USE IN ACCORDANCE WITH 29 CFR 1910.134.
Ventilation: USE WITH ADEQUATE MECHANICAL/LOCAL VENTILATION.
Protective Gloves: WORK GLOVES
Eye Protection: CHEMICAL GOGGLES
Other Protective Equipment: EYE WASH AND RUBBER BOOTS.
Work Hygienic Practices: WASH HANDS AFTER USE AND BEFORE EATING, DRINKING, OR SMOKING. LAUNDER CONTAMINATED CLOTHES BEFORE REUSE.

Transportation Data

Trans Data Review Date: 94285
DOT PSN Code: ZZZ
DOT Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
IMO PSN Code: ZZZ
IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION
IATA PSN Code: ZZZ
IATA Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
AFI PSN Code: ZZZ
AFI Prop. Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION

Disposal Data

Label Data

Label Required: YES
Technical Review Date: 12OCT94
Label Status: F
Common Name: KIDDS ABC MULTIPURPOSE (CHEMICAL DRY POWDER)
Signal Word: CAUTION!
Acute Health Hazard-Slight: X
Contact Hazard-Slight: X
Fire Hazard-None: X
Reactivity Hazard-None: X
Special Hazard Precautions: ACUTE: MAY IRRITATE NOSE, THROAT, SKIN AND EYES. CHRONIC: NONE LISTED. STORE IN A COOL, DRY AREA AWAY FROM ALKALINE FIRST AID-INHALATION OF DUST, REMOVE TO FRESH AIR, PROVIDE CPR/OXYGEN AS NEEDED. EYE CONTACT: FLUSH WITH WATER FOR 15 MINUTES. IF REDNESS OR IRRITATION PERSIST CONTACT A DOCTOR. SKIN: WASH WITH SOAP AND WATER. INGESTION: DRINK 1-2 GLASSES OF WATER, GET MEDICAL HELP IMMEDIATELY. DO NOT INDUCE VOMITING.
Protect Eye: Y
Protect Skin: Y
Protect Respiratory: Y
Label Name: KIDDE INC, WALTER KIDDE DIV
Label Street: 1349 SOUTH THIRD STREET

Label City: MEBANE
Label State: NC
Label Zip Code: 27302-9711
Label Country: US
Label Emergency Number: 919-563-5911, CHEMTREC 800-424-9300

AIR PRODUCTS & CHEMICALS -- OXYGEN, LOX (LIQUID ONLY), GOX (GAS ONLY) - CONVERTER, LIQUID OXYGEN
MATERIAL SAFETY DATA SHEET
NSN: 1660008060569
Manufacturer's CAGE: 00742
Part No. Indicator: A
Part Number/Trade Name: OXYGEN, LOX (LIQUID ONLY), GOX (GAS ONLY)

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General Information

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Item Name: CONVERTER, LIQUID OXYGEN
Company's Name: AIR PRODUCTS AND CHEMICALS INC.
Company's Street: 7201 HAMILTON BLVD
Company's City: ALLENTOWN
Company's State: PA
Company's Country: US
Company's Zip Code: 18195-1501
Company's Emergency Ph #: 215-481-4911 OR 800-523-9374
Company's Info Ph #: 215-481-4911
Distributor/Vendor # 1: LITTON SYSTEMS INC INSTRUMENTS & LIFE SU
Distributor/Vendor # 1 Cage: 99251
Record No. For Safety Entry: 001
Total Safety Entries This Stk#: 001
Status: SE
Date MSDS Prepared: 01JUN90
Safety Data Review Date: 02SEP93
Supply Item Manager: SX
MSDS Serial Number: BRLYT
Specification Number: MIL-C-19803
Hazard Characteristic Code: G4
Unit Of Issue: EA
Unit Of Issue Container Qty: 10 LITER
Type Of Container: UNKNOWN

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Ingredients/Identity Information

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Proprietary: NO
Ingredient: OXYGEN
Ingredient Sequence Number: 01
NIOSH (RTECS) Number: RS2060000
CAS Number: 7782-44-7
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NOT ESTABLISHED

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Physical/Chemical Characteristics

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Appearance And Odor: GASEOUS OXYGEN IS COLORLESS AND ODORLESS.LIQUID OXYGEN IS PALE BLUE AND ODORLESS
Boiling Point: -297F,-183C
Vapor Density (Air=1): 0.08279
Specific Gravity: 1.14

Solubility In Water: MODERATE
Percent Volatiles By Volume: 100

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Fire and Explosion Hazard Data

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Flash Point: NONE
Extinguishing Media: NONE SPECIFIED BY MANUFACTURER.
Special Fire Fighting Proc: OXYGEN IS NONFLAMMABLE, BUT SUPPORTS AND VIGOROUSLY ACCELERATES COMBUSTION OF FLAMMABLES. TO FIGHT FIRES, SHUT OFF SOURCES OF OXYGEN AND FIGHT FIRE.
Unusual Fire and Explosive Hazards: OXYGEN SUPPORTS AND VIGOROUSLY ACCELERATES COMBUSTION OF FLAMMABLES. SOME MATERIALS WHICH ARE NONCOMBUSTIBLE IN AIR WILL BURN IN THE PRESENCE OF OXYGEN.

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Reactivity Data

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Stability: YES
Condition To Avoid (Stability): MATERIALS WHICH BURN IN AIR WILL BURN VIOLENTLY IN ATMOSPHERE RICHER THAN APPROX. 25% OXYGEN.
Materials To Avoid: ALL FLAMMABLES, ESPICALLY PETROLEUM PRODUCTS, ASPHALT, OTHER VOLATILE FLAMMABLES.
Hazardous Decomposition Products: NONE SPECIFIED BY MANUFACTURER.
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): NONE SPECIFIED BY MANUFACTURER.

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Health Hazard Data

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LD50-LC50 Mixture: NONE SPECIFIED BY MANUFACTURER.
Route Of Entry - Inhalation: YES
Health Hazard Acute And Chronic: OXYGEN IS NON TOXIC UNDER MOST CONDITIONS OF USE AND IS NECESSARY TO SUPPORT LIFE. LIQUID OXYGEN OR COLD GAS WILL FREEZE TISSUES AND CAN CAUSE SEVERE CRYOGENIC BURNS. BREATHING OF PURE OXYGEN AT 60% MAY PRODUCE COUGH & CHEST PAIN, CNS MANIFESTATIONS. INFANTS EXPOSED TO 35-40% OXYGEN MAY SUFFER PERMANENT VISUAL DAMAGE.
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Signs/Symptoms Of Overexposure: WHEN EXPOSED TO 60% OXYGEN, SYMPTOMS INCLUDE COUGHING AND CHEST PAIN. THESE SYMPTOMS MAY BE SEEN IN SEVERAL DAYS. AT TWO ATMOSPHERES SYMPTOMS OCCUR IN 2-3 HOURS. INFANTS EXPOSED TO OXYGEN LEVELS IN EXCESS OF 35-40% MAY SUFFER PERNAMENT VISUAL IMPAIRMENT OR BLINDNESS.
Med Condition Aggravated By Exp: NONE SPECIFIED BY MANUFACTURER.
Emergency/First Aid Proc: IF CRYOGENIC LIQUID OR COLD BOIL-OFF GAS CONTACTS A WORKER'S SKIN OR EYES, FROZEN TISSUES SHOULD BE FLOODED OR SOAKED WITH TEPID WATER (105-115F; 41-46C). DO NOT USE HOT WATER. BURNS WHICH RESULT IN BLISTERING OR DEEPER TISSUE FREEZING SHOULD BE SEEN PROMPTLY BY A PHYSICIAN.

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Precautions for Safe Handling and Use

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Steps If Material Released/Spill: PREVENT LIQUID OXYGEN FROM CONTACTING GREASE, OIL AND OTHER COMBUSTIBLES. VENTILATE AREA TO DISPERSE OXYGEN, AVOID SMOKING, EVACUATE ALL PERSONNEL FROM RELEASE AREA. DO NOT ENTER AREAS OF HIGH OXYGEN CONCENTRATION, WHICH CAN SATURATE CLOTHING.
Neutralizing Agent: NOT APPLICABLE.
Waste Disposal Method: ALLOW LIQUID OXYGEN TO EVAPORATE IN A WELL VENTILATED OUTDOOR AREA. VENT OXYGEN GAS TO OUTSIDE LOCATION. DISPOSAL SITE SHOULD BE REMOTE FROM WORK AREAS, OPEN FLAMES OR SOURCES OF IGNITION AND COMBUSTIBLES. RETURN CYLINDERS TO AIR PRODUCTS.
Precautions-Handling/Storing: PREVENT CONTACT OF LIQUID OXYGEN WITH EXPOSED SKIN. PREVENT ENTRAPMENT OF LIQUID IN CLOSED SYSTEM. USE ONLY IN WELL VENTILATED AREAS.
Other Precautions: SECURE CYLINDERS WHEN NOT IN USE. AVOID DRAGGING, ROLLING, OR SLIDING CYLINDERS, EVEN FOR SHORT DISTANCE. USE A SUITABLE HAND TRUCK.

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Control Measures

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Respiratory Protection: NONE SPECIFIED BY MANUFACTURER.
Ventilation: PREVENT ACCUMULATION WITH NATURAL OR FORCED AIR. USE VENTILATION AS NECESSARY.
Protective Gloves: LEATHER GLOVES FOR HANDLING CYLINDERS.
Eye Protection: CHEMICAL GOGGLES OR SAFETY GLASSES.
Other Protective Equipment: SAFETY SHOES
Work Hygienic Practices: OBSERVE GOOD PERSONAL HYGIENE PRACTICES AND RECOMMENDED PROCEDURES.
Supplemental. Safety & Health Data: OXYGEN IS NOT TO BE USED AS A SUBSTITUTE FOR COMPRESSED AIR.

