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U.S. Army Corps of Engineers

New England District
Concord, Massachusetts

UXO AND SOIL REMEDIATION OPENING BURNING GROUNDS SENECA ARMY DEPOT ACTIVITY ROMULUS, NEW YORK

Contract No. DACW33-00-D-0007
Task Order No. 0003
DCN: SEDA2-092401-AACD

AMENDMENT WORK PLAN

September 2001

01M-0007

WESTON
MANAGERS DESIGNERS/CONSULTANTS

AMENDMENT
WORK PLAN

UXO AND SOIL REMEDIATION
OPEN BURNING GROUNDS
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Contract No. DACW33-00-D-0007
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DCN: SEDA2-092401-AACD

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 Virginia Road
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September 2001

W.O. No. 20140.007.003

TABLE OF CONTENTS

LIST OF FIGURES

Title **Page**

LIST OF ACRONYMS

CEHNC	Huntsville Center, Corps of Engineers
CENAE	U.S. Army C orps of Engineers, New England District
CENAN	U.S. Army Corps of Engineers, New York District
CPM	Critical Path Method
CQCP	Contractor Quality Control Plan
CRZ	Contamination reduction zone
DDESBH	Department of Defense Explosive Safety Board
DoD	Department of Defense
ESS	explosive safety submission
EZ	exclusion zone
ft	foot/feet
HE	High Explosive
mm	millimeters
MPM	Most Probable Munition
NYSDEC	New York State Department of Environmental Conservation
OB	open burning
OE	Ordnance and Explosives
ORS	Ordnance-Related Scrap
OSHA	Occupational Safety and Health Administration
POTW	publicly owned treatment works
PPE	personal protective equipment
QA	quality assurance
QC	Quality Control
SEDA	Seneca Army Depot Activity
SSHASP	Site Specific Health and Safety Plan
SZ	Support zone
T&D	transportation and disposal
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
WBS	work breakdown structure
WESTON®	Roy F. Weston, Inc.
WP	Work Plan
yd3	cubic yards

SECTION 1

INTRODUCTION

1. INTRODUCTION

This Work Plan (WP) Amendment defines the technical approach of Roy F. Weston, Inc. (WESTON®) for the unexploded ordnance (UXO) and Soil Remediation activities at the Open Burning Grounds site located at the Seneca Army Depot Activity (SEDA) in Romulus, New York under Contract No. DACW33-00-D-0007 (Delivery Order No. 0003). This amendment was prepared for the U.S. Army Corps of Engineers, New England District (CENAE). Under this contract, the U.S. Army Corps Of Engineers, New York District (CENAN) will oversee performance of this Task Order. This amendment was prepared in order to define additional tasks not previously summarized in the Work Plans dated April 1999.

The project involves the following additional tasks; excavation and screening of stockpiled soils, oversized sorting to remove and dispose of Ordnance and Explosives (OE), and geophysical mapping and clearing of the underlying site. All other ancillary and critical activities associated with this effort are detailed in the existing Work Plans dated April 1999. Sessler Wrecking will be performing all operations within the OBG site related to the handling and transportation of soils containing OE under the supervision of WESTON's UXO subcontractor SpecPro, Incorporated. SpecPro will be performing UXO support for all site activities, oversize sorting and removal of OE. Geophysical mapping and clearance will be performed by WESTON and SpecPro.

1.1 SITE DESCRIPTION

A complete site description is contained in the Revised Draft Work Plans dated April 1999. Activities performed since the start of the project in June 1999 have resulted in the accumulation of approximately 15 soil stockpiles that are currently located at various locations throughout the 30 acre OBG site. The stockpiles range in size from approximately 45 cy to 10,800 cy and consist of unscreened soil, screened soil, and oversize material. Numerous depressions exist at pad and berm locations where soil with either elevated levels of lead or OE have been removed.

1.2 PROJECT OBJECTIVES

The objective of this WP Addendum is to address specific changes in the scope of work related to the remediation of the Open Burning Grounds within Seneca Army Depot Activity (SEDA). Specific project objectives include the following:

- Excavate soil associated with 1-ft. cut material
- Screen stockpiled soils down to 1/2-inch minus to remove oversize material and OE
- Perform oversize sorting to remove and dispose of OE from the soil
- Perform geophysical mapping and clearance to remove OE to a total depth of 3-ft.
- Dispose of all OE, OE scrap, and ferrous materials.
- Perform site restoration.

The work will be implemented in accordance with existing project plans and the following amendments;

- Site Specific Health and Safety Plan (SSHASP) Amendment
- Contractor Quality Control Plan (CQCP) Amendment

SECTION 2

MANAGEMENT

2. MANAGEMENT

2.1 STAFFING

WESTON's management team will be led by the Program Manager (Mr. Roberto Rico), the Deputy Program Manager (Mr. Bruce Campbell), and Project Manager (Mr. Christopher Kane). They will be responsible for WESTON's overall performance on this Task Order. The WESTON project team will consist of a Site Manager (Mr. Edwin Benton), a Project Engineer/Quality Control (QC) Officer (Mr. Ralph Willey), a Site Safety and Health Officer/Sample Technician (Mr. Steven Kirejczyk), and a UXO Quality Control/Health and Safety Officer (Mr. Frank Henderson). The project team will closely monitor site activity, performance, costs, schedule, QC, and safety to ensure that the project objectives set forth in this WP Addendum are achieved.

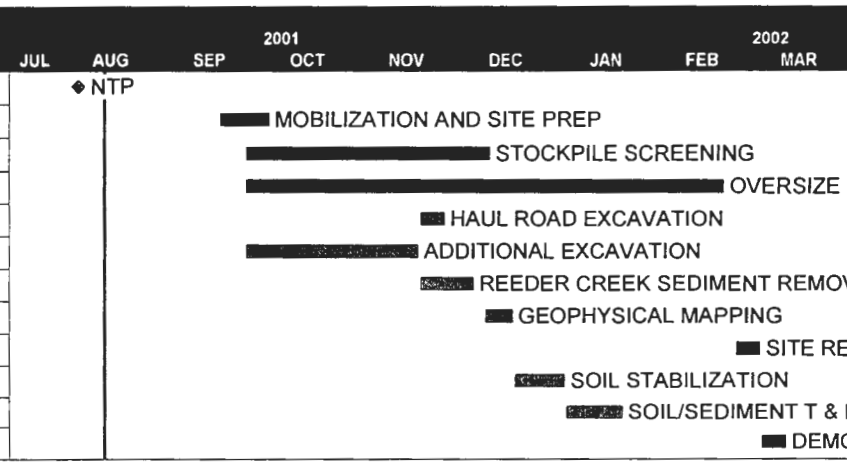
2.2 PROJECT SCHEDULE

As a result of the change in work scope in these areas, the project schedule has been modified to incorporate the additional activities to be completed by WESTON. The Project Schedule has been prepared using Primavera Systems, Inc. Critical Path Method (CPM) software and is organized by the tasks outlined in the work breakdown structure (WBS). The updated Project Schedule is presented in Figure 2-1.

The left portion of the schedule contains the WBS number, task description, remaining duration and early start and finish dates. The right side of the schedule depicts the task period of performance presented in Gantt bar chart form. Task time-frames have been established using estimated durations for labor and where applicable, material procurements.

Figure 1-2
Seneca Army Depot Activity
OBG Site
Romulus, NY

Description	Orig Dur	Rem Dur	Early Start	Early Finish
P	0	0	06AUG01 A	
BILIZATION AND SITE PREP	10d	10d	19SEP01	04OCT01
OCKPILE SCREENING	42d	42d	27SEP01	11DEC01
ERSIZE SCREENING	80d	80d	27SEP01	21FEB02
UL ROAD EXCAVATION	4d	4d	20NOV01	27NOV01
DITIONAL EXCAVATION	30d	30d	27SEP01	19NOV01
EDER CREEK SEDIMENT REMOVAL	10d	10d	20NOV01	06DEC01
OPHYSICAL MAPPING	6d	6d	10DEC01	18DEC01
E RESTORATION	5d	5d	25FEB02	04MAR02
IL STABILIZATION	5d	5d	19DEC01	03JAN02
IL/SEDIMENT T & D	10d	10d	04JAN02	21JAN02
MOBILIZATION	5d	5d	05MAR02	12MAR02



3JUL01	U.S. ARMY CORPS OF ENGINEERS, NE DISTRICT	Early bar
2MAR02	CONTRACT NO. DACW33-00-D-0007	Progress
4AUG01	T.O. No.: 20140.007.203	Critical ba
6AUG01	Prepared by:	Summary
A	WESTON	Start miles
ystems, Inc.	OBG	Finish mile

SECTION 3

SITEWORK

3. SITEWORK

3.1 MOBILIZATION

WESTON will mobilize personnel and subcontractors to the Open Burning Grounds site following completion of milestone activities at the Area 44A site to implement the specific tasks scheduled to be performed.

A WESTON project field team has been selected to optimize the efficient execution of each phase of the field operations. The crew will consist of a Site Manager, Project Engineer/Quality Control Officer, Site Health and Safety Officer/Sample Technician, and UXO Quality Control Officer/Health and Safety Officer. WESTON has designated certain qualified individuals to perform dual roles to maximize operation efficiency. Mobilization of staff and construction facilities will be initiated upon Notice to Proceed. WESTON will work with base personnel to determine security procedures to be followed for subcontractors, supplies, and deliveries to ensure timely performance without delays. With the support of SEDA personnel, WESTON will notify the installation environmental coordinator and/or Dig-Safe to identify and locate utilities within the open burning (OB) Grounds. WESTON will also investigate the need for, and if necessary, obtain local permits (e.g., utility clearance and digging permits). After receipt of necessary permits, utility clearances, and clearance by the UXO subcontractor, temporarily facilities will be established, including the delivery and set-up of storage facilities, decontamination facilities (personnel and equipment), portable water, communications equipment, and sanitary facilities. Construction equipment will be brought onsite in a phased manner, as required, to support the field work at the designated access gate.

All equipment mobilized on-site will be routinely maintained and inspected for safety operating practices as detailed in the SSHASP. The following Equipment (or similar) is proposed for use at the site during various phases of work:

- Excavator — JD 450
- Front-end Loader — (6yd) Volvo L120C/Michigan L140
- Bulldozer — 2 CAT D6
- Off-Road Dump Truck: — CAT D250 (30-35 ton)
- Scissors Man-Lift — JLG

- Roll-Off Container (20yd)
- Mixing Screen Trommel Screen
- Conveyor 2 M65 (50 ft)

All earthmoving equipment used during OE operations will be fitted with plexiglass shields. Shield thickness has been calculated to be a minimum of 3-inches of plexiglass (by Dr.Crull, Structures Branch, USAGE, Huntsville, using THOR equations for fragment penetration from TM 5-1300) using the Q-D MPM, the 37mm MKII Projectile.

3.2 SITE PREPARATION

3.2.1 Work Zones

Once mobilization is complete, field crews will establish site controls and delineate the project work zones. These zones include areas for the placement of a storage trailer, equipment, and materials staging within the OBG.

To prevent both exposures to unprotected personnel and migration of contamination due to tracking by personnel or equipment, work areas and personal protective equipment requirements within those areas will be clearly identified. Signs will be posted at entrance roads that declare the area as hazardous. Signs will also be erected that direct visitors to the only authorized support zone entrance. (This will include vendors, and WESTON guests).

WESTON will designate work areas or zones, as suggested in Occupation Safety and Health Guidance Manual for Hazardous Waste Site Activities, NIOSH/OSHA/USCG/EPA, November 1985. The areas surrounding the work area will be divided into the following three zones:

- Exclusion zone (EZ)
- Contamination reduction zone (CRZ)
- Support zone (SZ)

The EZ will include the areas within the perimeter fence where intrusive activities are occurring and where personnel may expose themselves to soils. The CRZ will include the area where

personal protective equipment (PPE) is doffed and secured. The SZ will include parking/staging areas, trailer location, perimeter access roads and any other area outside the CRZ.

3.2.2 Site Security and Control

WESTON will comply with existing access control procedures, site security protocols, and work permit requirements of SEDA.

3.2.3 SEDA Requirements

WESTON will provide a list of all employees, subcontractors, and suppliers to CENAN. Samples of signatures for all employees on the list will be provided. All vehicles entering the Site will be required to follow the posted Speed Limits (Ammo Area – 5-miles per hour (mph), Limited/Exclusion Area – 25 mph).

3.2.4 Site Entry

Site entry is to be performed through the access gate at Post Gate No. 2. A sign will be posted directing all site visitors, subcontractors, and suppliers to report to the main office at the gate to sign in. All site visitors and personnel will be required to have positive identification and enter their name, affiliation, purpose of visit, and time of site entry/exit into a permanently bound logbook maintained by WESTON at the entrance to the work area. The logbook will include all equipment and vehicles entering and leaving the site.

Visitors and vendors will only be allowed in the designated Support Zones. Those who must gain access to an Exclusion Zone must show proof of required training and medical clearances as described in the SSHASP.

Two-way radios will be used to maintain full time communications with the main site trailer and WESTON field staff.

3.3 SOIL SCREENING

The soil identified by Stockpiles 1-15 as shown in Figure 1-1 will be screened/sifted depending on the nature of the stockpile (unscreened, oversize, etc.). Following site preparation activities, the screening plant will be mobilized and placed at a central location (to be approved in advance by WESTON, CENAN, and UXO subcontractor) in order to maximize production for sifting operations while minimizing redundant materials handling operations. Soil removed from the stockpiles will be processed in the screening plant down to 1/2-inch using a Trommel Screen. Material passing the 1/2-inch screen will be hauled directly to the staging area and separated into one of two stockpiles, either Case I soil (soil failing TCLP lead), or Case III Soil (material < 500 mg/kg). All reject material or oversized material (assuming 20% of total screened quantity) will be hauled directly to an oversize stockpile outside the Public Withdrawal Distance (400-ft) for UXO rescreening (if applicable) and sorting. All excavation, soil screening, and ancillary tasks will be performed in accordance with the OBG Explosives Safety Submission dated June 1999 and Amendment 1 dated August 2000.

3.4 ADDITIONAL EXCAVATION OF 1-FT. CUT & SCREENING

Additional excavation within the 30-acre area may be required in order to obtain the 1-ft. cut clearance requirement site wide. This may include perimeter soils, overlying areas (not previously excavated to the required depth), Reeder Creek Sediments, or soil beneath the existing stockpiles. Soil will be excavated, removed, and hauled to the soil screening plant, screened to 1/2-inch (via Trommel Screen) and either hauled to a stockpile staging for characterization purposes or to the oversize staging area for rescreening and sorting. All excavation, soil screening, and ancillary tasks will be performed in accordance with the OBG Explosives Safety Submission dated June 1999 and Amendment 1 dated August 2000.

3.5 OVERSIZED SCREENING

All oversized material, i.e., items greater than 1/2 inch in diameter will be removed for UXO clearance. It is anticipated that approximately 20% of the excavated/screened soil volume will result in oversized material that will need to be separated out by hand, however, a significant volume of oversized material already exists in the stockpiles onsite. The stockpiled material will

be screened first in order to remove additional fines. Once the material is rescreened, the reject material will be placed onto a conveyor for processing at the oversized sorting table by UXO technicians. Material will then be examined by UXO technicians to determine the presence of OE and OE related materials. Items identified as OE will be segregated into a demolition holding area. OE related scrap will be segregated separately. OE items will be destroyed weekly and stored in the magazine area as noted below in Subsection 3.9, OE Disposal. OE related materials will be examined and certified inert then processed as scrap. The metal scrap generated from the sorting operation will be used as fill/grading material or disposed of offsite at the request of CENAN. All other reject will be hauled to the staging area for characterization.

The following Occupational Safety and Health Administration (OSHA) standards and the U.S. Army Corps of Engineers (USACE) requirements directly apply to the conduct of operations associated with this SOP.

- OSHA Construction Industry Standard 19 CFR Part 1926, Subpart O
- OSHA General Industry Standard 29 CFR Part 1910, Subparts N and O
- USACE EM 385-1-1, Sections 16 A and B Section 17A

3.6 GEOPHYSICAL TEST GRID

A Geophysical Test Grid will be constructed and daily tests performed to verify that the detection equipment is capable of detecting the target ammunition to the required depths in accordance with the OBG ESS, Section 6.0 (Phase II). The detection equipment must be able to detect down to two feet for the MKII Grenade and one foot for the illuminating signal and the 37mm MKII Projectile. Equipment will be calibrated using the test grid for each successive day of mapping and clearing activities.

3.7 GEOPHYSICAL MAPPING AND CLEARANCE

A sweep of the entire 30-acres will be performed following completion of HTRW confirmation soil sampling; all anomalies to depth of two feet will be investigated and removed. Anomalies that are deeper will be chased and removed. Each grid will be divided into 5-ft. lanes (at a minimum). Mapping and clearance will be performed in accordance with the ESS.

3.7.1 QC Audit

The QC Safety UXO Technician and the UXO subcontractor's QA/QC representative will conduct a QC audit in accordance with the ESS, Section 6.0 (Phase VII), QA/QC Requirements. This audit will include a surface and subsurface check of an area representing 20% of the work completed. The QC/Safety UXO Technician, assisted by the UXO subcontractor's QA/QC representative, will proceed on a predetermined pattern starting on the opposite side from the QC/Safety UXO Technician's check. If the site fails, it will be scheduled for re-work. In addition, an inspection of all logs and a check of contractor and subcontractor personnel will be conducted to ensure that they are complying with the WP.

The pass/fail criteria for the final clearance are set by the Huntsville Center, Corps of Engineers (CEHNC). This criteria specifies that a grid will be failed if, during the QC audit:

- A live item is found
- More than three OE scrap items are found in a grid
- Any inert OE item, which resembles a live UXO, is found
- Any piece of scrap with dimensions greater than 2 in. x 2 in. is discovered

3.8 OE DISPOSAL

Disposal operations will be carried out weekly. Items which can be removed will be consolidated in accordance with "Procedures for Demolition of Multiple Rounds (Consolidate Shots) on Ordnance and Explosives (OE) Sites", dated August 1998 and approved by DDESB on 27 October 1998. Disposal will be carried out at the OB Grounds, which is adjacent to the OB Grounds. Since the explosive storage magazines will be located within SEDA, all transport will be performed on dirt/gravel roads, thereby eliminating the necessity to transport on public highways. The transport vehicles shall meet all the requirements of 49 CFR 100-199. Items that cannot be moved, will be blown in-place, individually.

All Stockpiled, inert ordnance and Ordnance-Related Scrap (ORS) will be turned into a local scrap dealer. The procedures outlined in Department of Defense (DoD) 4160.21.M will be followed and the shipment certified as being free from explosive hazards. A DD Form 1348-1 will be utilized as turn-in documentation and will include the statement (I certify that the property listed heron has been inspected by me and, to the best of my knowledge and belief,

contains no items of a dangerous nature). The DD 1348 form will be signed by the SUXO and all turn-in documentation will be submitted to WESTON.

The UXO subcontractor will supply explosives for destruction operations. WESTON will not use anything other than non-electrical charges. Explosives will be stored in the SEDA OB/OD area double igloo type, earthen covered magazine. The existing magazine is constructed to Department of Defense Explosive Safety Board (DDESB) and U.S. Army standards and is complete with the required lightning protection. Refer to the disposal procedures outline in the attached OBG ESS.

3.9 SITE RESTORATION

Following completion of excavation activities at OBG, WESTON will perform site grading activities. The limits of site grading will be determined based on both vertical and horizontal soil confirmation sampling and the associated soil removal effort. The existing depressions formed by soil excavation at the former burn pad locations will be graded out in order to facilitate drainage from surface run on. A detailed site grading plan will be submitted to USACE for approval once final elevations are determined.

3.10 DEMOBILIZATION

Following completion of all sitework and restoration activities, WESTON shall demobilize all personnel, equipment, and materials. All contaminated material shall be properly loaded and transported off-site to a disposal facility. Subcontractors will demobilize the heavy equipment. All temporary erosion control measures such as construction fence, silt fence, hay bales, line posts, and banner guard will be removed and WESTON shall demobilize the temporary storage facilities and office location. Coordination with the Base Environmental Coordinator will be performed to remove all utilities and to ensure existing conditions are established prior to demobilization.

SECTION 4

FINAL REPORT

4. FINAL REPORT

Upon completion of site activities at the OBG site, WESTON will prepare and submit a closeout report, which documents all site activities. The report will be submitted to the USACE within 30 days from demobilization and will include a summary of the work activities described in this WP Amendment. In addition the report will include at a minimum; a final contour map of the site; geophysical mapping data and drawings; a final schedule; sampling data (if applicable); and any other information as required by the June 1999 ESS.

SECTION 5

REFERENCES

5. REFERENCES

EOD Technology, Inc. Knoxville, TN. 1997. Prepared for U.S. Army Engineering and Support Center, Huntsville, Alabama. *Workplan for the Ordnance and Explosive Removal Action, Open Burning (OB) Grounds – Volumes I and II.).* Seneca Army Depot Activity (SEDA), Romulus, NY.

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Parsons Engineering Science, Inc. Boston, MA. 1998. Prepared for U.S. Army Engineer Division, Huntsville, Alabama. *Section C – Technical Specifications Soil and Sediment Remediation at the Open Burning Grounds.* August 1998.

U.S. Army Corps of Engineers, New England District (CENAN). 1997. *Superfund Proposed Plan, The Open Burning (OB) Grounds at the Seneca Army Deport Activity (SEDA).* Seneca Army Depot Activity (SEDA), Romulus, NY. Contract No. DACW33-95-D-0005.

U.S. Army Engineer Division. Huntsville, Alabama. 1998. *Draft Section C – Technical Specifications*, Soil and Sediment Remediation at the Open Burning (OB) Grounds.

U.S. Army Engineer Division. Huntsville, Alabama. 1999. *Explosive Safety Submission, Ordnance and Explosive Removal at the Open Burning Grounds*, Seneca Army Depot Activity, Romulus, New York.

ATTACHMENT I

CONTRACTOR QUALITY CONTROL PLAN AMENDMENT

AMENDMENT
CONTRACTOR QUALITY CONTROL PLAN

UXO AND SOIL REMEDIATION
OPEN BURNING GROUNDS
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Contract No. DACW33-00-D-0007
Task Order No. 0003
DCN: SEDA2-092401-AACD

Prepared for:

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September 2001

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TABLE OF CONTENTS

LIST OF TABLES

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USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
WBS	work breakdown structure
WESTON®	Roy F. Weston, Inc.
WP	Work Plan
yd3	cubic yards

SECTION 1

OVERVIEW

1. OVERVIEW

This Contractor Quality Control Plan (CQCP) amendment was developed to identify and implement quality requirements to ensure that project activities are conducted appropriately in accordance with the contract requirements. The CQCP was prepared for the U.S. Army Corps of Engineers, New England District (CENAE), in compliance with the specifications and the Scope of Work (SOW), Contract No. DACW33-00-D-0007 at the Seneca Army Depot Activity (SEDA) in Romulus, NY. Under this contract, the U.S. Army Corps of Engineers, New York District (CENAN) will oversee performance of the Task Order. The existing CQCP that was submitted and approved under the Revised Draft Work Plan (WP) (April 1999) covers all other work activities associated with this task order.

This plan amendment was prepared to ensure that all additional work tasks performed at the Open Burning (OB) Grounds and Area 44A sites are accomplished within acceptable levels of internal controls and review procedures. These controls and procedures will eliminate conflicts, errors, and omissions, and will ensure the technical accuracy of all deliverables. The amendment was prepared with guidance from Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans, QAMS-005/80, and from the Office of Toxic Substances (OTS) Guidance Document for the Preparation of Quality Assurance Project Plans, dated 9 September 1987.

Under contract with CENAE, Roy F. Weston, Inc. (WESTON®), will implement remedial activities at the OB Grounds and at the Area 44A site. To achieve this goal, it will be necessary to remove and dispose of ordnance and explosives (OE) and OE related scrap from soils associated with the two sites.

The work will consist of the following:

- Excavation
- Soil Screening
- Oversize Sorting and OE Removal/Disposal
- Geophysical Mapping, Clearance, and Removal/Disposal of OE

SECTION 2

SCOPE

2. SCOPE

The scope of this plan provides quality control (QC) measures applicable to administrative, engineering, and technical activities associated with the additional tasks scoped under Contract No. DACW33-00-D-0007 at SEDA. The requirements of this plan are also applicable to all WESTON-affiliated project support groups and their contractors and subcontractors unless an alternate Quality Control Plan, which is consistent with or exceeds the requirements of this document either in whole or in part, is used. This CQCP has been developed for the activities associated with the above tasks at the OB Grounds site and the Area 44A site.

SECTION 3

PROJECT ORGANIZATION AND RESPONSIBILITIES

3. PROJECT ORGANIZATION AND RESPONSIBILITIES

Under the direction of CENAE, WESTON is responsible for implementing the Scope of Work (SOW). WESTON will provide a staff of experienced administrative and technical professionals to serve as key personnel for this project. These personnel were selected for their management and technical abilities. A discussion of WESTON roles and responsibilities is provided in Section 2 of the Revised Draft WP. A revised organizational chart is included in Attachment A of this plan amendment. WESTON onsite subcontractors will include Sessler (sitework subcontractor) and SpecPro (OE subcontractor).

SECTION 4

FIELD ACTIVITIES

4. FIELD ACTIVITIES

4.1 QUALITY REQUIREMENTS

The quality requirements associated with field activities in support of this task order are defined in Table 4-1. These requirements apply to the additional field activities that affect the quality of work and work products. The quality requirements associated with sampling and analysis are identified in the Sampling and Analysis Plan (SAP). The approved SAP and SAP Amendment will be followed for sampling activities, except in cases where field conditions may not coincide with the conditions outlined in the SAP.

QA/QC checks will be conducted as follows:

- **Daily Briefings** - The Site QA/QC Officer will ensure that daily safety and operational briefings are conducted routinely. The Site QA/QC Officer will accomplish this by personally observing or conducting the briefings.

- **Communications** - Positive communications with USACE Field Representative and site personnel will be maintained throughout the workday.

  - Communication checks will be conducted each morning prior to starting work, after the lunch break, and following any period of prolonged interruption of operations.

  - Teams will not start operations until satisfactory checks have been achieved and have been approved by CENAN.

- **Training** - The Site Safety and Health Officer and SUXOS will ensure that initial site-specific training is performed for all field personnel prior to startup of field activities, and that all safety control measures have been established.

Training will be accomplished using only approved training materials

- **Documentation** - The Site QA/QC Officer will ensure the completion of all documentation of all surveys and clearance reports.

- **Review** - The Site Manager will review all documentation for accuracy.

Table 4-1

Remediation Activities
Open Burning Grounds and Area 44A Remediation
Seneca Army Depot Activity

Objective	Activity	Activity Quality Requirement	Quality Control Verification
Site-work	Excavation	OBG: Excavate in-situ soils within OBG at Pad/Berm areas, complete remaining 1-ft. cut, remove sediments from Reeder Creek, and excavate haul road in accordance with the limits set forth in the SOW, ESS, and sampling criteria. Area 44A: Excavate the remaining 1-ft. cut beneath existing stockpiles in accordance with the SOW and ESS.	Daily Inspection Report Daily Site Health and Safety Meeting Report Daily Equipment Checklist Construction Equipment Inspection Checklist (NAD Form 478) PM Health and Safety Compliance Inspection. QA Audit Checklist and Audit Form Final Inspection
Site work	Soil Screening	OBG: Screen stockpiled soils to ½ in. in accordance with ESS. Area 44A: Screen stockpiled soils to 1 in. in accordance with the ESS.	Daily Inspection Report Daily Site Health and Safety Meeting Report Daily Equipment Checklist Construction Equipment Inspection Checklist (NAD Form 478) PM Health and Safety Compliance Inspection. QA Audit Checklist and Audit Final Inspection
Site-work	Oversize Sorting and OE Removal/Disposal	OBG: Remove via screening/handsorting all OE, OE scrap, and ferrous material from oversized stockpiles and remaining screened material for disposal. Area 44A: Remove OE, OE scrap, and ferrous material from the oversized material following placement of the oversized soil in 12 in. lifts.	Daily Inspection Report Daily Site Health and Safety Meeting Report Daily Equipment Checklist Construction Equipment Inspection Checklist (NAD Form 478) PM Health and Safety Compliance Inspection. QA Audit Checklist and Audit Form Final Inspection

Table 4-1 (continued)

Remediation Activities
Open Burning Grounds and Area 44A Remediation
Seneca Army Depot Activity

Site work	Geophysical Mapping and Clearance and OE Removal/Disposal	OBG: Visually clear 30-acre site, perform geophysical mapping to a depth of 2 ft. (below 1 ft. cut) to identify, flag, and remove anomalies via UXO tech support. Area 44A: Visually clear 25-acre site, perform geophysical mapping to a depth of 2 ft. (below 1 ft. cut) to identify, flag, and remove anomalies via UXO tech support.	Daily Inspection Report Daily Site Health and Safety Meeting Report PM Health and Safety Compliance Inspection. GIS Anomaly Map QA Audit Checklist and Audit Final Inspection

4.2 FIELD DOCUMENTATION

All field activities affecting quality control will be performed in accordance with documented procedures, instructions, or drawings identified in the specifications or the scope of work. During all field activities, WESTON will use the following reporting formats:

- Daily Inspection Report (Form 1).
- Quality Assurance Audit Checklist and Audit Notes (Form 2).
- Daily Site Health and Safety Meeting Report or equivalent(Form 3).
- Daily Equipment Checklist (Form 4).
- Construction Equipment Inspection Form (Form 5).
- Health and Safety Compliance Inspection (Form 6).
- Field Logbooks.

These reports will be used to document construction quality control activities and are located in Appendix A of the CQCP (April 1999). Related laboratory test reports and vendor data will be attached to these QC reports when daily work activities are associated with these data (upon CENAN request).

SECTION 5

FIELD INSPECTIONS

5. FIELD INSPECTIONS

The WESTON Site QA/QC Officer will maintain a field logbook of the inspection and test activities. This daily logbook will be used in preparing the Daily Construction Quality Control (CQC) Report form. The Daily Construction Quality Control Reports for the activities of each day of the previous week will be submitted weekly to the Contracting Officer's Representative (COR) or CENAN resident field engineer. Reports will not be submitted for days on which no work is performed. At a minimum, one report will be submitted for every seven days of no work and on the last day of a period of work stoppage. Reports will be signed and dated by the Site QA/QC Officer.

The Daily CQC Report and the Daily Inspection Report include:

- Contractor/subcontractors and responsibilities.
- Equipment used, with any idle or downtime noted.
- Location, personnel, and description of work for each day.
- Test and/or control activities performed. Any deficiencies to the specifications will be noted along with the corrective action taken.
- Quantity of materials received at the site. For all materials received, acceptability, storage, and compliance with specifications will be noted.
- Review of submittals.
- Off-site surveillance activities.
- Safety evaluations including a description of inspections, results, and any corrective actions.

SECTION 6

AUDITS

6. AUDITS

Field performance will be evaluated to ensure that the quality standards and objectives of the WP are met. The evaluation will be accomplished through audits and corrective action through use of the Daily Construction Quality Control Report. Audits will be conducted and corrective actions will be implemented when non-conformances or deficiencies are identified. Additional audits will be conducted periodically. The audits will be planned and conducted by the Program or Project QC Manager, Site QA/QC Officer, or the Site Health and Safety Officer and clearly defined before they are initiated. Procedures for auditing activities will be identified prior to implementation of the audits.

The audit process will involve identifying non-conformances or deficiencies, reporting and documenting them, initiating corrective action through appropriate channels, and following up with a compliance review. Records will be kept of all auditing tasks and findings on the Quality Assurance Audit Checklist and Audit Notes. In addition, copies of the audit findings will be provided to CENAE/CENAN within 1 week of completion of the audit.

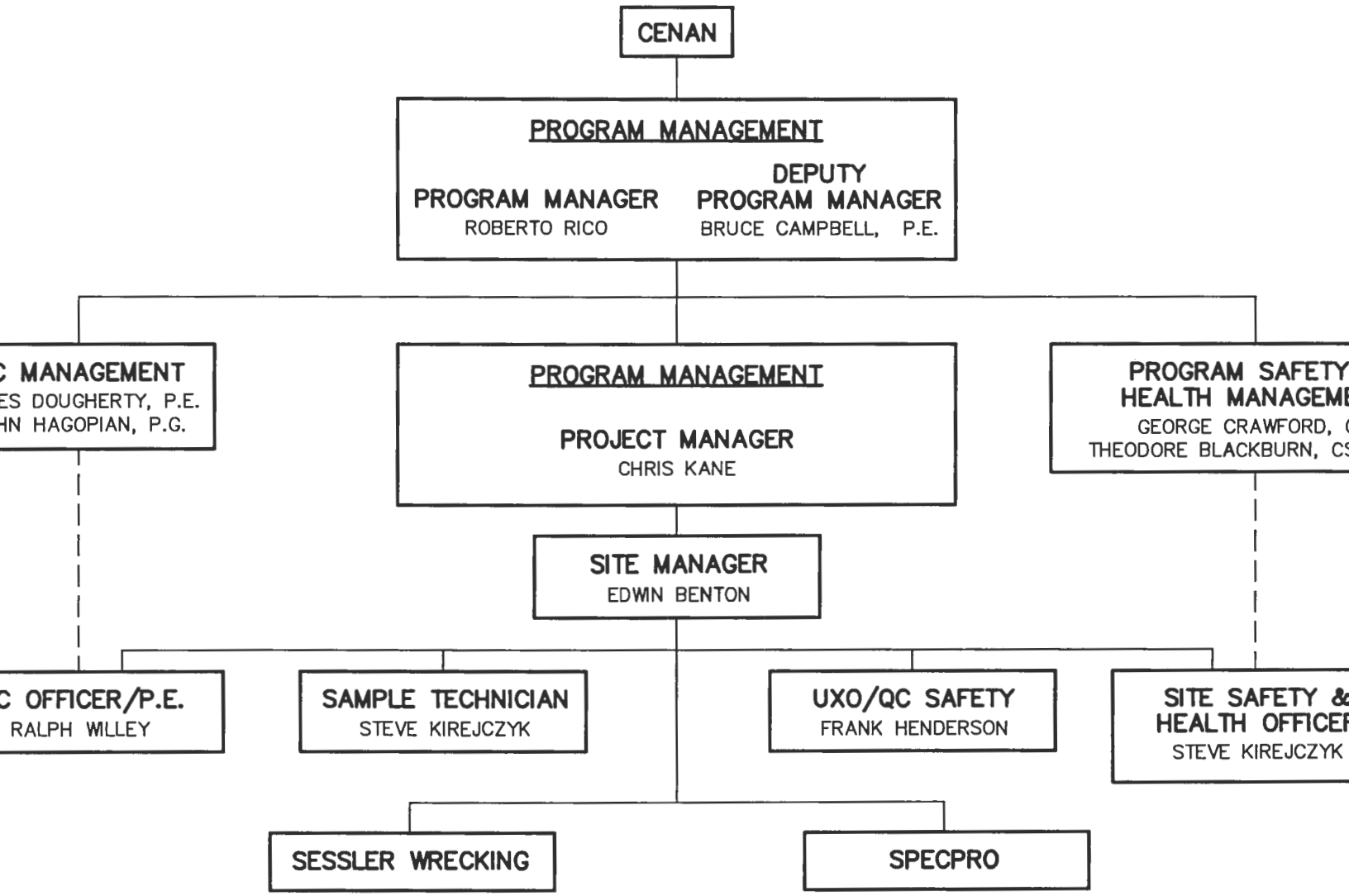
Additional field activities requiring an audit include the sampling activities. Proper sample collection (location, number, parameters, and QA/QC samples) and delivery (packaging, labeling, chain-of-custody, custody seals, etc.) will be closely verified.

The field teams involved with the construction activities are responsible for reporting all suspected technical non-conformances or deficiencies to the Program or Project QC Manager. The Program or Project QC Manager is responsible for evaluation of the situation and taking action, if any is required, after following the notification protocol.

APPENDIX A – ORGANIZATIONAL CHART

ORGANIZATIONAL CHART

UXO/SOIL AND SEDIMENT REMEDIAL ACTION AT THE OPEN BURNING GROUNDS (OB) SENECA ARMY DEPOT ACTIVITY (SEDA) ROMULUS, NEW YORK



DY F. WESTON, INC.
ESTON
DESIGNERS/CONSULTANTS

ACOE\SENECA\SECTION_3.DWG (PLOT 1=1)

CONTRACT NO. DACW33-

SECTION 3

ATTACHMENT 2

SITE SPECIFIC HEALTH AND SAFETY PLAN AMENDMENT

AMENDMENT
SITE SPECIFIC HEALTH AND SAFETY PLAN

UXO AND SOIL REMEDIATION
OPEN BURNING GROUND
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Contract No. DACW33-00-D-0007
Task Order No. 0003
DCN: SEDA2-082401-AACD

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 Virginia Road
Concord, Massachusetts 01742-2751

Prepared by:

ROY F. WESTON, INC
One Wall Street
Manchester, New Hampshire 03101-1501

September 2001

W.O. No. 20140.007.203

TABLE OF CONTENTS

LIST OF TABLES

Title **Page**

LIST OF ACRONYMS

CEHNC	Huntsville Center, Corps of Engineers
CENAE	U.S. Army C orps of Engineers, New England District
CENAN	U.S. Army Corps of Engineers, New York District
CPM	Critical Path Method
CQCP	Contractor Quality Control Plan
CRZ	Contamination reduction zone
DDESBH	Department of Defense Explosive Safety Board
DoD	Department of Defense
ESS	explosive safety submission
EZ	exclusion zone
ft	foot/feet
HE	High Explosive
mm	millimeters
MPM	Most Probable Munition
NTP	Notice to Proceed
NYSDEC	New York State Department of Environmental Conservation
OB	open burning
OE	Ordnance and Explosives
ORS	Ordnance-Related Scrap
OSHA	Occupational Safety and Health Administration
POTW	publicly owned treatment works
PPE	personal protective equipment
QA	quality assurance
QC	Quality Control
SEDA	Seneca Army Depot Activity
SHSO	site health and safety officer
SSHASP	Site Specific Health and Safety Plan
SZ	Support zone
T&D	transportation and disposal
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
WBS	work breakdown structure
WESTON®	Roy F. Weston, Inc.
WP	Work Plan
yd3	cubic yards

Site Specific Health and Safety Plan Amendment
Approval/Signoff Form
UXO and Soil Remediation
Open Burning Ground
Seneca Army Depot Activity
Romulus, NY

Contract No. DACW33-00-D-0007

SITE SPECIFIC HEALTH AND SAFETY PLAN APPROVALS

By their specific signature, the undersigned certify that this site specific HASP is approved for utilization during OE activities at the Open Burning Ground site at the Seneca Army Depot Activity site located in Romulus, New York.