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Transportation Data

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Trans Data Review Date: 93245
DOT PSN Code: LEH
DOT Proper Shipping Name: OXYGEN, COMPRESSED
DOT Class: 2.2
DOT ID Number: UN1072
DOT Label: NONFLAMMABLE GAS, OXIDIZER
IMO PSN Code: LBP
IMO Proper Shipping Name: OXYGEN, COMPRESSED
IMO Regulations Page Number: 2169
IMO UN Number: 1072
IMO UN Class: 2(2.2)
IMO Subsidiary Risk Label: OXIDIZING AGENT
IATA PSN Code: SWO
IATA UN ID Number: 1072
IATA Proper Shipping Name: OXYGEN, COMPRESSED
IATA UN Class: 2.2
IATA Subsidiary Risk Class: 5.1
IATA Label: NON-FLAMMABLE GAS & OXIDIZER
AFI PSN Code: SWO
AFI Prop. Shipping Name: OXYGEN, COMPRESSED
AFI Class: 2.2
AFI ID Number: UN1072

AFI Label: 5.1
AFI Basic Pac Ref: 6-6,6-10

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Disposal Data

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Label Data

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Label Required: YES
Technical Review Date: 02SEP93
Label Status: G
Common Name: OXYGEN,LOX (LIQUID ONLY), GOX (GAS ONLY)
Signal Word: CAUTION!
Acute Health Hazard-Slight: X
Contact Hazard-Slight: X
Fire Hazard-Slight: X
Reactivity Hazard-None: X
Special Hazard Precautions: OXYGEN IS NON TOXIC UNDER MOST CONDITIONS OF USE AND IS NECESSARY TO SUPPORT LIFE. LIQUID OXYGEN OR COLD GAS WILL FREEZE TISSUES AND CAN CAUSE SEVERE CRYOGENIC BURNS. BREATHING OF PURE OXYGEN AT 60% MAY PRODUCE COUGH & CHEST PAIN, CNS MANIFESTATIONS. INFANTS EXPOSED TO 35-40% OXYGEN MAY SUFFER PERMANENT VISUAL DAMAGE. PREVENT CONTACT OF LIQUID OXYGEN WITH EXPOSED SKIN. PREVENT ENTRAPMENT OF LIQUID IN CLOSED SYSTEM. USE ONLY IN WELL VENTILATED AREAS.
Protect Eye: Y Protect Skin: Y Protect Respiratory: Y
Label Name: AIR PRODUCTS AND CHEMICALS INC.
Label Street: 7201 HAMILTON BLVD
Label City: ALLENTOWN
Label State: PA
Label Zip Code: 18195-1501
Label Country: US
Label Emergency Number: 215-481-4911 OR 800-523-9374

CASTROL -- GTX SUPER MULTIGRADE SAE 10W-30-10W-40 MOTOR OIL - LUBRICATING OIL, ENGINE
MATERIAL SAFETY DATA SHEET
NSN: 9150001160506
Manufacturer's CAGE: 0B2U4
Part No. Indicator: A
Part Number/Trade Name: GTX SUPER MULTIGRADE SAE 10W-30/10W-40 MOTOR OIL
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General Information

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Item Name: LUBRICATING OIL, ENGINE
Company's Name: CASTROL INC
Company's Street: 1500 VALLEY ROAD
Company's City: WAYNE
Company's State: NJ
Company's Country: US
Company's Zip Code: 07474
Company's Emerg Ph #: 908-980-9100
Company's Info Ph #: 908-980-9100/908-980-9519
Distributor/Vendor # 1: BALKAMP INC (317-248-0760)
Distributor/Vendor # 1 Cage: 70842
Distributor/Vendor # 2: NATIONAL AUTOMOTIVE PARTS ASSN/NAPA/
Distributor/Vendor # 2 Cage: 050Q3
Record No. For Safety Entry: 001
Tot Safety Entries This Stk#: 008
Status: SE
Date MSDS Prepared: 05SEP91
Safety Data Review Date: 10JAN97
Supply Item Manager: CX
MSDS Preparer's Name: K. WRIGHT
MSDS Serial Number: CCLNJ
Specification Number: UNKNOWN
Spec Type, Grade, Class: 10W-40 GRADE
Hazard Characteristic Code: N1
Unit Of Issue: DR
Unit Of Issue Container Qty: 55 GALLONS
Type Of Container: DRUM
Net Unit Weight: 403.0 LBS
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Ingredients/Identity Information

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Proprietary: NO
Ingredient: SEVERELY REFINED PETROLEUM BASESTOCKS. MAY CONTAIN ONE OR MORE OF INGREDS #2 THROUGH #16.
Ingredient Sequence Number: 01
Percent: 70-100
NIOSH (RTECS) Number: 9999999ZZ
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO

Ingredient: MINERAL OIL
Ingredient Sequence Number: 02
Percent: SEE #1
NIOSH (RTECS) Number: 1002839MO
CAS Number: 64742-41-2
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: MINERAL OIL
Ingredient Sequence Number: 03
Percent: SEE #1
NIOSH (RTECS) Number: PY8040500
CAS Number: 64741-88-4
OSHA PEL: 5 MG/M3 (OIL MIST)
ACGIH TLV: 5 MG/M3 (OIL MIST)
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: SOLVENT REFINED RESIDUM
Ingredient Sequence Number: 04
Percent: SEE #1
NIOSH (RTECS) Number: 1005387SR
CAS Number: 64742-01-4
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: MINERAL OIL
Ingredient Sequence Number: 05
Percent: SEE #1
NIOSH (RTECS) Number: 1002839MO
CAS Number: 64742-41-2
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: HYDROTREATED MIDDLE PETROLEUM DISTILLATE
Ingredient Sequence Number: 06
Percent: SEE #1
NIOSH (RTECS) Number: JN9379645
CAS Number: 64742-46-7
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: MINERAL OIL
Ingredient Sequence Number: 07

Percent: SEE #1
NIOSH (RTECS) Number: PY8035500
CAS Number: 64742-54-7
OSHA PEL: 5 MG/M3 (OIL MIST)
ACGIH TLV: 5 MG/M3 (OIL MIST)
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: DISTILLATES, SOLVENT-DEWAXED LIGHT PARAFFINIC
Ingredient Sequence Number: 08
Percent: SEE #1
NIOSH (RTECS) Number: PY8039500
CAS Number: 64742-56-9
OSHA PEL: 300 PPM
ACGIH TLV: 300 PPM
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: SOLVENT REFINED HYDROTREATED RESIDUAL OIL
Ingredient Sequence Number: 09
Percent: SEE #1
NIOSH (RTECS) Number: 1005536SR
CAS Number: 64742-57-0
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: SOLVENT DEWAXED RESIDUAL OIL (PETROLEUM)
Ingredient Sequence Number: 10
Percent: SEE #1
NIOSH (RTECS) Number: 1004315SD
CAS Number: 64742-62-7
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: MINERAL OIL
Ingredient Sequence Number: 11
Percent: SEE #1
NIOSH (RTECS) Number: PY8038500
CAS Number: 64742-65-0
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: MINERAL OIL
Ingredient Sequence Number: 12
Percent: SEE #1
NIOSH (RTECS) Number: 1002836MO

CAS Number: 72623-83-7
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: HIGHLY REFINED BASE OIL
Ingredient Sequence Number: 13
Percent: SEE #1
NIOSH (RTECS) Number: 1003826HR
CAS Number: 72623-85-9
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: HIGHLY REFINED BASE OIL
Ingredient Sequence Number: 14
Percent: SEE #1
NIOSH (RTECS) Number: 1003825HR
CAS Number: 72623-87-1
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: PETROLEUM BASESTOCK
Ingredient Sequence Number: 15
Percent: SEE #1
NIOSH (RTECS) Number: 1001111PO
CAS Number: 72326-84-8
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: PETROLEUM BASESTOCK
Ingredient Sequence Number: 16
Percent: SEE #1
NIOSH (RTECS) Number: 1001111PO
CAS Number: 72623-86-0
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: MULTI-FUCT ADDITIVE MIX COMPO OF ORGANO-METALLIC CMPDS (ZN DIALKAYL DITHIOPHOSPHATE,CA SALTS OF ALKYLATED(SEE INGRED 18))
Ingredient Sequence Number: 17
Percent: 10-30
NIOSH (RTECS) Number: 1003136AP
OSHA PEL: NOT ESTABLISHED

ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: PHENOL SULFIDES, ALKYLATED DIPHENYL AMINES).
Ingredient Sequence Number: 18
Percent: SEE #17
NIOSH (RTECS) Number: 9999999ZZ
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: MEHTACRYLATE POLYMER &/OR ETHYLENE-PROPYLENE COPOLYMER WITH N ITROGEN FUNCTIONAL GROUP BLEND (CAS-MIXTURE)
Ingredient Sequence Number: 19
Percent: 5-15
NIOSH (RTECS) Number: 1000338PU
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED
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Physical/Chemical Characteristics

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Appearance And Odor: CLEAR, AMBER FLUID; MILD PETROLEUM ODOR.
Boiling Point: >500F,>260C
Melting Point: NP
Vapor Pressure (MM Hg/70 F): 1
Specific Gravity: 0.88
Decomposition Temperature: NP
Evaporation Rate And Ref:

AMERICAN INDUSTRIAL -- OFF - INSECT REPELLANT, CLOTHING & PERSONAL APPLICATION
MATERIAL SAFETY DATA SHEET
NSN: 6840013093890
Manufacturer's CAGE: 0WE73
Part No. Indicator: A
Part Number/Trade Name: OFF

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General Information

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Item Name: INSECT REPELLANT, CLOTHING & PERSONAL APPLICATION
Company's Name: AMERICAN INDUSTRIAL
Company's P. O. Box: 10996
Company's City: BURBANK
Company's State: CA
Company's Country: US
Company's Zip Code: 9151000996
Company's Emerg Ph #: 818-841-7788
Company's Info Ph #: 818-841-7788
Record No. For Safety Entry: 001
Tot Safety Entries This Stk#: 006
Status: SE
Date MSDS Prepared: 16AUG93
Safety Data Review Date: 08JUN95
Supply Item Manager: CX
MSDS Serial Number: BWZRS
Hazard Characteristic Code: T5
Unit Of Issue: CN
Unit Of Issue Container Qty: 6 OZ
Type Of Container: CAN
Net Unit Weight: UNKNOWN

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Ingredients/Identity Information

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Proprietary: NO
Ingredient: D-LIMONENE
Ingredient Sequence Number: 01
Percent: UNKNOWN
NIOSH (RTECS) Number: GW6360000
CAS Number: 5989-27-5
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: DIPROPYLENE GLYCOL METHYL ETHER
Ingredient Sequence Number: 02
Percent: UNKNOWN
NIOSH (RTECS) Number: JM1575000
CAS Number: 34590-94-8
OSHA PEL: S,100PPM/150STEL
ACGIH TLV: S,100PPM/150STEL9192

Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: LPG (LIQUEFIED PETROLEUM GAS)
Ingredient Sequence Number: 03
Percent: UNKNOWN
NIOSH (RTECS) Number: SE7545000
CAS Number: 68476-85-7
OSHA PEL: 1000 PPM
ACGIH TLV: 1000 PPM; 9192
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: PROPYLENE GLYCOL MONOMETHYL ETHER
Ingredient Sequence Number: 04
Percent: UNKNOWN
NIOSH (RTECS) Number: UB7700000
CAS Number: 107-98-2
OSHA PEL: 100 PPM/150 STEL
ACGIH TLV: 100 PPM/150STEL;9192
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: TOLUENE (SARA III)
Ingredient Sequence Number: 05
Percent: UNKNOWN
NIOSH (RTECS) Number: XS5250000
CAS Number: 108-88-3
OSHA PEL: 100 PPM/150 STEL
ACGIH TLV: 100 PPM/150STEL;9192
Other Recommended Limit: NONE RECOMMENDED
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Physical/Chemical Characteristics
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Appearance And Odor: VISCOUS SPRAY, CHLORINATED SOLVENT SCENT.
Boiling Point: 165
Melting Point: N/A
Vapor Pressure (MM Hg/70 F): 100
Vapor Density (Air=1): 1
Specific Gravity: 1.00
Evaporation Rate And Ref: 2 (N-BUTYL ACETATE=1)
Solubility In Water: 0%
Autoignition Temperature: N/A
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Fire and Explosion Hazard Data
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Flash Point: 100F,38C
Flash Point Method: TCC
Lower Explosive Limit: N/A
Upper Explosive Limit: N/A
Extinguishing Media: STANDARD CHEMICAL FIRE EXTINGUISHER.
Special Fire Fighting Proc: NONE

Unusual Fire And Expl Hazrds: FLAMMABLE. CONTENTS UNDER PRESSURE. EXPOSURE TO TEMPERATURE >120F MAY CAUSE BURSTING. MAY DEVELOP A FLAMMABLE ATMOSPHERE IN CONFINED SPACES.

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Reactivity Data

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Stability: YES
Cond To Avoid (Stability): TEMPERATURES ABOVE 120F, HOT SURFACES.
Materials To Avoid: PLASTICS, PRE-TEST TO BE SPRAYED BEFORE USING.
Hazardous Decomp Products: EXPOSURE TO RED HOT SURFACES MAY PRODUCE CARBON MONOXIDE AND HYDROGEN CHLORIDE GASES.
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): N/A

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Health Hazard Data

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LD50-LC50 Mixture: ORAL LD50 (RAT) IS UNKNOWN
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: YES
Route Of Entry - Ingestion: YES
Health Haz Acute And Chronic: INHALATION-WILL CAUSE DIZZINESS IF INHALED DIRECTLY. EYES-MAY CAUSE TEMPORARY CORNEAL OPACITY. WILL CAUSE SEVERE IRRITATION. SKIN-MAY CAUSE LOCALIZED DEFATTING OF SKIN AND IRRITATION. INGESTION-SEE BELOW.
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: NOT CARCINOGENIC.
Signs/Symptoms Of Overexp: INGESTION-MAY CAUSE NAUSEA, VOMITING, DIARRHEA AND RESTLESSNESS. ASPIRATION INTO THE LUNGS CAN CAUSE SEVERE CHEMICAL PNEUMONITIS OR PULMONARY HEMORRHAGE, WHICH CAN BE FATAL.
Med Cond Aggravated By Exp: NONE
Emergency/First Aid Proc: INHALATION-REMOVE TO FRESH AIR. EYES-FLUSH WITH WATER FOR 15 MINUTES & CONTACT PHYSICIAN. SKIN-WASH WITH SOAP & WATER. TREAT AFFECTED AREAS WITH SKIN MOISTURIZER & CONTACT PHYSICIAN. INGESTION-DO NOT INDUCE VOMITING. CONTACT PHYSICIAN IMMEDIATELY.

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Precautions for Safe Handling and Use

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Steps If Matl Released/Spill: WIPE UP WITH RAGS OR USE AN ABSORBENT CLAY MATERIAL OR TOWEL. DISPOSE OF RESIDUE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL GUIDELINES.
Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.
Waste Disposal Method: WRAP CONTAINER IN OLD NEWSPAPER AND PLACE IN TRASH COLLECTION. DO NOT REUSE EMPTY CONTAINER.
Precautions-Handling/Storing: DO NOT USE OR STORE NEAR HEAT, SPARK, FIRE OR OPEN FLAMES.
Other Precautions: EXPOSURE TO TEMPERATURES ABOVE 120F MAY CAUSE BURSTING. DO NOT PUNCTURE OR INCINERATE CONTAINERS. VAPORS MAY COLLECT IN LOW LYING AREAS.

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Control Measures

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Respiratory Protection: USE ONLY IN A WELL-VENTILATED AREA.
Ventilation: N/A
Protective Gloves: N/A
Eye Protection: N/A
Other Protective Equipment: N/A
Work Hygienic Practices: N/A
Suppl. Safety & Health Data: NONE
==========
Transportation Data
==========
Trans Data Review Date: 94159
DOT PSN Code: HPV
DOT Proper Shipping Name: INSECTICIDE GASES, N.O.S
DOT Class: 2.1
DOT ID Number: NA1954
DOT Label: FLAMMABLE GAS
IMO PSN Code: INV
IMO Proper Shipping Name: INSECTICIDE GAS, N.O.S. o
IMO Regulations Page Number: 2152
IMO UN Number: 1968
IMO UN Class: 2(++)
IMO Subsidiary Risk Label: -
IATA PSN Code: ALS
IATA UN ID Number: 1950
IATA Proper Shipping Name: AEROSOLS, 30, *
IATA UN Class: 2.1
IATA Label: FLAMMABLE GAS
AFI PSN Code: ALR
AFI Prop. Shipping Name: AEROSOLS, FLAMMABLE, N.O.S.
AFI Class: 2.1
AFI ID Number: UN1950
AFI Basic Pac Ref: 6-6
MMAC Code: NR
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Disposal Data
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Label Data
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Label Required: NO
Label Status: X
Common Name: LABEL COVERED UNDER EPA REGS - HAZCOM LABEL NOT AUTHORIZED

SOLARIS GROUPS OF MONSANTO -- ORTHO HORNET & WASP KILLER, 1000-055-M
MATERIAL SAFETY DATA SHEET
NSN: 684000N084995
MANUFACTURER'S CAGE: SXLAR
PART NO. INDICATOR: A
PART NUMBER/TRADE NAME: ORTHO HORNET & WASP KILLER, 1000-055-M
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GENERAL INFORMATION

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Company's name: solaris groups of monsanto co
Company's p. O. Box: 5008
Company's city: san ramon
Company's state: ca
Company's country: us
Company's zip code: 94583-0808
Company's emerg ph #: 800-454-2333
Company's info ph #: 800-454-2333
Safety data action code: a
Record no. For safety entry: 001
Tot safety entries this stk#: 001
Status: smj
Date msds prepared: 20jul95
Safety data review date: 16apr98
Msds serial number: cgvkl
Hazard characteristic code: nk
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INGREDIENTS/IDENTITY INFORMATION

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Proprietary: no
Ingredient: carbamic acid, methyl-, o-isopropoxyphenyl ester; (propoxur (baygon)) (SARA 313) (cercla)
Ingredient sequence number: 01
Percent: 0.5
Ingredient action code: a
NIOSH (RTECS) number: fc3150000
CAS number: 114-26-1
OSHA PEL: 0.5 mg/m3
ACGIH TLV: 0.5 mg/m3

Proprietary: no
Ingredient: inert ingredients
Ingredient sequence number: 02
Percent: 99.5
Ingredient action code: a
NIOSH (RTECS) number: 1000082ii
OSHA PEL: n/k (fp n)
ACGIH TLV: n/k (fp n)

Proprietary: no
Ingredient: distillates (petroleum), hydrotreated light
Ingredient sequence number: 03
Ingredient action code: a

NIOSH (RTECS) number: 9999999zz
OSHA PEL: n/k (fp n)
ACGIH TLV: n/k (fp n)

Proprietary: no
Ingredient: carbon dioxide
Ingredient sequence number: 04
Ingredient action code: a
NIOSH (RTECS) number: ff6400000
CAS number: 124-38-9
OSHA PEL: 5000 ppm
ACGIH TLV: 5000 ppm/30000 STEL

Proprietary: no
Ingredient: isopropyl alcohol (SARA 313)
Ingredient sequence number: 05
Ingredient action code: a
NIOSH (RTECS) number: nt8050000
CAS number: 67-63-0
OSHA PEL: 400 ppm
ACGIH TLV: 400 ppm/500 STEL

Proprietary: no
Ingredient: supdat: occur during act of swallowing/when vomit substance.
Once in lungs, substance is very difficult to remove & (ing 7)
Ingredient sequence number: 06
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no
Ingredient: ing 6: can cause sev injury to lungs & death. Inhal: substance is considered practically non-toxic to internal (ing 8)
Ingredient sequence number: 07
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no
Ingredient: ing 7: organs. Comments hlth: prod active ingred is carbamate
& considered to be reversible cholinesterase (ing 9)
Ingredient sequence number: 08
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no
Ingredient: ing 8: inhibitor. Signs & symps may appear w/in 1-2 hrs
Following overexp & may incl, but may not be limited to,(ing 10)

Ingredient sequence number: 09
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no
Ingredient: ing 9: HDCH, constriction of pupil of eye, blurred vision,
Excess salivation/nasal discharge, profuse sweating, (ing 11)
Ingredient sequence number: 10
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no
Ingredient: ing 10: abdomen cramps, nausea, vomit & diarr. Convulsions are rarely
Seen in carbamate poison. In untreated sev poisoning,(ing 12)
Ingredient sequence number: 11
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no
Ingredient: ing 11: respiratory depress/card arrest may be fatal. Toxicological
Information: for more specific info contact nehc (fp n).
Ingredient sequence number: 12
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no
Ingredient: first aid proc: person & prod containment, w/lbl, to emergency treatment
Ctr. Inhal: if respiratory discomfort/irritation occurs, move (ing 14)
Ingredient sequence number: 13
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no
Ingredient: ing 13: person to fresh air. See MD if discomfort/irritation
Continues. Notes to phys: in sev poison, measurement of (ing 15)
Ingredient sequence number: 14
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no

Ingredient: ing 14: blood cholinesterase activity may be used in
Monitoring expos, but may not be reliable detectors of (ing 16)
Ingredient sequence number: 15
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no
Ingredient: ing 15: carbamate poison because enzyme activities may revert to
Norm within mins/hrs of expos. If signs of (ing 17)
Ingredient sequence number: 16
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no
Ingredient: ing 16: cholinesterase inhibition appear, atropine sulfate is
Antidotal. This matl cntns light hydrocarb liq. (ing 18)
Ingredient sequence number: 17
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no
Ingredient: ing 17: either during swallowing/vomit, aspir of matl into
Lungs may occur. Addn info: in case of emergency involving(ing 19)
Ingredient sequence number: 18
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no
Ingredient: ing 18: prod, call day or night, (800) 454-2333.
Ingredient sequence number: 19
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no
Ingredient: spill proc: impervious surfs should be contained or dike, &
Should be absorbed w/attapulgite, bentonite/other (ing 21)
Ingredient sequence number: 20
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no
Ingredient: ing 20: absorbent matl. For more specific information cont
Nehc (fp n).
Ingredient sequence number: 21
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no
Ingredient: waste disp meth: all of prod be used up, carefully following
All lbl directions & prec. For more info cont nehc (fp n).
Ingredient sequence number: 22
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no
Ingredient: respiratory pro: limitations specified by niosh or the manufacturer.
For applic of prod i/a/w lbl instructions, no spec(ing 24)
Ingredient sequence number: 23
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable

Proprietary: no
Ingredient: ing 23: respiratory protection is required.
Ingredient sequence number: 24
Ingredient action code: a
NIOSH (RTECS) number: 9999999zz
OSHA PEL: not applicable
ACGIH TLV: not applicable
==========

PHYSICAL/CHEMICAL CHARACTERISTICS

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Appearance and odor: pressurized water-white liquid with chlorinated Solvent odor.
Specific gravity: 0.76 (fp n)
Evaporation rate and ref: not known
Solubility in water: insoluble
Ph: n/a
==========

FIRE AND EXPLOSION HAZARD DATA

==========
Flash point: 53.0f,11.7c
Flash point method: tcc
Extinguishing media: co*2, dry chemical, foam and water fog.
Special fire fighting proc: niosh apprvd scba & full prot equip (fp n).
Prods of combust from fires involving matl may be toxic. Avoid brthg smoke & mists. Avoid pers & equip cont (supdat)

Unusual fire and expl hazrds: normal combustion forms carbon dioxide and Water vapor: incomplete combustion can produce carbon monoxide.

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REACTIVITY DATA

==========

Stability: yes
Cond to avoid (stability): none specified by manufacturer.
Materials to avoid: avoid contact with alkaline materials and strong Oxidants.
Hazardous decomp products: no data available.
Hazardous poly occur: no
Conditions to avoid (poly): not relevant.