Signature, Name, Title

WESTON – Program Manager for Roberto Rico	9-24-01 Date
for WESTON - Project Manager Christopher G. Kane	9-24-01 Date
WESTON - Program CIH George M. Crawford, CIH	9.24.01 Date
WESTON - Program Safety Manager Theodore L. Blackburn, CSP, CET	9.24.01 Date
for WESTON - Site Health and Safety Officer Steve Kirejczyk	9-24-01 Date

Site Specific Health and Safety Plan Amendment
Approval/Signoff Form
UXO and Soil Remediation
Open Burning Ground
Seneca Army Depot Activity
Romulus, NY

Contract No. DACW33-00-D-0007

I understand, agree to, and will abide by the information set forth in this Site Specific Health and Safety Plan (SSHASP), and the information discussed in the Daily Safety and Health briefings.

Name	Signature	Date

Name	Signature	Date

SECTION 1

INTRODUCTION

1. INTRODUCTION

The purpose of this document is to amend the Revised Site Safety and Health Plan (SSHASP) prepared in April 1999. This amendment will update the existing SSHASP by outlining the procedures and safety concerns that may apply to workers performing fieldwork activities at the **Open Burning Grounds (OBG)** as it relates to UXO and Soil Remediation. Upon receiving notice to proceed (NTP) from CENAE, WESTON and its subcontractors Sessler and SPECPRO, Inc. will mobilize onsite from the Area 44A operation. Sessler will serve as the sitework subcontractor while SPECPRO, Inc. will provide the unexploded ordnance (UXO) support as the ordnance and explosives (OE) subcontractor during intrusive and soil screening activities.

The subcontractors are responsible for supplying all Personnel Protective Equipment (PPE) for their staff. The anticipated level of protection, for this phase of work is Modified Level D (Hardhat, safety glasses, ANSI approved footwear, gloves, Tyvek, rubber booties, chemical resistant gloves, and hearing protection). All work will be performed in accordance with this Health and Safety Addendum, the Explosive Safety Submission (ESS), June 1999, Amendment 1 to the ESS (10 August 2000), the Statement of Work (23 June 1997), any referenced regulations contained within the ESS, USACE EM 385 1-1, and all other state, federal, and local requirements.

SECTION 2

EXISTING SITE CONDITIONS

2. EXISTING SITE CONDITIONS

During previous OBG activities, material was excavated from burn pad and berm areas at nine locations throughout the 30 acre site based on the presence of OE and elevated levels of metals (lead in particular). The excavations were performed to first remove the presence of OE by sifting the soil down to ½ inch. However, since the soil contained elevated levels of lead, the soil was then hauled directly to a staging area (1181 ft. away based on the Public Withdrawal Distance) and stockpiled for confirmatory sampling to determine if the soil was either Case I (failing TCLP), Case II (passing TCLP but > 500 mg/kg), or Case III (less than 500 mg/kg) material. Based on this rationale, all materiel failing TCLP was stabilized on site and transported offsite as non-hazardous lead contaminated soil. All material passing TCLP but greater than 500 mg/kg was transported offsite as non-hazardous lead contaminated soil, and all material less than 500 mg/kg was left in the Case III stockpile (for future use by the SEDA). All soil not passing the ½ inch screen was transported directly from the screening plant to the oversize area within the OBG where it is currently stockpiled for secondary screening and hand sorting operations.

Currently, the pad, berm, 1-ft. cut material, and oversized soil stockpiles are located throughout the site. In addition, 50% of Reeder Creek has been excavated. The only activity that has been completed is the removal of all bermed material. Additional sitework services to be performed under this scope of work include the following; excavation of soil from the pads, 1-ft. cut area, and haul road, removal of sediment from Reeder Creek, hauling, sifting, oversize sorting, geophysical mapping and clearing, final grading, stabilization, and load out of non-hazardous soils.

SECTION 3

GENERAL OBJECTIVES

3. GENERAL OBJECTIVES

- Complete excavations at burn pad locations based on additional confirmatory sampling
- Complete 1 ft. cut across the site and removal of the haul roads
- Sift all unscreened material and haul to staging area for waste characterization
- Haul reject material to oversize stockpile for processing by UXO Subcontractor
- Perform sediment removal at Reeder Creek
- Restore the Site
- Complete stabilization activities on hazardous soils
- Perform offsite T & D of non-hazardous soils

SECTION 4

FIELD ACTIVITIES

4. FIELD ACTIVITIES

The scope of work for the remediation of soil and sediment at the OBG consists of the activities listed in Table 4-1:

Table 4-1
Field Activities

Activity Number	Activity
1	Mobilization
2	Site Preparation
3	Stockpile Screening
4	Haul Road Excavation/Screening/Hauling
5	Oversize Screening
6	Additional Excavation of 1 ft. Cut and Screening
7	Geophysical Test Grid
8	Geophysical Mapping and Clearance
9	OE Disposal
10	Reeder Creek Excavation
11	Storm Water Collection and Management
12	T & D Wastewater
13	Final Grading
14	Demobilization
15	Soil Stabilization
16	Loading Soil
17	Maintain Stockpiles

The major activities identified for this phase of the project can be summarized as follows:

4.1 ACTIVITY 1- MOBILIZATION

Subcontractors are responsible for the mobilization of all equipment, materials and personnel to perform the work described in this document. In addition, the subcontractors are also responsible for providing all temporary facilities including but not limited to the following: portable

sanitation facilities, site utilities (phone, fax, copier, printer, etc.), potable (bottled) water, PPE, conex storage box, fuel, etc. as necessary to perform all sitework services. The existing SEDA building shall be used by the subcontractors for their staff.

4.2 ACTIVITY 2 – SITE PREPARATION

Following mobilization but prior to the start of soil screening, it may be necessary for the OE subcontractor to clear all staging areas for construction equipment, to establish an OE grid system, to clear locations established for erosion and siltation controls, and to assist WESTON during sampling activities.

The subcontractor will install and maintain erosion and sedimentation control devices (silt fence and hay bales) at all environmentally sensitive areas associated with work at the OBG, Staging Area, or at Reeder Creek throughout the entire duration of work to prevent erosion, cross contamination, and sediment migration due to run-on and run-off. This shall include but not limited to the following: installation of silt fence and hay bales at ALL inlet locations along the perimeter of the OBG side (west side) adjacent to Reeder Creek, and installation of silt fence and hay bales along the perimeter of all stockpiles within the OBG that abut ponded areas. All silt fencing materials will be keyed into the soil (4-6 in.) and hay bales will be held in place with two stakes. Existing erosion and sedimentation controls will be utilized (from previous sitework activities) if found to be in acceptable conditions.

Also, both sides of the existing decontamination pad will be repaired. The 20 ft. x 50 ft. pad walls were built for temporary use only. Currently the 2 x 4 framed plywood walls are buckling and will need to be replaced and discarded. In addition, 20 mil polyethylene sheeting will be installed over the walls to a height of 8 ft. (min).

The subcontractor will delineate all staging areas in advance to allow the OE Subcontractor to clear the area. These areas will be demarcated in the field following the NTP.

4.3 ACTIVITY 3 – STOCKPILE SCREENING

A total of 4 stockpiles within the OE limits have not been screened based on prior records and visual observations made during the sitewalk. Subcontractor is responsible for hauling the unscreened soil to the screening plant or consolidating stockpiles, screening the soil to ½ inch, and hauling the soil to the Case I or Case III staging areas for characterization (by WESTON). The soil will be stockpiled within the OBG at locations determined by WESTON or CENAN. All reject material or oversize material (assuming 20% +or- of total screened quantity) will be hauled directly to an oversize pile outside the Public Withdrawal Distance (400 feet) for UXO processing or hand sorting.

The OE subcontractor will be responsible for providing all labor, equipment, and materials for UXO support during the screening of this material. The OE subcontractor will be responsible for all provisions in ESS relating to OE monitoring, removal, clearance and support for this activity in accordance with the ESS and Appendix A - Standard Operating Procedure 120-B and Amendment 1. The sitework subcontractor will be responsible for the continuous removal of all screened soil and reject from stockpiles at the discharge ends of the conveyor(s).

4.4 ACTIVITY 4 – HAUL ROAD EXCAVATIONS/SCREENING/HAULING

Subcontractor is responsible for excavating the shale haul road within the OE limits of work to a depth of 1 ft., hauling the soil to the screening plant, screening the soil to ½ inch, and hauling the soil to the Case III area for characterization (by WESTON). All reject material will be hauled to the oversize stockpile for processing. For clarification purposes the limits of the excavation include all sections of the haul road that lie to the south of the east-west access road or OE limits.

4.5 ACTIVITY 5 – OVERSIZE SCREENING

All stockpiled oversize material will be screened by the OE subcontractor in order to reduce fines content (as approved the USACE), however, the material will be conveyed or transported to the central oversize material processing area by sitework subcontractor. This includes stockpiled oversized material that was previously screened by the sitework subcontractor, and any

additional oversize material generated as a result of the primary screening operations (to ½ inch). In addition, the subcontractor will be responsible for loading the oversize (if not conveyed directly), and hauling the oversize to the Case I area for characterization once processed by the OE subcontractor.

Subcontractor is responsible for providing the loading equipment, discharge equipment, personnel (except UXO techs.), fuel and maintenance for all oversize sorting.

OE subcontractor will supply a power screen (1/2 inch screen), hopper and conveyor system that will be used to process the scrap. Sorting process shall include the gradual feeding of the oversized material past UXO personnel stationed along the conveyor. As the soil proceeds along the conveyor, the UXO personnel will search for, remove, and properly dispose of OE related hazardous items. The items remaining on the belt will be conveyed to a stockpile where the non-OE debris will be managed by the site work subcontractor. OE subcontractor shall be responsible for the handling and disposal of suspect OE. OE Subcontractor shall also submit a detailed specification of equipment anticipated for hand sorting operation. Sifting Operations will be performed in accordance with Amendment 1 (June 1999). The following Occupational Safety and Health Administration (OSHA) standards and the U.S. Army Corps of Engineers (USACE) requirements directly apply to the conduct of operations associated with this SOP. The sitework subcontractor will load all oversized material into the equipment and remove all non-OE oversized material following processing by OE subcontractor.

- OSHA Construction Industry Standard 29 CFR Part 1926, Subpart O
- OSHA General Industry Standard 29 CFR Part 1910, Subparts N and O
- USACE EM 385-1-1, Sections 16 A and B and Section 17 A

4.6 ACTIVITY 6 – ADDITIONAL EXCAVATION OF 1 FT. CUT & SCREENING

In order to receive closure on the site following removal of stockpiled soils, all remaining areas not previously cut to a depth of 12 inches must be excavated and the soil screened and hauled to the Case III area for characterization. In addition, all "contaminated" areas, i.e., areas > 500 mg/kg must be removed and any soil remaining at concentrations exceeding 60 mg/kg must

receive 1 ft. of "clean" cover material. The subcontractor is responsible for excavating 1 ft. of surface soils (for OE purposes), hauling the soil to the screening plant, sifting the soil to ½ inch minus and stockpiling the soil within the OBG at a determined area set by WESTON or CENAN. Although other areas are shown in this figure with cut depths of less than 1 ft., these areas will not be cut further since the area will be geophysically mapped at a later point in time.

Note: Area 11 has not been cleared, grubbed, stripped of all Low Lying Hill soils or cut to the appropriate depth to receive OE clearance. The subcontractor will excavate soils out to the limits shown in the drawings. In addition, once the remaining LLH is removed, 1 ft. of material will be stripped from the surface, hauled to the screening plant, sifted to ½ inch and stockpiled within the OBG at a determined area set by WESTON or CENAN or hauled to the oversized stockpile for hand sorting.

Additional excavation will be required at former burn pad areas where confirmatory sampling data results in lead concentrations exceeding 60 mg/kg or 500 mg/kg. The subcontractor will excavate soils based on limits pre-established by WESTON, haul the soil to the screening plant, sift to ½ inch and haul to the Class I or III area or to the oversized stockpile for hand sorting. In lieu of this option, it may be more cost effective to deliver 1 ft. of fill to areas with concentrations of lead in soil exceeding 60 mg/kg.

4.7 ACTIVITY 7 - GEOPHYSICAL TEST GRID

A Geophysical test grid will be performed by the OE subcontractor to verify that the detection equipment is capable of detecting the target ammunition to the required depths in accordance with OBG, ESS, Section 6.0 (Phase II), June 1999. Detection equipment must be able to detect down to two feet for the MK II Grenade and one-foot, for the Illuminating Signal and the 37mm MK II projectile. Previous OE contractors used the EM-61 and the White's Spectrum XLT to achieve the detection of the three chosen Most Probable Munitions (MPM) to at least the depths required.

4.8 ACTIVITY 8 – GEOPHYSICAL MAPPING AND CLEARANCE

OE subcontractor will perform a sweep of the entire 30 acres (except beneath Stockpile No. 3); all anomalies to a depth of two feet will be investigated and removed. Anomalies that are deeper will be chased and removed. Mapping and Clearance will be performed in accordance with the OBG, ESS, Section 6.0 (Phase V & VI), June 1999, and the Statement of Work (23 June 1997) Section 3.3.

4.9 ACTIVITY 9 - OE DISPOSAL

Disposal operations will be carried out weekly. Items that can be removed will be consolidated in accordance with "Procedures for Demolition of Multiple Rounds (Consolidated Shots) on Ordnance and Explosives (OE) Sites", dated August 1998 and approved by DDESB on 27 October 1998. Disposal will be carried out at the OD Grounds, which is adjacent to the OB Grounds. Since the explosive storage magazines will be located within SEDA, all transportation activities will be performed on dirt/gravel roads, thereby eliminating the necessity to transport on public highways. The transport vehicles shall meet all the requirements of 49 CFR 100-199. Items that cannot be moved, will be blown in-place, individually.

The subcontractor will supply explosives for destruction operations. Explosives will be stored in the SEDA OB/OD area double igloo type, earthen covered magazine. The existing magazine is constructed to DDESB and Army standards and is complete with the required lightning protection. Refer to the disposal procedures outlined in the attached Area-44A, ESS, Section 6.0, June 1999.

4.10 ACTIVITY 10 – REEDER CREEK EXCAVATION

Following delineation surveying and staking by WESTON, the subcontractor will be responsible for clearing access ways to the stream as required to access all areas for sediment removal. However, the SEDA personnel previously hydro-axed all vegetation and small shrubs along the entire length of the stream bank to gain access. It is not anticipated that tree removal is necessary but some 1.5-2.5 ft. diameter trees remain. Prior to excavation, the subcontractor will be

responsible for restoring upstream dam nd to divert the upstream flow of the creek around areas scheduled for sediment removal. The purpose of the diversion is to prevent fines from migrating downstream during remediation. Once the flow is diverted, the subcontractor will be responsible for dewatering the streambed in order to minimize the standing water elevation to <1-inch. Water pumped from these sections will be required to meet NYDEC Class c Discharge Criteria if discharged or offsite disposal parameters, however, storage provisions will be supplied by subcontractor if both modular storage tanks (2-155,000 gallon capacity) are full. WESTON will sample and analyze the water for disposal or discharge. Once all water is removed from the bottom, 2 ft. (max.) of the sidewall will be cut laterally from the toe of the slope (or to the bedrock) along each bank and excavation will proceed to bedrock (approx. 1-2.5 ft.) along the bottom. Confirmation samples will be collected by WESTON every 50 ft. along the sidewall and bottom. Diversion shall continue 24 hours per day until confirmation samples are received (turnaround time is 48 hours). It is anticipated that additional excavation in the creek will be required due to bedrock elevations and limits. WESTON will survey the stream banks once excavation has been completed. All excavated material will be hauled to the soil screening plant, screened to ½ inch, and hauled to the Class III area for characterization (by WESTON).

Riprap will be placed at downstream discharge points along with hay bales and silt fence to prevent solids suspension and fine migration from diverted water stream. The banks will be lined with 10 mil polyethylene sheeting (minimum thickness) to prevent contaminated sediment from falling on slope. Upon completion any disturbed areas will be re-graded and the dams will be removed and placed as directed by the USACE. No topsoil or seeding is required along the slopes.

Due to the vicinity of the creek in relation to the OBG, it has been determined that there may be a concern for possible OE materials within the creek limits of excavation. As a result, the OE subcontractor will be required to provide construction support during the creek excavation.

4.11 ACTIVITY 11 – STORM WATER COLLECTION AND MANAGEMENT

During performance of site remediation activities, the subcontractor will manage all run-on, run-off, storm water, and decontamination water that will be generated at the site. No water will be pumped directly to the swale, discharged, or transported offsite without being tested by WESTON. It is assumed that the water is non-hazardous but the water must meet NYDEC discharge criteria (if discharged onsite) or transported to a POTW if disposed offsite. The subcontractor is responsible for collecting, pumping and managing the water during all phases of work. It is assumed that water does not have to be pumped unless the underlying soil requires excavation, grading, or fill. All decontamination water will be pumped into modular storage tanks. All water generated within the site will be tested by WESTON in advance, however, it shall be assumed that all ponded water can be pumped to the settling area at elevation 620. The subcontractor will be responsible for decontaminating all equipment, materials and personnel that are in contact with the OE soil. Subcontractor will be responsible for wastewater generated from OE Subcontractor as well.

4.12 ACTIVITY 12 - T & D WASTEWATER

If determined, subcontractor may treat water onsite for discharge in accordance with NYDEC Discharge Criteria for Class C Stream or provide offsite disposal as a non-hazardous waste (treatment/disposal at POTW required).

4.13 ACTIVITY 13 – FINAL GRADING

Upon completion of all OE and HTRW components within the OE limits and the OBG, the subcontractor will regrade the site. It is not anticipated that grading will be necessary over the entire 30 acres, however, grading will be necessary at a minimum at each of the 11 ponds or depression areas that currently exist onsite in order to establish positive drainage.

Prior to grading, all ponded water will be removed and or transferred to a temporary sedimentation basin. Grading will consist of smoothing out existing sidewall cuts where vertical walls are exposed (to depths of 2 ft.) and filling the perimeter limits within each depressed pad

area with cut material (from TOS) to from natural depressions at each pad. If necessary, terracing will be performed to ensure positive drainage is established from west to east across the site. However, a grading plan will be provided to subcontractor for review prior to beginning final grading based on final excavation and backfill limits.

4.14 ACTIVITY 14 - DEMOBILIZATION

Upon completion of all soil screening activities, oversize sorting, grading, the subcontractor will be responsible for removing all temporary equipment and materials including construction fence, decontamination facilities, signs, hay bales, and silt fence from the site.

4.15 ACTIVITY 15 – SOIL STABILIZATION

Subcontractor to supply dozer to spread hazardous (failed TCLP) soil in 2-ft. layers in Case I staging area to stabilize the soil. Triple Super Phosphate will be added at a maximum rate of 5% addition (by weight) to the hazardous soil. Contact time will be limited to 24 hours prior to transferring, stockpiling, or consolidating. Once the curing period is completed, the soil will be tested by WESTON for TCLP lead to ensure that soil meets the LDR's and UTS guidelines.

4.16 ACTIVITY 16 – LOADING SOIL

Following stabilization activities and/or testing of soils with lead concentrations of greater than 500 mg/kg, soil loading will be performed by the sitework subcontractor in order to perform transportation and disposal of non-hazardous soils.

4.17 ACTIVITY 17 – MAINTAIN STOCKPILES

The stockpile staging area that is outside the 1181 ft. PWD will be maintained by the sitework subcontractor in order to ensure that sufficient capacity is available for material removed from the Open Burning Grounds. In addition, this will require the sitework subcontractor to de-water of the stockpile staging areas to prevent run-off and cross contamination. It is anticipated that this effort will require full time support.

SECTION 5

ACTIVITY HAZARD ANALYSES

5. ACTIVITY HAZARD ANALYSES

The attached activity hazard analyses (Attachment A) outlines the hazards associated with the field activities scheduled to begin in September 2001. Prior to start-up, affected personnel will be required to review the information found in the activity hazard analysis. Personnel will be required to attend the daily morning safety meeting at which time the site health and safety officer (SHSO) will review the material, and answer any questions.

SECTION 6

FIGURES, DRAWINGS, REFERENCES

6. FIGURES, DRAWINGS, REFERENCES

Attachment A: Activity Hazard Analyses

Attachment B: USACE, Open Burning Grounds, Explosive Safety Submission (ESS), June 1999

USACE, Amendment 1 to the ESS, August 2000

USACE, Statement of Work, Ordnance and Explosive (OE) Removal Action, At the Open Burning Grounds (OB), Senaca Army Depot Activity, Romulus, New York, 23 June 1997

SECTION 7

AMENDMENT APPROVALS

7. AMENDMENT APPROVALS

Program Manager: _____

Program CIH: _____

Program Safety Manager: _____

SSHO: _____

NOTE: **Amendment submittals and on-site documentation must include, at a minimum and as necessary, SSHP/SSHASP amendment/signature page; copies of amended sections and new or amended Activity Hazard Analysis tables.**

ATTACHMENT A

ACTIVITY HAZARD ANALYSES

Activity Hazard Analysis

vity 1 – Mobilization

Task	Hazards	Hazard Control
ilization, identify underground ies, establish work zones.	***Chemical Hazards***—Non-intrusive activities and therefore, the risk level of exposure to site contaminants during this activity is low.	No intrusive activities allowed during this activity. Wear appropriate PPE dermal contact. Avoid liquid pools and stained areas if possible. A backg will be conducted to ensure the levels of protection are correct. Action le established in the Table 4-1 will be used.
	Physical Hazards—Slip, trips, falls, tools, terrain or vegetation; uneven walking surfaces. Weather hazards, such as snow and ice, lightning; and poor visibility.	The work area shall be visually inspected. Slip, trip, and fall hazards shall removed or marked and barricaded. Sufficient illumination shall be maint personnel shall conduct walkover in groups of two as a minimum. Site pe refer to and follow WESTON FLDs 02-Inclement weather and 39-Illumi see FLD 11 and 12.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work ar kept organized and ice, snow and mud will be cleared from steps to reduc hazards. See FLD12
	Strains and sprains from manually lifting and moving.	Use proper lifting techniques such as keeping straight back, lifting with le twisting back; use mechanical equipment or get help from others. See FL
	Fire	Flammable liquids will be stored in safety containers and flammable stora Propane cylinders will be stored outside in secured areas. Fuel storage tan placed in impermeable dikes. Properly rated fire-extinguishers will be pla 50 ft of the fuel storage area, in construction equipment, and strategically construction area.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate care handling and placement of heavy objects. Materials and objects being har inspected for rough or sharp edges, and appropriate precautions shall be t contact. Personnel shall wear work gloves and avoid placing hands betwe

Task	Hazards	Hazard Control
	Electric Hazards	Generators will be grounded unless self-grounded. GFCIs will be used as Extension cords will be properly rated for intended use. Prior to any intru authorities will be contacted for permits. Elevated parts of machinery, lad antennas will be kept at least 10' from overhead electric lines. Qualified e will make electrical Installations. A lockout/tagout program consistent wi will be used for equipment maintenance.

	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefull handling equipment operations. Guards will be kept in place during oper Maintain safe distance from moving mechanical parts. Always use appro See FLD 22.
	Hand tools, manual and power.	Tools shall be inspected prior to use. Damaged tools will be tagged out c a qualified person can perform repair. Use tools properly and for their in purpose. A ground fault circuit interrupter (GFCI) will protect all power for hand tools. See FLD 38.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of th appropriate measures as required. Adhere to WESTON Bloodborne Pa Exposure Control Plan - First Aid Procedures FLD.
	Radiation: There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days	Use sunblock as appropriate. Avoid direct exposure to sun for long per

vity 2 - Site Preparation

Task	Hazards	Hazard Control
) clearance (UXO work will be ucted according to UXO SSHASP he ESS, non UXO qualified onnel will remain at designated nces from UXO related work), llation erosion control, repair decon ıs necessary	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain lead and nuggets of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air moni be conducted as defined in Section 4 of the SSHASP. See FLD 28. Eng Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. UXO personnel will examine areas designated for site preparation activ to ensure clearance is achieved for staging, laydown, and erosion contr
	Physical Hazards—Slip, trips, falls, tools, terrain or vegetation; uneven walking surfaces. Weather hazards, such as snow and ice, lightning; and poor visibility.	The work area shall be visually inspected. Slip, trip, and fall hazards shall removed or marked and barricaded. Sufficient illumination shall be maint personnel shall conduct walkover in groups of two as a minimum. Site pe refer to and follow WESTON FLDs 02-Inclement weather and 39-Illumi see FLD 11 and 12.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work are kept organized and ice, snow and mud will be cleared from steps to reduc hazards. See FLD12
	Strains and sprains from manually lifting and moving.	Use proper lifting techniques such as keeping straight back, lifting with le twisting back; use mechanical equipment or get help from others. See FL
	Fire	Flammable liquids will be stored in safety containers and flammable stora Propane cylinders will be stored outside in secured areas. Fuel storage tan placed in impermeable dikes. Properly rated fire-extinguishers will be pla 50 ft of the fuel storage area, in construction equipment, and strategically construction area.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel.shall be made aware of the hazard and asked to coordinate care handling and placement of heavy objects. Materials and objects being har inspected for rough or sharp edges, and appropriate precautions shall be t contact. Personnel shall wear work gloves and avoid placing hands betwe

	Electric Hazards	Generators will be grounded unless self-grounded. GFCIs will be used as Extension cords will be properly rated for intended use. Prior to any intru authorities will be contacted for permits. Elevated parts of machinery, lad antennas will be kept at least 10' from overhead electric lines. Qualified will make electrical Installations. A lockout/tagout program consistent w will be used for equipment maintenance.
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefull handling equipment operations. Guards will be kept in place during oper Maintain safe distance from moving mechanical parts. Always use appro See FLD 22.
	Hand tools, manual and power.	Tools shall be inspected prior to use. Damaged tools will be tagged out o a qualified person can perform repair. Use tools properly and for their int purpose. A ground fault circuit interrupter (GFCI) will protect all power for hand tools. See FLD 38.
	Soil excavating.	Personnel working near or around an open excavation shall avoid walk standing near the edge of the excavation. Excavation equipment and st will not be closer than two feet from the edge of excavation. No person allowed in excavations greater than 4.0 ft. Excavation edge flagged and Visually inspect sheet piling daily for signs of stress. See FLD 28, 29 C Subpart P and EM 385-1-1 Section 25.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.
	Striking and being struck by operating equipment, loads, falling objects, and pinch points. 1181' clearance distance required during all excavation sifting operations.	Workers shall stay out of the swing range of all equipment and from ur Remain within view of operator. All heavy equipment should be equip back-up alarms. See FLD 20, 22, and 23. Workers exposed to traffic ha wear traffic/reflectorized vests.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of th appropriate measures as required. Adhere to WESTON Bloodborne Pa Exposure Control Plan - First Aid Procedures FLD.
	Radiation: There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Exposure Control Plan – First Aid Procedures FLD Use sunblock as appropriate. Avoid direct exposure to sun for long per

ity 3 – Stockpile Screening

Task	Hazards	Hazard Control
work subcontractor will form excavation, hauling, ening, and stockpiling of s. UXO subcontractor will vide support during intrusive vities.	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain lead, and nuggets of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air monito be conducted as defined in Section 4 of the SSHASP. See FLD 28. Engin Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. C UXO personnel will examine excavated soil for the presence of OE and C
	Physical Hazards: Slip, trips, falls from construction debris, equipment, materials, tools, terrain; uneven walking surfaces or deep excavation limits. Weather hazards, such as severe weather and lightning; poor visibility. UXO escort required.	The work area will be visually inspected. Slip, trip, and fall hazards shall either removed or marked and barricaded. Sufficient illumination shall be maintained to ensure a safe working environment and weather conditions continuously monitored. See FLD 11, 12, and 39.
	Strains and sprains from manually lifting and moving objects.	Use proper lifting techniques such as keeping straight back, lifting with l avoid twisting back, use mechanical equipment or get help from others. T area will be visually inspected. See FLD 10.
	Inclement weather, including rain, lightning, and heat stress.	Personnel shall be dressed according to weather conditions; personnel wo rain and direct sunlight shall follow FLD 05.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate care handling and placement of heavy objects. Materials and objects being ha will be inspected for rough or sharp edges, and appropriate precautions s taken to avoid contact. Personnel shall wear work gloves and avoid placi between objects. See FLD 10.
		Lockout/Tagout procedures must be followed when performing service and main activities on equipment in which the unexpected energizing or start up of the ma equipment, or release of stored energy could cause injury to employees. Employ work operations are or may be in an area where energy control procedures may b shall be instructed about the procedure, and about the prohibition relating to atte restart or re-energize machines or equipment which are locked or tagged out. Per will be required to review and understand (Attachment B) JSA-Lockout/Tagout. See FLD 10 and 42.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.

	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefully handling equipment operations. Guards will be kept in place during opera Maintain safe distance from moving mechanical parts. Always use approp See FLD 22.
	Soil excavating.	Personnel working near or around an open excavation shall avoid walki standing near the edge of the excavation. Excavation equipment and sto soil will not be closer than two feet from the edge of excavation. No pe are allowed in excavations greater than 4.0 ft. Excavation edge flagged barricaded. Visually inspect sheet piling daily for signs of stress. See FI CFR 1926, Subpart P and EM 385-1-1 Section 25.
	Electric Hazards	Generators will be grounded unless self-grounded. GFCIs will be used as Extension cords will be properly rated for intended use. Prior to any intru activity, authorities will be contacted for permits. Elevated parts of machi ladders, and antennas will be kept at least 10' from overhead electric lines electricians will make electrical Installations. A lockout/tagout program c with FLD42 will be used for equipment maintenance.
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress symptom will be available to workers. See FLD 05 and 06. Work rest periods wil established according to ACGIH and NIOSH guidelines.
	***Biological*:** Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of thi Use appropriate measures as required. Adhere to WESTON Bloodborne Pathogens Exposure Control Plan - First Aid Procedures FLD.
	***Radiation*:** There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long peri time.

vity 4 – Haul Road Excavation/Screening/Hauling
vity 6 – Additional Excavation of 1 ft. Cut & Screening

Task	Hazards	Hazard Control
ework subcontractor shall avate and perform the dling of the material. The O subcontractor will provide port over intrusive activities screen all stockpiled rsized material. The ndards and procedures lined in the listed references st be followed: ESS; endment 1, OSHA 29 CFR t 1926, Subpart O; OSHA 29 R Part 1910, Subparts N,O; ACE EM 385-1-1, Sections A, B, 17A.	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain lead and nuggets of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air monito be conducted as defined in Section 4 of the SSHASP. See FLD 28. Engir Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. C UXO personnel will examine excavated soil as it is excavated. Blasting s be utilized by personnel and on equipment during excavation.
	Physical Hazards: Slip, trips, falls from construction debris, equipment, materials, tools, terrain; uneven walking surfaces or deep excavation limits. Weather hazards, such as severe weather and lightning; poor visibility. UXO escort required.	The work area will be visually inspected. Slip, trip, and fall hazards shall either removed or marked and barricaded. Sufficient illumination shall b maintained to ensure a safe working environment and weather condition continuously monitored. See FLD 11, 12, and 39.
	Strains and sprains from manually lifting and moving objects.	Use proper lifting techniques such as keeping straight back, lifting with l avoid twisting back, use mechanical equipment or get help from others. area will be visually inspected. See FLD 10.
	Inclement weather, including rain, lightning, and heat stress.	Personnel shall be dressed according to weather conditions; personnel w rain and direct sunlight shall follow FLD 05.
	Electric Hazards	Generators will be grounded unless self-grounded. GFCIs will be used as r Extension cords will be properly rated for intended use. Prior to any intrusi activity, authorities will be contacted for permits. Elevated parts of machin ladders, and antennas will be kept at least 10' from overhead electric lines. electricians will make electrical Installations. A lockout/tagout program co with FLD42 will be used for equipment maintenance.

	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate ca handling and placement of heavy objects. Materials and objects being h will be inspected for rough or sharp edges, and appropriate precautions taken to avoid contact. Personnel shall wear work gloves and avoid plac between objects. See FLD 10. Lockout/Tagout procedures must be followed when performing service and ma activities on equipment in which the unexpected energizing or start up of the m equipment, or release of stored energy could cause injury to employees. Emplo work operations are or may be in an area where energy control procedures may shall be instructed about the procedure, and about the prohibition relating to att restart or re-energize machines or equipment which are locked or tagged out. Pe will be required to review and understand (Attachment B) JSA-Lockout/Tagout See FLD 10 and 42.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefully handling equipment operations. Guards will be kept in place during operat Maintain safe distance from moving mechanical parts. Always use approp See FLD 22.
	Soil excavating.	Personnel working near or around an open excavation shall avoid walki standing near the edge of the excavation. Excavation equipment and sto soil will not be closer than two feet from the edge of excavation. No per are allowed in excavations greater than 4.0 ft. Excavation edge flagged barricaded. See FLD 28, 29 CFR 1926, Subpart P and EM 385-1-1 Sect
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress symptom will be available to workers. See FLD 05 and 06. Work rest periods will established according to ACGIH and NIOSH guidelines.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of thi Use appropriate measures as required. Adhere to WESTON Bloodborne Pathogens Exposure Control Plan - First Aid Procedures FLD.
	Radiation: There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long peri time.

ity 5 – Oversize Screening

Task	Hazards	Hazard Control
UXO subcontractor will en all stockpiled oversized erial, however sitework contractor shall perform the dling of the material. The ıdards and procedures lined in the listed references st be followed: ESS; endment 1, OSHA 29 CFR t 1926, Subpart O; OSHA 29 R Part 1910, Subparts N,O; ACE EM 385-1-1, Sections A, B, 17A.	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain lead and nuggets of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air monito be conducted as defined in Section 4 of the SSHASP. See FLD 28. Engin Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. C UXO personnel will examine excavated soil as it is excavated. Equipmer must have blasting shields. Oversize sorting to be performed in accordar SpecPro SSHASP.
	Physical Hazards: Slip, trips, falls from construction debris, equipment, materials, tools, terrain; uneven walking surfaces or deep excavation limits. Weather hazards, such as severe weather and lightning; poor visibility. UXO escort required.	The work area will be visually inspected. Slip, trip, and fall hazards shall either removed or marked and barricaded. Sufficient illumination shall be maintained to ensure a safe working environment and weather conditions continuously monitored. See FLD 11, 12, and 39.
	Strains and sprains from manually lifting and moving objects.	Use proper lifting techniques such as keeping straight back, lifting with l avoid twisting back, use mechanical equipment or get help from others. T area will be visually inspected. See FLD 10.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate care handling and placement of heavy objects. Materials and objects being ha will be inspected for rough or sharp edges, and appropriate precautions s taken to avoid contact. Personnel shall wear work gloves and avoid placi between objects. See FLD 10. Lockout/Tagout procedures must be followed when performing service and mair activities on equipment in which the unexpected energizing or start up of the ma equipment, or release of stored energy could cause injury to employees. Employ work operations are or may be in an area where energy control procedures may b shall be instructed about the procedure, and about the prohibition relating to atter restart or re-energize machines or equipment which are locked or tagged out. Per will be required to review and understand (Attachment B) JSA-Lockout/Tagout. See FLD 10 and 42.

	Electric Hazards	Generators will be grounded unless self-grounded. GFCIs will be used as r Extension cords will be properly rated for intended use. Prior to any intrus activity, authorities will be contacted for permits. Elevated parts of machir ladders, and antennas will be kept at least 10' from overhead electric lines. electricians will make electrical Installations. A lockout/tagout program co with FLD42 will be used for equipment maintenance.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefully handling equipment operations. Guards will be kept in place during operat Maintain safe distance from moving mechanical parts. Always use approp See FLD 22.
	Soil excavating.	Personnel working near or around an open excavation shall avoid walkir standing near the edge of the excavation. Excavation equipment and stoc soil will not be closer than two feet from the edge of excavation. No pers are allowed in excavations greater than 4.0 ft. Excavation edge flagged a barricaded. See FLD 28, 29 CFR 1926, Subpart P and EM 385-1-1 Secti
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress symptoms will be available to workers. See FLD 05 and 06. Work rest periods will established according to ACGIH and NIOSH guidelines.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of this Use appropriate measures as required. Adhere to WESTON Bloodborne Pathogens Exposure Control Plan - First Aid Procedures FLD.
	Radiation: There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long perio time.

ity 7 – Geophysical Test Grid

Task	Hazards	Hazard Control
hysical Test Grid will be performed E subcontractor to verify that ion equipment is capable of ing target ammunition to the red depths in accordance with ESS. etection equipment must be able to t down to two (2) feet for the MKII ade and one foot for the illuminating l and the 37mm MKII Projectile.	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain lead and nuggets of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air monit be conducted as defined in Section 4 of the SSHASP. See FLD 28. Engi Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. UXO personnel will examine excavated soil as it is excavated.
	Physical Hazards—Slip, trips, falls, tools, terrain or vegetation; uneven walking surfaces. Weather hazards, such as snow and ice, lightning; and poor visibility.	The work area shall be visually inspected. Slip, trip, and fall hazards shall removed or marked and barricaded. Sufficient illumination shall be maint personnel shall conduct walkover in groups of two as a minimum. Site pe refer to and follow WESTON FLDs 02-Inclement weather and 39-Illumin see FLD 11 and 12.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work are kept organized and ice, snow and mud will be cleared from steps to reduc hazards. See FLD12
	Strains and sprains from manually lifting and moving.	Use proper lifting techniques such as keeping straight back, lifting with le twisting back; use mechanical equipment or get help from others. See FLI
	Fire	Flammable liquids will be stored in safety containers and flammable stora Propane cylinders will be stored outside in secured areas. Fuel storage tan placed in impermeable dikes. Properly rated fire-extinguishers will be pla 50 ft of the fuel storage area, in construction equipment, and strategically construction area.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate care handling and placement of heavy objects. Materials and objects being han inspected for rough or sharp edges, and appropriate precautions shall be t contact. Personnel shall wear work gloves and avoid placing hands betwe
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefully handling equipment operations. Guards will be kept in place during opera Maintain safe distance from moving mechanical parts. Always use approp See FLD 22.