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HEALTH HAZARD DATA

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Ld50-lc50 mixture: ld50: (oral,rat) 4.2 g/kg
Route of entry - inhalation: yes
Route of entry - skin: yes
Route of entry - ingestion: yes
Health haz acute and chronic: acute: eyes: slightly irritating. May incl
Discomfort, tearing, swell, redness, & blurred vision. Skin: sev irritant
So cont w/skin could cause prlngd(weeks) injury to affected area. Degree of
Injury will depend on amt of matl that gets on skin & speed & thoroughness
Of first aid treatment. Irritation may (efts of overexp)
Carcinogenicity - ntp: no
Carcinogenicity - iarc: no
Carcinogenicity - osha: no
Explanation carcinogenicity: not relevant.
Signs/symptoms of overexp: hlth haz: incl redness, swell & possibly
Blistering. If absorbed thru skin, substance is considered practically non-
Toxic to internal organs. Ingest: slightly toxic to internal organs. Degree
Of injury will depend on amt absorbed from gut. Because of low viscosity of
Substance, it can directly enter lungs if (supdat)
Med cond aggravated by exp: none specified by manufacturer.
Emergency/first aid proc: eyes: immed flush w/plenty of water for @ lst 15
Mins. Get med attn if irritation persists. Skin: remove contamd clthg, wash
W/plenty of soap & water. Wash contamd clthg before reuse. If irritation
Persists, see MD. Ingest: immed telephone pois ctl ctr, emergency treatment ctr/
Phys of advice. Do not make person vomit unless directed to do so by med
Pers. If med advice cannot be obtained, then immed take (ing 13)

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PRECAUTIONS FOR SAFE HANDLING AND USE

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Steps if matl released/spill: sm spill: soak up spilled matl w/paper
Towels/other absorb matl & discard in trash. Prod is highly flamm. Keep all
Sources of ignit away from spill. Lg spill: elim all sources of ignit in
Vicin of spill/released vap. Liq spills on floor/other(ing 20)
Neutralizing agent: none specified by manufacturer.
Waste disposal method: lg spills: matl collected that cannot be
Reprocessed should be disposed of in landfill apprvd for pesticide disp or
l/a/w applic fed, state/loc proc. Prod disp: solaris group is committed to
Responsible environmental practices & recommends (ing 22)
Precautions-handling/storing: read & observe all precautions on prod lbl.

Store i/a/w nfpa 30f for level i aerosol. Do not use/store near flame,
Spks/hot surfaces. Extremely flamm.
Other precautions: use only in well ventilated area. Container under
Pressure. Exposure to heat/prlngd exposure to sun may cause containment to burst.
Do not puncture, incinerate or store above 130f. Keep out of reach of
Children. Harmful if swallowed.

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control measures

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Respiratory protection: hndlg of prod is not likely to present an airbone
Expos concern during norm hndlg. In event of accidential discharge of matl
During mfr/hndlg which prdces heavy dust, workers should put on respiratory prot
Equip. Observe respiratory use (ing 23)
Ventilation: use this material only in well ventilated areas.
Protective gloves: impervious gloves (fp n).
Eye protection: ansi apprvd chem workers goggles (fp n).
Other protective equipment: ansi apprvd eye wash & deluge shower (fp n).
Work hygienic practices: none specified by manufacturer.
Suppl. Safety & health data: fire fight proc: w/fallout & runoff. Minimize
Amt of water used for fire fight. Keep cntnrs cool w/water spray. Cntn &
Isolate runoff & debris for proper disp. Decontaminate personal prot equip
Swallowed(this is called aspir). This can (ing 6)

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TRANSPORTATION DATA

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DISPOSAL DATA

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LABEL DATA

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AMERICAN CYANAMID CO.
PARSIPPANY, NJ 07054
MSDS NO. CN07144-2
MATERIAL SAFETY DATA SHEET CAS NO. 52315-07-8
DATE: JUN 02, 1997
EMERGENCY TELEPHONE: 1-800-454-COPE (CANADA)
(973)-683-3100 (U.S.A.)

PRODUCT IDENTIFICATION TRADE NAME: PERMETHRIN Technical
SYNONYMS:
(RS)-alpha-cyano-3-phenoxybenzyl-(1RS,3RS; 1RS, 3SR)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclo-propanecarboxylate.
CHEMICAL FAMILY: Pyrethroid
MOLECULAR FORMULA: CHCNO
MOLECULAR WEIGHT: 416.300
USAGE: Insecticide

WARNING STATEMENTS Moderately hazardous by the oral route.
Slightly hazardous by the dermal route. Toxic to fish and aquatic invertebrates.

CHRONIC HAZARD WARNING None

INGREDIENTS	COMPONENT	CAS. NO.	PEL/TLV
Cypermethrin	52315-07-8 900 g/kg	None Established	

REFERENCE: Cypermethrin None

PHYSICAL APPEARANCE AND PROPERTIES ODOR: Yellow/brown viscous liquid to semi-solid crystalline mass.
MELTING POINT: 60C
VAPOR PRESSURE: 190(extrapolated value to 20C)
DENSITY: 1.120 g/kg @ 20C
OCTANOL / HO PARTITION COEF.: log P>ow< 6.6
SOLUBILITY IN WATER: 0.01-0.02 mg/l
SOLUBILITY (APPROXIMATE) IN OTHER SOLVENTS: Xylene, Acetone, Chloroform, Cyclohexanone >450 mg/l Ethanol = 337 mg/l
OXIDIZING PROPERTIES: None
MATERIALS TO : None found

FIRE AND FIRE CONTROL TACTICS:
EXPLOSION HAZARD INFORMATION Wear self-contained, positive pressure breathing apparatus and full fire fighting protective clothing.
Keep unnecessary people away. Use as little water as possible. Dike area of fire to prevent material run-off. Use spray or fog - solid stream may cause spreading. Do not decontaminate personnel or equipment, or handle broken packages or containers without protective equipment

as specified in the Exposure Control Section. Decontaminate emergency personnel with soap and water before leaving the fire area. Avoid breathing dusts, vapors and fumes from burning materials. Control run-off water - if water enters a drainage system, advise the authorities downstream.
FIRE EXTINGUISHING MEDIA:
Use water, foam, dry chemical, or carbon dioxide to extinguish fires.

NFPA HAZARD RATING NFPA Rating Not Assigned

REACTIVITY DATA STABILITY: Chemically and thermally stable. Can be decomposed in strong alkali solution.
CONDITIONS TO AVOID: None found
HAZARDOUS DECOMPOSITION PRODUCTS: May emit toxic fumes in a fire

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HEALTH HAZARD INFORMATION TOXICITY DATA AND EFFECTS OF OVEREXPOSURE:
ACUTE TOXICITY DATA:
Acute toxicity:
Oral LD (rat) (mg/kg): 287
Dermal LD (rat) (mg/kg): >1000
Irritation:
Skin: Moderate
Eyes: Not an irritant
Sensitization: Not a sensitizer
EMERGENCY AND FIRST AID PROCEDURES:
Flush eye with water. If irritation persists, obtain medical attention.

DO NOT INDUCE VOMITING. Give nothing by mouth. Obtain medical attention.
Remove to fresh air. If symptoms appear, obtain medical attention.
In common with other synthetic pyrethroids, this product may cause abnormal sensations in the skin, especially the face (facial paresthesia) variously experienced as a numbness or tingling sensation or even severe pain which usually does not persist beyond 24 hours. It has been established that topical application of olive oil to the affected area will afford prompt relief. (This remedy is more effective if the affected area is washed with soap and water and then dried, before application of olive oil.)
MEDICAL CONDITION AGGRAVATED BY OVEREXPOSURE:
Over-exposure may cause local irritation of the skin (burning sensation on the face and elsewhere) and irritation of the respiratory tract causing rhinorrhea, chest tightness or dyspnea.
NOTES TO PHYSICIAN:
ANTIDOTE: There is no specific antidote.
Treat symptomatically. Ingestion poses the major hazard.
In case of ingestion, consider gastric lavage within 4 hours. In case of gross over-exposure, subject should be kept under observation as indicated by his/her condition. Convulsions should be treated with anticonvulsants.

EXPOSURE CONTROL METHODS Exposure controls: None established
When handling this product, the following good industrial hygiene practice is recommended:
Provide adequate local ventilation. If dust/vapor exceed the recommended PEL, an approved pesticide respirator should be worn until engineering controls are achieved.

Chemical goggles or some other form of eye protection must be worn to prevent exposure to the eyes.
Wear nitrile rubber gloves, overalls, rubber boots and face shield when handling this material. Remove contaminated clothing and wash before reuse. Wash thoroughly with soap and water after handling.
For end-users, please refer to the product label for personal protective clothing/equipment.
Shower at the end of the work day and change clothing. Do not eat, smoke, or drink at the workplace.

SPILL OR LEAK PROCEDURES — Wear appropriate clothing and personal protective equipment (See "Exposure Control".)

Keep away from drains, surface and ground water, and soil.
Dike spill area to prevent spill from spreading. Absorb the spilled material with an inert absorbent such as granular clay or sawdust. Shovel or sweep the absorbed spill into covered containers for proper disposal. (See "Waste Disposal".)
Rinse the spill area and any tools or implements several times with soapy water. Contain and absorb this rinsate with inert absorbents and place into the same covered container as the spilled material.
Spills to the soil can be shoveled directly into covered containers for disposal. If the spill occurred to a body of water, immediately notify the appropriate authorities downstream of the spill so that they can decide what if any further action is needed.
Depending on local spill reporting requirements and the amount released to the environment, it may be necessary to notify the regulatory authorities.

WASTE DISPOSAL: To avoid disposal, all attempts should be made to use this product completely, in accordance with its registered use. If this is not possible, handle with care and dispose in a safe manner. Empty containers or liners may retain some product residues. DO NOT REUSE. Rinse the container or liner as needed for disposal. Render it unusable by crushing or puncturing. Dispose of the container and any rinsate in a safe manner. Follow all applicable community, national or regional regulations regarding waste management methods.

SPECIAL PRECAUTIONS — HANDLING AND STORAGE:

Handling precautions: Avoid contact with the skin, eyes, nose and mouth. Observe plant hygiene recommendations. Wash all exposed skin before eating, drinking, smoking or using the toilet. After work, change out of working clothes and take a bath or shower.
Storage conditions: Store in secure, well ventilated building or warehouse, away from foodstuffs and animal feed and out of the reach of children. Store under cool and dry conditions.

APPENDIX

The information and statements herein are believed to be reliable but are not to be construed as a warranty or representation for which we assume legal responsibility. Users should undertake sufficient verification and testing to determine the suitability for their own particular purpose of any information or products referred to herein. NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS MADE.