	Hand tools, manual and power.	Tools shall be inspected prior to use. Damaged tools will be tagged out c a qualified person can perform repair. Use tools properly and for their in purpose. A ground fault circuit interrupter (GFCI) will protect all power for hand tools. See FLD 38.
	Soil excavating.	Personnel working near or around an open excavation shall avoid wall standing near the edge of the excavation. Excavation equipment and st will not be closer than two feet from the edge of excavation. No perso allowed in excavations greater than 4.0 ft. Excavation edge flagged an Visually inspect sheet piling daily for signs of stress. See FLD 28, 29 (Subpart P and EM 385-1-1 Section 25.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress sympto will be available to workers. See FLD 05 and 06. Work rest periods wi established according to ACGIH and NIOSH guidelines.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of th appropriate measures as required. Adhere to WESTON Bloodborne Pa Exposure Control Plan - First Aid Procedures FLD.
	Radiation: There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long per

vity 8 - Geophysical Mapping and Clearance

Task	Hazards	Hazard Control
nomalies to a depth of two feet will vestigated and removed. Anomalies are deeper will be chased and oved. Mapping and Clearance will be ormed in accordance with the ESS se 6.0).	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain lead and nuggets of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air moni be conducted as defined in Section 4 of the SSHASP. See FLD 28. Eng Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. UXO personnel will examine excavated soil as it is excavated.
	Physical Hazards—Slip, trips, falls, tools, terrain or vegetation; uneven walking surfaces. Weather hazards, such as snow and ice, lightning; and poor visibility.	The work area shall be visually inspected. Slip, trip, and fall hazards shal removed or marked and barricaded. Sufficient illumination shall be main personnel shall conduct walkover in groups of two as a minimum. Site pe refer to and follow WESTON FLDs 02-Inclement weather and 39-Illumi see FLD 11 and 12.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work ar kept organized and ice, snow and mud will be cleared from steps to redu hazards. See FLD12
	Strains and sprains from manually lifting and moving.	Use proper lifting techniques such as keeping straight back, lifting with l twisting back; use mechanical equipment or get help from others. See FL
	Fire	Flammable liquids will be stored in safety containers and flammable stor Propane cylinders will be stored outside in secured areas. Fuel storage ta placed in impermeable dikes. Properly rated fire-extinguishers will be pl 50 ft of the fuel storage area, in construction equipment, and strategically construction area.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate car handling and placement of heavy objects. Materials and objects being ha inspected for rough or sharp edges, and appropriate precautions shall be contact. Personnel shall wear work gloves and avoid placing hands betw

	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefull handling equipment operations. Guards will be kept in place during oper Maintain safe distance from moving mechanical parts. Always use appro See FLD 22.
	Hand tools, manual and power.	Tools shall be inspected prior to use. Damaged tools will be tagged out c a qualified person can perform repair. Use tools properly and for their in purpose. A ground fault circuit interrupter (GFCI) will protect all power for hand tools. See FLD 38.
	Soil excavating.	Personnel working near or around an open excavation shall avoid wall standing near the edge of the excavation. Excavation equipment and st will not be closer than two feet from the edge of excavation. No perso allowed in excavations greater than 4.0 ft. Excavation edge flagged an Visually inspect sheet piling daily for signs of stress. See FLD 28, 29 Subpart P and EM 385-1-1 Section 25.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress sympto will be available to workers. See FLD 05 and 06. Work rest periods wi established according to ACGIH and NIOSH guidelines.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of th appropriate measures as required. Adhere to WESTON Bloodborne Pa Exposure Control Plan - First Aid Procedures FLD.
	Radiation: There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long pe

vity 9 – OE Disposal

Task	Hazards	Hazard Control
osal operations will be carried out kly. Items which can be removed will onsolidated in accordance with cedures for Demolition of Multiple nds (Consolidated Shots) on nance and Explosives (OE) Sites", ust 1998, approved by DDESB, 27 ober 1998. Disposal procedures are ned in the ESS.	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain lead and nuggets of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air moni be conducted as defined in Section 4 of the SSHASP. See FLD 28. Eng Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. UXO personnel will examine excavated soil as it is excavated. OE rem activities to be performed in accordance with ESS and SpecPro SSHAS shields and equipment shall be utilized during handling, storage, and di OE. Only NY certified blaster will be approved to dispose of OE.
	Physical Hazards—Slip, trips, falls, tools, terrain or vegetation; uneven walking surfaces. Weather hazards, such as snow and ice, lightning; and poor visibility.	The work area shall be visually inspected. Slip, trip, and fall hazards shal removed or marked and barricaded. Sufficient illumination shall be main personnel shall conduct walkover in groups of two as a minimum. Site pe refer to and follow WESTON FLDs 02-Inclement weather and 39-Illumi see FLD 11 and 12.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work ar kept organized and ice, snow and mud will be cleared from steps to redu hazards. See FLD12
	Strains and sprains from manually lifting and moving.	Use proper lifting techniques such as keeping straight back, lifting with l twisting back; use mechanical equipment or get help from others. See FL
	Fire	Flammable liquids will be stored in safety containers and flammable stor Propane cylinders will be stored outside in secured areas. Fuel storage ta placed in impermeable dikes. Properly rated fire-extinguishers will be pl 50 ft of the fuel storage area, in construction equipment, and strategically construction area.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate car handling and placement of heavy objects. Materials and objects being ha inspected for rough or sharp edges, and appropriate precautions shall be contact. Personnel shall wear work gloves and avoid placing hands betw
	Hand tools, manual and power.	Tools shall be inspected prior to use. Damaged tools will be tagged out o a qualified person can perform repair. Use tools properly and for their in purpose. A ground fault circuit interrupter (GFCI) will protect all power for hand tools. See FLD 38.

	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress sympto will be available to workers. See FLD 05 and 06. Work rest periods wi established according to ACGIH and NIOSH guidelines.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of th appropriate measures as required. Adhere to WESTON Bloodborne Pa Exposure Control Plan - First Aid Procedures FLD.
	Radiation: There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long per

Reeder Creek

Task	Hazards	Hazard Control
ocontractor shall to, restore upstream er creek, and 00 LF of Reeder) subcontractor will port during Reeder ties.	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain lead and nuggets of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air monitoring will be conducted as defined in Section 4 of the SSHASP. See FLD 28. Engineering Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. Qualified UXO personnel will examine excavated soil as it is excavated.
	Physical Hazards: Slip, trips, falls from construction debris, equipment, materials, tools, terrain; uneven walking surfaces or deep excavation limits. Weather hazards, such as severe weather and lightning; poor visibility. UXO escort required.	The work area will be visually inspected. Slip, trip, and fall hazards shall be either removed or marked and barricaded. Sufficient illumination shall be maintained to ensure a safe working environment and weather conditions to be continuously monitored. See FLD 11, 12, and 39.
	Strains and sprains from manually lifting and moving objects.	Use proper lifting techniques such as keeping straight back, lifting with legs, avoid twisting back, use mechanical equipment or get help from others. The work area will be visually inspected. See FLD 10.
	Inclement weather, including rain, lightning, and heat stress.	Personnel shall be dressed according to weather conditions; personnel working in rain and direct sunlight shall follow FLD 05.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate carefully the handling and placement of heavy objects. Materials and objects being handled will be inspected for rough or sharp edges, and appropriate precautions shall be taken to avoid contact. Personnel shall wear work gloves and avoid placing hands between objects. See FLD 10. Lockout/Tagout procedures must be followed when performing service and maintenance activities on equipment in which the unexpected energizing or start up of the machines or equipment, or release of stored energy could cause injury to employees. Employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure, and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked or tagged out. Personnel will be required to review and understand (Attachment B) JSA-Lockout/Tagout. See FLD 10 and 42.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefully during handling equipment operations. Guards will be kept in place during operation. Maintain safe distance from moving mechanical parts. Always use appropriate PPE.

Task	Hazards	Hazard Control
		Maintain safe distance from moving mechanical parts. Always use appropriate PPE See FLD 22.
	Soil excavating.	Personnel working near or around an open excavation shall avoid walking or standing near the edge of the excavation. Excavation equipment and stockpiled soil will not be closer than two feet from the edge of excavation. No personnel are allowed in excavations greater than 4.0 ft. Excavation edge flagged and barricaded. See FLD 28, 29 CFR 1926, Subpart P and EM 385-1-1 Section 25.
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress symptoms. Fluids will be available to workers. See FLD 05 and 06. Work rest periods will be established according to ACGIH and NIOSH guidelines.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of this area. Use appropriate measures as required. Adhere to WESTON Bloodborne Pathogens Exposure Control Plan - First Aid Procedures FLD.
	Radiation: There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long periods of time.

Storm Water Collection and Management
T&D Waste water

Task	Hazards	Hazard Control
contractor will un-on, run-off, and tion water the site.	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain lead and nuggets of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air monitoring will be conducted as defined in Section 4 of the SSHASP. See FLD 28. Engineering Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. Qualified UXO personnel will examine excavated soil as it is excavated.
	Physical Hazards: Slip, trips, falls from construction debris, equipment, materials, tools, terrain; uneven walking surfaces or deep excavation limits. Weather hazards, such as severe weather and lightning; poor visibility. UXO escort required.	The work area will be visually inspected. Slip, trip, and fall hazards shall be either removed or marked and barricaded. Sufficient illumination shall be maintained to ensure a safe working environment and weather conditions to be continuously monitored. See FLD 11, 12, and 39.
	Strains and sprains from manually lifting and moving objects.	Use proper lifting techniques such as keeping straight back, lifting with legs, avoid twisting back, use mechanical equipment or get help from others. The work area will be visually inspected. See FLD 10.
	Inclement weather, including rain, lightning, and heat stress.	Personnel shall be dressed according to weather conditions; personnel working in rain and direct sunlight shall follow FLD 05.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate carefully the handling and placement of heavy objects. Materials and objects being handled will be inspected for rough or sharp edges, and appropriate precautions shall be taken to avoid contact. Personnel shall wear work gloves and avoid placing hands between objects. See FLD 10. Lockout/Tagout procedures must be followed when performing service and maintenance activities on equipment in which the unexpected energizing or start up of the machines or equipment, or release of stored energy could cause injury to employees. Employees whose work operations are or may be in an area where energy control procedures may be utilized shall be instructed about the procedure, and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked or tagged out. Personnel will be required to review and understand (Attachment B) JSA-Lockout/Tagout. See FLD 10 and 42.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefully during handling equipment operations. Guards will be kept in place during operation.

Task	Hazards	Hazard Control
	equipment operations.	handling equipment operations. Guards will be kept in place during operation. Maintain safe distance from moving mechanical parts. Always use appropriate PPE See FLD 22.
	Soil excavating.	Personnel working near or around an open excavation shall avoid walking or standing near the edge of the excavation. Excavation equipment and stockpiled soil will not be closer than two feet from the edge of excavation. No personnel are allowed in excavations greater than 4.0 ft. Excavation edge flagged and barricaded. See FLD 28, 29 CFR 1926, Subpart P and EM 385-1-1 Section 25.
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress symptoms. Fluids will be available to workers. See FLD 05 and 06. Work rest periods will be established according to ACGIH and NIOSH guidelines.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of this area. Use appropriate measures as required. Adhere to WESTON Bloodborne Pathogens Exposure Control Plan - First Aid Procedures FLD.
	Radiation: There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long periods of time.

Final Grading

Task	Hazards	Hazard Control
ocontractor shall ite.	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain lead and nuggets of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air monitoring will be conducted as defined in Section 4 of the SSHASP. See FLD 28. Engineering Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. Qualified UXO personnel will examine excavated soil as it is excavated.
	Physical Hazards: Slip, trips, falls from construction debris, equipment, materials, tools, terrain; uneven walking surfaces or deep excavation limits. Weather hazards, such as severe weather and lightning; poor visibility. UXO escort required.	The work area will be visually inspected. Slip, trip, and fall hazards shall be either removed or marked and barricaded. Sufficient illumination shall be maintained to ensure a safe working environment and weather conditions to be continuously monitored. See FLD 11, 12, and 39.
	Strains and sprains from manually lifting and moving objects.	Use proper lifting techniques such as keeping straight back, lifting with legs, avoid twisting back, use mechanical equipment or get help from others. The work area will be visually inspected. See FLD 10.
	Inclement weather, including rain, lightning, and heat stress.	Personnel shall be dressed according to weather conditions; personnel working in rain and direct sunlight shall follow FLD 05.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate carefully the handling and placement of heavy objects. Materials and objects being handled will be inspected for rough or sharp edges, and appropriate precautions shall be taken to avoid contact. Personnel shall wear work gloves and avoid placing hands between objects. See FLD 10. Lockout/Tagout procedures must be followed when performing service and maintenance activities on equipment in which the unexpected energizing or start up of the machines or equipment, or release of stored energy could cause injury to employees. Employees whose work operations are or may be in an area where energy control procedures may be utilized shall be instructed about the procedure, and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked or tagged out. Personnel will be required to review and understand (Attachment B) JSA-Lockout/Tagout. See FLD 10 and 42.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefully during handling equipment operations. Guards will be kept in place during operation. ~~Maintain safe distance from moving mechanical parts. Always use appropriate PPE~~

Task	Hazards	Hazard Control
		Maintain safe distance from moving mechanical parts. Always use appropriate PPE See FLD 22.
	Soil excavating.	Personnel working near or around an open excavation shall avoid walking or standing near the edge of the excavation. Excavation equipment and stockpiled soil will not be closer than two feet from the edge of excavation. No personnel are allowed in excavations greater than 4.0 ft. Excavation edge flagged and barricaded. See FLD 28, 29 CFR 1926, Subpart P and EM 385-1-1 Section 25.
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress symptoms. Fluids will be available to workers. See FLD 05 and 06. Work rest periods will be established according to ACGIH and NIOSH guidelines.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of this area. Use appropriate measures as required. Adhere to WESTON Bloodborne Pathogens Exposure Control Plan - First Aid Procedures FLD.
	Radiation: There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long periods of time.

Demobilization

Task	Hazards	Hazard Control
ion of all activities, will be responsible for emporary equipment and ding construction fence, on facilities, signs, hay fence from the site.	***Chemical Hazards***—Non-intrusive activities and therefore, the risk level of exposure to site contaminants during this activity is low.	No intrusive activities allowed during this activity. Wear appropriate PPE to prever dermal contact. Avoid liquid pools and stained areas if possible. A background sur will be conducted to ensure the levels of protection are correct. Action levels established in the Table 4-1 will be used.
	Physical Hazards—Slip, trips, falls, tools, terrain or vegetation; uneven walking surfaces. Weather hazards, such as snow and ice, lightning; and poor visibility.	The work area shall be visually inspected. Slip, trip, and fall hazards shall be either removed or marked and barricaded. Sufficient illumination shall be maintained. Sit personnel shall conduct walkover in groups of two as a minimum. Site personnel sl refer to and follow WESTON FLDs 02-Inclement weather and 39-Illumination. Al see FLD 11 and 12.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work areas will b kept organized and ice, snow and mud will be cleared from steps to reduce slip hazards. See FLD12
	Strains and sprains from manually lifting and moving.	Use proper lifting techniques such as keeping straight back, lifting with legs; avoid twisting back; use mechanical equipment or get help from others. See FLD 10.
	Fire	Flammable liquids will be stored in safety containers and flammable storage cabine Propane cylinders will be stored outside in secured areas. Fuel storage tanks will be placed in impermeable dikes. Properly rated fire-extinguishers will be placed withi 50 ft of the fuel storage area, in construction equipment, and strategically in the construction area.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate carefully the handling and placement of heavy objects. Materials and objects being handled will inspected for rough or sharp edges, and appropriate precautions shall be taken to av contact. Personnel shall wear work gloves and avoid placing hands between objects
	Electric Hazards	Generators will be grounded unless self-grounded. GFCIs will be used as necessary Extension cords will be properly rated for intended use. Prior to any intrusive activ authorities will be contacted for permits. Elevated parts of machinery, ladders, and antennas will be kept at least 10' from overhead electric lines. Qualified electrician will make electrical Installations. A lockout/tagout program consistent with FLD42 will be used for equipment maintenance.
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefully during handling equipment operations. Guards will be kept in place during operation. Maintain safe distance from moving mechanical parts. Always use appropriate PPE

Task	Hazards	Hazard Control
		See FLD 22.
	Hand tools, manual and power.	Tools shall be inspected prior to use. Damaged tools will be tagged out of service a qualified person can perform repair. Use tools properly and for their intended purpose. A ground fault circuit interrupter (GFCI) will protect all power circuits u for hand tools. See FLD 38.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of this area. U appropriate measures as required. Adhere to WESTON Bloodborne Pathogens Exposure Control Plan - First Aid Procedures FLD.
	Radiation: There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long periods of ti

Soil Stabilization

Task	Hazards	Hazard Control
›contractor shall pment and labor to dous (failed TCLP) ayers in Case I to stabilize soil. Phosphate (TSP) d at a 5% addition to the hazardous	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain high lead concentrations, and possible exposure to the stabilization chemical, Granular Triple Super Phosphate Fertilizer GTSP 0-46-0.	Appropriate PPE will be utilized during excavation activities. Air monitoring will be conducted as defined in Section 4 of the SSHASP. See FLD 28. Engineering Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. Qualified UXO personnel will examine excavated soil as it is excavated. In addition, please refer to the attached Material Safety Data Sheet – **Granular Triple Super Phosphate**
	Physical Hazards: Slip, trips, falls from construction debris, equipment, materials, tools, terrain; uneven walking surfaces or deep excavation limits. Weather hazards, such as severe weather and lightning; poor visibility. UXO escort required.	The work area will be visually inspected. Slip, trip, and fall hazards shall be either removed or marked and barricaded. Sufficient illumination shall be maintained to ensure a safe working environment and weather conditions to be continuously monitored. See FLD 11, 12, and 39.
	Strains and sprains from manually lifting and moving objects.	Use proper lifting techniques such as keeping straight back, lifting with legs, avoid twisting back, use mechanical equipment or get help from others. The work area will be visually inspected. See FLD 10.
	Inclement weather, including rain, lightning, and heat stress.	Personnel shall be dressed according to weather conditions; personnel working in rain and direct sunlight shall follow FLD 05.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate carefully the handling and placement of heavy objects. Materials and objects being handled will be inspected for rough or sharp edges, and appropriate precautions shall be taken to avoid contact. Personnel shall wear work gloves and avoid placing hands between objects. See FLD 10. Lockout/Tagout procedures must be followed when performing service and maintenance activities on equipment in which the unexpected energizing or start up of the machines or equipment, or release of stored energy could cause injury to employees. Employees whose work operations are or may be in an area where energy control procedures may be utilized shall be instructed about the procedure, and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked or tagged out. Personnel will be required to review and understand (Attachment B) JSA-Lockout/Tagout. See FLD 10 and 42.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.

Task	Hazards	Hazard Control
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefully during handling equipment operations. Guards will be kept in place during operation. Maintain safe distance from moving mechanical parts. Always use appropriate PPE See FLD 22.
	Soil excavating.	Personnel working near or around an open excavation shall avoid walking or standing near the edge of the excavation. Excavation equipment and stockpiled soil will not be closer than two feet from the edge of excavation. No personnel are allowed in excavations greater than 4.0 ft. Excavation edge flagged and barricaded. See FLD 28, 29 CFR 1926, Subpart P and EM 385-1-1 Section 25.
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress symptoms. Fluids will be available to workers. See FLD 05 and 06. Work rest periods will be established according to ACGIH and NIOSH guidelines.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of this area. Use appropriate measures as required. Adhere to WESTON Bloodborne Pathogens Exposure Control Plan - First Aid Procedures FLD.
	Radiation: There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long periods of time.

Loading Soil

Task	Hazards	Hazard Control
contractor shall pment and labor to oading of non- il for transportation services.	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain high lead concentrations, and possible exposure to the stabilization chemical, Granular Triple Super Phosphate Fertilizer GTSP 0-46-0.	Appropriate PPE will be utilized during excavation activities. Air monitoring will be conducted as defined in Section 4 of the SSHASP. See FLD 28. Engineering Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. Qualified UXO personnel will examine excavated soil as it is excavated. In addition, please refer to the attached Material Safety Data Sheet – **Granular Triple Super Phosphate**
	Physical Hazards: Slip, trips, falls from construction debris, equipment, materials, tools, terrain; uneven walking surfaces or deep excavation limits. Weather hazards, such as severe weather and lightning; poor visibility. UXO escort required.	The work area will be visually inspected. Slip, trip, and fall hazards shall be either removed or marked and barricaded. Sufficient illumination shall be maintained to ensure a safe working environment and weather conditions to be continuously monitored. See FLD 11, 12, and 39.
	Strains and sprains from manually lifting and moving objects.	Use proper lifting techniques such as keeping straight back, lifting with legs, avoid twisting back, use mechanical equipment or get help from others. The work area will be visually inspected. See FLD 10.
	Inclement weather, including rain, lightning, and heat stress.	Personnel shall be dressed according to weather conditions; personnel working in rain and direct sunlight shall follow FLD 05.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate carefully the handling and placement of heavy objects. Materials and objects being handled will be inspected for rough or sharp edges, and appropriate precautions shall be taken to avoid contact. Personnel shall wear work gloves and avoid placing hands between objects. See FLD 10. Lockout/Tagout procedures must be followed when performing service and maintenance activities on equipment in which the unexpected energizing or start up of the machines or equipment, or release of stored energy could cause injury to employees. Employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure, and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked or tagged out. Personnel will be required to review and understand (Attachment B) JSA-Lockout/Tagout. See FLD 10 and 42.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefully during handling equipment operations. Guards will be kept in place during operation. Maintain safe distance from moving mechanical parts. Always use appropriate PPE.

Task	Hazards	Hazard Control
		See FLD 22.
	Soil excavating.	Personnel working near or around an open excavation shall avoid walking or standing near the edge of the excavation. Excavation equipment and stockpiled soil will not be closer than two feet from the edge of excavation. No personnel are allowed in excavations greater than 4.0 ft. Excavation edge flagged and barricaded. See FLD 28, 29 CFR 1926, Subpart P and EM 385-1-1 Section 25.
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress symptoms. Fluids will be available to workers. See FLD 05 and 06. Work rest periods will be established according to ACGIH and NIOSH guidelines.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of this area. Use appropriate measures as required. Adhere to WESTON Bloodborne Pathogens Exposure Control Plan - First Aid Procedures FLD.
	Radiation: There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long periods of time.

Maintain Stockpiles

Task	Hazards	Hazard Control
contractor shall pment and labor aintain the integrity , II, III stockpiles.	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain high lead concentrations, and possible exposure to the stabilization chemical, Granular Triple Super Phosphate Fertilizer GTSP 0-46-0.	Appropriate PPE will be utilized during excavation activities. Air monitoring will be conducted as defined in Section 4 of the SSHASP. See FLD 28. Engineering Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. Qualified UXO personnel will examine excavated soil as it is excavated. In addition, please refer to the attached Material Safety Data Sheet – **Granular Triple Super Phosphate**
	Physical Hazards: Slip, trips, falls from construction debris, equipment, materials, tools, terrain; uneven walking surfaces or deep excavation limits. Weather hazards, such as severe weather and lightning; poor visibility. UXO escort required.	The work area will be visually inspected. Slip, trip, and fall hazards shall be either removed or marked and barricaded. Sufficient illumination shall be maintained to ensure a safe working environment and weather conditions to be continuously monitored. See FLD 11, 12, and 39.
	Strains and sprains from manually lifting and moving objects.	Use proper lifting techniques such as keeping straight back, lifting with legs, avoid twisting back, use mechanical equipment or get help from others. The work area will be visually inspected. See FLD 10.
	Inclement weather, including rain, lightning, and heat stress.	Personnel shall be dressed according to weather conditions; personnel working in rain and direct sunlight shall follow FLD 05.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate carefully the handling and placement of heavy objects. Materials and objects being handled will be inspected for rough or sharp edges, and appropriate precautions shall be taken to avoid contact. Personnel shall wear work gloves and avoid placing hands between objects. See FLD 10. Lockout/Tagout procedures must be followed when performing service and maintenance activities on equipment in which the unexpected energizing or start up of the machines or equipment, or release of stored energy could cause injury to employees. Employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure, and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked or tagged out. Personnel will be required to review and understand (Attachment B) JSA-Lockout/Tagout. See FLD 10 and 42.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefully during handling equipment operations. Guards will be kept in place during operation. Maintain safe distance from moving mechanical parts. Always use appropriate PPE.

Task	Hazards	Hazard Control
		See FLD 22.
	Soil excavating.	Personnel working near or around an open excavation shall avoid walking or standing near the edge of the excavation. Excavation equipment and stockpiled soil will not be closer than two feet from the edge of excavation. No personnel are allowed in excavations greater than 4.0 ft. Excavation edge flagged and barricaded. See FLD 28, 29 CFR 1926, Subpart P and EM 385-1-1 Section 25.
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress symptoms. Fluids will be available to workers. See FLD 05 and 06. Work rest periods will be established according to ACGIH and NIOSH guidelines.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of this area. Use appropriate measures as required. Adhere to WESTON Bloodborne Pathogens Exposure Control Plan - First Aid Procedures FLD.
	Radiation: There are no radiological hazards expected because past uses do not indicate the use of radioactive material. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long periods of time.

APPENDIX A

USACE, OPEN BURNING GROUNDS - EXPLOSIVE SAFETY SUBMISSION, JUNE 1999, AND AMENDMENT 1, AUGUST 2000

SIOAC-ESL (DDESB-KO/14 Jul 99) (385[A]) 1st End
SUBJECT: Explosives Safety Submission, Ordnance and Explosives (OE) Removal at the Open Burning Grounds, Seneca Army Depot Activity, July 1998

15 JUL 1999

U.S. Army Defense Ammunition Center, McAlester, OK 74501-9053

FOR Commander, U.S. Army Industrial Operations Command, ATTN: AMSIO-SF, Rock Island, IL 61299-6000

1. Reference: 1st End, Defense Ammunition Center, SIOAC-ESL, 18 June 1999, to memorandum, U.S. Army Industrial Operations Command, AMSIO-SF, 13 May 1999, SAB (enclosure 1).

2. Basic correspondence provides Department of Defense Explosives Safety Board (DDESB) approval for the revised explosives safety submission for OE removal at the Open Burning Grounds, and is provided for your information and use.

3. The POC is Ms. Jean Gallagher, SIOAC-ESL, (918) 420-8876, DSN 956-8876; email gallagher@dac-emh2.army.mil.

FOR THE DIRECTOR:

Clifford H Doyle

Encl
as

CLIFFORD H. DOYLE
Safety Manager, Ordnance
Explosives Environmental Division

CF (wo/encls):
Army Safety Office, ATTN: DACS-SF, Chief of Staff, 200 Army Pentagon, Washington, DC 20310-0200
Commander, U.S. Army Engineering and Support Center, Huntsville, ATTN: CEHNC-PM, P.O. Box 1600, Huntsville, AL 35807-4301

DEPARTMENT OF DEFENSE EXPLOSIVES SAFETY BOARD
2461 EISENHOWER AVENUE
ALEXANDRIA, VIRGINIA 22331-0600

14 JUL 1999

DDESB-KO

MEMORANDUM FOR DIRECTOR, US ARMY TECHNICAL CENTER FOR EXPLOSIVES SAFETY (ATTENTION: SIOAC-ESL)

SUBJECT: Explosives Safety Submission, Ordnance and Explosives (OE) Removal at the Open Burning Grounds, Seneca Army Depot Activity, July 1998

References: (a) Memorandum, Department of Defense Explosives Safety Board, DDESB-KO, June 18, 1998, Subject: Safety Submission for the Removal of Ordnance and Explosives(OE) from the Open Burning Grounds, Seneca Army Depot Activity (SEDA), New York

(b) Memorandum, Headquarters, U.S. Army Industrial Operations Command, AMSIO-SF, U.S. Army Defense Ammunition Center, SIOAC-ESL, May 13, 1998, Subject as above (with one endorsement)

Reference (a) provided DDESB approval of the initial safety submission. The DDESB secretariat has reviewed the revised safety submission forwarded by reference (b) with respect to explosives safety criteria. Based on the information submitted, we approve the revised safety submission for removal of OE from the open burning grounds at Seneca Army Depot Activity, New York.

Point of Contact is Mr. Charles A. Cates, DDESB-KO, commercial number: (703) 325-1356 or DSN 221-1356. E-mail address is Charles.Cates@hqda.army.mil.

DANIEL T. TOMPKINS
Colonel, USAF
Chairman

SIOAC-ESL (AMSIO-SF/13 May 99) (385[A]) 1st End
SUBJECT: Explosives Safety Submission, Ordnance and Explosives Removal at the Open Burning Grounds Seneca Army Depot Activity, July 1998

U.S. Army Defense Ammunition Center, McAlester, OK 74501-9053 18 JUN 1999

FOR Chairman, Department of Defense Explosives Safety Board,
ATTN: DDESB-KO, 2461 Eisenhower Avenue, Alexandria, VA 22331-0600

1. References:

a. DOD 6055.9-STD, July 1997, Ammunition and Explosives Safety Standards.

b. AR 385-64, 28 November 1997, U.S. Army Explosives Safety Program.

c. Memorandum, Seneca Army Depot, SIOSE-IE, Subject: Safety Submission for the Removal of Ordnance and Explosives (OE) from the Open Burning Grounds, Seneca Army Depot Activity (SEDA), New York, 8 June 1998.

d. Memorandum, Department of Defense Explosives Safety Board (DDESB), DDESB-KO, Subject: Safety Submission for the Removal of Ordnance and Explosives (OE) from the Open Burning Grounds, Seneca Army Depot Activity (SEDA), New York, 1 October 1998.

2. We have reviewed this revised submission in accordance with the criteria of DOD 6055.9-STD as implemented by AR 385-64, and have granted Army approval. It is provided for Department of Defense Explosives Safety Board (DDESB) review with our recommendation for approval to allow OE removal and lease and/or transfer of property.

3. This submission is a revision to a previously approved submission (ref 1c). Your office approved the original submission 1 October 1998 (ref 1d). However, during the operation, it was determined several changes to the scope and procedures were required so the submission was revised. Change text in this revision appears as bold, italicized text.

a. Interference from a layer of metallic debris in the first 12 inches of soil renders detectors useless. So 12 inches of soil will be removed and sifted; then the detectors will be used to map anomalies. The anomalies will be cleared to a 2-foot depth, but if any are found deeper, they will also be removed.

b. A 37mm MK II projectile was discovered during the surface clearance. Its greater fragmentation distance requires larger separation distances than those used in the original submission. The detection equipment can detect these rounds to a one-foot depth, and the previous most probable munitions (MK II Grenade) to a 2-foot depth.

SIOAC-ESL (AMSIO-SF/13 May (() 1st End
SUBJECT: Explosives Safety Submission, Ordnance and Explosives Removal at the Open Burning Grounds Seneca Army Depot Activity, July 1998

c. As in the original submission, it is reasonable to assume the OE will be within the first 12 inches since this parcel was a burning ground where items were burned on the surface. The data obtained from this clearance will either prove or disprove this theory. All available evidence indicates the OE is restricted to the top 6-8 inches.

(1) If no OE is found deeper than 1-foot, it is reasonable to conclude the OE hazard has been removed from this parcel. The parcel then will be released for unrestricted use.

(2) However, if any OE is found deeper than 1-foot, another safety submission will be prepared.

4. We will send you the final removal report documenting the types, amounts, and depths of OE recovered.

5. The POC is Ms. Jean Gallagher, SIOAC-ESL, (918) 420-8876, DSN 956-8876, email gallagher@dac-emh2.army.mil.

FOR THE DIRECTOR

Clifford H Doyle

Encl
nc

CLIFFORD H. DOYLE
Safety Manager, Ordnance
Explosives Environmental Division

CF (wo/encl):
Army Safety Office, ATTN: DACS-SF, Chief of Staff, 200 Army Pentagon, Washington, DC 20310-0200
Commander, Industrial Operations Command, ATTN: AMSIO-SF, Rock Island, IL 61299-6000
Commander, U.S. Army Engineering and Support Center Huntsville, ATTN: CEHNC-OE-DC, P.O. Box 1600, Huntsville, AL 35807-4301
Commander, U.S. Army Engineering and Support Center, Huntsville, ATTN: CEHNC-OE-CX, P.O. Box 1600, Huntsville, AL 35807-4301

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY INDUSTRIAL OPERATIONS COMMAND
ROCK ISLAND, IL 61299-6000

AMSIO-SF (385-10d) 13 MAY 1999

MEMORANDUM FOR Director, Defense Ammunition Center, ATTN: SIOAC-ESL, 1C Tree Road, Bldg 35, McAlester, OK 74501-9053

SUBJECT: Explosives Safety Submission, Ordnance and Explosives Removal at the Open Burning Grounds Seneca Army Depot Activity, July 1998

1. The Industrial Operations Command Safety Team recommends approval of the enclosed U.S. Army Corps of Engineers (COE) prepared explosives safety submission (ESS) (encl 1) for your review. As this is the 3rd submission, the COE requests an expeditious review. Their proposed start date for excavation is 14 June 1999.

2. Prior IOC Safety Team comments (encl 2) have been incorporated.

3. The POC is Mrs. Deb Westervelt, AMSIO-SF, DSN 793-2986, E-mail amsio-sf@ioc.army.mil or westerveltd@ioc.army.mil.

2 Encls
as

ROSALENE E. GRAHAM
Chief, Safety/Rad Waste Team

Explosive Safety Submission

Ordnance And Explosives Removal

at the Open Burning Grounds,

Seneca Army Depot Activity,

Romulus, New York

July 1998 -June 1999

Prepared by
US ARMY CORPS OF ENGINEERS
Engineering and Support Center, Huntsville

CONTENTS

INTRODUCTION

This Explosive Safety Submission is for the removal of Ordnance and Explosives (OE) from the Open Burning Grounds, Seneca Army Depot Activity (SEDA), New York. It outlines the safety aspects of the plan for cleanup of Unexploded Ordnance (UXO) and OE on property that is owned by the Department Of Defense (DoD).

SEDA is a US Army facility located in Seneca County, New York. SEDA occupies approximately 10,600 acres (Appendix A, Figure 1). It is bounded on the west by State Route 96A and on the east by State Route 96. The cities of Geneva and Rochester are located to the northwest (14 and 50 miles, respectively); Syracuse is 53 miles to the northeast and Ithaca is 31 miles to the south. The surrounding area is generally used for farming.

SEDA was included on the Federal Facilities National Priorities List on 13 July 1989. Consequently, all work to be performed under this contract will be performed according to Comprehensive Environmental Response Compensation and Liability Act (CERCLA) guidance and the "Federal Facility Agreement under CERCLA Section 120 in the matter of Seneca Army Depot, Romulus, New York,".

SEDA was included on the 1995 Base Realignment and Closure List and is due to be closed. The Seneca County Industrial Development Agency (IDA) has prepared a reuse report entitled "Seneca Army Depot Reuse Plan and Implementation Strategy". The majority of the installation will be used for housing developments, industrial development, institutional and conservation/recreation uses upon transfer. The current OB Grounds site will fall within the area designated for "Conservation/Recreation". The intended uses which fall within the definition of "Conservation/Recreation" are: wildlife habitation, wildlife viewing, hiking/walking and picnicking. Although there is currently no plan for establishing camping facilities, the IDA does not wish to restrict such a possibility in the future. Therefore, this ESS is based upon the assumption that the clearance depth to be used will be based upon the Public Access scenario (e.g. surface recreation).

1.0 REASON FOR OE.

Open detonation/open burning operations have been conducted for more than forty years in the munitions destruction area (90 acres) in the northwest portion of the installation. The OB Grounds occupies an area of approximately 30 acres within the southern portion of this site (Appendix A). The Open Burning Grounds is the sole subject of this Explosives Safety Submission. The OD Grounds will be remediated separately.

The burning pads were used from the early 1960's till the late 1980's. During this time, items burned included explosive trash from an old washout plant and fuzes containing lead compounds. Operations were conducted by preparing combustible beds of pallets and wooden boxes and placing ammunition or components to be destroyed on the beds. A trail of propellant was placed on the ground and an electric squib was activated by an operator from a distance.

Originally open burning was conducted directly on the clay ground surface. Due to the seasonally wet nature of the local soils, the individual burn pads were subsequently built up with shale to provide a drier environment in which to perform the munitions burning. The berms around the burn pads were formed by bulldozing the surrounding soils, including those soils which contained residues of the burning process. The base material of the pads is composed of crushed shale which was quarried from a nearby area on SEDA and placed over the till to provide a solid base with good drainage. The burning of munitions was performed at nine burning pads labeled A through H and J. Of the nine burn pads, five are small (A,B,C,D and E; each approximately 70' x 100'). Two are of intermediate size (F and H; each approximately 120' x 210') and two are rather large (G and J; each approximately 200' x 460').

Pads A and J were the first to be abandoned. Pads A and J were only used for trash and rubbish while Pads B, C, D, E, F, G and H were used for explosives and propellants. The practice of open burning was discontinued in 1987. Currently, burning of munitions is done with an open air, steel enclosure located immediately west of Burning Pad D.

2.0 MAPS.

Maps detailing the location and extent of the area of concern and presenting the relevant Public Withdrawal Distances, Q-D Distances, etc., are presented in Appendix A to this submission.

3.0 AMOUNT AND TYPE OF OE.

A list of items that were demilled at the Munitions Destruction Area is included in Appendix B. Examples of items burned at the OB Grounds include various pyrotechnic items and fuzes. The HE items shown on the list (grenades, both hand and rifle), were only detonated at the OD Grounds, so no items of a high explosive nature are to be expected at the OB Grounds (personal communication with Mr. Jim Jones, former supervisor of munitions destruction operations at Seneca; 15 and 19 May 1998).

Three Most Probable Munitions (MPM) were chosen for this site. One was chosen for determination of the required Public Withdrawal Distance. This is the ***37mm MK II Projectile***. ***The Net Explosive Weight (NEW) is 0.527 lbs. of TNT***. The Public Withdrawal Distance (PWD) for this MPM is 1181 feet, which was computed using HNC-ED-CS-S-98-1 (approved by DDESB on 6 April 1998) by Dr. Michelle Crull, USAESC, Huntsville, Engineering Division, Structures Branch, 4-10-98. If an OE item having a greater fragment distance is found, its withdrawal distances will be determined in accordance with the procedures defined in 98-01. Until the appropriate distances are determined by 98-01, the default distances in DoD 6055.9-STD (Chapter 5, Paragraph E.4.a) will be used.

The ***second and third*** MPM was chosen for the purpose of determining the effectiveness of geophysical investigation equipment with respect to both ***ferrous and non-ferrous (pyrotechnic) items***. These are the M17, M19, M21 or M51 series Illuminating Ground Parachute Signal ***and the Mk II Hand Grenade***.

4.0 START DATE.

Work is anticipated to start in ***late May 1999*** beginning with survey work and progressing to intrusive work. Intrusive work should begin by ***14 June***.

NOT APPLICABLE

5.0 FROST LINE DEPTH.

The design frost depth for this site is 40 inches.

6.0 CLEARANCE TECHNIQUES.

This section presents information concerning the techniques to be used during the removal of OE at this site.

General Progression. OE remediation at the SEDA OB Grounds will take place in the following phases:

o Phase I. The thirty acre site, *including* the existing berms, pads and the low-lying hill, *was* surface cleared of all OE. This surface clearance *was* a visual clearance with instrument assistance, as required.

o Phase II. A Geophysical Test Grid *was* performed to verify that the detection equipment *could* detect the Most Probable Munitions to the required depths. These are two feet for the MK II Grenade and one foot for the Illuminating Signal *and the 37mm Mk II projectile. Due to a tremendous amount of interference (ferrous and non-ferrous items) in the top soil horizon at the test site, the instrumentation tested poorly with nothing visible above the constant background noise that was picked up. Additionally, in clearing a site at the OB Grounds for placement of the sifting unit, it was noted that all OE-and OE-related scrap occurred in the top 8-9 inches of soil. Consequently, a second effort was made to determine the probabilities of detection at the site. Initially, 12 inches of soil were removed from the surface of the Geophysical Test Plot and the instrumentation was re-run, resulting in a removal of the noise and achievement of much greater probabilities of detection. Using both the EM-61 and the White's Spectrum XLT, the Contractor was able to demonstrate good capability in detecting the three chosen MPM's to at least the depths required.*

o Phase III. The pad berms and the low-lying hill area will be excavated and sifted to remove all OE and scrap. A standard operating procedure for the sifting operations is included in Appendix D of this ESS. The sifted soils will then be stockpiled for remediation as part of a follow-on Hazardous/Toxic and Radiological Waste (HTRW) remediation project. The principle purpose of this HTRW remediation is to remove lead and other heavy metal contamination from the soil.

o Phase IV. Subsequently, the thirty acre site, minus the existing berms and the low-lying hill, will be excavated to a depth of 12 inches and that soil will be sifted. This is to completely remove the layer of interference (in the OB Ground proper, presumably OE-related scrap) that was evident in the completion of the test grid and the clearance of the sifter location.

(1) The 12 inch clearance over the majority of the site is expected to show that all OE is located at less than that depth. For example, if OE is only found in the top six inches, it is reasonable to assume a 1-foot removal was adequate;

(2) Mapping and anomaly sampling of areas deeper than 1-foot is expected to show that no OE is present at a depth greater than that 1-foot horizon.

At such a point, it will be concluded that no additional OE clearance will be required over the remainder of the site. This conclusion will be presented in the Final Report for this project, which will be distributed for review.

b. If OE-contamination does exist below the 1-foot depth, it will be removed. In this case, another ESS will be submitted for approval.

o Phase IX. The Final Report detailing the actual outcome of this project will be provided for information to those who have reviewed and approved this ESS and the remaining portions of the HTRW remediation will be initiated.

Discussion of Project-Specific Procedures.

All surveying activities will be completed with the accompaniment of a UXO escort. Surveying activities will consist of the location of soil excavation points, site grids and verification of payment quantities.

For surface clearance, each grid will be walked and visually checked for the presence of ordnance. Instrument assistance may be used as required. For subsurface clearance, each grid will be divided into 5 foot transects or lanes. Operators will walk each lane with the chosen geophysical instrument. The ch instrument(s) will be capable of detecting the Most Probable Munitions to the proposed depths. All anomalies will be marked with pin flags for retrieval by another team. Anomalies will be dug to a depth of two feet to determine the identity thereof. If anomalies are found to exist below the two foot clearance

NEXT PAGE MISSING

Additionally, the contractor will establish and enforce strict area and site access at the OB site proper. Access into a work site exclusion zone will be limited to contractor personnel specifically authorized to work on site and Corps of Engineers safety personnel. All other personnel will be restricted from entering the exclusion zone or be escorted by contractor or Corps safety personnel.

Disposal operations will be carried out ***weekly***. Items which can be moved ***will be consolidated in accordance with "Procedures for Demolition of Multiple Rounds (Consolidated Shots) on Ordnance and Explosives (OE) Sites", dated August 1998 and approved by DDESB on 27 October 1998. Disposal will be carried out at the OD Grounds which is adjacent to the OB site. UXO will be stored in the second magazine while awaiting demo operations***. Items which can not be moved will be blown-in-place, individually.

QA/QC requirements are presented in the Work Plan (see Appendix C, Excerpt 1). Pass/fail criteria are specifically discussed in Sections 8.7.2 through 8.7.4 in the excerpt. Scrap that is collected from this action will be handled as discussed in Sections 2.7.1 and 8.7.5 of the Work Plan (see Appendix C, Excerpt 2).

7.0 ALTERNATE TECHNIQUES. NA.

8.0 QUANTITY-DISTANCES.

The appropriate Quantity-Distances are shown on the site map enclosed in Appendix A of this submission. For ease of review, the distances are repeated here. The rationale for the MPM and citation for the calculation method are presented in Section 3.0 of this submission. In general, team separation distances will be determined by the greater of 200 feet or the K50 (0.9 psi overpressure) distance. The separation distance for all unrelated personnel for an accidental detonation from an OE area will be determined by the greater of 200 feet, the K50 distance or the maximum fragment throw distance. The separation distance for all personnel (related and unrelated) for intentional detonations will be determined by the maximum of 200 feet, the K328 distance or the maximum fragment throw distance. Applying the above principles, the following distances apply:

OE Areas: Minimum of *1181 feet* (this is the maximum fragment range for ***the 37mm Mk II Projectile***).

Magazines: Minimum of 500 feet (Front) and 250 feet (Rear and Sides), IAW Table 9-1 of DoD 6055.9-STD. The back and sides of the existing magazines face the removal site. Therefore, 250 feet will govern for the vast majority of the proposed removal. Note that these distances are for 1.1 explosives; therefore, they exceed the distance requirements ***for the 1.4*** demolition materials to be stored ***in one of the magazines. UXO (Class 1.1) will be stored in the second magazine***.

Intentional Detonations: Minimum of *1181 feet* (via approved calculation).

Sifting Operations: During operation, no non-essential personnel will be allowed within a 400 foot radius of the sifter. ***This is due to the fact that the 1/600 distance for a 37mm Mk II Projectile is less than the separation distance computed based upon the Joint Hazard Classification for the Mk II Hand Grenade, which is 400 feet since the Mk II grenade is a (04)1.1 item. Therefore, the more conservative 400-foot distance will be used.*** Reference should be made to Site Map No. 4 in Appendix A.

9.0 OFF-SITE DISPOSAL. NA.

10.0 TECHNICAL SUPPORT.

No Chemical Warfare Materials (CWM) are suspected at this site. The contractor will positively identify all OE uncovered before items are removed or destroyed. If a suspect CWM is encountered, the Site Safety Officer will stop all operations on site and notify the on site CEHNC representative. The CEHNC Safety Specialist will notify the appropriate Explosive Ordnance Disposal (EOD) Detachment (725th Ordnance Company (EOD) out of Fort Drum) and/or Technical Escort Unit.

11.0 LAND USE RESTRICTIONS..

There will be no reuse restrictions required following this action. The site will be transferred (sometime during the closure process) for use as discussed in the INTRODUCTION, above.

APPENDIX A

MAPS

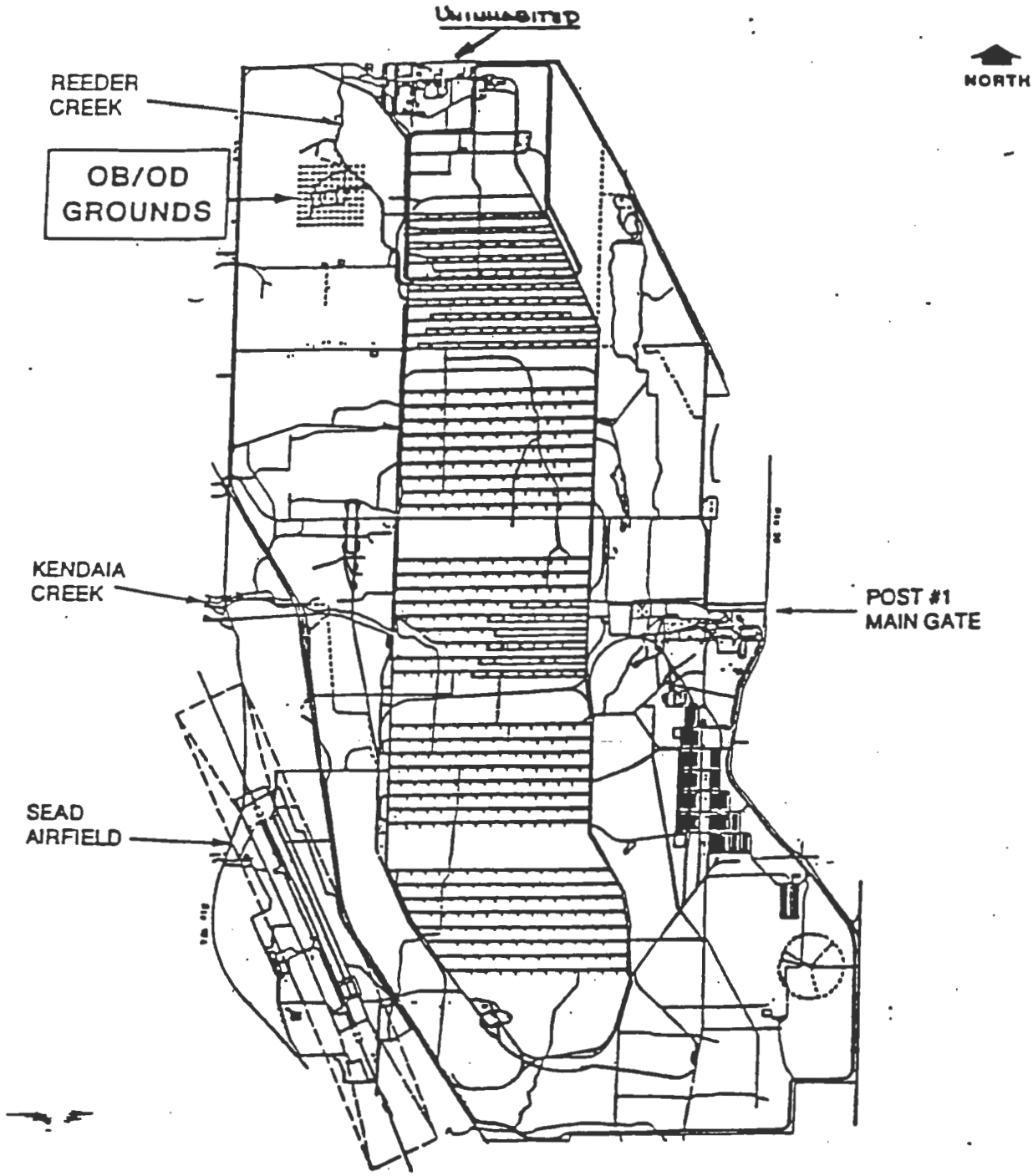
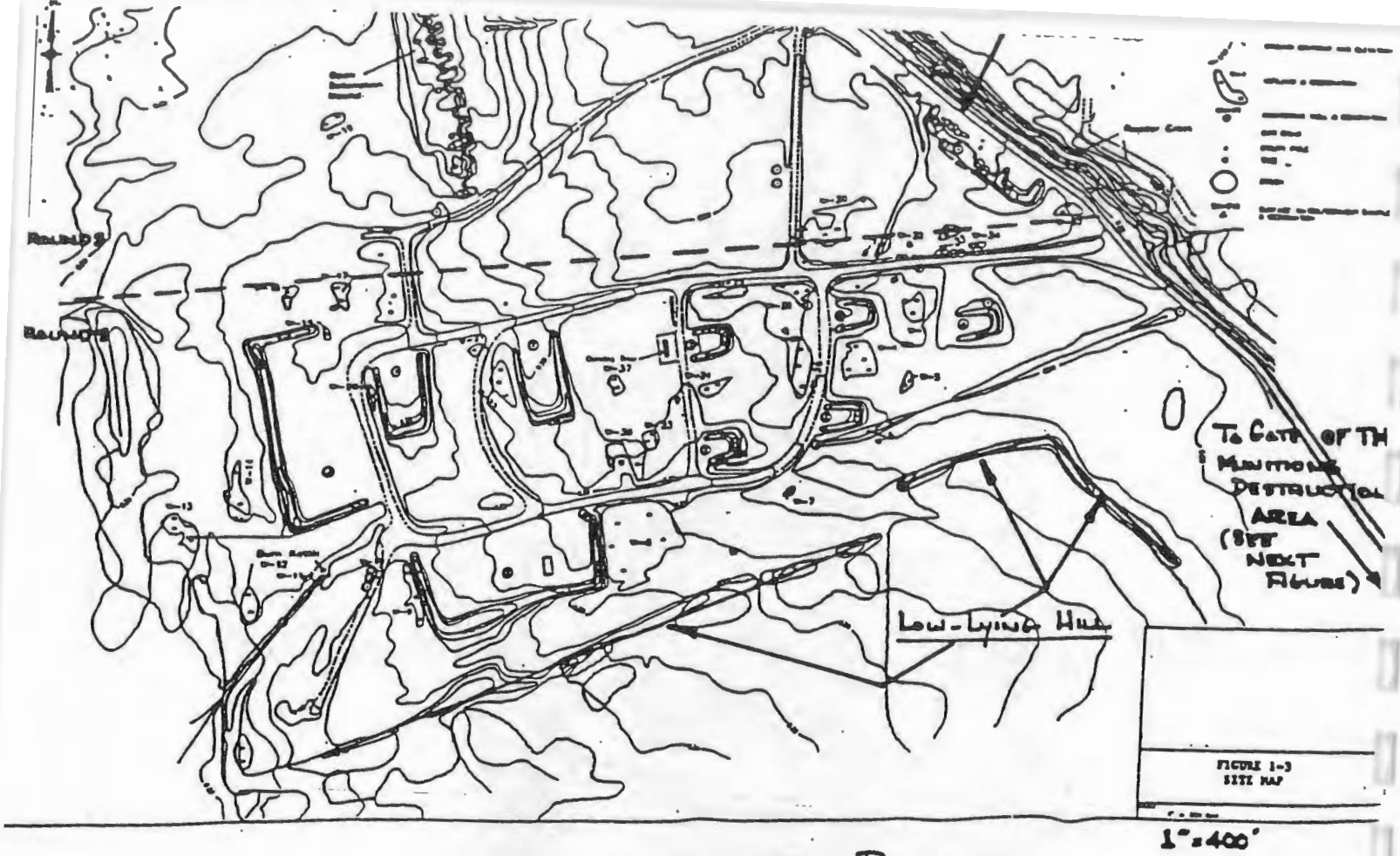


FIGURE 1-2

SENECA ARMY DEPOT MAP

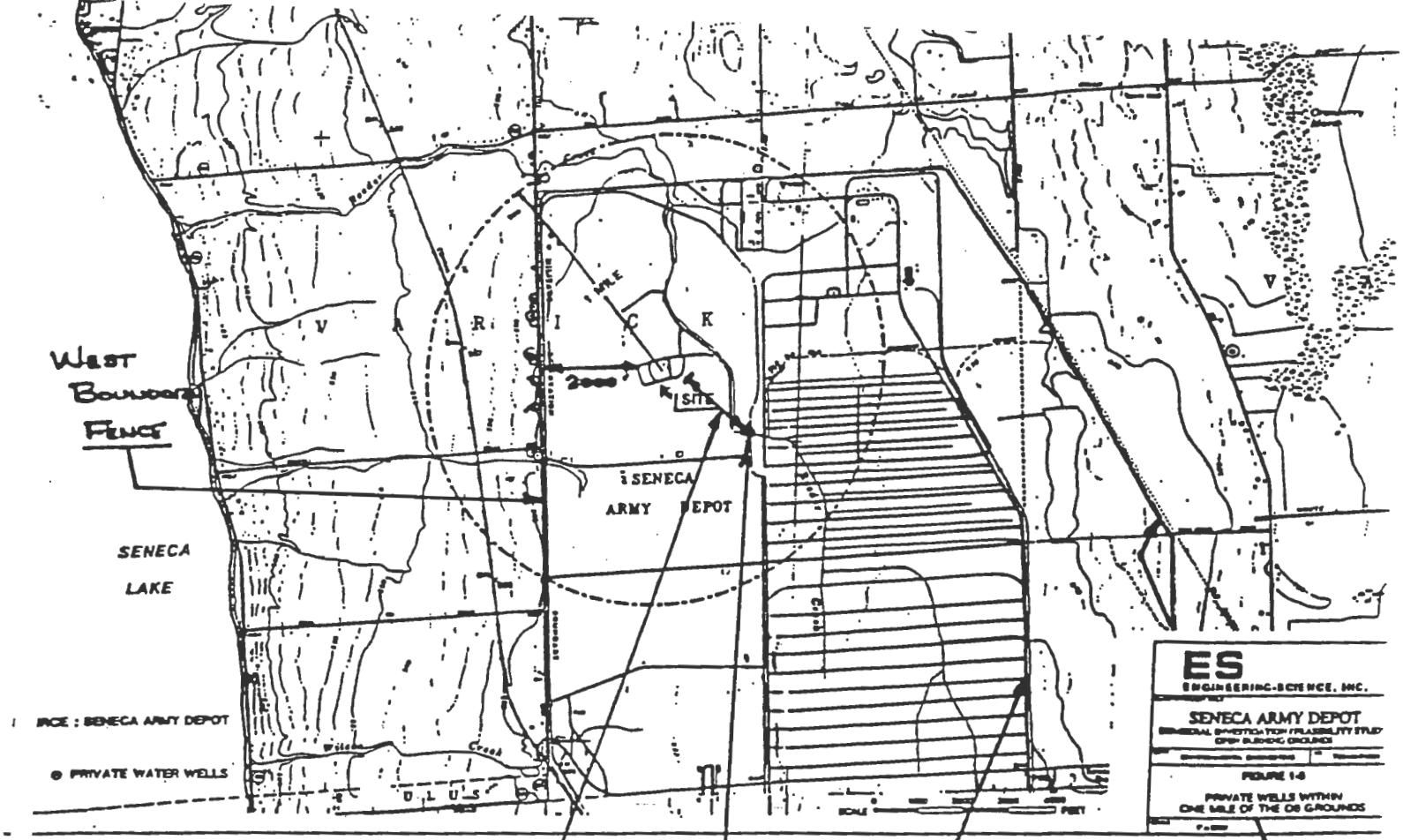
SOURCE: Seneca Army Depot

SCALE 1" = 2000' (APPROXIMATE)



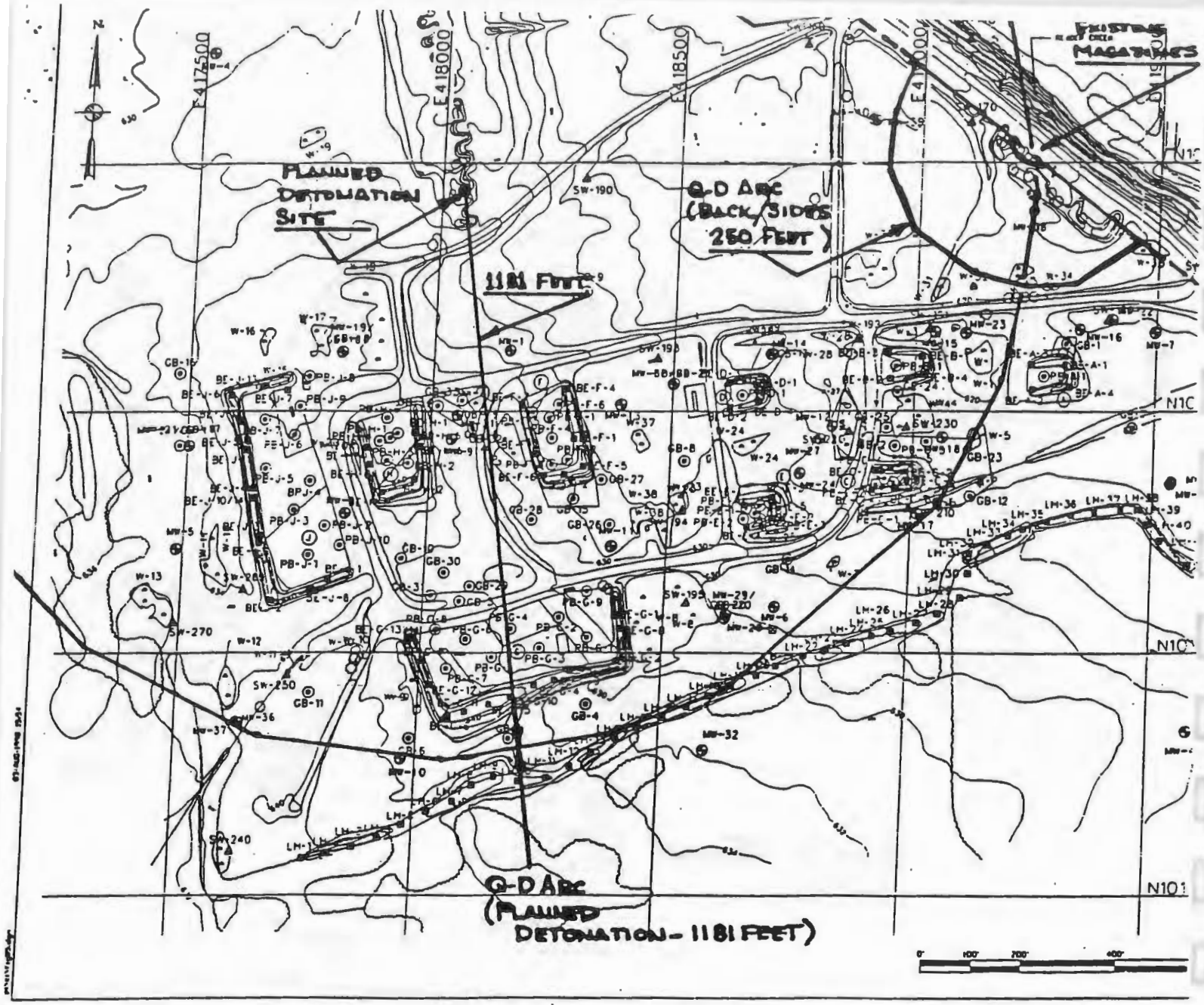
MPM = 37mm Projectile
PWD = 1181 Feet

Site Map 1
General Site Layout



SITE MAP 2

DISTANCES TO THE NEAREST POSSIBLE PRESENCE OF THE GENERAL PUBLIC



NOTE: REFER TO SITE MAP 2 TO SEE RELATIONSHIP OF DISTANCES SHOWN HERE TO THE OVERALL OB GROUNDS SITE AND THE NEAREST POSSIBLE PRESENCE OF THE GENERAL PUBLIC.

NOTE: Q-D ARCS FOR ALL OE AREAS ARE NOT SHOWN FOR OBVIOUS REASONS. AS ONE CAN GRASP FROM REFERENCE TO SITE MAP 2, THE SHORTEST DISTANCES TO THE NEAREST POSSIBLE PRESENCE OF THE GENERAL PUBLIC ARE:

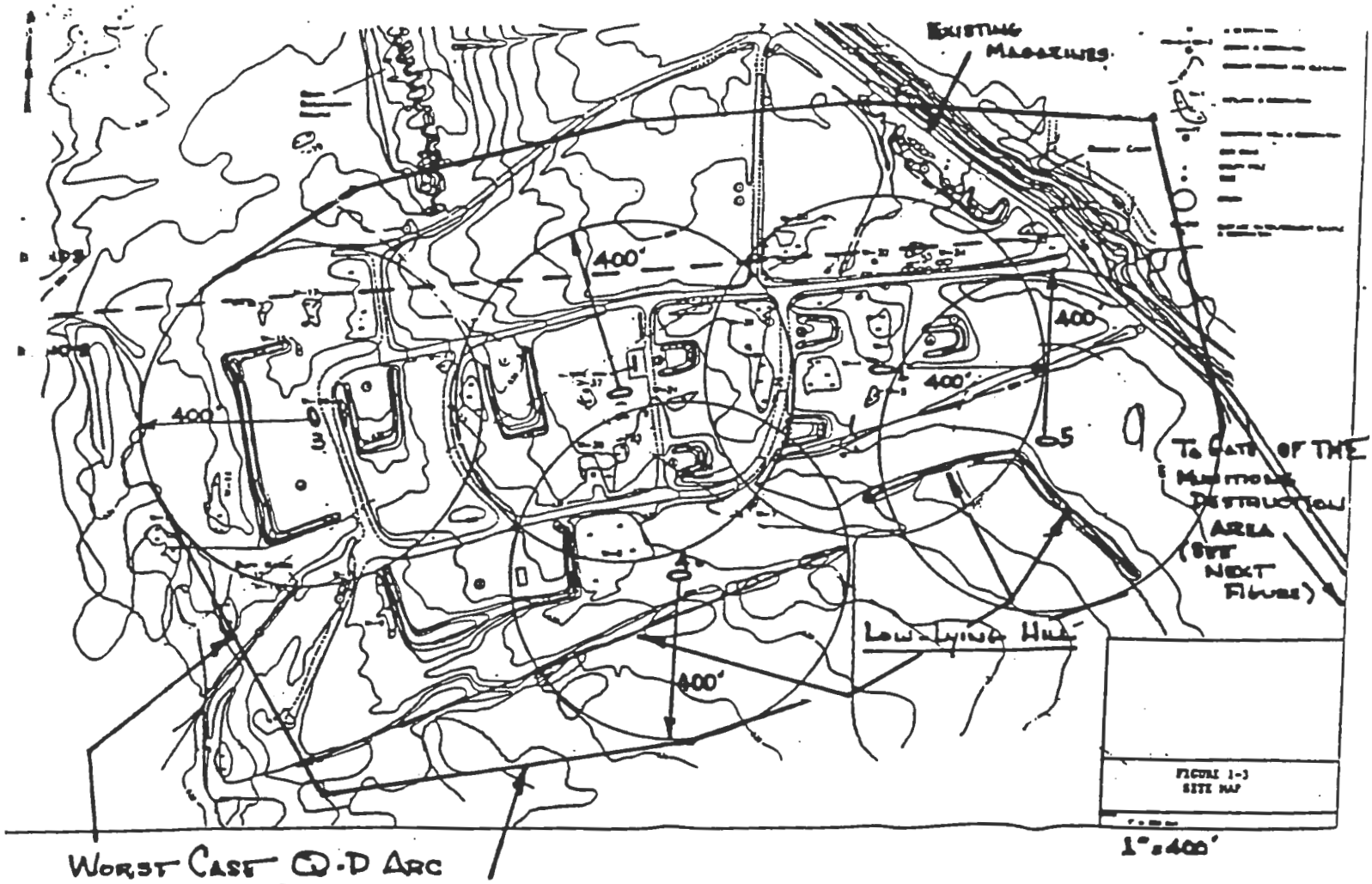
1880 FEET ± TO THE ENTRANCE TO THE MUNITIONS DESTRUCTIONS AREA FROM THE EXTREME SE PORTION OF THE SITE (ie. EXTREME SE TIP OF THE LOW-LYING HILL)

2000 FEET ± TO THE WEST BOUNDARY FENCE

2000 FEET ± TO THE PATROL ROAD SOUTH OF THE SITE

4000 FEET ± TO THE PATROL ROAD NORTH OF THE SITE

SITE MAP 3
Q-D ARCS FOR MAGAZINE AND PLANNED DETONATION



WORST CASE Q-D ARC FOR THE SIFTER (>400 FEET FROM ANY AND ALL POSSIBLE SIFTER LOCATIONS)

NOTE: MAP IS INTENDED TO DEMONSTRATE THAT 400' OF Q-D CLEARANCE WILL BE KEPT AROUND THE SIFTER REGARDLESS OF LOCATION. AS THE SIFTER WILL BE CONSTANTLY MOBILE, THERE WILL BE MANY MORE THAN THE FIVE LOCATIONS SHOWN.

MPM = 37mm PROJECTILE BUT IT WOULD BE MORE CONSERVATIVE TO USE A MK II GRENADE WHICH IS AN (04) 1.1 ITEM.

THEREFORE Q-D DISTANCE AROUND SIFTER LOCATION IS 400 FEET AT ALL TIMES OF OPERATION.

SITE MAP 4

SIFTER LOCATIONS AND Q-D ARCS

APPENDIX B

List of Items Demilled

at the SEDA Munitions Destruction Area

ATTACHMENT 2

List of Demilled Items

[illegible]	Burster, M14
[illegible]1-197	Burster, M19
[illegible]-1-202	Burster, M21
[illegible]-1-215	Burster, M23
[illegible] 2-21	Burster, M24
[illegible].7832	Burster, M55
[illegible]-1-264	Burster, M57
[illegible] 1-258	Burster, M40 Series
[illegible] 1-226	Burster, M41
[illegible]-1-230	Burster, M47
[illegible]484	Burster, M48
[illegible].032	Burster, M71
54390	Cam, Catapult, Firing
2-47-18	Cap, Blasting Electric
[illegible] 47-14	Cap, Blasting Electric

APPENDIX A Cont'd

[illegible]LINE NUMBER or MIL-SPEC	ITEM
[illegible]-60-255	Cap, Blasting, Electric, Commercial #6
[illegible]-47-05	Cap, Blasting, Electric, #8
[illegible] AXS 1234	Cap, Blasting, Electric, #6, 1st, 2nd, 3rd and 4th Delay
[illegible]972	Cap, Blasting, Electric, J2, PETN Type 2 and M6
[illegible] 48	Cap, Blasting, Nonelectric J1, PETN, RDX Type 1 and M7
[illegible]-4546	Cap, Blasting, Nonelectric #6 and 8
[illegible] 20496	Cap, Blasting, Nonelectric Tetryl Type A
[illegible]13	Cartridge, Activating Device
91836 (Navy)	Cartridge, Activating Device, MK 17, Mod 0
[illegible]-1	Cartridge, Powder Actuated
55	Cartridge, Aircraft, Fire Extinguisher
[illegible]9 (Navy)	Cartridge, Bomb, Ejection, MK1, Mod 2 and 3
[illegible]08	Cartridge, Bomb, Ejection, MK2, Mod 0
[illegible]-1	Cartridge, Bomb, Ejection, M3
[illegible] 2 (Air Force)	Cartridge, Bomb, Ejection, ARD 863-1
[illegible]55	Cartridge, Cutting Blade
[illegible]78	Cartridge, Delay, XM332
[illegible]	Cartridge, Delay - MI - Shear Corp.
[illegible] (Air Force)	Cartridge, Engine Starter, MXU[illegible]

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51
287
9-78
9-71
9-79
9-82
661 (Navy)
-40 (Navy)
426 (NAVAIR)
-227
-280
-288
-290
-95-1-11
084
295
79
1610
1960

Cartridge, Engine Starter, MXU 129A
Cartridge, Explosive
Cartridge, Igniter, Turbojet Engine
Type 2
Cartridge, Ignition, M2
Cartridge, Ignition, M2A2
Cartridge, Ignition M5A1
Cartridge, Ignition, M6
Cartridge, Ignition, M8
Cartridge, Ignition, M66
Cartridge, Impulse, MK2, Mod 1.
Cartridge, Impulse, MK24, Mod 0.
Cartridge, Impulse, MK151MOD 0
Cartridge, Impulse, M25A1
Cartridge, Impulse, M29A2
Cartridge, Impulse, M50
Cartridge, Impulse, M51A1
Cartridge, Impulse, M56
Cartridge, Impulse, M57
Cartridge, Impulse, M67
Cartridge, Impulse, MK104, Mod 0
Cartridge, Impulse, M141
Cartridge, Impulse, M150

SCP NO. SE-0000-1-005

APPENDIX A Cont'd

DRAWING NUMBER or MIL-SPEC	ITEM
B 51E31	Cartridge, Impulse, M151
293660	Cartridge, Impulse, ARD 446-1
9311660	Cartridge, Impulse, M796
5-1-15	Cartridge, Initiator, M38
5-1-22	Cartridge, Initiator, M46
8593274	Cartridge, Initiator, M70
8594157	Cartridge, Initiator, M73
465	Cartridge, Initiator, M91
L393512	Cartridge, Initiator, M93
58D46856 (Air Force)	Cartridge, Kit, Bomb
D14986 (Air Force)	Cartridge, Kit, Parachute
52C3268	Cartridge, Line Throwing Device
B434364	Cartridge, Mine Safety Appliance
7-0-114	Cartridge, Photo Flash, M112 Series
-0-132	Cartridge, Photo Flash, M121 Series
78-0-134	Cartridge, Photo Flash, M123 Series
78-0-137	Cartridge, Photo Flash, M124 Series
mmercial Cartridge, Powder Actuated Tool, Cal .22 and Cal .30	
2257AK	Cartridge, Release Cargo, Parachute, 1.0 sec delay
38662	Cartridge, Release Cargo, Parachute, 2.0 sec delay
ommercial Cartridge, Set, Escape System-4, MC2	
5-1-17	Cartridge, Thruster, M42
365	Cartridge, Thruster, M43
.367	Cartridge, Thruster, M44
596708	Cartridge, Thruster, M94
0674	Cartridge, Thruster, M119
7470	Cartridge, Thruster, T239
2-0-156	Charge Assembly, Demolition, M37
6416	Charge Assembly, Demolition, M183
0-93	Charge, Demolition Block, M2 and M3
94025	Charge, Demolition Block, M5
2-13-9	Charge, Demolition Block, M5A1
476	Charge, Demolition Block, M112
551	Charge, Demolition Block, M118
971113	Charge, Demolition Block, 1/4-lb TNT
3-24	Charge, Demolition Block, 1/2-lb and 1-lb TNT
L-E20308	Charge, Demolition Block, 1-lb Nitro-Starch
57	Charge, Demolition Chain, M1
306-5-1	Charge, Demolition Linear, Component of Demo Kit, M2
4-6	Charge, Demolition Linear, Component of Demo Kit, M2A1 and M2
-13-23	Charge, Demolition Linear, Component Expl. Kit, Earth Rod
3	Charge, Demolition, Shaped, M2A1
-0-120	Charge, Demolition, Shaped, M2A3
135	Charge, Demolition, Shaped, M3
3	Charge, Demolition, Shaped, 10-lb
57975	Charge, Demolition, Shaped, 40-lb

APPENDIX A Cont'd

DRAWING NUMBER or MIL-SPEC	ITEM
73-2-214	Fuze, Point Detonating, M78 Series
73-2-251	Fuze, Point Detonating, M21 Series
73-1-195	Fuze, Point Detonating, M82 Series
73-2-374	Fuze, Point Detonating, T234 Series
73-2-320	Fuze, Point Detonating, M503 Series
73-2-359	Fuze, Point Detonating, M508 Series
73-2-393	Fuze, Point Detonating, M519 Series
M511100	Safety and Arming Device, Guided Missile XM143
1711435	Fuze, Electronic Time, M587
1711268	Fuze, Electronic Time, M724
2510000	Fuze, Electronic Time, M762
2530850	Fuze, Electronic Time, M767
226650	Fuze, PIBD, XM579
797514	Fuze, Point Detonating, M524E1. NOTE: This SOP does not apply to the basic model Fuze, M524
00197	Fuze, Point Detonating, M525 Series
-2-393	Fuze, Point Detonating, M526 Series
-1-195	Fuze, Point Detonating, M527 Series
-2-141	Fuze, Point Detonating, M535 Series
53535	Fuze, Point Detonating, M557 Series
30696	Fuze, Point Detonating, M572.
58605	Fuze, Point Detonating, M739
55332	Fuze, Point Detonating, M739A1
2-236	Fuze, Point Initiating, M90 Series
9733	Fuze, Point Initiating, Base Detonating, M509 Series
523	Fuze, Proximity, M504 Series
0367	Fuze, Proximity, M513 Series
845	Fuze, Proximity, M514 Series
568	Fuze, Proximity, M515 Series
9932	Fuze, Proximity, M517 Series
6900	Fuze, Proximity, M532 Series
6451	Fuze, Proximity, M732
23 (Navy)	Fuze, Rocket, Nose, MK137 Series
83 (Navy)	Fuze, Rocket, Nose, AN-MK149 Series
84 (Navy)	Fuze, Rocket, Nose, MK154 Series
15 (Navy)	Fuze, Rocket, Nose, MK159 Series
581	Fuze, Rocket, Nose, M414 Series
45	Fuze, Rocket, Point Detonating, M423 and M423A Series
166	Fuze, Time M84

APPENDIX A Cont'd

DRAWING NUMBER or MIL-SPEC	ITEM
73-3-154	Fuze, Time Superquick, M54
73-3-155	Fuze, Time Superquick, M55
563141	Fuze, MT, MK25 Mod 5 (1390-N257)
253190	Fuze, MT, MK51-4 (1390-N247)
2428426	Fuze, MT, MK42 Mod 0 (1390-N250)
10520791	Fuze, Mechanical Time, M62
10520688	Fuze, Mechanical Time, M63
1594044	Fuze, Mechanical Time, Superquick, M520 Series
9236500	Fuze, Mechanical Time, Superquick, M577
352381	Fuze, Mechanical Time, Superquick, M577A1
236701	Fuze, Mechanical Time, Superquick, M582
9352382	Fuze, Mechanical Time, Superquick, M582A1
53001-1	Generator, Gas Pressure, Prop, Actuated
-0-143	Grenade, Hand, Fragmentation, MK2 Series
75-14-346 PRESSED FIBER BODY, NOT CRITICAL	Grenade, Hand, Offensive, MK3 Series
8?-0-1 INERT	Grenade, Hand, Practice, M2182-0-190
8 -0-190	Grenade, Hand, Fragmentation, M26 Series
3-0-191 INERT, MAYBE SMALL SEPARATE BLACK POWDER CHARGE	Grenade, Hand, Practice, M50
3-7-4	Grenade, Hand and Rifle: Smoke, WP, M54
-0-109 NOT CRITICAL	Grenade, Rifle, Smoke, WP, M19 Series
-0-117 NOT CRITICAL	Grenade, Rifle, Smoke, M22 Series
2-0-139 NOT CRITICAL	Grenade, Rifle, Smoke, Streamer, M23
2-2-204 NOT CRITICAL	Grenade, Rifle, Illuminating, M27 Series
0-195	Grenade, Rifle, HEAT, M31
5-9-62	Igniter, Blasting Fuse, M1 & M2
3-0-127	Igniter, Ram Jet Engine, M113
3168	Igniter, Ram Jet Engine, M114
-590	Igniter, Ram Jet Engine, M132
-2-592	Igniter, Ram Jet Engine, M133
-155	Igniter, Ram Jet Engine, M134 & M135
8 428	Igniter, Rocket, M20A1
-1-454	Ignition Cylinder, Portable, Portable Flame Thrower: M1 (MIL-I-11525) NSN 1375-00-219-8583-M620)
-4-652	Mine, AP, NM, M14
738	Mine, AP, Practice, NM, M17
25	Primer, Igniter, M10 Series Mine Fuze
63	Primer, Percussion, M1B1A2
60-1	Primer, Percussion, Cap, MCC, Improved No. 2 or 3
21	Primer, Percussion, Electric MK2A4
(Navy)	Primer, Percussion, Electric MK13
80 (Navy)	Primer, Percussion, Electric MK 13 Mod 1
(Navy)	Primer, Percussion, Electric MK 13 Mod 2
(Navy)	Primer, Percussion, Electric MK 14 Mod 1
52 (Navy)	Primer, Percussion, MK22 Mod 0 for 40MM Ammunition
8 (Navy)	Primer, Percussion, MK22 Mod 1 for 40MM Ammunition

OD Grou only

APPENDIX A Cont'd

DRAWING NUMBER or MIL-SPEC	ITEM
8797968	Signal, Illum, Parachute, M126 and M127 Series
8797996	Signal, Ground, Sak, M128 and M129 Series
8838071	Signal, Illum, Grd, Parachute, M131 Series
78-0-96	Simulator, Proj Air Burst, M74A1
78-0-115	Simulator, Gun Flash, M110
7549246	Simulator, Proj Ground Burst, M115 Series
8855109	Simulator, Hand Grenade, M116 Series
78-0-120	Simulator, Booby Trap, Flash, M117
78-0-122	Simulator, Booby Trap, Illum, M118
78-0-124	Simulator, Booby Trap, Whistling, M119
7522059	Simulator, Flash, Artillery, M21
1745290	Simulator, Launching, Antitank Guided Missile and Rocket, M22
1-13-3	Simulator, Projectile Airburst: Charge Smoke Puff White *
2-5-146	Squib, Electric, M1 Series
5-17-11	Tracer, [illegible] Series
349014	Tracer, XM10 Series
20866	Fuze, PD, XM716
20867	Fuze, PD, XM717
20850	Fuze, PD, XM719
10347	Fuze, Proximity, M516 Series
7728(S)	Fuze, Proximity, FMU-110/B
7272(S)	Fuze, Proximity, FMU-113

APPENDIX C

Excerpts from Work Plan: Scrap Handling

anomaly, based on the signal strength. Once verified, the UXO technician will continue digging with either the shovel or hand tools. In the event an anomaly is determined to be at a depth greater than that specified in the SOW, SUXOS, in conjunction with the CEHNC OSS, will determine the appropriate action: a) continue the excavation; or b) record the location of the anomaly for pursuing at a later time.