SOURCE AND DATE INFORMATION — SHEET NO.: CN07144-2
DATE: JUN 02, 1997

PREPARED BY — A. L. Picciano-V.P. of Manufacturing, Manufacturing Dept.
AMERICAN CYANAMID COMPANY: PHONE: 973-683-3100

CHEMSICO -- SPECTRACIDE WASP & HORNET KILLER II - AEROSOL INSECTICIDE
MATERIAL SAFETY DATA SHEET
NSN: 684000F024233
Manufacturer's CAGE: 0WMH8
Part No. Indicator: A
Part Number/Trade Name: SPECTRACIDE WASP & HORNET KILLER II

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General Information

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Item Name: AEROSOL INSECTICIDE
Company's Name: CHEMSICO
Company's Street: 8494 CHAPIN INDUSTRIAL DR
Company's City: ST LOUIS
Company's State: MO
Company's Country: US
Company's Zip Code: 64113
Company's Emerg Ph #: (800) 752-7869
Company's Info Ph #: (800) 752-7869
Record No. For Safety Entry: 001
Tot Safety Entries This Stk#: 001
Status: SE
Date MSDS Prepared: 26DEC90
Safety Data Review Date: 23JUL92
MSDS Preparer's Name: H.L. PAULS
Preparer's Company: CHEMSICO
Preparer's St Or P. O. Box: 8494 CHAPIN INDUSTRIAL DR
Preparer's City: ST LOUIS
Preparer's State: MO
Preparer's Zip Code: 64113
MSDS Serial Number: BNXDF

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Ingredients/Identity Information

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Proprietary: NO
Ingredient: 2-BUTOXYETHANOL (ETHYLENEGLYCOL MONOBUTYL ETHER), BUTYL CELLOSOLVE, BUTYL GLYCOL, GLYCOL ETHER EB
Ingredient Sequence Number: 01
Percent: 6%
NIOSH (RTECS) Number: KJ8575000
CAS Number: 111-76-2
OSHA PEL: S, 50 PPM
ACGIH TLV: S, 25 PPM; 9293
Other Recommended Limit: 25 PPM (SKIN)

Proprietary: NO
Ingredient: HEPTANE
Ingredient Sequence Number: 02
Percent: 4%
NIOSH (RTECS) Number: MI7700000
CAS Number: 142-82-5
OSHA PEL: 500 PPM/500 STEL
ACGIH TLV: 400 PPM/500STEL;9293

Other Recommended Limit: 400 PPM

Proprietary: NO
Ingredient: CHLORPYRIFOS (O,O,-DIETHYL-O-,3,5,6-TRICHLORO-2-PYRIDYL PHOSPHOROTHIOATE)
Ingredient Sequence Number: 03
Percent: 0.25%
NIOSH (RTECS) Number: TF6300000
CAS Number: 2921-88-2
OSHA PEL: 0.2 MG/CUM (SKIN)
ACGIH TLV: 0.2 MG/CUM (SKIN)

Proprietary: NO
Ingredient: D-TRANS-ALLETHRIN *92-2*
Ingredient Sequence Number: 04
Percent: 0.05%
NIOSH (RTECS) Number: 1008166TA
CAS Number: 28434-00-6

Proprietary: NO
Ingredient: PROPANE
Ingredient Sequence Number: 05
Percent: 3%
NIOSH (RTECS) Number: TX2275000
CAS Number: 74-98-6
OSHA PEL: 1000 PPM
ACGIH TLV: SIMPLE ASPHYXIANT
Other Recommended Limit: 1800 MG/CUM
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Physical/Chemical Characteristics
==========
Appearance And Odor: JET SPRAY, CLEAR WET FILM W/GLYCOL ETHER ODOR
Vapor Pressure (MM Hg/70 F): 120
Vapor Density (Air=1): >1
Specific Gravity: 0.95
Evaporation Rate And Ref: (BU AC = 1): <1
Solubility In Water: >90%
Percent Volatiles By Volume: 97%
==========
Fire and Explosion Hazard Data
==========
Flash Point: 138F
Flash Point Method: TCC
Extinguishing Media: WATER FOG, CO2, DRY CHEMICAL
Special Fire Fighting Proc: KEEP CONTAINERS COOL. USE EQUIPMENT OR SHIELDING REQUIRED TO PROTECT PERSONNEL AGAINST BURSTING, RUPTURING OR VENTING CONTAINERS.
Unusual Fire And Expl Hazrds: AT ELEVATED TEMPERATURES >130F, CONTAINERS MAY VENT, RUPTURE OR BURST.
==========
Reactivity Data
==========

Stability: YES
Cond To Avoid (Stability): TEMPERATURES >130F
Hazardous Decomp Products: CO & CO2
Hazardous Poly Occur: NO

Health Hazard Data

Route Of Entry - Inhalation: NO
Route Of Entry - Skin: YES
Route Of Entry - Ingestion: YES
Health Haz Acute And Chronic: INGESTION: HARMFUL. SKIN: HARMFUL IF ABSORBED. EYES: IRRITATION.
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: NONE
Signs/Symptoms Of Overexp: INGESTION: HARMFUL. SKIN: HARMFUL IF ABSORBED. EYES: IRRITATION.
Emergency/First Aid Proc: SKIN: WASH W/SOAP & WATER. EYES: FLUSH W/ PLENTY OF WATER. INHALATION: REMOVE TO FRESH AIR. OBTAIN MEDICAL ATTENTION IN ALL CASES.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: AVOID BREATHING VAPORS. REMOVE IGNITION SOURCES. AVOID SKIN CONTACT W/LIQUID.
Waste Disposal Method: DON'T PUNCTURE OR INCINERATE CONTAINERS. GIVE EMPTY LEAKING OR FULL CONTAINERS TO A FACILITY QUALIFIED TO DISPOSE OF PRESSURIZED CONTAINERS. DISPOSE OF IN ACCORDANCE W/FEDERAL, STATE, & LOCAL REGULATIONS.
Precautions-Handling/Storing: DON'T STORE WHERE TEMPERATURES >130F. DON'T PUNCTURE OR INCINERATE CONTAINERS.
Other Precautions: AVOID BREATHING VAPORS. AVOID SKIN CONTACT W/LIQUID.

Control Measures

Transportation Data

Disposal Data

Label Data

Label Required: NO
Label Status: X
Common Name: LABEL COVERED UNDER EPA REGS - HAZCOM LABEL NOT AUTHORIZED

NTP CHEMICAL REPOSITORY
2,4,6-TRINITROTOLUENE

-IDENTIFIERS
==========
*CATALOG ID NUMBER: 000623
*CAS NUMBER: 118-96-7
*BASE CHEMICAL NAME: TRINITROTOLUENE,2,4,6-
*PRIMARY NAME: 2,4,6-TRINITROTOLUENE
*CHEMICAL FORMULA: C7H5N3O6
*STRUCTURAL FORMULA:
*WLN: WNR B1 CNW ENW

*SYNONYMS:

2-METHYL-1,3,5-TRINITROBENZENE	ENTSUFON	TNT
1-METHYL-2,4,6-TRINITROBENZENE	METHYLTRINITROBENZENE	TOLIT
TRINITROTOLUENE	TRINITROTOLUENE, DRY (DOT)	TOLITE
S-TRINITROTOLUENE	S-TRINITROTOLUOL	TRILIT
ALPHA-TRINITROTOLUOL TRITON	SYM-TRINITROTOLUOL	TROTYL
SYM-TRINITROTOLUENE		

-PHYSICAL CHEMICAL DATA
==========
*PHYSICAL DESCRIPTIONS: COLORLESS CRYSTALS
*MOLECULAR WEIGHT: 227.15
*SPECIFIC GRAVITY: 1.654 @ 20/4 C
*DENSITY: 1.654 g/mL
*MP (DEG C): 80.9
*BP (DEG C): 240 EXPLODES
*SOLUBILITIES:

WATER : INSOLUBLE	95% ETHANOL : SOLUBLE
DMSO : Not available	METHANOL : Not available
ACETONE : VERY SOLUBLE	TOLUENE : Not available

OTHER SOLVENTS:

TOLUENE: VERY SOLUBLE	ETHER : SOLUBLE
PYRIMIDENE VERY SOLUBLE	BENZENE: VERY SOLUBLE

*VOLATILITY: Vapor pressure: 0.046

*FLAMMABILITY(FLASH POINT):
Flash point data for this chemical are not available. It is explosive. Fires involving this material should be controlled using a dry chemical, carbon dioxide or Halon extinguisher.

*UEL: Not available LEL: Not available

*REACTIVITY: This compound reacts with reducing agents. It will detonate if vigorously shocked or heated to 232 C (450 F).

*STABILITY: This compound is sensitive to heat and shock.
*OTHER PHYSICAL DATA:

Dipole moment: 1.37.

-TOXICITY
========
*NIOSH REGISTRY NUMBER: XU0175000
*TOXICITY: (abbreviations)

typ. dose	mode	specie	amount	unit	other
LDLO	ORL	RAT	700	MG/KG	
LDLO	ORL	CAT	1850	MG/KG	
LDLO	SCU	CAT	200	MG/KG	
LDLO	ORL	RBT	500	MG/KG	
LDLO	SCU	RBT	500	MG/KG	

*AQTX/TLM96: Not available
*SAX TOXICITY EVALUATION:
THR=HIGH VIA SC ROUTE AND MOD VIA ORAL AND DERMAL ROUTES. HAS BEEN IMPLICATED IN APLASTIC ANEMIA.
*CARCINOGENICITY: Not available
*MUTAGENICITY: Not available
*TERATOGENICITY: Not available

*STANDARDS, REGULATIONS & RECOMMENDATIONS:
OSHA: Federal Register (1/19/89) and 29 CFR 1910.1000 Subpart Z
Transitional Limit: PEL-TWA 1.5 mg/m3 (skin) [610]
Final Limit: PEL-TWA 0.5 mg/m3 (skin) [610]
ACGIH: TLV-TWA 0.5 mg/m3 (skin) [610]
NIOSH Criteria Document: None
NFPA Hazard Rating: Health (H): None
Flammability (F): None
Reactivity (R): None

*OTHER TOXICITY DATA:
Review: Toxicology Review

-OTHER DATA (Regulatory)
========================
*PROPER SHIPPING NAME (IATA): Trinitrotoluene
*UN/ID NUMBER: UN0209
*HAZARD CLASS: 1.1D SUBSIDIARY RISK: PACKING GROUP:

*LABELS REQUIRED:
*PACKAGING: PASSENGER: PKG. INSTR.: Forbidden MAXIMUM QUANTITY: Forbidden
CARGO : PKG. INSTR.: Forbidden MAXIMUM QUANTITY: Forbidden

*SPECIAL PROVISIONS:

*USES: High explosive; intermediate in dyestuffs and photographic chemicals.

*COMMENTS: Not available

-HANDLING PROCEDURES
====================

*ACUTE/CHRONIC HAZARDS:
This compound can be absorbed through the skin. The vapors are toxic. When heated to decomposition it emits toxic fumes. It will detonate under strong shock or sudden heating.

*MINIMUM PROTECTIVE CLOTHING: Not available

*RECOMMENDED GLOVE MATERIALS: Not available

*RECOMMENDED RESPIRATOR:
Where the neat test chemical is weighed and diluted, wear a NIOSH-approved half face respirator equipped with an organic vapor/acid gas cartridge (specific for organic vapors, HCl, acid gas and SO2) with a dust/mist filter.

*OTHER: Not available

*STORAGE PRECAUTIONS:
You should store this chemical under refrigerated temperatures, and keep it away from reducing materials. STORE AWAY FROM SOURCES OF IGNITION.

*SPILLS AND LEAKAGE:
Should a spill occur while you are handling this chemical, you should dampen the solid spill material with alcohol, then transfer the dampened material to a suitable container. Use absorbent paper dampened with alcohol to pick up any remaining material. Seal the absorbent paper, and any of your clothes, which may be contaminated,in a vapor-tight plastic bag for eventual disposal. Solvent wash all contaminated surfaces with alcohol followed by washing with a strong soap and water solution. Do not reenter the contaminate area until the Safety Officer (or other responsible person) has verified that the area has been properly cleaned.