2.6.10.2 Location Recording

The SUXOS will direct and supervise the following operations for UXO/OE encountered.

- Complete a Grid Survey Summary Log Form and an OE Operations Grid Map, examples of these can be found in Appendix E of the generic WP.
- Measure the approximate distance to within one foot from the southwest grid corner to the OE item of concern, and also record the depth at which the item was found.
- If the item is determined to be fuzed, or is otherwise unsafe to move, its location will be marked with crossed pin flags, so that the item may be relocated for BIP demolition.

2.6.10.3 Records

The SUXOS will maintain in a hard bound notebook, a detailed accounting of activities performed at each grid, which will include information pertaining to the following:

- The date and time operations began;
- Team composition and personnel names and positions;
- The date and time operations were completed;
- Any event which impacted on the day's operations; and
- The number of OE located, with the identification, condition, depth, disposition and location recorded on the Grid Survey Summary Log and OE Operations Grid Map.

2.6.10.4 Removal and Disposal of Scrap Metal

A temporary collection point for ORS will be established by the SUXOS or team leader within or adjacent to, each operating grid. During operations, the UXO technicians who uncover an item will inspect it for the presence of explosive hazards. OE items that are free of explosive contamination and do not require venting will be placed in the grid ORS collection point. Upon completion of operations in that grid, the material in the collection point will be collected and loaded into containers, weighed and the weight entered in the team log book. Further inspection of ORS by the QCS and SUXOS will be conducted IAW the QC requirements outlined in Chapter 8 of this WP.

2.6.11 Disposal Operations

All OE-related material containing explosives will be disposed of by detonation utilizing standard demolition procedures as outlined in TM 60A-1-1-31 and the [redacted] Disposal/Demolition Operations SOP found in Appendix G of this WP. The following paragraphs describe in general the procedures [redacted] will use to detonate OE related items at the SEDA.

the continued soil removal. Once the area has been cleared for excavation, a one foot lift will be removed and the excavated area will be inspected to determine if any OE have been uncovered. The bucket contents will then be visually inspected prior to dumping, and again after the bucket is dumped. When the EMM has excavated to a depth of approximately one foot over the item, one UXO Specialist (UXOSP) will utilize hand tools and a shovel to investigate the item. During excavation operations, the SSHO will be responsible for periodically inspecting the excavation and ensuring that appropriate safety procedures are used. Any excavation greater than four feet in depth will require guidance and approval of a registered engineer, as stated in the [redacted] Excavation and Trenching SOP presented in Appendix G to this WP.

2.6.13 Quality Control Inspections

[redacted] will utilize the QC procedures presented in Chapter 8 of this WP for controlling and measuring the quality of all work performed at SEDA. All QC activities will be performed and documented IAW applicable professional and technical standards, USACE requirements, and project goals and objectives. All site activities and project deliverables will be assessed, documented and reviewed for precision, accuracy and completeness.

2.7 PROJECT CLOSE-OUT

During this phase of each project, [redacted] will remove its operational capability from the area and will reallocate its personnel and equipment to either other SEDA projects or projects outside the SEDA. In order to clearly estimate the completion of each project, the project SUXOS and PM will closely monitor operational performance throughout the execution of each SOW. The SUXOS will initiate actions to demobilize personnel and equipment once a clear projection can be made of the actual completion date and approval has been granted by the CEHNC PM. Demobilization and close-out activities will be performed by [redacted] SUXOS, SSHO, and UXOSP.

2.7.1 Scrap Turn In

Upon completion of the project, all stockpiled, inert ordnance and ORS will be turned in to a local scrap dealer. The procedures outlined in DoD 4160.21.M will be followed and the shipment certified as being free of explosive hazards. A DD Form 1348-1 will be utilized as the Turn-In Documentation, and will include the statement "I certify that the property listed hereon has been inspected by me, and to the best of my knowledge and belief, contains no item of a dangerous nature." The DD Form 1348-1 will be signed by the SUXOS and all turn-in documentation included in the Removal Report.

2.7.2 Break Down Site

This paragraph, the requirements of the SOW and the specifications in Chapter 7 of this WP, will be followed in the break down of the site. All temporary facilities will be removed and the site

it is scheduled by the SUXOS for re-work. In addition, the QCS will conduct an audit of all grid clearance logs and reports as to their completeness.

8.7.3 Scheduled Audits

Due to the planned nature and duration of the project, a QC audit will be conducted by the [redacted] QCM. This audit will include a surface and subsurface check of an area representing an additional 10% of the work completed. The [redacted] QCM, assisted by the QCS, will proceed on a pre-determined pattern starting on the opposite side from the QCS's check, which will provide a total combined QC audit of approximately 20%. As with the QCS's check, if the site fails, it is scheduled for re-work. In addition, an inspection of all logs and a check of contractor and subcontractor personnel will be conducted to ensure that they are complying with the WP.

8.7.4 Pass/Fail Criteria

The pass/fail criteria for the final clearance of a site is set by the CEHNC. This criteria specifies that a grid will be failed if one UXO item is found during a QC or QA audit conducted by either [redacted] or CEHNC personnel. If this occurs, the entire grid will be failed and must be re-surveyed and cleared. Upon completion of the grid re-work, an additional QC or QA audit will be conducted again by the responsible parties. Any failure will be reported to the CEHNC KO, and the [redacted] QCM, PM and SUXOS.

8.7.5 Ordnance Related Scrap Inspections

When ORS is located on site, it will be inspected by at least two UXO technicians prior to being removed from the grid or sifter area. Whenever ORS is to be placed in a scrap storage container, the QCS and SUXOS will conduct a third and fourth inspection for the presence of explosive components or hazardous residues. In the event that any are discovered, the item will be removed and destroyed and the incident will be recorded and thoroughly discussed at the next daily tailgate safety meeting. The incident will be reviewed by the SUXOS and QCS and a recommended course of action will be presented to the PM, i.e., reprimand or dismissal of the two previous inspectors.

8.8 NON-CONFORMANCE/CORRECTIVE ACTION

Any non-conformance to contractual requirements will be documented and reported. Non-conformance includes:

- Delivery of items or services by [redacted] 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; and

UXO/OEW OPERATIONS - MECHANICAL SCREENING

1.0 PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to outline the minimum safety and health requirements and procedures applicable to the conduct of material separation operations involving the use of mechanical screening equipment.

2.0 SCOPE

This SOP applies to all site personnel, to include [redacted], contractor, and subcontractor personnel, and operations involving the separation of material through the use of mechanical screening equipment. This SOP is not intended to contain all requirements needed to ensure regulatory compliance and is generic in nature. Site-specific requirements for blast shields, plexiglass and safety arcs are presented in the figures attached to this SOP when it is added to a Site Safety and Health Plan. Additionally, consult the documents listed in section 3.0 of this SOP for additional compliance issues.

3.0 REGULATORY REFERENCES

The following Occupational Safety and Health Administration (OSHA) standards and U.S. Army Corps of Engineers (USACE) requirements directly apply to the conduct of operations associated with the SOP. In the event other hazards are associated with the conduct of this SOP, consultation of other SOPs and regulatory references may be needed.

- OSHA Construction Industry Standard 29 CFR Part 1926, Subpart O;
- OSHA General Industry Standard 29 CFR Part 1910, Subparts N and O; and
- USACE EM 385-1-1, Sections 16 A and B and Section 17 A.

4.0 RESPONSIBILITIES

4.1 PROJECT MANAGER

The Project Manager shall be responsible for ensuring the availability of the EODT resources needed to implement this SOP, and shall ensure that this SOP is incorporated in the plans, procedures and training for sites where mechanical screening is to be implemented.

4.2 SENIOR UXO SUPERVISOR

The Senior UXO Supervisor (SUXOS) will ensure that this SOP is implemented for screening operations, and that relevant sections of this SOP are discussed in the tailgate safety briefings. Information related to the daily implementation of the SOP is to be is documented in the Site Operational Log maintained by the SUXOS.

4.3 UXO SUPERVISOR

The UXO Supervisor (UXOS) shall be responsible for ensuring the field implementation of this SOP and for implementing the safety and health requirements outlined in section 5.0 of this SOP. In the absence of a SUXOS, the UXOS shall be responsible for implementing the SUXOS responsibilities outlined in para 4.2.

4.4 SITE SAFETY AND HEALTH OFFICER

The Site Safety and Health Officer (SSHO) will be responsible for ensuring that the safety and health hazards and control techniques associated with this SOP are discussed during the initial site hazard training and the daily tailgate safety briefings. The SSHO will also be responsible for daily inspection of site operations and conditions to ensure their initial and continued compliance with this SOP and other regulatory guidelines.

5.0 PROCEDURE

All [redacted], contractor, and subcontractor personnel involved in screening operations shall be familiar with the potential safety and health hazards associated with this operation. Additionally, all effected personnel shall also be familiar with the control techniques that will used to reduce or eliminate these hazards.

5.1 SAFETY HAZARDS

The safety and health hazards potentially associated with mechanical screening operations on an ordnance and explosives (OE) site are listed below. For each of the hazards listed, at least one hazard control measure is listed in paragraph 5.2 for the reduction of the operational hazard. At no time will mechanical screening operations be conducted on site without the use and implementation of the appropriate controls measures.

1. Unexploded ordnance (UXO), possibly resulting in heat, fire, fragmentation, and over pressurization hazards;
2. Vehicle traffic and movement
3. Trips and falls (excavations and man lift)
4. Noise;
5. Heavy equipment operations;
6. Dust, with potential for exposure to toxic metals;
7. Stored energy and pinch points; and
8. Engine exhaust.

NEXT PAGE ASSIGN

screening process will be shut down immediately. Additionally, if a potential UXO is observed in the screen reject, the UXOSP observing the item will use radio or visual communication to order the immediate shut-sown of the screening operations. Once the process has been halted and secured, the potential UXO item will be inspected by the UXOSPs. If the item is confirmed as being a UXO, the item will be identified and a determination made as to whether the item can be moved. Those items that are unfuzed or safe to move will be removed from the screening equipment and stored for later disposal according to the approved Work Plan (WP). Those items determined to be unsafe to move will be left in place, the CEHNC on-site Safety Specialist will be notified, and the screening operations halted until such time as a resolution can be obtained using the procedures in the approved WP. Those items identified as being OE-related but not UXO will be removed and stored accordingly.

7. Segregation of the oversize materials will be performed according to the following:
   a Debris identified as rocks, roots, shale, etc., will be collected and combined with the screened soil from which they came.
   b. The debris is identified as non-OE scrap that will be disposed of as scrap.
   c. The debris is identified as OE-related scrap or inert OE and must be verified as being free of OE hazards prior to scrap disposal.
   d. The debris is identified as UXO that is unfuzed and safe to move, in which case the item will be removed from the area and destroyed at the existing OD area.
   d. Hazardous UXO identified that cannot be moved, will be brought to the attention of the SUXOS who will immediately notify the USAESCH OSS. The OSS will direct [redacted] as to the next course of action to be taken.
8. When maintenance/servicing is performed on the sifter or conveyor system, all sources of immediate power or stored energy shall be controlled (refer to lockout/tagout SOP).
9. Screening operations shall be restricted to daylight hours, and once operations begin, only UXO-qualified personnel may enter the safety zone around the sifter operation.
10. All personnel involved in the screening operations shall be informed of the "Kill Switch" location, as well as the procedures for summoning emergency support.

5.2 SAFETY AND PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

The following safety measures and personal protective equipment (PPE) shall be used in preventing or reducing exposures associated with screening operations. These requirements will be implemented unless superseded by site specific requirements stated in the SSHP.

1. Hard hats, steel-toe safety boots and protective gloves shall be worn when ever maintenance, adjustment or clearing of the sifter is being performed.
2. Safety glasses shall be worn around screening equipment unless full face respirators are required; and
3. Any of the PPE that will be worn when investigating OE items in the sifter will be secured to the wearer to ensure that it does not fall off and strike suspect UXO items;

4. Hearing protection shall be worn when screening equipment is in operation unless the SSHO has measured and determined the noise levels to be less than 85 decibels on the "A" scale over an 8-hour time-weighted average.

6.0 AUDIT CRITERIA

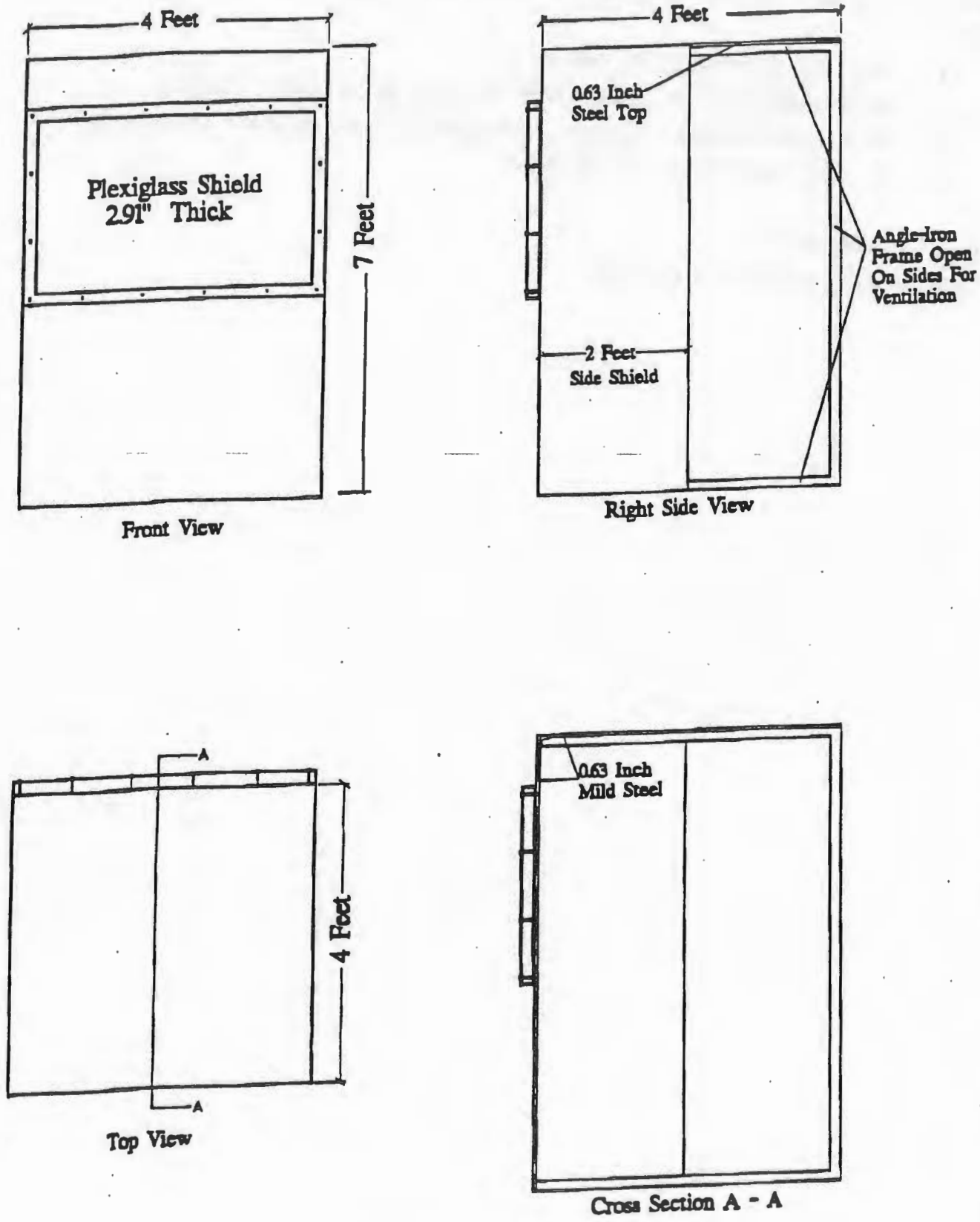
The following items related to screening operations will be audited to ensure compliance with this SOP:

1. The Daily Operational and Safety Logs;
2. The Documentation of Training form for the initial site hazard training;
3. The Documentation of Training form for the Daily Tailgate Safety Briefings; and
4. The Daily Safety Inspection Checklist.

7.0 ATTACHMENTS

No attachments associated with this SOP.

Figure 120B-1. Blast Shielding for Remote Sifter Operator



APPENDIX E

RESPONSES TO PREVIOUS EXTERNAL REVIEW COMMENTS - THIS SUBMISSION

1. FROM USATCES (Ms. Gallagher)
2. FROM DDESB (Mr. Cates)

SENECA ADA - OB GROUNDS EXPLOSIVES SAFETY SUBMISSION

Comments from USATCES (Ms. Jean Gallagher)

Note: All corrections made in response to Ms. Gallagher's comments are shown in the body of the ESS in underlined, bold italics.

1. Correct reference to Pad "I" at the bottom of first page of Section 1.0. It should read "Pad A". **{DONE}**

2. Add the proper NEW for a 37mm projectile. **{Added in the second paragraph of Section 3.0. Value is 0.527 lbs. of TNT as per Dr. Crull}**

3. Remove the Phase IX discussion. Construction/avoidance support does not require an ESS. **{DONE...Phase X now becomes Phase IX}.**

4. In the third paragraph of the "Discussion of Project Specific Procedures", be absolutely specific about what demo materials are being used. There's a possible question on whether what's proposed is correctly categorized with respect to the explosive class. **{[redacted] provided an MSDS for the explosives to be used. Ms. Gallagher said that that would be sufficient for what she had in mind}**

5. On page 8, middle paragraph, specify what explosives are being stored in the magazines and what, if anything, will they be paired with? Separation required?? **{[redacted] has provided. Text was added}**

6. On Page 8, paragraph 3, discuss where OE that is located will be stored during the week while awaiting destruction at the end of the week. **{[redacted] has provided. Task was added}**

7. In general (I believe it says so in the Work Plan pages that were inserted), why is the excavation equipment only being shielded on the windshields? Shouldn't the shields extend to the sides and back of the cab as well?? **{[redacted] has provided. As suspected, this was an error and has been corrected to state that equipment barricading will be used over the front, sides and back windows of the equipment}**

8. Site Map 3. Revise to show the Q-D's to the correct scale. **{Done. Was faxed 9 Jun}**

9. Site Map 4. Recommended showing a 400 foot Q-D rectangle around the entire site in order to clean up this map and make it easier to demonstrate the 400 foot sifter clearance. **{Initially agreed but then re-thought the issue. The reason one circle around the entire site was not shown is that we don't want to indicate that we plan to have the entire site shut down while the sifter is in operation within one corner. Later in the project, [redacted] will be geophysically mapping the already stripped areas for deeper anomalies. They will be able to do this and still maintain the 1181 and 400 foot Q-D's, in many instances. We don't wish to preclude this additional productivity if we don't have to. As such, the map will stay the same. All need to understand that the drawing is meant to demonstrate that the sifter will be mobile and will operate at different areas of the site at different times (as opposed to the original idea of using an immobile sifter that is setup for the duration in one spot). The multiple Q-D arcs are meant to demonstrate that, regardless of the location of the sifter, at any given time the 400 foot Q-D distance will be maintained. No action required}.**

{Ms. Gallagher disagreed with this response to Number 9, so the correct Q-D arc was shown on the map as stated in the responses to her second round of comments}

SENECA ADA - OB GROUNDS EXPLOSIVES SAFETY SUBMISSION

Second Round of Comments from USATCES (Ms. Jean Gallagher)

Note: All corrections made in response to Ms. Gallagher's comments are shown in the body of the ESS in underlined, bold italics.

Following is Jean Gallagher's responses to HNC responses to her original round of comments and our proposed resolutions.

From: gallagher@dac-emh2.army.mil

To: Kevin W Healy

Date: Thu, Jun 10, 1999 3:04 PM

Subject: Re: Seneca Update on Your Comments

Kevin,
I tried calling you, but didn't get an answer. I've looked at what you've sent me and I've got a few comments.

1. Para 6.0, phase VII, subpara b: Recommend deleting everything after the first sentence and adding a statement that you will submit another safety submission if OE is found below the 1-ft depth. That will avoid an argument now over something that may not happen. ***{DONE}***

2. Section titled "Discussion of Project-Specific Procedures", 4th para:
"These are considered flammable oxidizers and ..." The binary explosives are actually considered flammable liquids and oxidizers. ***{CORRECTION MADE}***

3. Para 8.0, last line of para describing magazine QD: delete the words:
"... 1.3 and...". Reason: you've changed the materials to binary explosives and hazard class 1.4B. (I'm assuming the binary explosives won't be stored here. If I'm wrong, that should be added.) ***{DONE}***

4. Appendix D, para 5.2, #5: K24 for 0.527 lbs of TNT is 19.4 ft; the 17.53 ft given here may be for the grenade. You need to use the most restrictive distance. ***{CORRECTION MADE BY EODT}***

5. Site map 3: Are there any other operations going on within this new arc? ***{NO}***

6. Site map 4: Disagree with your response. The map needs to show the maximum area that could be covered by a QD arc, so DDESB can approve the "worst case". I can easily explain that the arc will be changing daily. That arc could be added to site map 3 instead of changing site map 4. ***{SITE MAP NO. 4 WAS REVISED TO SHOW THE 400 FOOT Q-D ARC AROUND THE ENTIRE SITE. THIS IS IN ORDER TO REPRESENT THE WORST CASE, AS REQUESTED.}***

Jean Gallagher
(918)420-8876

DEPARTMENT OF DEFENSE EXPLOSIVES SAFETY BOARD
2461 EISENHOWER AVENUE
ALEXANDRIA, VIRGINIA 22331-0600

13 NOV 2000

DDESB-KO

MEMORANDUM FOR DIRECTOR, U. S. ARMY DEFENSE AMMUNITION CENTER
(ATTN: SMAAC-ESL)

SUBJECT: Amendment 1 to Explosives Safety Submission for Ordnance and Explosives (OE) Removal at the Open Burning Grounds, Seneca Army Depot Activity, Romulus, NY

References: (a) SMAAC-ESL of September 28, 2000, Same subject

(b) DoD Explosives Safety Board Memorandum DDESB-KO of July 14, 1999 Subject: Explosives Safety Submission, Ordnance and Explosives (OE) Removal at the Open Burning Grounds, Seneca Army Depot Activity, July 1998

(c) DoD 6055.9-STD, DoD Ammunition and Explosives Safety Standards

The subject amendment provided by reference (a) to the explosives safety submission approved by reference (b) has been reviewed with respect to criteria of reference (c). Based on the information furnished, the set up, equipment and procedures to determine if OE items and metallic scrap exist in the oversize material left from the first OE screening operation performed at the Open Burning Grounds on Seneca Army Depot Activity, Romulus, New York are approved. This approval is based on the following:

a. The equipment setup and the work are performed as identified in the package of the reference (a).

b. Procedures must be established and implemented to keep non-related personnel outside the exclusion area during screening operation.

After completion of the clearance effort, request this office be furnished a copy of the final closure plan report.

Point of contact is Mr. Larry D. Webster at Commercial (703) 325-1378, DSN 221-1378 or E-mail Larry.Webster@hqda.army.mil.

DANIEL T. TOMPKINS
Colonel, USAF
Chairman

DEPARTMENT OF THE ARMY
US ARMY DEFENSE AMMUNITION CENTER
1 C TREE ROAD
MCALESTER, OK 74501-9053

REPLY TO ATTENTION OF

SMAAC-ESL (385(A))

28 SEP 2000

MEMORANDUM FOR Chairman, Department of Defense Explosives Safety Board, ATTN: DDESB-KO, Hoffman Building 1m Room 856C, 2461 Eisenhower Avenue, Alexandria, VA 22331-0600

SUBJECT: Amendment 1 to Explosives Safety Submission for Ordnance and Explosives (OE) Removal at the Open Burning Grounds, Seneca Army Depot Activity, Romulus, NY

1. References

a. Memorandum, Department of Defense Explosives Safety Board, DDESB-KO, 14 July 1999, Subject: Explosives Safety Submission, Ordnance and Explosives (OE) Removal at the Open Burning Grounds, Seneca Army Depot Activity, July 1998.

b. Memorandum w/ enclosures, HQ, Army Operations Support Command (PROV), AMSOS-SF, 23 May 2000, Subject: Amendment 1, Sorting Oversize and Hopper Operations, to Safety Submission for the Removal of Ordnance and Explosives (OE) from the Open Burning Grounds, Seneca Army Depot Activity (Enclosure).

2. We have reviewed subject amendment in accordance with the criteria of DOD 6055.9-STD as implemented by AR 385-64, and have granted Army approval. It is provided for Department of Defense Explosives Safety Board (DDESB) review with our recommendation for approval.

3. The following information is provided to assist in your review.

a. In the original DSS the soil was to be sifted and oversized material would be segregated and hand sorted. At that time, minimal oversized material was anticipated. However, sifting operations generated an 11,000 cubic yard stockpile of oversized material due to the shale and the ¼ inch screen size. Hand sorting is impractical, so a system incorporating a hopper and conveyor belt will be used. This amendment details the new procedures to be used to sort the oversize material.

b. A shielded front-end loader will dump oversize material into a passive feed hopper. This material will travel down a conveyor for sorting by a crew of UXO Specialists located outside K24 distance from the hopper. A double layered sandbag wall will be constructed at K24 distance from the hopper, separating the crew from the hopper.

c. A shielded safety observer will also be located outside the K24 distance. He will watch the operation and warn the sorting crew if he notices any hazardous conditions. The observer will have a kill switch that allows him to stop the conveyor if necessary.

SMAAC-ESL (DDESB-KO/13 Nov 00) (385[A]) 1st End
SUBJECT: Amendment 1 to Explosives Safety Submission for Ordnance and Explosives (OE) Removal at the Open Burning Grounds, Seneca Army Depot Activity, Romulus, NY

U.S. Army Defense Ammunition Center, ATTN: SMAAC-ESL, 1 C Tree Road, McAlester, OK 74501-9053

14 NOV 2000

FOR Commander, Operations Support Command (OSC), ATTN: AMSOS-SF, Rock Island, IL 61299-6000

1. Reference: Memorandum, Defense Ammunition Center, SMAAC-ESL, 28 September 2000, SAB (enclosure).

2. Basic correspondence provides Department of Defense Explosives Safety Board (DDESB) approval for subject submission, and is provided for your information and use.

3. Request two copies of the final removal report be sent to this office; we will forward one to DDESB.

4. The POC is Ms. Jean Gallagher, SMAAC-ESL, (918) 420-8876, DSN 956-8876; email gallagher@dac-smh2.army.mil.

FOR THE DIRECTOR:

Melvin L Colberg

MELVIN L. COLBERG
Chief, Ordnance Explosives
Environmental Division

Encl
as

CF:
Office of the Chief of Staff, ATTN: DACS-SF, 2211 S. Clark St., Room 980, Arlington, VA 22202
Commander, U.S. Army Engineering and Support Center, Huntsville, ATTN: CEHNC-OE-CX, P.O. Box 1600, Huntsville, AL 35807-4301

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY OPERATIONS SUPPORT COMMAND (PROV)
1 ROCK ISLAND ARSENAL
ROCK ISLAND, IL 61299-6000

REPLY TO
ATTENTION OF:

AMSOS-SF (385-10d) 23 MAY 2000

MEMORANDUM FOR Director, Defense Ammunition Center, ATTN: SIOAC-ESL, 1C Tree Road, Building 35, McAlester, OK 74501-9053

SUBJECT: Amendment 1, Sorting Oversize and Hopper Operations, to Safety Submission for the Removal of Ordnance and Explosives (OE) from the Open Burning Grounds, Seneca Army Depot Activity

1. The Department of Defense Explosives Safety Board approved the original safety submission on 14 July 1999 (encl 1). The Operations Support Command Safety Team recommends approval of Amendment 1, Sorting Oversize and Hopper Operations (encl 2).

2. The Corps of Engineers (COE) originally anticipated minimal oversized material. However, the shale and ½" screen requirement created 11,000 cubic yards of oversized material. The remediation contractor, EODT, developed the enclosed hopper and conveyor system to recheck the oversize material. EODT will process the oversized material through the new self-cleaning barrel sifter (proposed in the ESS for the SEAD-44A QA Function Test Range) to loosen up the material. What material remains will go through the hopper and conveyor system (encl 2). The COE predicts 60% of the material will drop out from the barrel sifter operation. The COE intends to incorporate the approved process at encl 2 into the generic work plan and use at other locations.

3. The OSC Safety Team clarifications include:

a. Para 4.0 Sorting.... Modify 3d sentence to read: *"These personnel will be located outside the K24 distance for the MPM <u>from the hopper (see B-2, Appendix B)</u> and will ....."*

b. Para 4.0 Sorting, subpara 5. Page 1-A-5, 3d sentence. Replace reference to *"above in item 6(e)"* with *"<u>below in item 6(e)</u>"*.

4. The COE would like to start operations in August 2000.

AMSOS-SF

SUBJECT: Amendment 1, Sorting Oversize and Hopper Operations, to Safety Submission for the Removal of Ordnance and Explosives (OE) from the Open Burning Grounds, Seneca Army Depot Activity

5. The POC is Mrs. Deb Westervelt, AMSOS-SF, DSN 793-2986, E-mail amsos-sf@osc.army.mil or westerveltd@osc.army.mil.

Encl

for Kristine R. Preston
ROSALENE E. GRAHAM
Chief, Safety/Rad Waste Team

Cc: AMSOS-MAI-O
Department of Army, Huntsville Center, Corps of Engineers, P.O. Box 1600, Huntsville, AL 35807-4301
Commander, Seneca Army Depot Activity, ATTN: SIOSE-BEC, 5786 State Route 96, Romulus, NY 14541-5001

DEPARTMENT OF DEFENSE EXPLOSIVES SAFETY BOARD
2461 EISENHOWER AVENUE
ALEXANDRIA, VIRGINIA 22331-0600

14 JUL 1998

DDESB-KO

MEMORANDUM FOR DIRECTOR, US ARMY TECHNICAL CENTER FOR EXPLOSIVES SAFETY (ATTENTION: SIOAC-ESL)

SUBJECT: Explosives Safety Submission, Ordnance and Explosives (OE) Removal at the Open Burning Grounds, Seneca Army Depot Activity, July 1998

References: (a) Memorandum, Department of Defense Explosives Safety Board, DDESB-KO, June 18, 1998, Subject: Safety Submission for the Removal of Ordnance and Explosives (OE) from the Open Burning Grounds, Seneca Army Depot Activity (SEDA), New York

(b) Memorandum, Headquarters, U.S. Army Industrial Operations Command, AMSIO-SF, U.S. Army Defense Ammunition Center, SIOAC-ESL, May 13, 1998, Subject as above (with one endorsement)

Reference (a) provided DDESB approval of the initial safety submission. The DDESB secretariat has reviewed the revised safety submission forwarded by reference (b) with respect to explosives safety criteria. Based on the information submitted, we approve the revised safety submission for removal of OE from the open burning grounds at Seneca Army Depot Activity, New York.

Point of Contact is Mr. Charles A. Cates, DDESB-KO, commercial number: (703) 325-1356 or DSN 221-1356. E-mail address is Charles.Cates@hqda.army.mil.

DANIEL T. TOMPKINS
Colonel, USAF
Chairman

DEPARTMENT OF THE ARMY
HUNTSVILLE CENTER, CORPS OF ENGINEERS
P.O. BOX 1600
HUNTSVILLE, ALABAMA 35807-4301

REPLY TO
ATTENTION OF

CEHNC-OE-CX (200-1c)

10 MAY 2000

MEMORANDUM FOR

Commander, Headquarters, U.S. Army Operations Support Command, 1 Rock Island Arsenal, ATTN: AMSOS-SF, Bldg 350 4SE, Rock Island, IL 61299-6000

Director, Defense Ammunition Center, ATTN: SIOAC-ESL (Mr. Cliff Doyle), Building 35, 1C Tree Road, McAlester, OK 74501-9053

SUBJECT: Amendment 1 to Safety Submission for the Removal of Ordnance and Explosives (OE) from the Open Burning Grounds, Seneca Army Depot Activity (SEDA), New York

1. The enclosed amendment to the subject safety submission was prepared for the installation by members of this organization and outlines the safety criteria for the protection of site personnel and the public during the explosives operations scheduled at the subject range.

2. The amendment specifically addresses the methodology proposed to safely sort oversized material produced during execution of work addressed in the basic safety submission, July 1998, which was approved by DDESB 1 October 1998.

3. The amendment is being forwarded for your concurrent review. Members of the USACE OE-CX have reviewed the document and concur with safety criteria presented. The installation point of contact has been furnished an electronic copy of the document and should forward the installation's endorsement shortly.

CEHNC-OE (200-1c) 10 MAY 2001

SUBJECT: Amendment 1 to Safety Submission for the Removal of Ordnance and Explosives (OE) from the Open Burning Grounds, Seneca Army Depot Activity (SEDA), New York

4. Should you have any questions or comments, you may contact me at (256)895-1300 or Mr. Kevin Healy at (256)895-1627.

Encl

HARRY E. SPEAR
COL, EN
Commanding

CF: (wo/encl)
Commander, Seneca Army Depot Activity, ATTN; SIOSE-BEC
(Mr. Absolom) 5786 State Route 96, Romulus, NY 14541-5001

US Army Corps
of Engineers
Huntsville Division

Amendment 1 to the

Explosive Safety Submission

Ordnance and Explosives Removal Action At the Open Burning Grounds Seneca Army Depot Activity, Romulus, New York

August 10, 2000

Prepared by
US ARMY CORPS OF ENGINEERS
Engineering and Support Center, Huntsville

INTRODUCTION

As a function of the sifting operations, oversize material that is greater than the screen is separated and located into a separate pile. The oversize materials must be sorted to determine if OE items and metallic scrap are existing in the oversize. The OE items and scrap discovered will be removed from the oversize so that the non-OE containing oversize soils may be transported and stockpiled for either later use or disposal, IAW the requirements of the WP and SOW. The oversize sorting procedures presented below are to be amended to the existing Clearance Techniques presented in the approved ESS. The oversize sorting procedures listed below will apply to oversize sorting at the OBG and will be submitted in future submissions involving SEDA sites where sifting operations are conducted. In future submissions, Figure 1-1 will be updated as needed to address changes in the site-specific data such as the K24 distance and the thickness of the plexiglass and mild steel.

6.0 Clearance Techniques.

Oversize materials removed from the screened soils will be processed by UXO-personnel to remove any OE or OE-related materials from the oversize. A passive feeder hopper and conveyer system will be used to transport the oversize past the UXO-personnel stationed along the conveyor. These personnel will be located outside the K24 distance from the hopper unit for the MPM, will visually observe the oversize materials, and remove OE items from other ordnance-related scrap (ORS), non-ORS and other oversize. The passive hopper unit will be fed by a properly shielded front-end loader (or similar EMM), with the hopper then gravity feeding the oversize material gradually onto a slow-moving, waist-high conveyer belt see Figure 1-2. PPE for the sorting operation will be standard Level D PPE, except as modified by the requirements of this ESS. Special PPE requirements and the other protective measures that will be used to protect site personnel from the potential OE hazards are listed below.

1. The exclusion zones around the oversize sorting operation will be equal to the exclusion zones for the sifting operation from which the oversize material was generated (see Figure 1-1).
2. To minimize the hazards to personnel in the event of an accidental detonation of the MPM in the hopper, the hopper walls will be manufactured of steel with minimum thickness as presented in Figure 1-1. Additionally, the hopper discharge opening will be shielded with a steel barrier of similar thickness, and a double-layered sandbag wall will be constructed at the K-24 distance behind which personnel will be stationed (see Figure 1-2).
3. In the event that the hopper walls cannot be manufactured to the specified thickness, sandbag barricading around three sides of the hopper will be used. The sandbag walls will be two sandbags thick, with the bags overlapped to provide appropriate coverage, and the wall heights at least equal to the hopper top. The fourth side of the hopper (i.e., the loader side) will remain open to facilitate the safe and effective loading of the hopper.
4. Personnel operating the EMM for loading the hopper will be protected behind plexiglass windows of at least "Thickness A" as specified in Figure 1-1. Additionally, since the front-end loader operator will be passing into and out-of the K24, the operator will utilize hearing protection (ear plugs/muffs) to reduce the harmful effects of sound power and over pressurization caused by a detonation.

5. A safety observer will be stationed behind a blast shield (see Figures 1-1 and 1-3) mounted on a man lift, or other stable platform, located outside the K24 distance expressed in Figure 1-1. This blast shield and man lift or platform system will be equivalent to that already being utilized on site for the approved screening operations. If the man lift is extended and located such that the underside of the floor is exposed to potential fragmentation effects, shielding material will be added to the floor of the man lift to ensure a steel thickness equal to that specified for mild steel in Figure 1-1 of this Amendment. Consideration for shielding the floor will also be given to any other platform that may be used to support the blast shield. The safety observer will be responsible for observing the overall operations and warning the sorting personnel of unusual occurrences that may be observed as material is loaded into the hopper, feeds out of the hopper, or proceeds down the conveyor belt toward the sandbag barrier wall. If needed, the safety observer will call for the conveyor personnel to evacuate the conveyor line to the blast shield located behind the personnel (see Figure 1-3) until a further assessment can be made of the hazard. To allow the observer to halt the sorting operation, the observer will be equipped with a kill switch that will allow the observer to stop the conveyor as needed. To aid the safety observer in identifying potential OE hazards, binoculars will be available on the man lift.
6. As the oversize material proceeds along the conveyer, the EODT UXO specialists will search for OE-related items. If an OE item can be identified with the conveyor moving, and it is determined to be safe to move, it will be collected and placed in a container for transportation, storage and demolition IAW the procedures in the WP. If an item cannot be identified with the conveyor moving, the conveyor will be stopped and the item inspected. No more than five UXO specialists spaced approximately four feet apart will be stationed along one side of the conveyor.
7. If at any time an OE item is identified on the conveyor as being fuzed or unsafe to move, the sorting operations will be halted temporarily and the procedures listed below will be followed.
   A. All non-essential personnel will be evacuated to an assembly area outside the 1,181 foot PWD.
   B. Once the site personnel are secure, a UXOSP stationed behind the approved blast shield located outside the K24 distance (see Figure 1-3) will start the conveyor and watch for the hazardous OE to fall off the end of the conveyor onto the oversize pile. This UXOSP will then remain behind the blast shield until the hazardous OE item is removed from the 1,181 foot PWD using the procedures in item C below.
   C. If approved by the on-site CEHNC OSS, the hazardous OE item on the oversize run-off pile will be collected using the front bucket of the shielded front-end loader. The OE item will be moved to the demolition area where it will be deposited. It will then be disposed of during the scheduled demolition IAW the demolition procedures in the WP. On the day that a hazardous OE item is removed from the sorting operation using the front-end loader, the item that was removed will be disposed at the demolition area on the day it was placed there. All other demolition will be accomplished weekly as presented in the ESS and the approved WP.

D. If the hazardous OE item cannot be collected with the front-end loader, EODT personnel will re-enter the site to barricade and dispose of the item IAW the demo procedures in the WP, and the procedures in HNC-ED-CS-S-98-7, "Use of Sandbags for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions."

8. The segregation procedures for sorting and disposing of the oversize materials will be conducted IAW the following:

A. Non-OE or scrap containing oversize comprised of organic and earthen debris such as rocks, roots, shale, etc., will be allowed to run off the end of the conveyor. As needed, properly shielded EMM will be used to remove and stockpile this material, with final disposition of the material being conducted IAW disposal procedures in the WP. Personnel at the end of the conveyor will remain a minimum of four feet from the end of the conveyor where the non-OE/non-scrap material will initially be piled.

B. Non-OE scrap located on the conveyor will be collected by the sorting personnel if the items are greater than two inches measured linearly in any direction. Metallic scrap that does not meet this criterion will not be collected and will be disposed of with the other non-OE oversize materials. Non-OE scrap that does meet the two-inch criteria will be removed from the conveyor by sorting personnel and placed in buckets located along the sorting line. These buckets of non-OE scrap will be periodically collected and emptied, with the scrap being placed in a pile for inspection by the SUXOS. Once inspected, the scrap will be disposed of IAW the procedures listed in the WP.

C. Oversize identified as ordnance-related scrap (ORS) or inert OE will be removed from the conveyor by sorting personnel and placed in buckets located along the sorting line. These buckets of OE scrap and inert OE will be periodically collected and emptied in a holding location on site. If needed, inert OE will be vented at the approved disposal area to verify it as being free of explosive hazards. ORS will be inspected IAW the scrap inspection procedures in the WP. The vented, inert OE and the previously inspected OE-related scrap will then be disposed of IAW the procedures specified in the WP.

D. UXO that are unfuzed and safe to move will be removed from the area and destroyed at the approved disposal area, with the resulting scrap collected and inspected IAW the site-specific demolition procedures.

E. OE identified as being hazardous UXO (i.e., fuzed or unsafe to move) will be handled as described in item 7.

9. For those sites where white phosphorous ordnance has been located in the soils from which the oversize originated, the precautions listed below will be taken to minimize the hazards associated with white phosphorous.

A. The safety observer stationed behind a blast shield (see Figures 1-1 and 1-3) mounted on the man lift located outside the K24 distance will watch for, and warn the sorting personnel of any smoking/burning white phosphorous rounds that may come out of the hopper. If this occurs, the safety observer will immediately call for the sorting personnel to evacuate the conveyor line to a blast shield located on the ground outside the K24 distance.

B. If a white phosphorous round does not start smoking until it reaches the sorting personnel, the sorting team UXO Supervisor will give verbal orders to evacuate as outlined above. In either case, once personnel have evacuated the area, the observer on the man lift will continue operating the conveyor until the smoking white phosphorous round rolls off the conveyor belt, whereupon the observer will halt the belt using the remote kill switch.

C. Once the smoking item is on the ground at the end of the conveyor, a UXO-qualified operator in the shielded front-end loader will use the front bucket to collect the item and move it to the approved demolition area. Sorting personnel will be stationed behind the blast shield while the item is being collected and moved out of the area. The sorting personnel behind the blast shield will remain behind the shield until the item has been placed in the demolition area. Once the white phosphorous item has been moved to the demolition area, it will be observed and allowed to burn out. The item will then be disposed of during site demolition operations IAW the white phosphorous demolition procedures outlined in the approved WP.

D. Personnel will not approach the item or the conveyor line until the all clear is given by the SUXOS.

E. For sorting of oversize where white phosphorous OE may be present, an ample supply of water and mud will be immediately available, as will escape respirators that will be used to protect site personnel from the toxic effects of the smoke. Non-smoking white phosphorous OE will be inspected and items that are safe to move will be placed in water or mud filled buckets located near the conveyor. The items in buckets will then be transported daily to the storage magazine for temporary storage until disposed of IAW the procedures in the WP. Those items that are fuzed or determined to be unsafe to handle will be rolled-off the conveyor and disposed of IAW using the procedures outlined above in item 7.

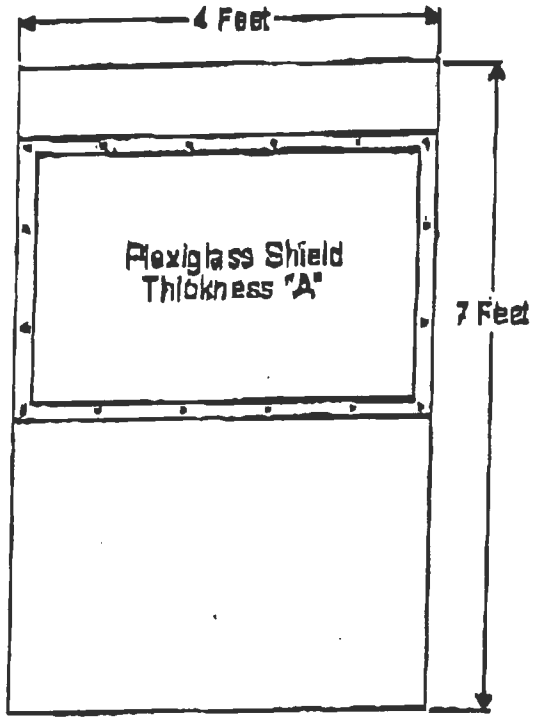
F. During sorting operations, personnel on the conveyor will wear a face shield, leather gloves and a leather welder's apron.

G. A supply of clean water (five or more gallons) will also be available for flushing white phosphorous injuries. This water will be stationed along with the first-aid and burn kits that will be placed behind the blast shield located outside the K24 distance.

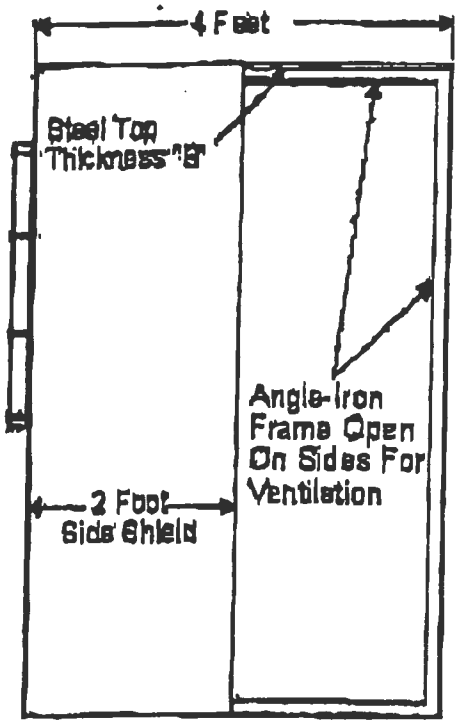
10. EODT personnel will periodically inspect the hopper to ensure no OE or other oversize has become lodged across the feeder opening. If an item blocking the opening is OE-related, it will be inspected to ensure it is unfuzed and safe to move, whereupon it will be removed by EODT personnel and disposed of accordingly. If the item is fuzed or unsafe to move, a rope will be attached to the item and it will be pulled/lifted by rope out of the hopper either by hand, or by using the RMM. During this removal method, sorting personnel will be located behind appropriate blast shielding located outside the K24. Once the fuzed/unsafe item has been pulled outside the hopper, it will be barricaded and disposed of according to the procedures of the WP and HNC-ED-CS-S-98-7. This process will be coordinated with the CEHNC OSS prior to implementation.

11. In the event that the hopper feeder becomes clogged with oversize materials and debris, one two-man UXO team will use hand tools to excavate/remove the debris/items from the hopper bin. Other site personnel will be removed to the assembly area outside the 1,181

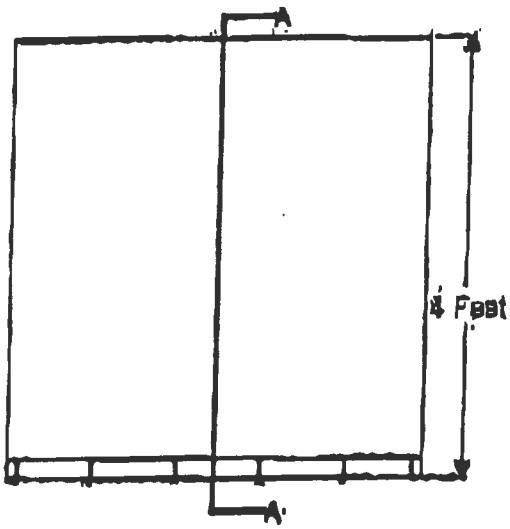
feet PWD. In the event that OE items are encountered, they will be inspected and handled according to the hazards associated with the item and the procedures outlined above.



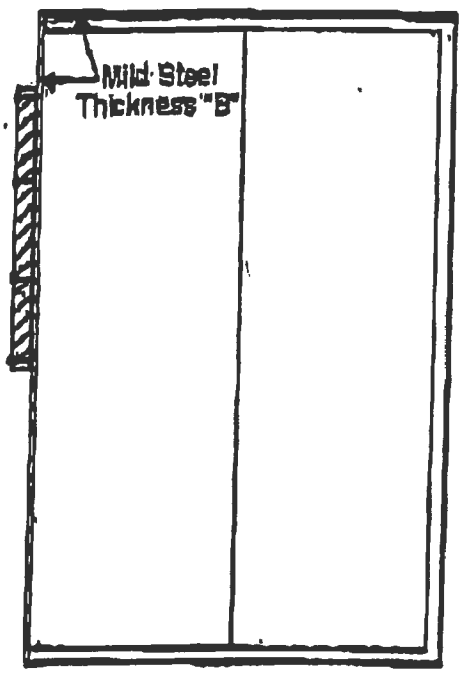
Front View



Right Side View



Top View



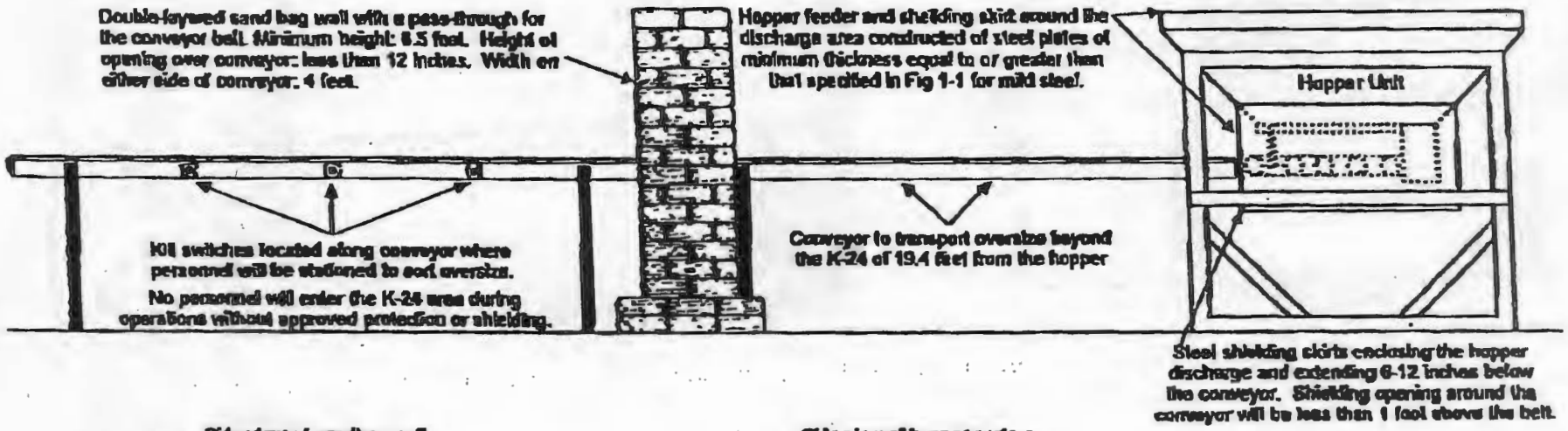
Cross Section A - A

Note:
Sizes are approximate, and different configurations may be used upon approval of CEHNC. Additionally, plexiglass window may cover entire front of blast shield.

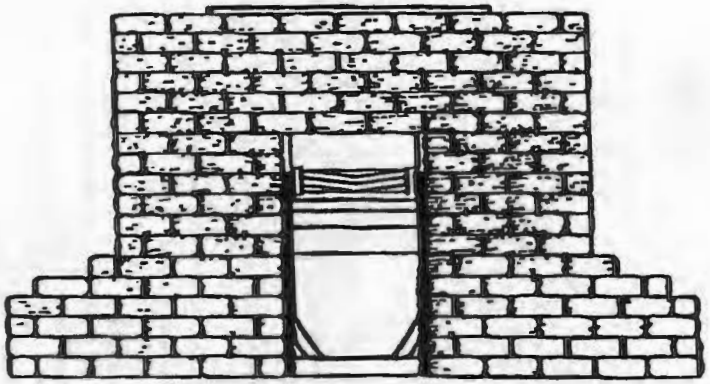
FIGURE 1-1: SHIELDING DATA AND PROTECTIVE DISTANCES

Site Name: Open Burning Grounds	Site Location: Seneca Army Depot Activity
MPM: 37mm Mk II Projectile	MSD: 1,181 feet
Thickness A for the Plexiglass: 3 inches	Team Separation / Exclusion Zone: 400 feet
Thickness B for mild steel: 0.63 inches	K24 Distance: 19.4 ft.

FIGURE 1-2: HOPPER AND CONVEYOR ASSEMBLY

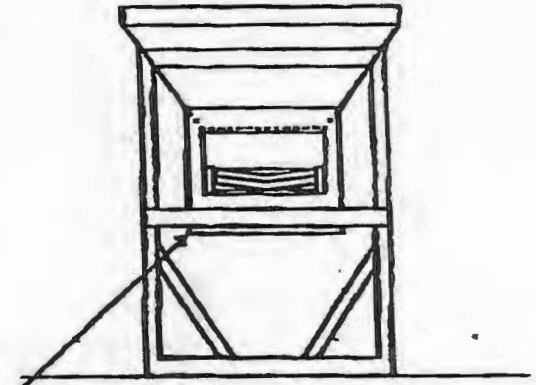


Side view of sandbag wall



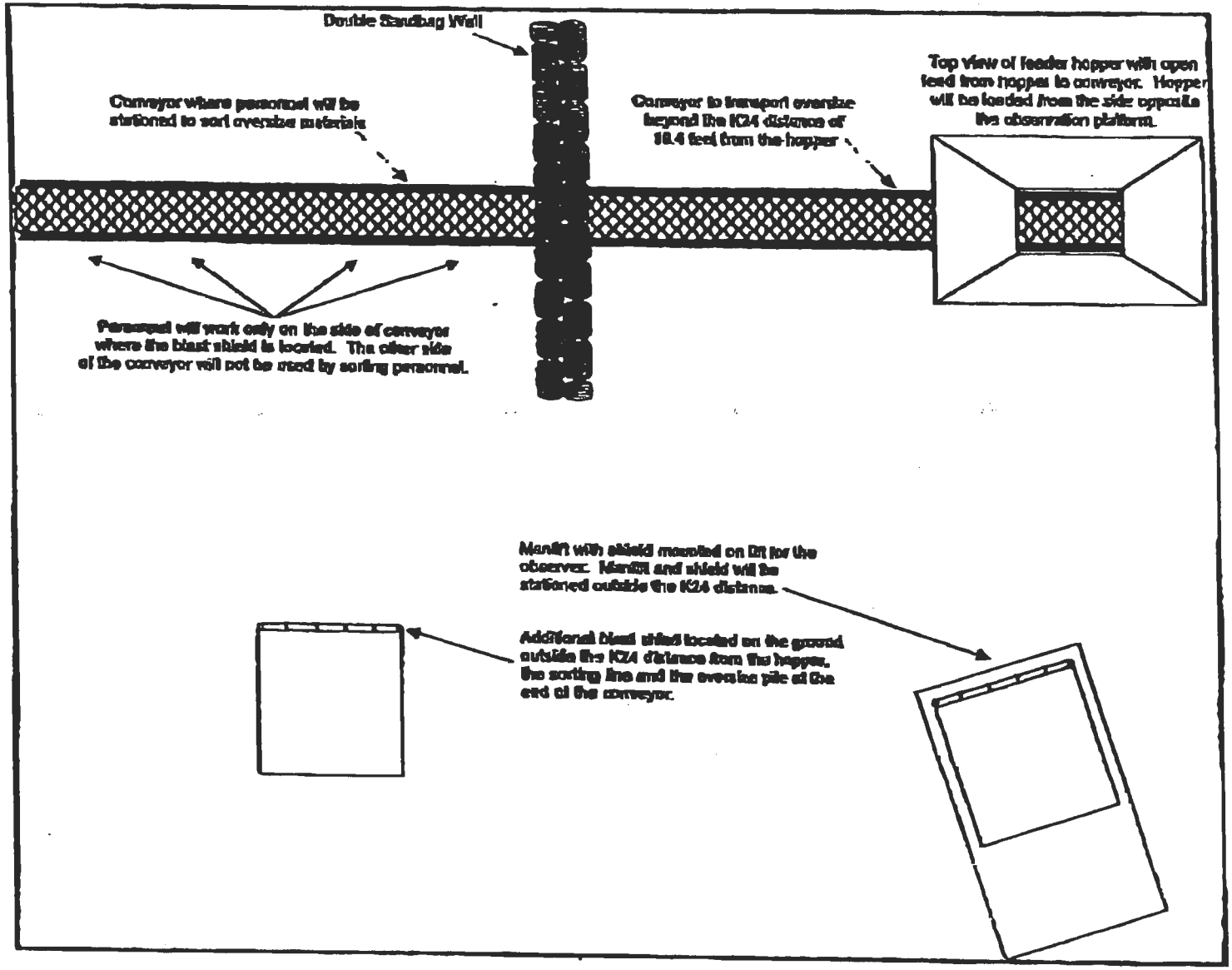
Distance from the top of the belt to the bottom of the wall opening approximately 12-inches. (View depicts possible wall configuration. Actual on-site configuration may vary with OSS approval.)

Side view of hopper system



View depicts the orientation of the steel shield at hopper discharge. Distance from the top of the belt to the bottom of the shield opening approximately 12-inches.

FIGURE 1-3: HOPPER AND CONVEYOR ASSEMBLY – TOP VIEW



APPENDIX B

SPECPRO SITE SPECIFIC HEALTH AND SAFETY PLAN

SITE SPECIFIC HEALTH AND SAFETY PLAN

FOR:

SITES 44A AND OPEN BURNING GROUNDS
SENECA ARMY DEPOT, NEW YORK

PREPARED BY:

SPECPRO, INC.
10500 HIGHWAY 281 NORTH, SUITE 107
SAN ANTONIO, TX 78216

PREPARED FOR:

ROY F. WESTON, INC.

August 20, 2001

DACA98-P-0051

TABLE OF CONTENTS

SITE SPECIFIC HEALTH AND SAFETY PLAN

1.0 INTRODUCTION

The purpose of this Site Specific Safety and Health Plan (SSHASP) is to establish general guidelines and procedures to ensure protection of SpecPro, Sessler, subcontractor personnel and the public while performing operations at sites 44A and the Open Burning Grounds (OBG) on Seneca Army Depot located at Romulus, New York. All site activities will be performed in accordance with the Site Specific Health and Safety Plan (SSHASP). The objective of this SSHASP is to provide site personnel the necessary tools to maintain a safe and healthy work place and to protect the environment. SpecPro places safety and accident prevention above operations, and places the burden of responsibility on all employees, consultants, teaming associates, and subcontractors. A copy of this SSHASP is available for review by all employees, subcontractors, and visitors upon request. All site personnel will review the SSHASP and acknowledge by signature that they understand the SSHASP prior to performing any work at the site. Personnel that violate policies contained in this SSHASP may be dismissed from the work site and considered for termination. The standard Operating Procedures for health and safety are listed in the SpecPro Corporate Health and Safety Plan and the Explosives Safety Submission and applicable Amendments for the Area 44A site and the OB Grounds site.

1.1 INSTALLATION/SITE DESCRIPTION

1.1.1 Seneca Army Depot (SEDA)

SEDA is a U.S. Army facility located in the town of Romulus, in Seneca County, New York. SEDA occupies approximately 10,600 acres and is bounded on the west by State Route 96A and on the east by State Route 96. The cities of Geneva and Rochester are located to the northwest (15 miles and 50 miles); Syracuse, 53 miles to the northeast and Ithaca, 31 miles to the south.

1.1.2 Site History

The OBG was utilized as an open burning grounds for more than 40 years in the northwest section of the SEDA facility. The OB grounds occupy an area of approximately 30 acres. A total of nine burning pads were used between the early 1960's and the late 1980's. During this time, items burned included explosive trash from an old washout plant and fuzes containing lead compounds. Operations were conducted by preparing combustible beds of pallets and wooden boxes and placing ammunition or components to be destroyed on the beds.

1.1.3 Scope of Work

SpecPro, under contract with Roy F. Weston, Inc. will provide services for UXO Services. These services include:

- Provide UXO support during pre-construction as required and during sampling operations
- Screen soils at sites 44A & OBG
- Perform sorting of oversize material at sites 44A & OBG
- Final disposition of OE Scrap
- Explosive disposal of UXO and hazardous OE

- Provide final disposition of all UXO & non-UXO scrap material

1.1.4 Specific Work Sites

SpecPro will provide UXO services at Seneca Army Depot, New York, sites 44A & OBG.

1.2 OBJECTIVE

The objective is for SpecPro to safely and efficiently provide UXO avoidance support, screen soil, sort oversize material, identify and dispose of UXO and UXO Scrap from approximately 25 acres at site 44A and 30 acres at OBG.

1.3 ORGANIZATION STRUCTURE AND RESPONSIBILITIES

1.3.2 General

- Ensuring the safe and healthful conduct of site operations is the responsibility of everyone assigned to the site. Therefore, all personnel involved in site activities will be responsible for the following:
- Complying with the SSHASP and all other required safety and health guidelines
- Taking all necessary precautions to prevent injury to themselves and to their fellow employees
- Continually being alert to any potentially harmful situation and immediately informing the UXO Site Safety Officer (UXOSSO) of any such identified conditions
- Performing only those tasks that they believe they can do safely and have been trained to do
- Notifying the UXOSSO of any special medical conditions (i.e., allergies, contact lenses, diabetes) which could affect their ability to safely perform site operations
- Notifying the UXOSSO of any prescription and/or over-the-counter medication which they are taking that might cause drowsiness, anxiety or other unfavorable side affects
- Preventing spillage and splashing of materials to the greatest extent possible
- Practicing good housekeeping by keeping the work area neat, clean and orderly
- Immediately reporting all injuries, no matter how minor to the UXOSSO
- Maintaining site equipment in good working order, and reporting defective equipment to the UXO Supervisor (UXOS), UXOSSO and/or Senior UXO Supervisor (SUXOS).
- Properly inspecting and using the PPE required by the SSHASP or the UXOSSO

1.3.3 Organization

The Safety and Health (S&H) requirements listed in this plan may change as work progresses at the site, however, no changes will be made without approval of Weston, SpecPro, and CEHNC personnel. However, SpecPro will staff the project with required personnel based on ESS and USACE requirements. The following personnel will be onsite when required during UXO activites:

1.3.4 Senior UXO Supervisor (SUXOS)

Mr. Chris Brown is a Master EOD/UXO Technician with extensive experience in OE remediation and operating on hazardous work sites. His responsibilities include but are not limited to the following:

1.3.4.1 Responsibilities:

- Reports directly to SpecPro Project Manager on project matters
- Reviewing and becoming familiar with the site Work Plan (WP) and SSHASP
- Furnishing copies of the WP and SSHASP to site personnel for their review
- Directly interfacing with the prime contractor and advising him/her of safety and health matters related to UXO matters concerning site operations and safety
- Monitors performance and safety compliance and acts as the primary point of contact for UXO issues

1.3.5 UXO Site Safety and Health Officer (UXOSSO)

Mr. Floyd Kittle is a Master EOD/UXO Technician with extensive experience in ordnance and UXO safety.

1.3.5.1 Responsibilities

The UXOSSO will have the following responsibilities:

- STOP WORK authority for safety and health reasons
- Complete Personnel Data Sheets on all site personnel
- Implement and enforce the SSHASP, and report safety violations to the PM
- Establishing work zones and controlling access to these zones
- Confirm all contractor and subcontractor personnel's suitability for work, based upon OSHA and site specific medical and training requirements
- Conduct daily General Safety Briefings and all UXO training to site personnel
- Ensure proper condition, maintenance, storage, and use of PPE
- Assisting in the continued development of the SSHASP and other health and safety procedures
- Investigate accidents/incidents and "near misses"
- Conduct visitor orientation
- Enforce the "buddy" system
- Restrict site personnel from site activities if they exhibit symptoms of alcohol or drug use or illness, and continually monitor site personnel for signs of chemical exposure or physical stress
- Maintain the site safety and monitoring logs

- Act as the On-Scene-Incident-Commander (OSIC) in the event of an emergency, notify and coordinate off-site emergency and medical response agencies
- Post the descriptions and maps associated with hospital and emergency evacuation routes
- Ensure field implementation of the SSHASP

1.3.6 UXO Quality Control Officer (UXOQCO)

Mr. Floyd Kittle will conduct Quality Control inspections of SpecPro operations.

1.3.6.1 Responsibilities

- Controlling and measuring the quality of work performed by SpecPro UXO Technicians
- Insuring all magnetometers are function tested each workday or as required
- Determining the effectiveness of work performed
- Inspecting the maintenance and accuracy of site records
- Determining compliance with the site safety, environmental and operational work plans

1.3.7 UXO Technician III

Mr. Richard "Dick" Bilbrey is a Master EOD/UXO Technician with extensive experience in ordnance, UXO safety and UXO operations. He will be the Unexploded Ordnance Supervisor (UXOS). This position is also known as Team Leader.

1.3.7.1 Responsibilities

- Supervise all UXO tasks and UXO team
- Enforce UXO safety at all times
- Monitor lunch breaks and direct team breaks as required
- Conducts demolition operations
- Ensure compliance with SSHASP and Site Work Plan

1.3.8 Responsibilities of all Site Personnel

Ensuring the safe and healthful conduct of site operations is the responsibility of everyone assigned to the site, therefore, all personnel involved in site activities will be responsible for the following:

- Complying with the SSHASP and all other required safety and health guidelines
- Taking all necessary precautions to prevent injury to themselves and to their fellow employees
- Continual alertness to any potentially harmful situation and the need to immediately inform the UXOSSO of any such conditions
- Performing only those tasks that they believe they can do safely and have been trained to do

- Notifying the UXOSSO of any special medical conditions (i.e., allergies, contact lenses, diabetes) which could affect their ability to safely perform site operations
- Notifying the UXOSSO of any prescription and/or over-the-counter medication which they are taking that might cause drowsiness, anxiety or other unfavorable side affects
- Preventing spillage and splashing of materials to the greatest extent possible
- Practicing good housekeeping by keeping the work area neat, clean and orderly
- Immediately reporting all injuries, no matter how minor to the UXOSSO
- Maintaining site equipment in good working order, and reporting defective equipment to the UXOQCS
- Properly inspecting and using the PPE required by the SSHASP or the UXOSSO

1.4 SITE CONTROL

Ordnance removal activities will be performed under this contract. Exclusion zones (EZ) associated with any removal work will be enforced by the UXOSSO and SUXOS in accordance with this SSHASP and the ESS. Site Maps delineating site boundary limits, maximum frag distances, public withdrawal distances, Q-D zones, and planned detonation areas are included in Appendix A of the ESS document. In the event that UXO or OE hazards are identified on-site, the item will be marked with 2 crossed red pin flags. All non-UXO qualified personnel will not be permitted near these items. Visitors will be required to sign the Visitors Log before entering the project site. Visitors will be escorted by Weston personnel, SUXOS or UXOSSO at all times during their visit on the project site. This requirement will apply to all visitors including representatives from regulatory agencies who perform site visits. Further site controls to ensure safety are as follows:

- Eating, drinking, and smoking are prohibited except in designated areas.
- Weston, SUXOS or UXOSSO will escort all authorized visitors while they are on site.
- All personnel entering the site, including visitors, will be in the proper PPE.
- The UXOSSO will maintain the site visitors log to ensure accurate accountability for personnel.
- The UXOSSO will brief this SSHASP to all personnel entering the site to inform them of the potential site hazards. All personnel will acknowledge this briefing by signing the SSHASP briefing log.
- In case of an emergency, personnel will exit the site and move to the designated safe area. The safe area will be located upwind of the site outside of the fragmentation area. The UXOSSO, and SUXOS will determine the severity of the emergency. If the emergency warrants site evacuation, emergency horns will be used to notify all personnel.

1.5 HAZARD/RISK ANALYSIS

SpecPro has analyzed the scope of work to determine the work risk hazards associated with each task. The tasks consist of direct tasks and the implied tasks, or sub tasks, to accomplish the work. SpecPro has identified the following hazards/risks for sites 44A & OBG.

1.5.1 UXO Escort Support

Below are listed potential exposures to hazards associated with providing UXO escort support:

- Exposure to surface and subsurface UXO: These items if moved or handled improperly could explode, either killing or seriously injuring personnel.
- Biological hazards: Potential exposure to irritating plant life; exposure to dangerous wildlife, rodents, insects, etc which present the possibility of bites and associated diseases.
- Potential trip hazard associated with ground cover, irregular terrain, and vegetation
- Lifting hazards, such as back strain, associated with handling UXO scrap
- Heat/Cold Stress

1.5.2 Screening Soils/Separation of Oversize Material

Below are listed potential exposures to hazards associated with Screening Soils/Separation of Oversize Material:

- Exposure to surface and subsurface UXO: These items if moved or handled improperly could explode, either killing or seriously injuring personnel;
- Exposure to white phosphorous munitions;
- Injuries occurring from hand tools, shovels and pry bars;
- Slips, trips and falls;
- Biological hazards: Exposure to irritating plant life; exposure to wildlife, rodents, insects, etc. which present the possibility of bites and associated diseases;
- Potential trip hazard associated with ground cover, irregular terrain, and vegetation;
- Mechanical pinch hazards from exposed belts, pulleys and moving parts
- Falling from man-lift/Mechanical Sifting Plant;
- Items falling from above;
- Lifting hazards, such as back strain;
- Heat/Cold Stress.
- Suspend all operations immediately upon approach of an electrical storm;
- Do not handle any UXO unnecessarily;
- Avoid inhalation and skin contact with smoke, fumes, dust, and vapors of detonations and OE residue;
- Do not attempt to extinguish burning explosives or any fire which might involve explosive materials;
- Utilize engineering controls such as sandbags to reduce fragmentation during demolition operations;

- Do not subject OE to rough handling;
- Avoid the forward portions of munitions employing proximity fuzing;
- Assume unknown fuzes to contain cocked strikers or anti-disturbance features.
- Observe safety precautions for White Phosphorous (WP) munitions;
- Always take precautions to prevent fire

1.5.3 Operating Man-Lift

- Only properly trained operators will be permitted to operate lifting platform.
- Turn engine off when refueling
- Check clearances above, below and on sides and bottom of platform when raising and lowering platform.
- Never use scissors arms to climb up or down platform.
- Ensure machine is positioned on a firm, level and uniform surface prior to raising platform
- Do not use handrails to carry material, equipment or tools
- No stunt driving or horseplay is permitted
- Do not operate without handrails in place and secured
- Keep mud, oil, grease and other slippery substances from footwear, deck and steps

1.5.4 Conveyors

- All exposed moving machinery will be mechanically guarded
- Emergency stop devices will be located along their full length
- Lock out/Tag out devices will be used whenever periodic maintenance is being performed

1.5.5 Blasting

- Operations will be immediately discontinued during the approach of a thunderstorm
- Blasting operations will be under the control of one supervisor
- All blasting will be performed under the supervision of a qualified blaster
- All blasting operations will be conducted in accordance with DoD, CEHNC, Federal and local directives
- Electrically initiated demolition operations are prohibited due to the close proximity of the Coast Guard LORAN "C" Station. Only non-electric initiated demolition systems will be used during demolition operations

1.6 MITIGATING RISKS TO HAZARDS

1.6.1 General

SpecPro personnel will follow the below listed procedures to mitigate the hazards/risks outlined in paragraph 1.5.1 of this SSHASP:

- Any approach to a suspected UXO will be conducted in accordance with procedures outlined in the U.S. Army Engineering and Support Center (CEHNC) Safety Concepts and Basic Considerations Unexploded Explosive Ordnance (UXO) Engineer Pamphlet 385-1-92a, dated 29 June 2001 (enclosed as Appendix A);
- Any UXO found within the confines of the work area will be positively identified by two (2) UXO qualified technicians;
- UXO items will only be moved or handled by UXO qualified personnel;
- Do not transport WP munitions unless they immersed in water, mud, or wet sand;
- If loose pyrotechnic, tracer, flare or similar mixtures are to be transported, they will be placed in No. 10 mineral oil or equivalent to minimize the fire and explosion hazards.
- All personnel will wear as a minimum Level D PPE, sleeves rolled down when in heavy vegetation, leather or canvas work gloves and sturdy work boots. In addition to these measures, any person known to have allergic reactions to insect bites or exposure to toxic plants will be identified and will carry appropriate first aid materials at all times;
- Hard hats will be worn during operations where an overhead hazard exists;
- While on the job, all personnel will move at a moderate pace and stay alert for possible trip hazards. No running at any time;
- Personnel will avoid, to the maximum extent possible, contact with any wildlife. Should a person become bitten he/she will receive immediate first aid;
- Personnel working in vegetated or wooded areas will be reminded to check themselves for insect bites & ticks after leaving the work area;
- While working on site all personnel will use the "buddy" system. They will remain in sight of each other at all times to ensure safe working practices;
- All unprotected personnel will be prohibited from entering the exclusion zones; 400 feet for site 44A and 1181 feet for OBG.
- UXO technicians working near screening will observe the K24 distance of 11 feet for site 44A and 19.4 feet for OBG.

1.6.1.2 Fire Protection

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

- Vehicles and equipment will not be refueled while running;
- Flammable/combustible liquid storage will have at least one (1) 2A10BC fire extinguisher located within 25-75 feet, marked with the appropriate fire symbol and no smoking signs;
- Temporary offices will be equipped with a fire extinguisher of not less than 2A 10:ABC
- At least one fire extinguisher will be located at each work site, minimum 2A10BC
- All vehicles operated by SpecPro will carry at least one all purpose ABC fire extinguisher.

1.6.2 UXO

These basic safety precautions are the minimum UXO safety requirements required of all personnel on site. Other precautions and requirements are in the CEHNC Safety Concepts and Basic Considerations Unexploded Explosive Ordnance (UXO) in Appendix A.

1.6.2.1 Basic Considerations

The following should be taken into consideration when planning or conducting UXO operations:

- SAFETY IS PARAMOUNT;
- Do not move or disturb unidentified items;
- All UXO will be identified independently by a two (2) UXO technicians;
- Do not collect souvenirs;
- Do not smoke except in designated areas;
- Do not carry fire or spark producing devices into the site;
- All operations will use the "Buddy" system;
- Prohibit unnecessary personnel from visiting the site.

1.6.2.2 Basic Safety Precautions:

(1) Suspend all operations immediately upon approach of an electrical storm;

(2) Do not handle any UXO unnecessarily;

(3) Do not depress plungers, turn vanes, rotate spindles, levers, setting rings or other external fittings on OE items. Such actions may arm or activate the OE.

(4) Do not attempt to remove any fuze(s) from the OE. Do not dismantle or strip components from any OE items.

(5) UXO Personnel are not authorized to inert any OE items found on-site.

(6) OE /UXO items will not be taken from the site as souvenirs/training aids.

(8) Consider OE items, which may have been exposed to fire and detonation, as extremely hazardous. Chemical and physical changes may have occurred to the contents, which might render it more sensitive than its original state.

(9) Do not rely on the color-coding of OE for positive identification. Munitions having incomplete or improper color codes have been encountered.

(10) Avoid approaching the forward area of an OE item until it can be determined whether or not the item contains a shaped charge. The explosive jet, which is formed during detonation, can be lethal at great distances. Assume that all shaped charge munitions contain a piezoelectric (PZ) fuzing system until identified. PZ fuzing is extremely sensitive. They can function at the slightest physical change and can remain hazardous for an indefinite period of time.

(11) Do not approach a smoking white phosphorous (WP) munition. Burning WP may detonate the explosive burster charge at anytime.

(12) Always take precautions to prevent fire

1.6.2.3 Heavy Equipment Operation

- Heavy equipment utilized onsite will be operated under strict adherence to the applicable OSHA regulations found in 29 CFR 1910, 29 CFR 1926, the requirements of EM 385-1-1, Section 16 and the guidelines listed below:
- The operation of heavy equipment will be limited to authorized personnel specifically trained in its operation;
- The operator will visually inspect heavy equipment daily, prior to operation, and report any abnormalities/deficiencies to the UXOSSO and/or SUXOS;
- The operator will use the safety devices provided with the equipment, including seat belts, and backup warning indicators and horns will be operable at all times;
- All equipment used to move material that might possibly contain UXO/hazardous item will be properly shielded as required by the Explosive Safety Submission (ESS);
- While in operation, all personnel not directly required in the area will keep a safe distance from the equipment;
- The operator's cab will be kept free of all non-essential items and all loose items will be secured;
- Personnel will avoid moving into the path of operating equipment and areas blinded from the operator's vision will be avoided;
- When heavy equipment must negotiate in tight quarters, or if operators of earth moving equipment cannot see the bucket, a secondary person will be stationed to guide the operator;
- Additional riders will not be allowed on equipment unless it is specifically designed for that purpose (i.e., there is an additional seat with a seat belt).

1.6.2.4 Excavations and Confined Spaces:

UXO supervision support will be provided during any excavation activities. No confined space entry is anticipated.

1.6.2.5 Definitions

Blood borne Pathogens: Pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Exposure Incident: A specific eye, mouth, other mucous membrane, non-intact skin, or potential contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

Other Potentially Infectious Materials: The following human body fluids:

Semen, vaginal secretions, cerbro-spinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, any body fluid that is visibly contaminated with blood, and all body fluids in

situations where it is difficult or impossible to differentiate between body fluids.

Any unfixed tissue or organ (other than intact skin) from a living or deceased human.