*DISPOSAL AND WASTE TREATMENT:
You should dispose of all waste and contaminated materials associated with this chemical as specified by existing local, state and federal regulations concerning hazardous waste disposal. It is suggested that your contaminated materials should be destroyed by incineration in a special, high temperature (>2000 degrees F), chemical incinerator facility.

-EMERGENCY PROCEDURES
==========
*SKIN CONTACT:
IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water.
If symptoms such as redness or irritation develop, IMMEDIATELY call a physician and be prepared to transport the victim to a hospital for treatment.

*INHALATION:
IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. If symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be

used; if not available, use a level of protection greater than or equal to that advised under Respirator Recommendation.

*EYE CONTACT:
First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

*INGESTION:
DO NOT INDUCE VOMITING. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. Be prepared to transport the victim to a hospital if advised by a physician. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. IMMEDIATELY transport the victim to a hospital.

*SYMPTOMS:
Symptoms of exposure to this compound may include headache, weakness, anemia, toxic hepatitis, cyanosis, dermatitis, jaundice, purpura, liver injury, conjunctivitis, irritation of the respiratory tract, constriction in the chest, lack of appetite, nausea, vomiting, diarrhea, petechial hemorrhages in the skin, oliguria, albuminuria, casts in urine, papular dermititis, and yellow-orange discoloration of the hands, nails, face and hair.

*FIREFIGHTING:

*SOURCES:
Lewis, R.J., Sr. and R.L. Tatken, Eds. Registry of Toxic Effects of Chemical Substances. DHEW (NIOSH) Publication No. 79-100. National Institute for Occupational Safety and Health. Cincinnati, OH. 1979. XU0175000.
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Windholz, M., Ed. The Merck Index. 9th Ed. Merck and Co. Rahway, NJ. 1976. PP.1248 NO.9397.
Sax, N.I. Dangerous Properties of Industrial Materials. 4th Ed. Van Nostrand Reinhold. New York. 1975. PP.1065.
Hawley, G.G., Ed. The Condensed Chemical Dictionary. 9th Ed. Van Nostrand Reinhold. New York. 1977. PP.890.
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U.S. Environmental Protection Agency, Office of Toxic Substances. Toxic Substances Control Act Chemical Substances Inventory, Initial Inventory. 6 Vols. U.S. Environmental Protection Agency. Washington, D.C. 1979. NOT LISTED.
Proctor, N.H. and J.P. Hughes. Chemical Hazards of the Workplace. J.B. Lippincott. Philadelphia. 1978. PP.499.
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Hazardous Industrial Chemicals Safety Manual for Handling and Disposal with Toxicity and Hazard Data. International Technical Information Institute. 1978. PP.524 NO.647.

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Oak Ridge National Laboratory. Environmental Mutagen Information Center (EMIC), Bibliographic Data Base. Oak Ridge National Laboratory. Oak Ridge, TN. LISTED.

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United States National Toxicology Program. Chemical Status Report. NTP Chemtrack System. Research Triangle Park, NC. November 6, 1990.

AMOCO OIL -- AMOCO REGULAR LEAD-FREE GASOLINE - GASOLINE,UNLEADED
MATERIAL SAFETY DATA SHEET
NSN: 9130012084172
Manufacturer's CAGE: 15958
Part No. Indicator: B
Part Number/Trade Name: AMOCO REGULAR LEAD-FREE GASOLINE
==========

General Information

==========
Item Name: GASOLINE,UNLEADED
Company's Name: AMOCO OIL COMPANY
Company's Street: 200 EAST RANDOLPH DRIVE
Company's City: CHICAGO
Company's State: IL
Company's Country: US
Company's Zip Code: 60601
Company's Emerg Ph #: 800-447-8735 (HEALTH)
Company's Info Ph #: 312-856-3907
Record No. For Safety Entry: 022
Tot Safety Entries This Stk#: 064
Status: FE
Date MSDS Prepared: 24SEP93
Safety Data Review Date: 20OCT94
Supply Item Manager: KY
MSDS Preparer's Name: DONALD M. BARKER, DIR
Preparer's Company: PRODUCT STEWARDSHIP & TOXICOLOY
Preparer's St Or P. O. Box: (MSDS#:02003992)
MSDS Serial Number: BVHJH
Specification Number: VV-G-1690
Spec Type, Grade, Class: CIVGAS
Hazard Characteristic Code: F2
Unit Of Issue: DR
Unit Of Issue Container Qty: 55 GALLONS
Type Of Container: DRUM, 18 GAGE
Net Unit Weight: 343.5 LBS
==========

Ingredients/Identity Information

==========
Proprietary: NO
Ingredient: GASOLINE
Ingredient Sequence Number: 01
Percent: N/GIVEN
NIOSH (RTECS) Number: LX3300000
CAS Number: 8006-61-9
OSHA PEL: 300 PPM
ACGIH TLV: 300 PPM/500STEL;9394
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: BENZENE (SARA III)
Ingredient Sequence Number: 02
Percent: 4

NIOSH (RTECS) Number: CY1400000
CAS Number: 71-43-2
OSHA PEL: SEE 1910.1028
ACGIH TLV: 10 PPM; A2; 9394
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: ETHYL BENZENE (SARA III)
Ingredient Sequence Number: 03
Percent: 2
NIOSH (RTECS) Number: DA0700000
CAS Number: 100-41-4
OSHA PEL: 100 PPM
ACGIH TLV: 100 PPM/125STEL;9394
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: TOLUENE (SARA III)
Ingredient Sequence Number: 04
Percent: 22
NIOSH (RTECS) Number: XS5250000
CAS Number: 108-88-3
OSHA PEL: 200 PPM; Z-2
ACGIH TLV: S, 50 PPM; 9394
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: CYCLOHEXANE (SARA III)
Ingredient Sequence Number: 05
Percent: 5
NIOSH (RTECS) Number: GU6300000
CAS Number: 110-82-7
OSHA PEL: 300 PPM
ACGIH TLV: 300 PPM, 9394
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: XYLENES (O-,M-,P- ISOMERS) (SARA III)
Ingredient Sequence Number: 06
Percent: 10
NIOSH (RTECS) Number: ZE2100000
CAS Number: 1330-20-7
OSHA PEL: 100 PPM
ACGIH TLV: 100 PPM/150STEL;9394
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: METHYL TERT-BUTYL ETHER (SARA III)
Ingredient Sequence Number: 07
Percent: 15
NIOSH (RTECS) Number: KN5250000
CAS Number: 1634-04-4

OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: BUTANE
Ingredient Sequence Number: 08
Percent: N/GIVEN
NIOSH (RTECS) Number: EJ4200000
CAS Number: 106-97-8
OSHA PEL: 800 PPM
ACGIH TLV: 800 PPM; 9394
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: N-HEPTANE
Ingredient Sequence Number: 09
Percent: N/GIVEN
NIOSH (RTECS) Number: MI7700000
CAS Number: 142-82-5
OSHA PEL: 500 PPM
ACGIH TLV: 400 PPM/500STEL;9394
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: HEXANE (N-HEXANE)
Ingredient Sequence Number: 10
Percent: N/GIVEN
NIOSH (RTECS) Number: MN9275000
CAS Number: 110-54-3
OSHA PEL: 500 PPM
ACGIH TLV: 50 PPM; 9394
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: PENTANE
Ingredient Sequence Number: 11
Percent: N/GIVEN
NIOSH (RTECS) Number: RZ9450000
CAS Number: 109-66-0
OSHA PEL: 1000 PPM
ACGIH TLV: 600 PPM/750STEL;9394
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: TRIMETHYL BENZENE (SARA III)
Ingredient Sequence Number: 12
Percent: N/GIVEN
NIOSH (RTECS) Number: DC3220000
CAS Number: 25551-13-7
OSHA PEL: 25 PPM
ACGIH TLV: 25 PPM; 9394

Other Recommended Limit: NONE RECOMMENDED

==========

Physical/Chemical Characteristics

==========

Appearance And Odor: CLEAR, BRIGHT LIQUID, CHARACTERISTIC ODOR.
Boiling Point: 80.0F,26.7C
Vapor Pressure (MM Hg/70 F): 7-15LBS
Vapor Density (Air=1): 3-4
Specific Gravity: 0.75
Solubility In Water: NEGLIGIBLE,

APPENDIX E

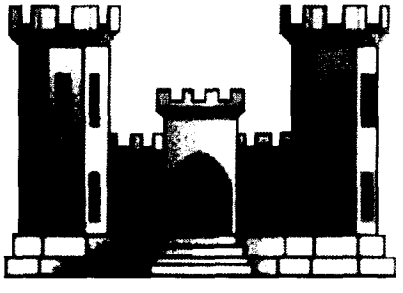
ENVIRONMENTAL SAMPLING AND ANALYSIS PLAN

FOR THE

OE ENGINEERING REMOVAL ACTION
FORMER CAMP HERO
MONTAUK, NEW YORK

Prepared For:

Contracting Agency:
U.S. Army Engineering & Support Center, Huntsville
4820 University Square
Huntsville, Alabama 35816-1822



Contract Number: DACA87-00-D-0037
Task Order: 0024
Project Number: C2NY002404

Prepared By:

2229 Old Highway 95
Lenoir City, Tennessee 37771

June 2003

APPENDIX E
ENVIRONMENTAL SAMPLING AND ANALYSIS PLAN

This plan is not required for this Task Order.

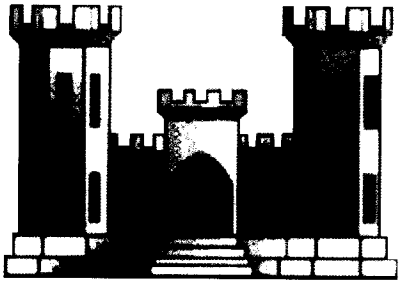
APPENDIX F
CONTRACTOR FORMS

FOR THE

OE ENGINEERING REMOVAL ACTION
FORMER CAMP HERO
MONTAUK, NEW YORK

Prepared For:

Contracting Agency:
U.S. Army Engineering & Support Center, Huntsville
4820 University Square
Huntsville, Alabama 35816-1822



Contract Number: DACA87-00-D-0037
Task Order: 0024
Project Number: C2NY002404

Prepared By:

EODT
EOD TECHNOLOGY, INC.

2229 Old Highway 95
Lenoir City, Tennessee 37771

June 2003

TABLE OF SAMPLE FORMS

NOTE:

A CD containing all ISO 9000-2000 compliant forms will be maintained on site. The forms in this appendix are examples of the forms that EODT will be using during this project.

EODT DAILY QC INSPECTION
AUDIT AND PRODUCTION LOG

DATE:

Contract No.:_____ DO:_____EODT JOB NO.:_____

LOCATION:_____

Ordnance items destroyed:

QTY	ITEM	QTY	ITEM	QTY	ITEM

Total Ord blown today:_____

The following grids were completed: _____ Hours spent re-working grids: __		
TEAM 1		
TEAM 2		
TEAM 3		
TEAM 4		

The following grids have received a Quality Control check and are ready for QA:

Comments

Notes for Using This Log: This log is intended to be a continuous table that will extend from page to page. The header, footer and first row of the table will be carried to each new page and a running log of the pages will be kept in the footer. To extend the length of the table (i.e., add additional rows) simply place the cursor in the Event column of the last row and press the "Tab" key. For simplicity of use, make each new entry in a new line within the table. For the first event entry each day enter the date in the first row under the previous days events, enter the time of the event and then the event description After that just enter additional time and event information on successive rows. There is no need to enter a new date with every event recorded within a given date since the rows in the date column can be merged at the end of the entries for a given date (see Example below). To merge the rows in the Date column at the end of the day, place your cursor in the row at the start of the day, click left mouse button, drag down and highlight all rows in the date column down to the last entry for the day. Release the left mouse button and with the cursor over part of the highlighted column click the right mouse button and select "Merge Cells" in the pop-up menu. Once you have mastered these instructions, or before final submission of this log, delete these instructions and the example table below.