Potential: Piercing mucous membranes or the skin barrier through such events as needle sticks, human bites, cuts, and abrasions.

Work Practice Controls: Controls that reduce the likelihood of exposure by altering the manner in which a task is performed.

Universal Precautions: An approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other blood borne pathogens.

1.6.2.6 Exposure Control Plan:

1.6.2.6.1 Exposure Determination

Due to the hazardous nature of UXO work, there is the potential for accidents and the exposure to blood pathogens. SpecPro employees will be required to perform emergency first aid and/or CPR in the event of an accident or injury.

1.6.2.6.2 Work Practice Controls

PPE (CPR Pocket Mask and disposable surgical gloves) are available in all first aid kits on site. Personnel performing first aid and/or CPR will comply with the following:

- Personnel that provide any first aid will wear disposable latex gloves if there is any visible body fluids;
- The CPR Pocket mask will be used when performing CPR and disposed of after use;
- Personnel will change clothing immediately, or as soon as feasible, that becomes contaminated with body fluids as a result of performing first aid;
- Personnel will immediately wash their hands after performing first aid procedures;
- Contaminated clothing and equipment will be bagged in plastic bags and labeled as to date and contents, and disposed of as infectious waste.

1.6.2.6.3 Post-Exposure Evaluation and follow-up

Following an exposure incident, SpecPro will make available, to the exposed employee, a confidential medical evaluation and follow-up containing the following elements:

- Documentation of the routes(s) of exposure, and the circumstances under which the exposure incident occurred;
- The source individual's and exposed employee's blood will be collected as soon as feasible and tested after consent is obtained;
- The results of the source individual's testing will be made available to the exposed employee, and the employee will be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

1.7 QUALIFICATION TRAINING

All UXO personnel working at this site have completed U.S. Naval Explosive Ordnance Disposal (USNAVSCOLEOD) training which details procedures for evaluation and disposal of OE. All employees who work on hazardous sites receive training, which includes an equivalent of 40 hours of training off-site and actual field experience under the direct supervision of a trained, experienced supervisor. Management and supervisors receive an additional 8 hours training on program supervision. Each employee receives 8 hours of OSHA refresher training annually. Copies of training and qualifications are on file and will be made available upon request.

1.7.1 Site Specific Training

The UXOSSO and SUXOS will give site-specific training to all UXO and non-UXO personnel prior to initial site entry. The training will include:

- Project scope to include: organization and responsibilities; site orientation, facilities, access, egress, evacuation routes, and other general information;
- Safety, to include: safe work practices; physical hazards, PPE; on/off-site emergencies; evacuation routes; emergency agencies/numbers; emergency equipment; medical emergencies; Drug and Alcohol; Blood borne pathogens; and other pertinent safety information.

1.7.2 Additional Training/Meetings

1.7.2.1 Tailgate Meetings

Safety training will be provided each morning on-site at the daily safety meeting. The safety and health considerations for the day's activities will be reviewed. Additional training will be conducted when circumstances dictate. The daily meeting will address that day's activities; safety issues; specific hazards; and emergency procedures, to include:

- Notification procedures and phone numbers;
- Rally points, and safe areas;
- Hospital and evacuation routes;
- Emergency equipment.

1.8 PERSONAL PROTECTIVE EQUIPMENT (PPE)

PPE required at the site will be at a level necessary to protect personnel. Normal work clothing will be level D. During operations, a hard hat is not required unless a possible head injury could result from the use of heavy equipment or overhead hazards. Steel toe footwear will not be used while operating magnetometers.

1.8.1 Level D PPE

- The minimum level of protection required of all personnel at the site is level D. The following is level D protection:

- Short or long sleeve cotton coveralls or work clothing;
- Sturdy work boots/shoes, (steel toe, reflective vest, when working around heavy equipment). Personnel using magnetometers will not use steel toe footwear;
- Safety glasses with side shields or goggles when an eye hazard exists;
- Hard hat (when required);
- Leather or canvas work gloves;
- Hearing protection, when working around heavy equipment or powered hand tools.

1.8.1.2 Modified Level D PPE

At times, Modified Level D PPE may be required. The following is Modified Level D protection:

- Hard hat
- Safety glasses with side shields or goggles when an eye hazard exists;
- ANSI approved footwear
- Leather or canvas work gloves;
- Tyvex/Saranex, rubber booties, chemical resistant gloves;
- Hearing protection, when working around heavy equipment or powered hand tools.

1.9 REGULATIONS AND REFERENCES

- The safety and health of on-site personnel and the local community will be ensured by following all of the applicable requirements and regulations listed in the publications below:
- OSHA Occupational Safety and Health Standards, 29 CFR 1910;
- OSHA Construction Standards, 29 CFR 1926;
- Applicable sections of EPA 40 CFR Parts 260 to 299;
- Applicable sections of DOT 49 CFR Parts 100 to 199;
- SpecPro Corporate Health and Safety Program (HSP);
- USACE EM 385-1-1, Safety and Health Requirements Manual;
- USACE ER 385-1-92, Safety and Occupational Health Document Requirements for Hazardous Waste Remedial Actions;
- DOD 6055.9-STD, DOD Ammunition and Explosives Safety Standards;
- DoD 4160.21-M, Defense Reutilization and Marketing Manual;
- 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/USACE supplement, Accident Reporting and Records.
- AR 385-64, U.S. Army Explosives Safety Program
- USACE EM 1110-1-4009, Ordnance and Explosives Response Engineering Manual
- EP 75-1-2, Unexploded Ordnance (UXO) Support During Hazardous, Toxic, And Radioactive Waste (HTRW) And Construction Activities
- EP 385-1-95a, Basic Safety Concepts and Considerations for Ordnance and Explosives Operations
- EP 1110-1-18, Ordnance and Explosives Response.
- ATF P 5400.7 Explosives Law and Regulations
- DA PAM 385-64, Ammunition and Explosives Safety

2.0 MEDICAL SURVEILLANCE REQUIREMENTS

All SpecPro UXO personnel on-site have completed a pre-placement or annual physical examination that complies with the requirements of 29 CFR 1910.120 and have been certified as fit to work by an Occupational Physician certified in Occupational Medicine by the American Board of Preventative Medicine, or who by necessary training and experience is board eligible. All UXO personnel on-site are in the SpecPro Medical Surveillance Program. Refer to SpecPro Corporate Health and Safety Plan for additional information. Documentation as to the medical qualifications of UXO personnel are on file and available for inspection.

2.1 Air Monitoring

Roy F. Weston, Inc. shall perform perimeter air monitoring and personnel air monitoring during Site activities.

3.0 EMERGENCY RESPONSE PLAN

Existing emergency response procedures as outlined in the ERCP will be followed. In the event of an emergency such as injury or illness, fire/explosion or inclement weather the following lines of authority will be utilized:

3.1 Lines of Authority

During an emergency situation, the UXO Team Leader will take control of the scene until the arrival of the Site Safety Officer who will be the On Scene Incident Commander (OSIC). The UXO Team Leader will ensure all personnel are present or accounted for. As soon as practical the following personnel will be notified of the emergency:

- SpecPro Chief Executive Officer – Mr. Armando De La Paz
- SpecPro Health & Safety Manager – Mr. Larry Blackwell
- SpecPro Director of Operations – Mr. Prakash Raja
- SpecPro Project Manager – Mr. Karl Goehring
- Site UXO Supervisor (SUXOS) – Mr. Chris Brown

3.2 Site Communications

Hand held radios will be utilized to communicate between UXO teams. These radios do not require FCC licensing. Team members will also be familiar with emergency hand signals as follows:

- Hands on throat----------Respirator of breathing problems
- Thumbs up----------I'm Alright; Understood
- Thumbs down----------Negative; No
- Hand(s) on head----------Need Help
- Grabbing wrist----------Immediately evacuate area

APPENDIX A

SpecPro

SAFETY AND HEALTH PROGRAM

SpecPro	Page 1 of 1
	Date November, 1999
Title	Approved By:
SPECPRO, INC. HEALTH AND SAFETY PROGRAM INDEX	**Larry Blackwell** **Director, Environmental Programs**
	Revised By: **Michael L. McIntosh, CIH, CHMM**

Title

INVESTIGATION, RECORDING, AND REPORTING OF OCCUPATIONAL INJURIES AND ILLNESSES

Approved By:

Larry Blackwell
Director, Environmental Programs

Revised By:
Michael L. McIntosh, CIH, CHMM

1.0 PURPOSE

1.1 The purpose of the Investigation, Recording, and Reporting of Occupational Injuries and Illnesses Program is to ensure all accidents are investigated, recorded and reported according to the requirements of the Occupational Safety and Health Administration (OSHA).

2.0 REFERENCES

2.1 29 CFR, Part 1904, Recording and Reporting Occupational Injuries and Illnesses, Occupational Safety and Health Administration (OSHA)

2.2 Recordkeeping Guidelines for Occupational Injuries and Illnesses, U.S. Department of Labor, Bureau of Labor Statistics, September 1986

3.0 DEFINITIONS

3.1 **First Aid.** Any one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care. Such treatment and observation are considered first aid even though provided by a physician or registered professional personnel.

3.2 **Log and Summary (OSHA No. 200).** The OSHA recordkeeping form used to list injuries and illnesses and to note the extent of each case.

3.3 **Lost Workday Cases.** Cases which involve days away from work or days of restricted work activity, or both.

3.4 **Lost Workdays.** The number of days (consecutive or not) after, but not including, the day of injury or illness during which the employee would have worked but could not do so, that is, could not perform all or any part of his normal assignment during all or any part of the workday or shift, because of the occupational injury or illness.

3.5 **Medical Treatment.** Includes treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even though provided by a physician or registered professional personnel.

3.6 **Occupational Illness.** Any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. It includes acute and chronic illnesses or diseases which may be caused by inhalation, absorption, ingestion, or direct contact

3.7 **Occupational Injury.** Any injury such as a cut, fracture, sprain, amputation, etc., which results from a work accident or from an exposure involving a single incident in the work environment. Conditions resulting from animal bites, such as insect or snake bites or from one-time exposure to chemicals, are considered to be injuries.

3.8 **Recordable Cases.** All work-related deaths and illnesses, and those work-related injuries which result in: loss of consciousness, restriction of work or motion, transfer to another job, or require medical treatment beyond first aid.

3.9 **Restriction of Work or Motion.** Occurs when the employee, because of the result of a job-related injury or illness, is physically or mentally unable to perform all or any part of his or her normal assignment during all or any part of the workday or shift.

3.10 **Supplementary Record (OSHA No. 101).** The form (or equivalent) on which additional information is recorded for each injury and illness entered on the log.

4.0 RESPONSIBILITIES

4.1 The Corporate Industrial Hygienist shall:

4.1.1 Assist Human Resources with determination of recordable injuries and illnesses and maintenance of the OSHA No. 200, Log and Summary of Occupational Injuries and Illnesses.

4.1.2 Certify the annual summary of occupational injuries and illnesses as true and complete at the end of each calendar year.

4.1.3 Provide employees with access to the OSHA No. 200 logs upon request.

4.1.4 Post a copy of the OSHA No. 200 covering the previous calendar year from February 1 to March 1 during each year.

4.1.5. Forward supplementary records for all recordable occupational injures or illnesses to Human Resources, Director of Administration, El Paso, TX for processing of workers compensation claims.

4.1.6 Provide Program Managers with assistance in accident investigations upon request.

4.1.7 Report facilities and accidents involving the hospitalization of 3 or more employees to the nearest OSHA office within 8 hours of occurrence.

4.2 Program Managers shall:

4.2.1 Complete the Supplementary Record of Occupational Injuries and Illnesses (See Appendix A) for all accidents that result in an injury or illness to an employee and provide the Corporate Industrial Hygienist a copy within 24 hours of occurrence;

4.2.2 Investigate and prepare a written report for all accidents that result in an injury or illness to an employee and provide the Corporate Industrial Hygienist a copy within 24 hours of occurrence.

4.3 Employees shall:

4.3.1 Report all accidents to their Program Manager.

5.0 INVESTIGATING, RECORDING AND REPORTING OCCUPATIONAL INJURIES AND ILLNESSES PROGRAM SPECIFIC ASPECTS

5.1 Accident Investigations

5.1.1 All accidents that result in an injury or illness to an employee shall be investigated within 24 hours of occurrence.

5.1.2 A written report shall be prepared for each accident investigation that contains the following information.

5.1.2.1 Date of the accident

5.1.2.2 Detailed account of events that led or contributed to the accident.

5.1.2.3 Description of injury or illness.

5.1.2.4 Immediate and/or temporary corrective action taken.

5.1.2.5 Final corrective action to be taken if different from above.

5.2 Log and Summary of Occupational Injuries and Illnesses

5.2.1 SpecPro, Inc. shall use the standard OSHA No. 200 log for recording occupational injuries and illnesses.

5.2.2 Each recordable injury and illness shall be entered on the log as early as practicable but no later than 6 working days after receiving information that a recordable injury or illness has occurred. (See Appendix B for determining whether or not a case is recordable)

5.2.3 The annual summary of occupational injuries and illnesses shall be certified as true and complete at the end of each calendar year.

5.2.4 The OSHA No. 200 covering the previous calendar year shall be posted no later than February 1 and shall remain in place until March 1. In the event no injuries or illnesses occurred during the year, zeros shall be entered on the totals line, and the form shall still be posted.

5.2.5 The log and summary of all recordable occupational injuries and illnesses (OSHA No. 200) shall be made available to employees, former employees, and to their representatives for examination and copying in a reasonable manner and at reasonable times.

5.2.6 OSHA No. 200s shall be retained for 5 years following the end of the year to which they relate.

5.3 Supplementary Records

5.3.1 A supplementary record shall be maintained for each injury or illness.

5.3.2 Supplementary Records shall be retained for 5 years following the end of the year to which they relate.

5.4 Reporting of Fatality or Multiple Hospitalization Accidents

5.4.1 All accidents resulting in one or more fatalities or the hospitalization of three or more employees shall be reported by telephone to the nearest office of the Area Director of the Occupational Safety and Health Administration, U.S. Department of Labor within 8 hours of occurrence.

Title

HAZARD COMMUNICATION PROGRAM

1.0 PURPOSE

1.1 The Hazard Communication Program defines a procedure for providing information to employees concerning hazardous chemicals to which they may potentially be exposed. Availability of this information will ensure that employees understand the nature of the hazardous chemicals with which they work and the proper safety procedures and equipment to use when working with such chemicals The goal of the Hazard Communication Program is to reduce chemically related occupational illness and injury for both Vista Technologies Inc. employees and contractor personnel while on the premises of Vista Technologies Inc. operated sites and facilities.

2.0 REFERENCES

2.1 29 CFR Part 1910, Subpart C, General Safety and Health Provisions, Occupational Safety and Health Administration (OSHA)

2.2 29 CFR Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA)

2.3 49 U.S.C. 1801, Hazardous Materials Transportation Act

2.4 International Agency for Research on Cancer (IARC) Monographs, (latest edition)

2.5 National Toxicology Program (NTP), Annual Report on Carcinogens, (latest edition)

2.6 Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment, American Conference of Governmental Industrial Hygienists (ACGIH), (latest edition)

3.0 DEFINITIONS

3.1 **Acute.** Effects usually occur rapidly as a result of short-term exposures, and are of short duration.

3.2 **Agents Which Act On The Hematopoietic System.** Decrease hemoglobin function; deprive the body tissues of oxygen.

3.3 **Agents Which Damage The Lungs.** Chemicals which irritate or damage the pulmonary tissue.

3.4 **Carcinogen.** A substance or agent capable of causing or producing cancer in mammals.

3.5 **Chronic.** Effects generally occur as a result of long-term exposure, and are of long duration.

3.6 **Combustible Liquid.** Any liquid having a flashpoint at or above 100° F (37.8° C), but below 200° F (93.3° C), except any mixture having components with flashpoints of 200°F (93.3° C), or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

3.7 **Compressed Gas.** A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70° F (21.1° C); or a gas or mixture of gases having, in a container an absolute pressure exceeding 104 psi at 130° F (54.4 ° C) regardless of the pressure at 70° F (21.1° C); or a liquid having a vapor pressure exceeding 40 psi at 100° F (37.8°C) as determined by ASTM D-323-72.

3.8 **Container.** Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical.

3.9 **Corrosive.** A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact.

3.10 **Cutaneous Hazards.** Chemicals which affect the dermal layer of the body.

3.11 **Explosive.** A chemical that causes a sudden almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

3.12 **Exposure or Exposed.** Contact by an employee with a hazardous chemical in the course of employment via any route of entry (inhalation, ingestion, skin contact or absorption, etc.); includes potential (e g. accidental or possible) exposure.

3.13 **Eye Hazards.** Chemicals which affect the eye or visual capacity.

3.14 **Flammable.** A chemical that falls into one of the following categories: flammable aerosol, flammable gas, flammable liquid, or flammable solid.

3.15 **Flammable Aerosol.** An aerosol that, when tested by the method described in 16 CFR 1500.45, yields a flame projection exceeding 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening.

3.16 **Flammable Gas.** A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of 13 percent by volume or less or a gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than 12 percent by volume, regardless of the lower limit.

3.17 **Flammable Liquid.** Any liquid having a flashpoint below 100° F (37.8 ° C), except any mixture having components with flashpoints of 100° F (37.8 ° C) or higher, the total of which make up 99 percent or more of the total volume of the mixture.

3.18 **Flammable Solid.** A solid, other than a blasting agent or explosive, that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard.

3.19 **Foreseeable Emergency.** Any potential occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment which could result in an uncontrolled release of a hazardous chemical into the workplace.

3.20 **Hazardous Chemical.** Any chemical which is a physical hazard or a health hazard.

3.21 **Hazard Warning.** Any words, pictures, symbols, or combination thereof appearing on a label or other appropriate form of warning which convey the hazard(s) of the chemical(s) in the container(s).

3.22 **Health Hazard.** A chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute (i.e. short-term or immediate) or chronic (i.e. long-term) health effects may occur in exposed employees. The term "health hazard" includes carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucus membranes.

3.23 **Hepatotoxin.** Chemicals which produce liver damage.

3.24 **Identity.** Any chemical or common name which is indicated on the Material Safety Data Sheet for the chemical. The identity permits cross-references to be made among the required list of hazardous chemicals, the label and the Material Safety Data Sheet.

3.25 **Immediate Use.** The hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

3.26 **Irritant.** A chemical, which is not corrosive, but which causes a reversible inflammatory effect on living tissue by chemical action at the site of the contact.

3.27 **Label.** Any written, printed, or graphic material, displayed on or affixed to containers of hazardous chemicals.

3.28 **Material Safety Data Sheet (MSDS).** Written or printed material prepared by a chemical manufacturer concerning a hazardous chemical per 29 CFR 1910.1200, the OSHA Hazard Communication Standard.

3.29 **Mixture.** Any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction.

3.30 **Nephrotoxins.** Chemicals which produce kidney damage.

3.31 **Neurotoxins.** Chemicals which produce their primary toxic effects on the nervous system.

3.32 **Organic Peroxide.** An organic compound that contains the bivalent -0-0- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

3.33. **Oxidizer.** A chemical other than a blasting agent or explosive that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

3.34 **Physical Hazard.** A chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

3.35 **Pyrophoric.** A chemical that will ignite spontaneously in air at a temperature of 130° F (54.4 ^{o} C) or below.

3.36 **Reproductive Toxins.** Chemicals which affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis).

3.37 **Sensitizer.** A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

3.38 **Unstable (Reactive).** A chemical which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature.

3.39 **Water-Reactive.** A chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

4.0 RESPONSIBILITIES

4.1 The Corporate Industrial Hygienist shall:

4.1.1 Create and maintain indefinitely a master file of all MSDS(s) received by Vista Technologies Inc.

4.1.2 Review the completeness of the supplier's MSDS and request further information from the manufacturer or importer when information is considered inadequate.

4.1.3 Review and distribute new or revised MSDS(s) from a supplier to the Program Managers in a timely manner.

4.1.4 Maintain a master chemical inventory for SpecPro Inc.

4.1.5. Develop, implement, and monitor the hazard communication training program.

4.1.6 Perform an annual audit to ensure that:

4.1.6.1 An MSDS for each and every hazardous chemical is available in the various work areas.

4.1.6.2 MSDS(s) are readily accessible to employees.

4.1.6.3 All containers are properly labeled or marked as required.

4.1.6.4 Employees have been properly trained in accordance with this standard.

4.2 Program Managers shall:

4.2.1 Obtain, maintain, and provide to the Corporate Industrial Hygienist an MSDS for each hazardous chemical in the work area to which employees may potentially be exposed and make these readily accessible to employees in their respective departments during each work shift.

4.2.2 Maintain and provide to the Corporate Industrial Hygienist a hazardous chemical list for their specific work area using an identity that is referenced on the appropriate Material Safety Data Sheet, making additions and deletions to the list as necessary, and keeping the Corporate Industrial Hygienist informed of these changes.

4.2.3 Ensure that all containers of hazardous chemicals in their work area are labeled in accordance with company requirements (See Section 5.1).

4.2.4 Provide and document hazard communication training on the hazardous chemicals found in his/her area of work using the training form in Appendix A.

4.2.5 Inform employees of the hazards of non-routine tasks and the necessary precautions to take when performing these assignments.

4.3 Employees shall:

4.3.1 Maintain familiarity with the requirements of this occupational safety and health standard.

4.3.2 Take precautionary measures to prevent adverse exposures to hazardous chemicals as specified by Program Managers, the Corporate Industrial Hygienist, and company policy.

4.3.3 Receive information and training in accordance with the requirements of this standard.

5.0 HAZARD COMMUNICATION PROGRAM SPECIFIC ASPECTS

5.1 Labels and Other Forms of Warning

5.1.1 Every container of a hazardous chemical which is produced and shipped offsite for distribution must carry a label or tag or be marked clearly with the following information:

5.1.1.1 Identity of the hazardous chemical.

5.1.1.2 Concisely written hazard warnings including physical and health hazards.

5.1.1.3 Name and address of the manufacturer, importer, or responsible party.

5.1.2 If a hazardous chemical is already regulated by the Occupational Safety and Health Administration (OSHA) in the form of a specific standard, then the labeling and/or other warning requirements of the more specific standard must be met. Contact the Corporate Industrial Hygienist for further clarification, if necessary.

5.1.3 Each container in the workplace shall be labeled, tagged, or marked with the following information:

5.1.3.1 Identity of the hazardous chemical in the container.

5.1.3.2 Concisely written hazard warnings.
NOTE: There are two exceptions to this rule. These are addressed below in 5.1.4 and 5.1.5.

5.1.4 Signs, placards, process sheets, batch tickets, operating procedures, or other such written materials (posters) may be used in lieu of labeling of containers, provided:

5.1.4.1 The containers can be readily identified.

5.1.4.2 The alternative warnings must contain the information required for labels and be readily accessible to employees at all times.

5.1.5 An employee who transfers a quantity of a hazardous chemical from a labeled container into a portable container for his immediate use shall not be required to label the portable container.

5.1.6 Existing labels on incoming containers of hazardous chemicals shall not be removed, covered up, or defaced unless the container is immediately marked with the required labeling information.

5.1.7 Labels or other words of warning shall be highly legible, in English, and readily available to employees. An example of the HMIS labeling system is included.

5.1.8 New labels need not be affixed to containers of hazardous chemicals if existing labels already carry the required information.

5.1.9 The department receiving a shipment shall inspect incoming containers to ensure adequate and appropriate labeling of hazardous chemicals/materials.

5.1.10 Each operating organization shall ensure appropriate and adequate labeling of chemical containers under their jurisdiction.

5.2 Material Safety Data Sheets

5.2.1 A master hard copy file of all MSDS(s) received by SpecPro, Inc. for hazardous chemicals shall be maintained by the Corporate Industrial Hygienist.

5.2.2 MSDS(s) shall be readily accessible during each work shift to employees through their Program Manager and the library.

5.2.3 The Corporate Industrial Hygienist shall make MSDS(s) readily available, upon request, to employees and their designated representatives and applicable state and federal agencies.

5.2.4 The completeness of the supplier's MSDS shall be reviewed by the Corporate Industrial Hygienist. In cases where MSDS information is determined to be inadequate, the Corporate Industrial Hygienist shall request additional information from the manufacturer.

5.3 Hazard Determination

5.3.1 A material is considered to be hazardous when there is significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health affects may occur in exposed employees. This includes materials which are carcinogenic, corrosive, toxic, irritants, and sensitizers.

5.3.2 A chemical is defined as "hazardous" if it is a physical or health hazard and is listed in any one of the following documents (Corporate Industrial Hygienist can verify a listing):

5.3.2.1 29 CFR Part 1910, Subpart Z, Toxic and Hazardous Substances. Occupational Safety and Health Administration (OSHA).

5.3.2.2 Threshold Limit Valves for Chemical Substances and Physical Agents in the Work Environment, American Conference of Governmental Industrial Hygienists (ACGIH), (latest edition).

5.3.3 A chemical is defined as "carcinogenic" or "potentially carcinogenic" if it is listed as such by one of the following agencies (Corporate Industrial Hygienist can verify a listing):

5.3.3.1 National Toxicology Program (NTP), Annual Report on Carcinogens, (latest edition).

5.3.3.2 International Agency for Research on Cancer (IARC) Monographs, (latest edition).

5.3.3.3 29 CFR Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

5.3.4 The hazards of mixtures shall be evaluated as follows:

5.3.4.1 If scientifically valid health hazard data is available for a mixture as a whole, such data may be used for hazard communication purposes.

5.3.4.2 If no such data is available for a mixture, then the mixture must be evaluated from the standpoint of its components, that is, that mixture shall be assumed to carry the same degree of hazard as do the components provided each component comprises one percent by weight of the mixture, or greater.

5.3.4.3 If a component is identified as a carcinogen or a potential carcinogen (See Section 5.3.3) and comprises 0.1% or greater of the mixture, then the mixture itself shall be identified as having the same carcinogenic potential.

5.3.4.4 If the mixture as a whole has not been evaluated for physical hazards, then any scientifically valid data may be used to determine the mixture's physical hazard. There are no percentage restrictions for physical hazards.

5.2.4.5 If evidence exists that a component present in the mixture in a quantity less than 1% (0.1% if it is a carcinogen or potential carcinogen) could exceed OSHA or ACGIH exposure limits or produce an adverse health effect during normal conditions of use, then the mixture shall be considered to have the same hazard as that component.

5.3.5 In determining chemical hazards, Vista Technologies Inc. shall rely upon the evaluation performed by the chemical manufacturer or importer of the product, as described in the MSDS.

5.4 Employee Information and Training

5.4.1 Employees are required to receive information and training on all hazardous chemicals in their work area upon initial assignment and whenever any new hazardous chemicals are introduced into the work area.

5.4.2 Employees shall be informed of:

5.4.2.1 The requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

5.4.2.2 Operations in the work area where hazardous chemicals are present.

5.4.2.3 The location and availability of the written hazard communication program, the list of hazardous chemicals in the work area, and the MSDS(s) for hazardous chemicals in the work area.

5.4.3 Employees shall be trained on :

5.4.3.1 The methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.).

5.4.3.2 The physical and health hazards of the chemicals in the work area.

5.4.3.3 The measures employees can take to protect themselves from these hazards, including specific procedures that Vista Technologies Inc. has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, personal protective equipment to be used, etc.

5.4.3.4 Details of the Hazard Communication Program, including an explanation of the labeling system, the Material Safety Data Sheets, and how employees can obtain and use this information.

5.4.3.5 The hazards of non-routine tasks and unlabeled piping systems.

5.4.4 Hazard Communication Training is required for all employees who have a potential to be exposed to hazardous chemicals in the workplace or through a reasonably foreseeable emergency resulting from workplace operations.

5.5 Hazardous Chemical List

5.5.1 Each Program Manager shall keep and provide the Corporate Industrial Hygienist with an accurate list of the hazardous chemicals used by Vista Technologies Inc. employees they supervise.

5.5.2 Each chemical shall be listed using the name referenced on the corresponding MSDS. Whenever an MSDS is required and not already on record for a chemical, the Program Manager shall immediately request a vendor MSDS from the chemical manufacturer, and forward a copy to the Corporate Industrial Hygienist.

5.5.3 The hazardous chemical list shall be updated as new hazardous chemicals are introduced into the workplace.

5.6 Multi-Employer Workplaces

5.6.1 The Project Leader shall inform all outside contractors of any precautionary measures that need to be taken to protect employees during Vista Technologies Inc.'s normal operating conditions and in foreseeable emergencies.

5.6.2 All contractors shall be provided with the following information:

5.6.2.1 SpecPro Inc. Safety Program.

5.6.2.2 Location of the Hazardous Chemical List and Material Safety Data Sheets for all hazardous chemicals used at the SpecPro Inc. job site.

5.6.2.3 Specific measures taken by SpecPro Inc. to protect employees from exposure to hazardous chemicals (e.g. personal protective equipment, work practices, and emergency procedures).

5.6.3 Contractors shall be responsible for providing necessary information to their employees.

5.6.4 Contractors are required to inform SpecPro Inc. of all hazardous chemicals they will be bringing onsite and shall be required to provide MSDS(s) for all hazardous chemicals to the Program Manager before onsite activity begins.

5.7 Hazardous Non-routine Tasks

5.7.1 Non-routine tasks involving hazardous chemical exposure must be approved by the Program Manager.

SPECPRO INC.
HAZARD COMMUNICATION TRAINING

Employee Name: _____

Position: _____

I acknowledge that I have been informed of the following:

_____ OSHA's hazard communication standard's requirements for SpecPro Inc.

_____ The potentially hazardous chemicals used in my work area or on the job site, by specific chemical or hazard category.

_____ SpecPro Inc. has a written hazard communication program.

_____ The location and accessibility of the written hazard communication program.

_____ The location and accessibility of SpecPro Inc.'s chemical inventory.

_____ The location and accessibility of SpecPro Inc.'s MSDS file.

_____ That all containers of potentially hazardous chemicals must have legible warning labels attached.

I acknowledge that I have received training concerning the following:

_____ The characteristics of each chemical or category of chemicals used in my work area or on the job site.

_____ The potential physical and health hazards presented by the chemicals in my work area or on the job site.

_____ The processes in my work area or on the job site which use potentially hazardous chemicals.

_____ How to read and understand warning labels.

_____ How to read and understand MSDS(s).

_____ The detection of chemical leaks or spills by smell or appearance.

_____ The monitoring devices used in my work area or on the job site to detect the presence of potentially hazardous chemicals.

_____ The proper procedure for safely completing non-routine tasks involving potentially hazardous chemicals.

_____ The proper procedure in case of a chemical spill or leak.

_____ The presence of potentially hazardous chemicals in unlabeled pipes

The proper emergency and first aid procedures.

_____ The proper disposal procedures.

_____ The reporting procedures in case of a chemical accident or injury.

I understand that I will be retrained when a new hazard is introduced into my work area and when I am assigned to work in another area with different hazards.

_____ _____

DATE EMPLOYEE'S SIGNATURE

_____

HAZARD COMMUNICATION TRAINER

HMIS Chemical Container Markings

ere
eme Danger
ardous
ntly Hazardous
mal Material

Flash Points
4 - Below 73 ^{0} F
3 - Below 100 ^{0} F
2 - Above 200 ^{0} F
1 - Will Not Burn

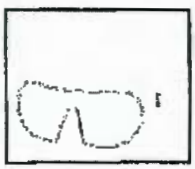
CHEMICAL NAME and NO.

HEALTH

FLAMMABILITY

REACTIVITY

PERSONAL PROTECTION


REACTIVITY
4 - May Detonate
3 - Shock or heat may cause detonation
2 - Violent chemical change
1 - Unstable if heated
0 - Stable

PERSONAL PROTECTION
Pictures will be placed here of any PPE required. Follow PPE requirements and any other special instructions listed

1.0 PURPOSE

1.1 The purpose of the Medical Surveillance Program is to assess and monitor workers' health and fitness both prior to employment and during the course of work for SpecPro Inc.; to provide emergency and other treatment as needed; and to keep accurate medical records for future reference.

2.0 SCOPE

2.1 The following groups of employees shall be included in the Medical Surveillance Program:

2.1.1 All employees who are or may be exposed to hazardous substances or health hazards at or above the permissible exposure limits or, if there is no permissible exposure limit, above the published exposure levels for these substances, without regard to the use of respirators, for 30 days or more a year.

2.1.2 All employees who are or may be exposed to hazardous substances or health hazards at or above the action level for an OSHA regulated substance for which there are specific exposure monitoring and medical surveillance requirements.

2.1.3 All employees who wear a respirator for 30 days or more a year or as required by 29 CFR 1910.134.

2.1.4 All personnel at hazardous waste sites including members of Hazardous Materials Response Teams and all employees who are injured, become ill or develop signs or symptoms due to possible over exposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation.

2.1.5 All employees whose noise exposures equal or exceed an 8-hour time-weighted average of 85 decibels.

3.0 REFERENCES

3.1 29 CFR Part 1910, Subpart C, General Safety and Health Provisions, Occupational Safety and Health Administration (OSHA)

3.2 29 CFR Part 1910, Subpart H, Hazardous Materials, Occupational Safety and Health Administration (OSHA)

3.3 29 CFR Part 1910, Subpart I, Personal Protective Equipment, Occupational Safety and Health Administration (OSHA)

3.4 Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, NIOSH/OSHA/USCG/EPA, October 1985

3.5 Standard Operating Safety Guides, Environmental Protection Agency, June 1992

4.0 DEFINITIONS

4.1 **Access.** Means the right and opportunity to examine and copy.

4.2 **Exposure or Exposed.** Means that an employee is subjected to a toxic substance or harmful physical agent in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.), and includes past exposure and potential (e.g., accidental or possible) exposure, but does not include situations where the employer can demonstrate that the toxic substance, or harmful physical agent is not used, handled, stored, generated, or present in the workplace in any manner different from typical non-occupational situations.

4.3. **Medical Record.** Means a record concerning the health status of an employee which is made or maintained by a physician, nurse, or other health care personnel or technician.

5.0 RESPONSIBILITIES

5.1 The Corporate Industrial Hygienist shall:

5.1.1 Administer the Medical Surveillance Program.

5.1.2 Maintain employee medical records.

5.1.3 Provide employees with access to medical records upon request.

5.14 Provide the attending physician with information including OSHA regulations and specifics related to the duties of employees.

5.2 Program Managers shall:

5.2.1 Assist the Corporate Industrial Hygienist in identifying employees for inclusion in the Medical Surveillance Program.

5.2.2 Ensure employees report for scheduled medical appointments.

5.3 Employees shall:

5.3.1 Participate in the Medical Surveillance Program, when required.

6.0 MEDICAL SURVEILLANCE PROGRAM SPECIFIC ASPECTS

6.1 Respiratory Protection

6.1.1 Employees shall not be assigned to tasks requiring the use of respirators unless it has been determined that they are physically able to perform the work while using the required respiratory equipment. The attending physician shall determine what health and physical conditions are pertinent. The respirator user's medical status shall be reviewed annually.

6.2 Hearing Conservation

6.2.1 All employees whose noise exposures equal or exceed an 8-hour time-weighted average of 85 decibels shall be provided audiometric testing on an annual basis.

6.3 OSHA Specific Health Standards

6.3.1 All employees who are or may be routinely exposed at or above the action level for an OSHA regulated substance for which there are exposure monitoring and medical surveillance requirements shall be included in the Medical Surveillance Program. Surveillance shall be provided in accordance with the applicable OSHA standard (See Appendix A for a list of hazardous substances with these requirements).

6.4 Published Exposure Limits

6.4.1 All employees who are or may be routinely exposed to hazardous substances at or above the OSHA Permissible Exposure Limit or ACGIH Threshold Limit Value shall be included in the Medical Surveillance Program. Surveillance shall be provided in accordance with the recommendations of the attending physician.

6.5 Hazardous Waste Site Activities

6.5.1 All employees involved in hazardous waste site activities shall be included in the Medical Surveillance Program. This includes members of Hazardous Materials Response Teams and all employees who are injured, become ill or develop signs or symptoms due to possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation. Medical examinations and consultations shall be made available as follows:

6.5.1.1 Prior to assignment.

6.5.1.2 At least once every twelve months unless the attending physician believes a longer interval (not greater than biennially) is appropriate.

6.5.1.3 At termination of employment or reassignment to an area where the employee would not be covered if the employee has not had an examination within the last six months.

6.5.1.4 As soon as possible upon notification by an employee that the employee has developed signs or symptoms indicating possible overexposure to hazardous substances or health hazards, or that the employee has been injured or exposed above the permissible exposure limits or published exposure levels from an emergency response or hazardous waste operation.

6.5.1.5 More frequently as recommended by the examining physician.

6.5.2 Medical examinations shall include a medical and work history with special emphasis on symptoms related to the handling of hazardous substances and health hazards, and to fitness for duty including the ability to wear any required PPE under conditions (i.e., temperature extremes) that may be expected at the work site. The attending physician shall determine what additional health and physical conditions should be evaluated.

6.5.3 SpecPro Inc. shall provide the attending physician with the following information:

6.5.3.1 A copy of 29 CFR 1910.120 and its appendices, Hazardous Waste Operations and Emergency Response.

6.5.3.2 A description of the employee's duties as they relate to the employee's exposures.

6.5.3.3 The employee's exposure levels or anticipated exposure levels.

6.5.3.4 A description of any personal protective equipment used or to be used.

6.5.3.5 Information from previous medical examinations of the employee which is not readily available to the examining physician.

6.5.3.6 A copy of Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, Section 5, Medical Program.

6.5.4 SpecPro Inc. shall obtain and furnish the employee with a copy of a written opinion from the attending physician containing the following:

6.5.4.1 The physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health from work in hazardous waste operations or emergency response, or from respirator use.

6.5.4.2 The physician's recommended limitations upon the employee's assigned work.

6.5.4.3 The results of the medical examination and tests if requested by the employee.

6.5.4.4 A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.

6.6 Recordkeeping

6.6.1 SpecPro Inc. shall maintain accurate records for all employees included in the Medical Surveillance Program for at least the duration of employment plus thirty(30) years.

6.6.1.1 Audiometric test records shall include:

6.6.1.1.1 Name and job classification of the employee.

6.6.1.1.2 Date of the audiogram.

6.6.1.1.3 The examiner's name.

6.6.1.1.4 Date of the last acoustic or exhaustive calibration of the audiometer.

6.6.1.1.5 Employee's most recent noise exposure assessment.

6.6.1.2 Records maintained for hazardous waste site workers shall include:

6.6.1.2.1 The name and social security number of the employee.

6.6.1.2.2 Physician's written opinions, recommended limitations, and results of examinations and tests.

6.6.1.2.3 Any employee medical complaints related to exposure to hazardous substances.

6.6.1.2.4 A copy of the information provided to the examining physician by SpecPro, Inc., with the exception of the standard and its appendices.

6.7 Access to Records

6.7.1 All medical records shall be provided upon request to employees, former employees, representatives designated by the individual employee, and the Occupational Safety and Health Administration (OSHA).