Date	Time	Event
01/06/03	0700	Event 1
	0730	Event 2
	0800	Event 3
	Etc	Event 4
	Etc	Event 5
	Etc	Event 6
	1630	Event 7
01/06/03	0700	Event 1
	0745	Event 2
	01630	Event 3

EODT SAFETY TRAINING ATTENDANCE LOG
OE OPERATIONS

Date:	Instructor(s):	Time:	Log No.:
Contract Number:		Delivery Order Number:	
Site Name & Location:			
Training Provided: ☐Initial ☐Site ☐Hazard ☐Training ☐Weekly ☐Safety ☐Training ☐ Other: _____ ☐Tailgate ☐Safety ☐Briefing ☐Task/Hazard ☐Specific Trng _____			

I. TRAINING TOPICS COVERED

Work Plan and /SSHP: _____
UXO/OE Hazards: _____
Chemical Hazards: _____
Physical Hazards: _____
Emergency Procedures: _____
Other: _____

II. TRAINING COURSE ATTENDEES

Name (printed)	Signature	Organization

III. TRAINING VERIFICATION

I certify that the personnel listed on this roster (to include the second page if needed) have received the safety training described above.

_____ Site Safety and Health Officer

_____ Sr. UXO Supervisor / Project Manager

EODT SAFETY TRAINING ATTENDANCE LOG
OE OPERATIONS

Date:	II. TRAINING COURSE ATTENDEES (continued	Log No.:

Name (printed)	Signature	Organization

EODT SITE VISITORS LOG
FOR OE OPERATIONS

LOCATION:			CONTRACT NO.:		DELIVERY ORDER NO.:		
Date	Name	Company	Reason for Visit	Safety Briefing Given By	Time		Escort Req'd (Y / N)
					In	Out	

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG FOR OE OPERATIONS

DATE:	TIME:	LOG NO.:
CONTRACT NO.:	TASK ORDER NO.:	
SITE NAME AND LOCATION:		
WEATHER CONDITIONS: _____		
I. AREAS INSPECTED: (List by grid number, Team or task) _____		

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list)	Y / N
8. Monitoring Equipment Calibration	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) _____

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required) _____

V. REINSPECTION RESULTS: (If required) _____

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

_____
Site Safety and Health Officer

_____
Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

EODT Daily Report of OE Operations

Project	
Task Order	
Team Leader	
Date	
Time	
Excavation Number	
X Coordinate	
Y Coordinate	
Z Coordinate	
Type of OE or Residue	
Amount in pounds	
Method of location/identification	
Type of Container	
Final disposition	

EODT Explosives Accountability Record
(Magazine Data Card)

Product Code / FSN:	Nomenclature:			Site Name: Address:
Date Code / Lot Number:	Hazard Class	UN or NA	Quantity / Case:	

Date	Bill of Lading / Voucher Number	Received From	Quantity Received	Quantity Issued	Issued To	Current Balance	Initials	
							Issuer	Receiver

DEPARTMENT OF THE TREASURY - BUREAU OF ALCOHOL, TOBACCO AND FIREARMS

LICENSE/PERMIT (18 U.S.C. CHAPTER 40, EXPLOSIVES)

In accordance with the provisions of Title XI, Organized Crime Control Act of 1970, and the regulations issued thereunder (27 CFR Part 55), you may engage in the activity specified in this license/permit within the limitations of Chapter 40, Title 18, United States Code and the regulations issued thereunder, until the expiration date shown. See "WARNING" and "NOTICES" on back.

DIRECT ATF CORRESPONDENCE TO: CHIEF, NATIONAL LICENSING CENTER
ATF, P.O. Box 2994
Atlanta, GA 30301-2994

LICENSE/PERMIT NUMBER: 1-TN-105-33-3H-97874

EXPIRATION DATE: August 1, 2003

NAME: EOD TECHNOLOGY, INC

Premises Address:
2229 OLD HWY 95
LENOIR CITY, TN 37771-

TYPE OF LICENSE OR PERMIT: 33-USER OF HIGH EXPLOSIVES

CHIEF, NATIONAL LICENSING CENTER

PURCHASING CERTIFICATION

I certify that this is a true copy of a license/permit issued to me to engage in the activity specified.

(SIGNATURE OF LICENSEE/PERMITTEE)

LICENSEE OR PERMITTEE MAILING ADDRESS:

EOD TECHNOLOGY, INC
PO BOX 24173
KNOXVILLE, TN 37933-2173

The licensee/permittee named herein shall use a reproduction of this license/permit to assist a transferor of explosives to verify the identity and status of the licensee/permittee as provided in 27 CFR Part 55. The signature on each reproduction must be an ORIGINAL signature.

ATF F 5400.14/5400.15, Part 1 (8/89)

APPENDIX G

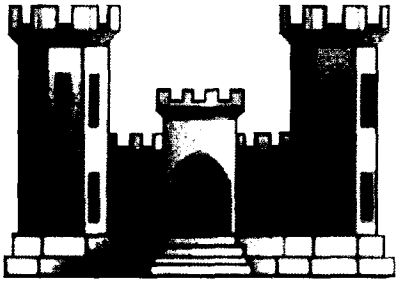
MSD CALCULATION SHEETS

FOR THE

OE ENGINEERING REMOVAL ACTION
FORMER CAMP HERO
MONTAUK, NEW YORK

Prepared For:

Contracting Agency:
U.S. Army Engineering & Support Center, Huntsville
4820 University Square
Huntsville, Alabama 35816-1822



Contract Number: DACA87-00-D-0037
Task Order: 0024
Project Number: C2NY002404

Prepared By:

EODT
EOD TECHNOLOGY, INC.

2229 Old Highway 95
Lenoir City, Tennessee 37771

June 2003

APPENDIX G
MSD CALCULATION SHEETS

Minimum Separation Distances
Camp Hero
105mm M1
9 May 2003

REQUESTED BY: Jerry Kresge
PREPARED BY: Sherene Opichka

This form shows calculated distances only. It does not constitute approval. Concurrence of CEHNC-OE-S is required to determine the applicable distance for a specific site.

In accordance with (IAW) EM 1110-1-4009, the minimum separation distance for unintentional detonations shall be the largest of the maximum fragment range, the K50 ($50W^{1/3}$ where W is the total net explosive weight for the detonation) overpressure distance or 200 ft. In accordance with (IAW) EM 1110-1-4009, use of the range to no more than 1 hazardous fragment/600 sq ft as the minimum separation distance for unintentional detonations requires written justification, a risk analysis, calculation of this distance by CEHNC-ED-CS-S, and concurrence of CEHNC-OE-S.

IAW EM 1110-1-4009, the minimum separation distance for intentional detonations shall be the largest of the maximum fragment range, the K328 ($328W^{1/3}$ where W is the total net explosive weight for the detonation) overpressure distance or 200 ft.

CALCULATED FRAGMENT DISTANCES

Maximum Fragment Range = 1939 ft
Range to No More Than 1 Hazardous Fragment/600 sq ft = 341 ft

CALCULATED OVERPRESSURE DISTANCES BASED ON OE ITEM'S EXPLOSIVE WEIGHT ONLY (i.e. NO DONOR CHARGE)

Range to 0.9 psi Overpressure (K50) = 97 ft
K328 Overpressure Range = 636 ft (based on munition NEW only, no donor)

The primary fragmentation characteristics used in the calculation of the values listed above were computed IAW CEHNC-ED-CS-S-98-1. The maximum fragment range was calculated using the maximum weight fragment and the initial velocity from these characteristics in the computer software TRAJ. The range to no more than 1 hazardous fragment/600 sq ft was calculated IAW CEHNC-ED-CS-S-98-2.

NOTE THAT ALL MITIGATION METHODS FOR INTENTIONAL DETONATIONS ARE BASED ON THE USE OF COMMERCIAL SHAPED CHARGES FOR INITIATION. IF ANY OTHER DONOR CHARGE IS TO BE USED THIS INFORMATION MUST BE PROVIDED TO CEHNC WITH A REQUEST FOR NEW CALCULATIONS!

Minimum Separation Distances
Camp Hero
105mm M1
9 May 2003

SANDBAG ENCLOSURE FOR INTENTIONAL DETONATIONS

Required Sandbag Thickness = 24 in. with 6" standoff between munition and sandbags
Sandbag Throw Distance = 135 ft
Minimum Separation Distance = 200 ft

The required sandbag thickness and the sandbag throw distance were calculated IAW CEHNC-ED-CS-S-98-7. A copy of HNC-ED-CS-S-98-7, "Use of Sandbags for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions" must be available on site.

WATER MITIGATION FOR INTENTIONAL DETONATIONS

Water Containment System (see HNC-ED-CS-S-00-3)	Minimum Separation Distance (ft)
1100 gallon tank	200

The water containment system and the minimum separation distance were determined IAW HNC-ED-CS-S-00-3. A copy of HNC-ED-CS-S-00-3, "Use of Water for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions" must be available on site.

MINIMUM SEPARATION DISTANCES WHILE USING OFB DURING INTRUSIVE ACTIVITIES

Design of the Open Front Barricade (OFB) is in accordance with HNC-ED-CS-S-99-1, "Open Front and Enclosed Barricades". A copy of this report must be available on site. DDESB has placed certain restrictions on the approved usage of the OFB. These are listed in the approval letter in the front of the report.

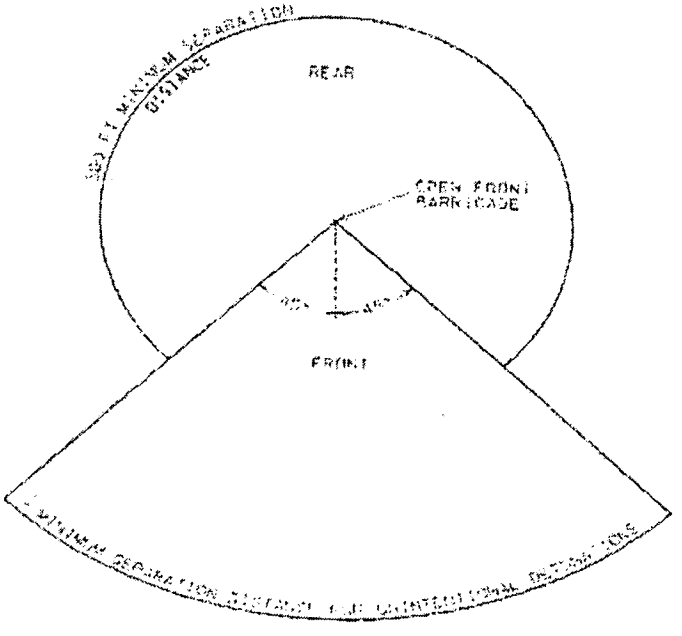
Thickness of Aluminum Required to Prevent Perforation = 1.87 in
Thickness of Steel Required to Prevent Perforation = 0.90 in

The OFB is designed to defeat fragments to the rear and sides of the OFB in the case of an accidental/unintentional detonation during intrusive activities. The fragment distances to the front of the OFB are the same as the fragment distances without the OFB (see figure). The OFB is not designed to reduce the effects of blast overpressure. The OFB may not be used for intentional detonations. The minimum separation distances to the rear and sides of the

Minimum Separation Distances
Camp Hero
105mm M1
9 May 2003

OFB must be maintained based on the expected throw distance of the OFB itself.

Minimum Separation Distance to sides and rear = 300 ft
Minimum Separation Distance to front = 1939 ft
K50 distance = 97 ft



SIGNATURES:

Sherene ORuchka 5/9/03
Subject Matter Expert Date

Michelle Crull 5/9/03
QA Reviewer Date

APPENDIX H

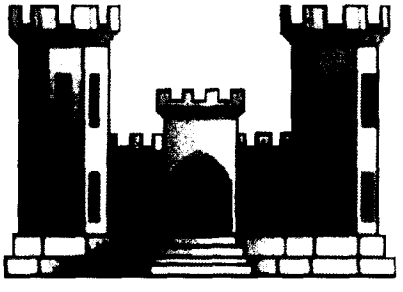
RESUMES

FOR THE

OE ENGINEERING REMOVAL ACTION
FORMER CAMP HERO
MONTAUK, NEW YORK

Prepared For:

Contracting Agency:
U.S. Army Engineering & Support Center, Huntsville
4820 University Square
Huntsville, Alabama 35816-1822



Contract Number: DACA87-00-D-0037
Task Order: 0024
Project Number: C2NY002404

Prepared By:

2229 Old Highway 95
Lenoir City, Tennessee 37771

June 2003

TABLE OF CONTENTS

1.0 GENERAL

Prior to mobilization, EODT will submit to the CEHNC for approval, the resumes of the UXO-qualified personnel that will be needed for the successful completion of this Task Order.

2.0 RESUMES

This appendix contains the resumes for the management and supervisory personnel listed below, which EODT proposes to use for the execution of the work associated with this Task Order:

- Bill Pearse, Program Manager
- Bill Pearse, Project Manager
- Charles Phillips, Ph.D., CIH
- Stephen C. Voland, CQM, Corporate Quality Control Manager

3.0 OSHA TRAINING

Prior to mobilization, EODT will ensure that all personnel assigned to this project will have received the training required by OSHA in 29 CFR 1910.120. EODT will further ensure that a copy of the 40-hour, and any applicable 8-hour refresher, certificates for all site personnel will be on file in the project field office.

4.0 MEDICAL SURVEILLANCE

Prior to mobilization, EODT will ensure that all EODT site personnel assigned to this project are enrolled in the medical surveillance program, as required by the EODT Corporate Safety and Health Program and by OSHA in 29 CFR 1910.120. As proof of participation in the medical surveillance program, a copy of the physician's statement for each person assigned to the project will be on file at the field office.

WILLIAM M. PEARSE — PROGRAM/PROJECT MANAGER

Education: **B.S. Chemistry, Rensselaer Polytechnic Institute, Troy, NY, 1975; M.S., Nuclear Engineering, Cornell University, Ithaca, NY, 1977**

Training: **EIT Certification, 1980; Certified Hazardous Materials Manager, Masters Level, 1986; Provisionally Certified ISO 14000 Auditor, 1997**

Experience Summary

Mr. Pearse is a program/project manager and environmental professional with 20 years of technical and business management experience in government, industry, and consulting environments. Mr. Pearse has been involved with UXO project and business management for ten years.

Specific areas of experience include project and program management, environmental regulatory compliance, and environmental management systems.

Professional Experience

1978-1987:	**Environmental Compliance Manager – Tennessee Valley Authority.**
1987-1989:	Assistant Branch Chief – Tennessee Valley Authority.
1989-1993:	Manager, Tennessee Operations – ABB Environmental Services, Inc.
1990-1993:	Deputy Program Manager – Lockheed-Martin's HAZWRAP Program, involving 20 projects over a four-year period. Total contract value over this period was approximately $50M.
1993-1996:	Director, Business Development – ABB Environmental Services, Inc.
1996-PRESENT:	Project Manager – EOD Technology, Inc.
1998-1999:	Project Manager – EOD Technology, Inc. Southwest Proving-Grounds site remediation project, Hope, AR. Two task assignments with a total contract value in excess of $1.5M.
1998:	Project Manager – EOD Technology, Inc. McGregor Range site characterization project, Ft. Bliss, TX. Project completed ahead of schedule and under budget ($1.8M).
2000-PRESENT:	CEHNC Project Manager – EOD Technology, Inc. Managed over 30 projects with an aggregate value of $25M.
2000-2001:	Project Manager – EOD Technology, Inc. Seneca Army Depot site remediation project, Romulus, NY. Three task assignments with a total contract value of approximately $4M.
2000:	Project Manager – EOD Technology, Inc. Ouli Time-Critical Removal Action project, Waimea, HI. Total contract value $400K. Project completed on time and within budget.
2001:	Project Manager – EOD Technology, Inc. Former Camp Claiborne OE Removal project, Alexandria, LA. Managed final phase of work. Overall contract value approximately $6M.
2001-2002:	Project Manager – EOD Technology, Inc. Porta Bella Landfill Removal Demonstration project, Santa Clarita, CA. Contract value approximately $2M. Ongoing project.

CHARLES PHILLIPS, MPH, Ph.D., CIH, CIAQP, CHCM CSHM

Education: **B.S. Environmental Health, East TN State University, Aug 69; M.S. Environmental Health, East TN State University, Aug 75; M.P.H., University of TN, Knoxville, Dec 91; Ph.D. Occupational Safety and Health, University of TN, Knoxville, May 97**

Training: **Certified Industrial Hygienist, May 81; International CHCM Certification Board, Hazard Control Manager – Master Level, Feb 83; Graduate Command and General Staff College, U.S. Army, Honor Graduate, Aug 83; American Academy of Sanitarians, Certified in Environment Health and Sanitation, Jun 88; Association of Energy Engineers, Certified Indoor Air Quality Professional, Dec 02; OSHA 40-hour Hazardous Waste Operations, Emergency Response Course and Annual Refresher, Jul 01; ISO 14000 Auditor-trained, Sep 01.**

Professional Experience:

Jun 73-Jun 75, Industrial Hygienist and Assistant Epidemiologist – 5th Medical Laboratory, Fort Sam Houston, TX. Provided industrial hygiene and hospital safety services to the western half of the U.S. Army installations located in a 17-state area.

Jun 75-Jul 78, Hospital Safety Manager – Chief Preventive Medicine Activity, Fort Eustis, VA. Supervised 17 professionals providing public, occupational, and environmental health support to 50,000 personnel on three Army installations. Conducted industrial hygiene, toxic hazard, and safety evaluations.

Jul 78-Jul 80, Staff Industrial Hygienist – U.S. Army Safety Center, Ft. Rucker, AL. Supervised Life Sciences Branch, managed the Army Safety Management Information System (ASMIS), and analyzed, evaluated, and recommended control measures for industrial hygiene and safety problems for the U.S. Army worldwide. Conducted technical evaluations on U.S. Army installations nationwide.

Jul 80-Nov 84, Director of Industrial Hygiene and Engineering – U.S. Army Environ. Hygiene Agency, Fort Meade, MD. Supervised 10 Industrial Hygienists and Engineers. Provided oversight at 35 major military-industrial locations in 17 states. Personally conducted 33 technical evaluations at military industrial and research operations.

Nov 84-Jun 89, Director of Industrial Hygiene and Safety – Kimbrough Army Hospital, Fort Meade, MD. Supervised 34 Industrial Hygienists in seven major military industrial locations, including CWM research, biological research, heavy equipment maintenance, and rebuild depots. Conducted technical evaluations, program evaluations, and staff training. Served as Safety Manager for the medical facility and JCAH/JACHO ES&H Coordinator.

Jun 88-Nov 00, IH Section Head & Programs Manager – Lockheed Martin, Oak Ridge National Laboratory, Oak Ridge, TN. ORNL Perchoric Acid Committee Chair, Testing and Decontamination Projects Manager. Managed implementation of 26 major safety/environmental programs. Served as Senior IH Specialist for Oak Ridge National Laboratory. Lockheed Martin ES&H-Certified Corporate Auditor. NFPA-51B Committee technical expert on Welding, Burning, and Hot Work Safety and Health.

Jan 91-Present, Health and Safety Consultant – Waldheim International, Inc., Knoxville, TN. Conduct Hazardous Waste Site Evaluations and comprehensive Indoor-Air Quality Investigations,

Consults, and Audits. Developed Perchlorate Contaminated Vent System Testing and Decontamination. NFPA-45 Committee Principal technical expert on perchlorate hood decontamination.

Feb 02-Present, Corporate Safety and Health Manager – EOD Technology, Inc., Lenoir City, TN. Responsible for writing and overseeing the implementation of site safety and health plans and abbreviated plans for all EODT contracts. Provide medical surveillance, OSHA reporting, training, and guidance for site-specific training necessary to conduct UXO and HAZWOPER-related contracts. Conduct safety audits and sampling in support of field operations.

STEPHEN C. VOLAND, CQM — CORPORATE QUALITY CONTROL MANAGER

Education: **B.A. Business Administration, Regents College, NY, 1996.**
Training: **EOD School, 1988; OSHA 40-hour HAZWOPER Course, 1993.**

SUMMARY: Mr. Voland is a certified quality manager and an experienced UXO Technician with 8 years of military EOD experience and over 9 years of commercial UXO experience. Mr. Voland has completed advanced training in quality management and has extensive expertise in quality management issues, especially as they relate to UXO activities.

QC/QA AND COMMERCIAL UXO EXPERIENCE

1998-Present, Corporate Quality Control Manager, EODT. Mr. Voland has filled this position under contract DACA87-97-D-0005 and DACA87-00-D-0037 for EODT with the CHENC. Responsible for performing site audits on all active EODT projects sites and administers EODT's Quality Assurance Program. Ensure compliance with State and Federal explosive standards and regulations. Prepares Quality Management Plans for all proposals and Work Plans.

Served as QC Specialist for Panama Canal Zone, Republic of Panama - range clearance.

Served as QC Specialist for Panama Canal, Panama Canal, Republic of Panama – range clearance.

Served as QC Specialist for Southwest Proving Ground, Hope, AR. UXO clearance.

APPENDIX I

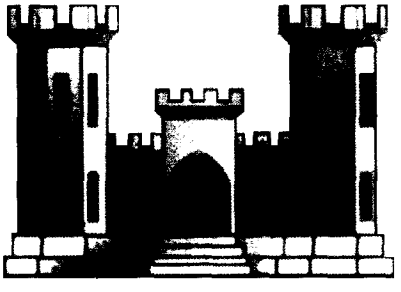
CORPORATE SAFETY AND HEALTH PLAN

FOR THE

OE ENGINEERING REMOVAL ACTION
FORMER CAMP HERO
MONTAUK, NEW YORK

Prepared For:

Contracting Agency:
U.S. Army Engineering & Support Center, Huntsville
4820 University Square
Huntsville, Alabama 35816-1822



Contract Number: DACA87-00-D-0037
Task Order: 0024
Project Number: C2NY002404

Prepared By:

EODT
EOD TECHNOLOGY, INC.

2229 Old Highway 95
Lenoir City, Tennessee 37771

June 2003