Note: In most cases, access to a record shall be provided within 15 working days. If this is not possible, the Corporate Industrial Hygienist shall inform the employee or designated representative requesting the record of the reason for the delay and the earliest date when the record can be made available.

6.7.2 Employees shall be informed when hired and at least annually thereafter of the following:

6.7.2.1 The existence, location, and availability of any medical records.

6.7.2.2 The person responsible for maintaining and providing access to medical records.

6.7.2.3 Each employee's rights of access to these medical records.

Appendix A

OSHA TOXIC AND HAZARDOUS SUBSTANCES WITH EXPOSURE MONITORING AND MEDICAL SURVEILLANCE REQUIREMENTS.

Sec.	
1910.1000	Air contaminants.
1910.1001	Asbestos.
1910.1002	Coal tar pitch volatiles; interpretation of term.
1910.1003	4-Nitrobiphenyl.
1910.1004	alpha-Naphthylamine.
1910.1005	[Reserved]
1910.1006	Methyl chloromethyl ether.
1910.1007	3,3´-Dichlorobenzidine (and its salts).
1910.1008	bis-Chloromethyl ether.
1910.1009	beta-Naphthylamine.
1910.1010	Benzidine.
1910.1011	4-Aminodiphenyl.
1910.1012	Ethyleneimine.
1910.1013	beta-Propiolactone.
1910.1014	2-Acetylaminofluorene.
1910.1015	4-Dimethylaminoazobenzene.
1910.1016	N-Nitrosodimethylamine.
1910.1017	Vinyl chloride.
1910.1018	Inorganic arsenic.
1910.1025	Lead.
1910.1027	Cadmium.
1910.1028	Benzene.
1910.1029	Coke oven emissions.
1910.1030	Bloodborne pathogens.
1910.1043	Cotton dust.
1910.1044	1,2-dibromo-3-chloropropane.
1910.1045	Acrylonitrile.
1910.1047	Ethylene oxide.
1910.1048	Formaldehyde.
1910.1050	Methylenedianline.

Title

RESPIRATOR PROGRAM

1.0 POLICY

1.1 SpecPro Inc. shall prevent employee exposure to contaminated air as much as feasible by accepted engineering control measures (i.e., general and local ventilation, substitution of a less toxic material, enclosure or confinement of the operation). Approved respiratory equipment shall be worn when it is clearly impracticable to remove harmful dusts, fumes, mists, vapors or gases at their source. The use of respiratory protective equipment for routine activities shall be permitted while engineering controls are being implemented or as a supplement to engineering controls when required. Other activities that may require the use of respiratory protective equipment are nonroutine or emergency activities (e.g., hazardous waste operations).

2.0 PURPOSE

2.1 The Respirator Program establishes procedures governing the selection and use of respirators.

3.0 REFERENCES

3.1 29 CFR Part 1910, Subpart I, Personal Protective Equipment, Occupational Safety and Health Administration (OSHA)

3.2 NIOSH Respirator Decision Logic, U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health

4.0 DEFINITIONS

4.1 **Air-Line Respirator.** A respirator in which air is supplied to the facepiece from an auxiliary source located at a distance from the wearer. Provides protection against all contaminants in concentrations not immediately dangerous to life or health (IDLH).

4.2 **Air-Purifying Respirator.** A respirator that filters and/or absorbs contaminants from the ambient air (Does not provide protection in oxygen deficient or immediately dangerous to life or health atmospheres).

4.3. **Emergency Situations.** Unplanned events which are characterized by risks sufficient to require immediate action and which may necessitate the use of respirators for respiratory protection.

4.4 **Immediately Dangerous to Life or Health (IDLH).** Exposure condition that poses a threat of exposure to airborne contaminants when that exposure is likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from such an environment. The purpose of establishing an IDLH exposure level is to ensure that the worker can escape from a given contaminated environment in the event of failure of the respiratory protection equipment.

4.5 **Negative-Pressure Respirator.** A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere. Any respirator which has a filter, cartridge or canister which cleans the work room air before you breathe it and which requires the force of your inhalation to draw air through the filtering element is a negative-pressure respirator (See Air-Purifying Respirator).

4.6 **Negative Pressure Seal Check.** Close off the inlet opening of the canister or the breathing tube by covering it with the palm of the hand or by replacing the tape seal, gently inhale so that the facepiece collapses slightly, and hold the breath for 10 seconds. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is satisfactory.

4.7 **Nonroutine Operations.** Activities that are either nonrepetitive or occur infrequently and for which adequate protection with engineering controls is impractical or infeasible and which may necessitate the use of respirators to avoid excessive exposure to inhalation hazards.

4.8 **Oxygen Deficient Atmosphere.** Atmosphere which contains an oxygen partial pressure of less than 148 millimeters of mercury (19.5 percent by volume at sea level).

4.9 **Positive-Pressure Respirator.** A respirator in which the air pressure inside the during exhalation and inhalation. A positive pressure respirator supplies air to you directly.

4.10 **Positive Pressure User Seal Check.** If necessary, remove the exhalation valve cover, close off the exhalation valve with the palm of the hand, and exhale gently so that a slight positive pressure is built up in the facepiece. If no outward leakage of air is detected at the periphery of the facepiece, the face fit is satisfactory. (Note: With certain devices, removal of the exhaust valve cover is very difficult, making this test almost impossible to perform.)

4.11 **Qualitative Fit Test.** Involves exposure of the respirator user to an irritant smoke, odorous isoamyl acetate vapor or other suitable test agent easily detectable by irritation, odor, or taste (An air-purifying respirator must be equipped with the appropriate air-purifying element). An acceptable fit has been obtained if the respirator wearer is unable to detect the penetration of the test agent into the respirator.

4.12 **Quantitative Fit Test.** Exposes the respirator wearer to a test atmosphere containing an easily detectable, relatively nontoxic aerosol, vapor, or gas as the test agent and then measures the penetration of the test agent into the respirator.

4.13 **Routine Operations.** Planned activities that occur with various frequencies, which should employ engineering controls to reduce airborne concentrations to a level as low as reasonably achievable.

4.14 **Self-Contained Breathing Apparatus (SCBA).** A respirator in which the air supply is carried by the wearer.

5.0 RESPONSIBILITIES

5.1 The Corporate Industrial Hygienist is responsible for maintaining an effective Respiratory Protection Program including:

5.1.1 Selecting proper respiratory protection based upon potential exposure hazards.

5.1.2 Recommending engineering controls to management, when feasible.

5.1.3 Conducting respirator training and fit-testing as required.

5.14 Ensuring SCBA units are inspected annually by the manufacturer.

5.1.5 Performing periodic audits to evaluate the effectiveness of the program.

5.2 Program Managers or their Designated Safety Coordinators are responsible for ensuring implementation of this procedure. Specifically, they are responsible for:

5.2.1 Identifying the need for respiratory protection and initiating the process for obtaining a respirator (See Appendix A).

5.2.2 Purchasing respirators upon receipt of fit-testing information from the Corporate Industrial Hygienist.

5.2.3 Monitoring the proper use, maintenance, and care of respirators.

5.2.4 Ensuring SCBA units are inspected monthly by a member of their staff.

5.3 Employees are responsible for:

5.3.1 Wearing appropriate respiratory protective devices as assigned.

5.3.2 Inspecting respirators before and after each use.

5.3.3 Performing the positive and negative pressure respirator seal checks after donning any respirator.

5.3.4 Cleaning the respirator assigned to them after each days' use.

5.3.5 Attending respirator training as required by this program.

6.0 RESPIRATOR PROGRAM SPECIFIC ASPECTS

6.1 Respiratory Selection

6.1.1 Whenever respiratory equipment is required to control harmful exposures, only equipment approved for that purpose shall be used, and such equipment must be jointly approved by the National Institute for Occupational Safety and Health (NIOSH). Only parts approved for the specific respirator system shall be used for replacement. Substitution of parts from a different brand or type of respirator invalidates approval of the device and shall not be allowed.

6.1.2 Respirators shall be selected on the basis of hazards to which the worker is exposed and according to the guidance of American National Standard Practices for Respirtory Protection Z88.2-1969 (See Appendix A, Procedure For Obtaining A Respirator).

6.2 Medical Determination

6.2.1 Employees shall not be assigned to tasks requiring the use of respirators unless it has been determined that they are physically able to perform the work while using the required respiratory equipment.

6.2.2 Medical evaluations shall be conducted by a physician or other licensed health care professional (PLHCP). The medical evaluation may be performed using a medical questionnaire (Appendix E) or an initial medical examination that obtains the same information.

6.2.3 Additional medical evaluations will be provided whenever there is any indication that a reevaluation is appropriate. At a minimum, this would occur: if the employee reports any signs or symptoms that are related to the ability to use a respirator; if the PLHCP, program administrator or supervisor determines that a reevaluation is necssary; if information from the respiratory protection program indicates a need for reevaluation; or if a change in work place conditions could affect the physiological burden place on the employee.

6.3 Air Quality

6.3.1 Breathing air must be free of harmful quantities of dusts, mists, or noxious gases and may be supplied from cylinders or compressors. Breathing air shall meet at least the requirements of the specification for Grade D breathing air as described in Compressed Gas Association Commodity Specification G-7.1-1989 and summarized below:

Oxygen Content (V/V)	19-23.5% (Atmospheric Air)
Hydrocarbon (Condensed)	5 mg/m^3
Carbon Monoxide	10 ppm or less
Carbon Dioxide	1000 ppm or less
Lack of noticeable odor	

6.3.2 Cylinders shall be tested and maintained, as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR Part 173 and 178).

6.3.3 The compressor for supplying air shall be equipped with necessary safety and standby devices as described below:

6.3.3.1 A breathing air-type compressor shall be used.

6.3.3.2 Compressors shall be constructed and situated so as to avoid entry of contaminated air into the system and suitable in-line air purifying sorbent beds and filters installed to further assure breathing air quality.

6.3.3.3 A receiver of sufficient capacity to enable the respirator wearer to escape from a contaminated atmosphere in event of compressor failure, and alarms to indicate compressor failure and overheating shall be installed in the system.

6.3.4 If an oil-lubricated compressor is used, it shall have a high-temperature or carbon monoxide alarm, or both. If only a high-temperature alarm is used, the air from the compressor shall be checked at intervals sufficient to prevent carbon monoxide from exceeding 10 ppm.

6.3.5 Air-line couplings associated with breathing air shall be incompatible with outlets for other gas systems to prevent inadvertent servicing of air-line respirators with nonrespirable gases or oxygen.

6.3.6 Air pressure at the hose connection to the respiratory equipment must be within the range specified in the approval of the respiratory equipment.

6.3.7 Breathing gas containers shall be marked in accordance with American National Standard Method of Marking Portable Compressed Gas Containers to Identify the Material Contained, Z48.1-1954; Federal Specification BB-A-1034a, June 21, 1968, Air, Compressed for Breathing Purposes; or Interim Federal Specification GG-B-00675b, April 27, 1965, Breathing Apparatus, Self-Contained.

6.4 Use of Respirators

6.4.1 Employees shall be instructed and trained in the need, use, sanitary care, and limitations of any respiratory equipment the employee may have occasion to use. Prior to training employees must have medical approval to use respirators as described in Section 6.2.

6.4.1.1 Training shall include explanations and discussions of:

6.4.1.1.1 The respiratory hazard and what happens if the respirator is not used properly.

6.4.1.1.2 The engineering and administrative controls being used and the need for respirators to provide protection.

6.4.1.1.3 The reason for selecting a particular type of respirator.

6.4.1.1.4 The function, capabilities, and limitations of the selected respirator.

6.4.1.1.5 The method of donning the respirator and checking its fit and operation.

6.4.1.1.6 The proper wearing of the respirator.

6.4.1.1.7 Respirator maintenance.

6.4.1.1.8 Recognizing and handling emergency situations.

6.4.1.2 Respirator training shall be repeated annually or more often if necessary.

6.4.1.3 Training shall include a demonstration of the positive and negative pressure sealing checks. Employees shall conduct this positive and negative field test before each use. These tests shall be conducted in accordance with the procedures recommended by the manufacturer.

6.4.1.4 Training shall provide employees with an opportunity to handle the respirator, have it fitted properly, test its face-piece-to-face seal, wear it in normal air for a long familiarity period, and to wear the respirator in a test atmosphere to ensure an adequate fit.

6.4.2 All users of respirators shall be qualitatively or quantitatively fit tested. A satisfactory seal is a prerequisite for successful completion of the training program.

6.4.2.1 Each respirator wearer shall be fit tested at least annually.

6.4.3 Respirators shall not be worn with conditions that interfere with the face-piece-to-face seal. Such conditions include:

6.4.3.1 Growth of beard, sideburns, a skull cap that projects under the facepiece.

6.4.3.2 Temple pieces on glasses.

6.4.3.3 Absence of one or both dentures.

6.4.4 Selection of individuals to receive training and instruction in the use of SCBA will depend upon their potential for exposure during hazardous activities. Program Managers should request training for employees engaged in nonroutine activities where engineering controls are not applicable.

6.4.5 Contact lenses may be worn with full facepiece respirators. Also, systems have been developed for mounting corrective lenses inside full facepiece respirators. Contact the Corporate Industrial Hygienist for assistance.

6.4.6 Corrective spectacles or goggles must be worn so as not to affect the fit of the respirator facepiece. Contact the Corporate Industrial Hygienist for assistance.

6.5 Respirator Care and Maintenance

6.5.1 Respiratory equipment shall be regularly cleaned and disinfected by the user.

6.5.1.1 Routinely used respiratory equipment issued for the exclusive use of one worker shall be cleaned at least after each days' use.

6.5.1.2 Self-Contained Breathing Apparatus (SCBA) and supplied-air respirators shall be cleaned after each use by the using organization.

6.5.2 All respirators shall be inspected routinely by the user before and after each use.

6.5.2.1 Respirator inspection shall include a check of the tightness of connections and the condition of the facepiece headbands, valves, connecting tube, and canisters. Rubber or elastomer parts shall be inspected for pliability and signs of deterioration.

6.5.2.2 Respirators that are not routinely used but kept ready for emergency use shall be inspected after each use and at least monthly by the using organization. (Contact the Corporate Industrial Hygienist for assistance). The breathing air cylinder of the self-contained breathing apparatus shall be fully charged. (Minimum allowable in-service pressures will be posted on the unit.) The hydrotest certification date must be current. Regulator and warning devices must function properly.

6.5.2.3 SCBA(s) shall be inspected annually by personnel trained by the manufacturer.

6.5.3 Replacement or repairs shall be performed by experienced persons with parts designed for the particular respirator. No attempt shall be made to replace components or to make adjustment or repairs beyond the manufacturer's recommendations. Contact the Corporate Industrial Hygienist for assistance.

6.5.4 Respirators shall be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals.

6.5.4.1 Routinely used respirators may be stored in resealable plastic bags.

6.5.4.2 Respirators should not be stored in such places as lockers or tool boxes unless they are in carrying cases or cartons.

6.5.4.3 Respirators should be stored in one layer with the facepiece and exhalation valve in a normal undistorted position and should never be hung by the straps.

6.5.4.4 Emergency respirators shall be properly stored in accordance with the manufacturer's instructions usually mounted inside the carrying case lid.

6.5.4.5 Respirators placed at stations and work areas for emergency use must be quickly accessible at all times and shall be stored in compartments built for that purpose. The compartments must be clearly marked.

6.6 Work Surveillance

6.6.1 Work area conditions shall be initially and periodically evaluated by the Corporate Industrial Hygienist to ensure adequate respiratory protection is worn by employees as necessary. Employee exposure levels shall be determined by personal monitoring when screening indicates employees may be potentially exposed to high levels of any air contaminant.

Appendix A

PROCEDURE FOR OBTAINING A RESPIRATOR

I. SpecPro Inc. has established the following procedure for requesting a respirator:

1. The Program Manager identifies the need for the respirator (Contact the Corporate Industrial Hygienist for assistance as necessary).

2. The Program Manager must provide the Corporate Industrial Hygienist with the following information:

   a. Physician approval for respirator use.

   b. Description of the task to be performed.

   c. Any known contaminants of concern (Provide a list of hazardous chemicals when possible).

3. Respirator training and fit testing will be scheduled by the Corporate Industrial Hygienist upon receipt of all of the above information.

4. Program Manager purchases the respirator upon receipt of fit-testing information from the Corporate Industrial Hygienist.

Appendix B

QUALITATIVE RESPIRATOR FIT TESTING

1.0 PURPOSE

1.1 The purpose of respirator fit testing is to select a Make, Model and Size of a tight-fitting facepiece that adequately accomodates (or fits) an individual's unique facial size, shape and characteristics.

2.0 REFERENCES

2.1 Fit Testing of Respirator Facepieces, Respirator Support Services

2.2 29 CFR 1910.134, Appendix A, Fit Testing Procedures

3.0 PREREQUISITES TO FIT TESTING

3.1 Employees must be clean shaven in the sealing periphery of the facepiece.

3.2 Employees must receive medical clearance to wear a respirator.

3.3 Employees must satisfactorily complete the respirator training class.

4.0 ISOAMYL ACETATE (IAA) PROTOCOL

4.1 Test the employee's ability to smell banana oil at a low concentration. Failure to detect banana oil shall void the fit test (See Section 5.0 for alternative fit testing method).

4.2 The employee will pick the most acceptable respirator from a sufficient number of respirator models and sizes to achieve the correct fit.

4.3 Have the employee equip the respirator with organic vapor cartridges.

4.4 Review the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:

(a) Position of the mask on the nose
(b) Room for eye protection
(c) Room to talk
(d) Position of mask on face and cheeks

The following criteria shall be used to help determine the adequacy of the respirator fit:

(a) Chin properly placed;
(b) Adequate strap tension, not overly tightened;
(c) Fit across nose bridge;
(d) Respirator of proper size to span distance from nose to chin;
(e) Tendency of respirator to slip;

(f) Self-observation in mirror to evaluate fit and respirator position.

4.5 Instruct the employee to "seat" his respirator by rapidly moving the head side-to-side and up and down, taking a few deep breaths.

4.6 Have the employee perform the negative and positive-pressure seal checks.

4.7 Allow the employee to wear the respirator for at least 10 minutes before starting the fit test.

4.8 In an isoamyl acetate test environment, have the employee perform the following exercises for at least one minute each:

4.8.1 Normal breathing.

4.8.2 Deep breathing. Be certain breaths are deep and regular.

4.8.3 Turning head from side-to-side. Be certain movement is complete. Alert the employee not to bump the respirator on the shoulders. Have the employee inhale when his head is at either side.

4.8.4 Nodding head up-and-down. Be certain motions are complete and made about every second. Alert the employee to not bump the respirator on the chest. Have the employee inhale when his head is in the fully up position.

4.8.5 Talking. Have the employee read the following paragraph:

THE RAINBOW PASSAGE

WHEN SUNLIGHT STRIKES THE RAINDROPS IN THE AIR, THEY ACT LIKE A PRISM AND FORM A RAINBOW. THE RAINBOW IS A DIVISION OF WHITE LIGHT INTO MANY BEAUTIFUL COLORS. THESE TAKE THE SHAPE OF A LONG ROUND ARCH, WITH ITS PATH HIGH ABOVE, AND ITS TWO ENDS APPARENTLY BEYOND THE HORIZON. THERE IS, ACCORDING TO LEGEND, A BOILING POT OF GOLD AT ONE END. PEOPLE LOOK, BUT NO ONE EVER FINDS IT. WHEN A MAN LOOKS FOR SOMETHING BEYOND HIS REACH, HIS FRIENDS SAY HE IS LOOKING FOR THE POT OF GOLD AT THE END OF THE RAINBOW.

4.8.6 Bending over or jogging in place

4.8.7 Normal breathing.

4.9 If at any time during the test, the employee detects the banana-like odor of IAA, the test must be stopped.

4.10 Have the employee select another respirator and repeat the test.

5.0 IRRITANT FUME PROTOCOL.

5.1 Perform this test in a location with exhaust ventilation sufficient to prevent general contamination of the testing area by the irritant smoke.

5.2 Test the employee's ability to react to irritant smoke. Failure to evoke a response shall void the fit test.

5.3 The employee will pick the most acceptable respirator from a sufficient number of respirator models and sizes to achieve the correct fit.

5.4 Have the employee equip the respirator with high efficiency cartridges.

5.5 Review the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:

(a) Position of the mask on the nose
(b) Room for eye protection
(c) Room to talk
(d) Position of mask on face and cheeks

The following criteria shall be used to help determine the adequacy of the respirator fit:

(a) Chin properly placed;
(b) Adequate strap tension, not overly tightened;
(c) Fit across nose bridge;
(d) Respirator of proper size to span distance from nose to chin;
(e) Tendency of respirator to slip;
(f) Self-observation in mirror to evaluate fit and respirator position.

5.6 Have the employee perform the negative and positive-pressure fit checks.

5.7 Allow the employee to wear the respirator for at least 10 minutes before starting the fit test.

5.8 Review this protocol with the employee before testing.

5.9 Advise the employee that the smoke can be irritating to the eyes and instruct him/her to keep his/her eyes closed while the test is performed.

5.10 In an irritant smoke test environment have the employee perform the following exercises for at least one minute each:

5.10.1 Normal breathing.

5.10.2 Deep breathing. Be certain breaths are deep and regular.

5.10.3 Turning head from side-to-side. Be certain movement is complete. Alert the employee not to bump the respirator on the shoulders. Have the employee inhale when his head is at either side.

5.10.4 Nodding head up-and-down. Be certain motions are complete. Alert the employee not to bump the respirator on the chest. Have the employee inhale when his head is in the fully up position.

5.10.5 Talking. Have the employee read the following paragraph:

THE RAINBOW PASSAGE

WHEN SUNLIGHT STRIKES THE RAINDROPS IN THE AIR, THEY ACT LIKE A PRISM AND FORM A RAINBOW. THE RAINBOW IS A DIVISION OF WHITE LIGHT INTO MANY BEAUTIFUL COLORS. THESE TAKE THE SHAPE OF A LONG ROUND ARCH, WITH ITS PATH HIGH ABOVE, AND ITS TWO ENDS APPARENTLY BEYOND THE HORIZON. THERE IS, ACCORDING TO LEGEND, A BOILING POT OF GOLD AT ONE END. PEOPLE LOOK, BUT NO ONE EVER FINDS IT. WHEN A MAN LOOKS FOR SOMETHING BEYOND HIS REACH, HIS FRIENDS SAY HE IS LOOKING FOR THE POT OF GOLD AT THE END OF THE RAINBOW.

5.10.6 Bending over or joggin in place

5.10.7 Normal breathing.

5.10.8 If at any time during the test, the irritant smoke produces an involuntary reaction (cough) by the employee, the test must be stopped.

5.10.9 Have the employee select another respirator and repeat the test.

Appendix C

SpecPro

Fit Test and Training Report

Last Name	
First Name	
Company	
Location	
Notes	

Test Date	
Training Date	
Protocol	
Manufacturer	
Model	
Mask Size	
Cartridge Type	

Exercise	**Duration (sec)**	**Pass**
Normal Breathing	60	
Deep Breathing	60	
Head Side to Side	60	
Head Up and Down	60	
Talking	60	
Bend and Touch Toes	60	
Normal Breathing	60	

Fit Test Operator _____ Date _____

Acknowledgement of fit testing and training:

Name _____ _____ Date _____

Appendix D

RESPIRATOR TRAINING STATEMENT

I understand the following statement with regard to using air purifying respirators at SpecPro Inc.:

yes (please check)

_____ 1. The air-purifying respirator (with cartridges) shall not be worn if oxygen concentration is below 19.5%, highly toxic chemicals are being used or the hazard is unknown.

_____ 2. The air-purifying respirator should only be used when the toxic contaminant(s) can be detected by taste, odor, irritation or in the case of particles, difficulty in breathing. Therefore, when the cartridge becomes saturated or "used up", the employee is warned that breakthrough has occurred and new cartridges are needed.

_____ 3. There are many different types of cartridges; it is important to use the correct cartridge which is determined by which chemical or group of chemicals the employee is exposed to. The cartridges are labeled and color coded; some are chemical absorbents used for gases and others are particle filters for dust, mists and fumes.

__ 4. Replacement cartridges, filters or parts shall be from the same manufacturer as your respirator.

_____ 5. Respirators shall be inspected prior to each use for cleanliness, proper valve placement, sturdy elastic straps and proper cartridges. There should be no defects such as breakage, blistering, worn parts, warped valves, dents, cracks, broken fittings or bubbling of silicone rubber. Many parts of the respirator can be replaced by the Corporate Industrial Hygienist. The respirator shall be cleaned and disinfected after each day of use.

_____ 6. Before entering the contaminated area, check the fit of the respirator by performing the negative and positive pressure test, as demonstrated to you, in order to ensure a proper fit. The respirator must not be removed from the face while still in the contaminated area.

_____ 7. A respirator only protects the wearer if there is a good seal against the face and the correct cartridges are being used. Since facial hair interferes with the seal, employees must be clean shaven (A small mustache may be acceptable).

_____ 8. The respirator shall be placed in its plastic storage bag and stored in a cool, dry, non-contaminated atmosphere to ensure that it is protected against dust, chemicals, moisture, excessive heat and physical damage. Never leave the respirator sitting out or hanging on a hook.

_____ 9. The employee's responsibilities for respiratory protection are:

a. Inspect the respirator before each use and notify the Corporate Industrial Hygienist if there are any worn or defective parts. Do not use a defective respirator.

b. Determine a proper fit before use by performing the negative and positive fit tests.

c. Keep the respirator clean by using respirator cleaning pads during and after each day of use and perform a more thorough cleaning with detergent and disinfectant as needed (at least semiweekly if the respirator is used daily).

d. Properly store the respirator in its plastic storage bag with your name on the bag and the respirator.

e. Be aware of cartridge depletion warning signs and obtain new cartridges from your Program Manager when needed.

f. Do not lend your respirator to anyone.

Trained by: _____

Date: _____

Employee Signature: _____ EE No: _____

Medical Clearance Date: _____

Program Manager: _____

Appendix E
OSHA RESPIRATOR MEDICAL EVALUATION QUESTIONNAIRE

To the employer: Answers to questions in Section 1. and to question 9 in Section 2 of Part A. do not require a medical examination.

To the employee: Can you read (check one): ☐ Yes ☐ No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A. Section 1. **(Mandatory)** The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date: _____ 2. Your name: _____

3. Date of Birth: ___/___/___ 4. Sex (check one): Male ☐ Female ☐

3. Your height: ____ ft. _____ in. 6. Your weight: _____ lbs.

4. Your job title: _____

5. A phone number where you can be reached by the health care professional who reviews this questionnaire (include this Area Code): ( ) _____

6. The best time to phone you at this number: _____ A.M. _____ P.M.

10. Has your employer told you how to contact the health care professional who will review this questionnaire (check one): ☐ Yes ☐ No

11. Check the type of respirator you will use (you can check more than one category):
1. ☐ N, R, or P disposable respirator (filter-mask, non-cartridge type only).
b. ☐ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).

12. Have you worn a respirator (check one): ☐ Yes ☐ No
If "yes," what type(s): _____

Part A. Section 2. **(Mandatory)** Questions 1 through 9 below must be answered by every employee who has been selected to use any type or respirator (please check "yes" or "no").

1. Do you *currently* smoke tobacco, or have you smoked tobacco in the last month: ☐ Yes ☐ No

2. Have you *ever* had any of the following conditions?
a. Seizures (fits): ☐ Yes ☐ No
b. Diabetes (sugar disease): ☐ Yes ☐ No
c. Allergic reactions that interfere with your breathing: ☐ Yes ☐ No
d. Claustrophobia (fear of closed-in places): ☐ Yes ☐ No
e. Trouble smelling odors: ☐ Yes ☐ No

3. Have you *ever* had any of the following pulmonary or lung problems?

a. Asbestosis: ☐ Yes ☐ No
b. Asthma: ☐ Yes ☐ No
c. Chronic bronchitis: ☐ Yes ☐ No
d. Emphysema: ☐ Yes ☐ No
e. Pneumonia: ☐ Yes ☐ No
f. Tuberculosis: ☐ Yes ☐ No
g. Silicosis: ☐ Yes ☐ No
h. Pneumothorax (collapsed lung): ☐ Yes ☐ No
i. Lung cancer: ☐ Yes ☐ No
j. Broken ribs: ☐ Yes ☐ No
k. Any chest injuries or surgeries: ☐ Yes ☐ No
l. Any other lung problem that you've been told about: ☐ Yes ☐ No

4. Do you *currently* have any of the following symptoms of pulmonary or lung illness?

a. Shortness of breath: ☐ Yes ☐ No
b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: ☐ Yes ☐ No
c. Shortness of breath when walking with other people at an ordinary pace on level ground: ☐ Yes ☐ No
d. Have to stop for breath when walking at your own pace on level ground: ☐ Yes ☐ No
e. Shortness of breath when washing or dressing yourself: ☐ Yes ☐ No
f. Shortness of breath that interferes with your job: ☐ Yes ☐ No
g. Coughing that produces phlegm (thick sputum): ☐ Yes ☐ No
h. Coughing that wakes you early in the morning: ☐ Yes ☐ No
i. Coughing that occurs mostly when you are lying down: ☐ Yes ☐ No
j. Coughing up blood in the last month: ☐ Yes ☐ No
k. Wheezing: ☐ Yes ☐ No
l. Wheezing that interferes with your job: ☐ Yes ☐ No
m. Chest pain when you breathe deeply: ☐ Yes ☐ No
n. Any other symptoms that you think may be related to lung problems: ☐ Yes ☐ No

5. Have you *ever had* any of the following cardiovascular of heart problems?

a. Heart attack: ☐ Yes ☐ No
b. Stroke: ☐ Yes ☐ No
c. Angina: ☐ Yes ☐ No
d. Heart failure: ☐ Yes ☐ No
e. Swelling in your legs or feet (not caused by walking): ☐ Yes ☐ No
f. Heart arrhythmia (heart beating irregularly): ☐ Yes ☐ No
g. High blood pressure: ☐ Yes ☐ No
h. Any other heart problem that you've been told about: ☐ Yes ☐ No

6. Have you *ever had* any of the following cardiovascular or heart symptoms?

a. Frequent pain or tightness in your chest: ☐ Yes ☐ No
b. Pain or tightness in your chest during physical activity: ☐ Yes ☐ No
c. Pain or tightness in your chest that interferes with your job: ☐ Yes ☐ No
d. In the past two years, have you noticed your heart skipping or missing a beat. ☐ Yes ☐ No
e. Heartburn or indigestion that is not related to eating: ☐ Yes ☐ No
f. Other symptoms that you think may be related to heart or circulation problems: ☐ Yes ☐ No

7. Do you *currently* take medication for any of the following problems?

a. Breathing or lung problems: ☐ Yes ☐ No
b. Heart trouble: ☐ Yes ☐ No
c. Blood pressure: ☐ Yes ☐ No
d. Seizures (fits): ☐ Yes ☐ No

8. If you've used a respirator, have you *ever had* any of the following problems? (If you've never used a respirator, check the following space and go to question 9): ..... Never Used a Respirator

a. Eye irritation: ..... Yes ☐ No
b. Skin allergies or rashes: ..... ☐ Yes ☐ No
c. Anxiety: ..... ☐ Yes ☐ No
d. General weakness or fatigue: ..... ☐ Yes ☐ No
e. Any other problem that interferes with your use of a respirator: ..... ☐ Yes ☐ No

9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire?: ☐ Yes ☐ No

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you *ever lost* vision in either eye (temporarily or permanently): ..... ☐ Yes ☐ No

11. Do you *currently* have any of the following vision problems?

a. Wear contact lenses: ..... ☐ Yes ☐ No
b. Wear glasses: ..... ☐ Yes ☐ No
c. Color blind: ..... ☐ Yes ☐ No
e. Any other eye or vision problem: ..... ☐ Yes ☐ No

12. Have you *ever had* an injury to your ears, including a broken ear drum?: ..... ☐ Yes ☐ No

13. Do you *currently* have any of the following hearing problems?

a. Difficulty hearing: ..... ☐ Yes ☐ No
b. Wear a hearing aid: ..... ☐ Yes ☐ No
c. Any other hearing or ear problem: ..... ☐ Yes ☐ No

14. Have you *ever had* a back injury?: ..... ☐ Yes ☐ No

15. Do you *currently* have any of the following musculoskeletal problems?

a. Weakness in any of your arms, hands, legs, or feet: ..... ☐ Yes ☐ No
b. Back pain: ..... ☐ Yes ☐ No
c. Difficulty fully moving your arms and legs: ..... ☐ Yes ☐ No
d. Pain or stiffness when you lean forward or backward at the waist: ..... ☐ Yes ☐ No
e. Difficulty fully moving your head up or down: ..... ☐ Yes ☐ No
f. Difficulty fully moving your head side to side: ..... ☐ Yes ☐ No
g. Difficulty bending at your knees: ..... ☐ Yes ☐ No
h. Difficulty squatting to the ground: ..... ☐ Yes ☐ No
i. Climbing a flight of stairs or a ladder carrying more than 25 lbs: ..... ☐ Yes ☐ No
j. Any other muscle or skeletal problem that interferes with using a respirator: ..... ☐ Yes ☐ No

Part B Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen?: ☐ Yes ☐ No

If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions: ..... ☐ Yes ☐ No

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: ☐ Yes ☐ No

If "yes," name the chemicals if you know them: _____

_____

_____

3. Have you ever worked with any of the materials, or under any of the conditions, listed below?:

a. Asbestos: ..... ☐ Yes ☐ No
b. Silica (e.g., in sandblasting): ..... ☐ Yes ☐ No
c. Tungsten/cobalt (e.g., grinding or welding this material): ..... ☐ Yes ☐ No
d. Beryllium: ..... ☐ Yes ☐ No
e. Aluminum: ..... ☐ Yes ☐ No
f. Coal (for example, mining): ..... ☐ Yes ☐ No
g. Iron: ..... ☐ Yes ☐ No
h. Tin: ..... ☐ Yes ☐ No
i. Dusty environments: ..... ☐ Yes ☐ No
j. Any other hazardous exposures: ..... ☐ Yes ☐ No

If "yes," describe these exposures: _____

_____

_____

4. List any second jobs or side businesses you have:

_____

_____

5. List your previous occupations.

_____

_____

6. List your current and previous hobbies:

_____

_____

7. Have you been in the military services? ..... ☐ Yes ☐ No

If "yes," were you exposed to biological or chemical agents (either in training or combat): ..... ☐ Yes ☐ No

8. Have you ever worked on a HAZMAT team? ..... ☐ Yes ☐ No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications)?: ☐ Yes ☐ No

If "yes," name the medications if you know them:

_____

10. Will you be using any of the following items with your respirator(s)?

a. HEPA Filters: ..... ☐ Yes ☐ No
b. Canisters (for example, gas masks). ..... ☐ Yes ☐ No
c. Cartridges: ..... ☐ Yes ☐ No

11. How often are you expected to use the respirator(s) (check "yes" or "no" for all answers that apply to you)?:

a. Escape only (no rescue): ..... ☐ Yes ☐ No
c. Less than 5 hours *per week*: ..... ☐ Yes ☐ No
d. Less than 2 hours *per day*: ..... ☐ Yes ☐ No
e. 2 to 4 hours *per day*: ..... ☐ Yes ☐ No
f. Over 4 hours *per day*: ..... ☐ Yes ☐ No

12. During the period you are using the respirator(s), is your work effort:

a. *Light* (less than 200 kcal per hour): ..... ☐ Yes ☐ No

If "yes," how long does this period last during the average shift: _____ hrs. _____ mins.

Examples of a light work effort are *sitting* while writing, typing, drafting, or performing light assembly work; or *standing* while operating a drill press (1 - 3 lbs.) or controlling machines.

b. Moderate (200 to 350 kcal per hour): ☐ Yes ☐ No
If "yes," how long does this period last during the average shift: _____hrs._____ mins.
Examples of moderate work effort are *sitting* while nailing or filing; *driving* a truck or bus in urban traffic; *standing* while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; *walking* on a level surface about 2 mph or down a 5-degree grade about 3 mph; or *pushing* a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.
c. *Heavy* (above 350 kcal per hour): ☐ Yes ☐ No
If "yes," how long does this period last during the average shift: _____hrs._____ _____mins.

Examples of heavy work are *lifting* a heavy load (about 50 lbs.) from the floor to your waist or shoulder; *working* on a loading dock; *shoveling*; *standing* while bricklaying or chipping castings; *walking* up an 8-degree grade about 2 mph; *climbing* stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator? ☐ Yes ☐ No
If "yes," describe this protective clothing and/or equipment:

_____ _____ _____
_____ _____

14. Will you be working under hot conditions (temperature exceeding 77 °F)? ☐ Yes ☐ No

15. Will you be working under humid conditions? ☐ Yes ☐ No

16. Describe the work you'll be doing while you're using your respirator(s):

_____ _____ _____
_____ _____
_____

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):

_____ _____ _____
_____ _____
_____

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

CHEMICAL/PRODUCT NAME	MAXIMUM EXPOSURE LEVEL	DURATION

The name of any other toxic substances that you'll be exposed to while using your respirator:

_____ _____ _____
_____ _____ _____
_____

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):

Title

PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING

1.0 PURPOSE

1.1 The purpose of the Personal Protective Equipment (PPE) and Clothing Program is to protect employees from safety and health hazards, and to prevent injury to the wearer from incorrect use and/or malfunction of the PPE.

2.0 REFERENCES

2.1 29 CFR Part 1910, Subpart G, Occupational Health and Environmental Control, Occupational Safety and Health Administration (OSHA)

2.2 29 CFR Part 1910, Subpart H, Hazardous Materials, Occupational Safety and Health Administration (OSHA)

2.3 29 CFR Part 1910, Subpart I, Personal Protective Equipment, Occupational Safety and Health Administration (OSHA)

2.4 Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, NIOSH/OSHA/USCG/EPA, October 1985

3.0 DEFINITIONS

3.1 **Audiogram**. A chart, graph, or table resulting from an employee's hearing threshold level as a function of frequency.

3.2 **dBA (A-weighted Network)**. Refers to one of three weighting networks of a sound level meter. The "A" network discriminates against low frequencies to a greater extent than the other networks and simulates the response of the normal ear to frequencies below 500 Hz. The A-weighting is used because studies have shown that it gives a better estimation of threat to hearing by noise than do the other weightings.

3.3 **Decontamination**. Process of removing or neutralizing contaminants that have accumulated on personnel and equipment.

3.4 **Level A Protection**. The highest available level of respiratory, skin, and eye protection.

3.5 **Level B Protection**. The same level of respiratory protection but less skin protection than Level A.

3.6 **Level C Protection**. The same level of skin protection as Level B, but a lower level of respiratory protection.

3.7 **Level D Protection**. No respiratory protection. Minimal skin protection.

4.0 RESPONSIBILITIES

4.1 The Corporate Industrial Hygienist shall assess the personal protective equipment (PPE) needs and requirements, ensure the proper PPE is selected, and perform periodic audits on job sites to verify PPE is properly maintained.

4.2 Program Managers shall enforce the use of PPE by all individuals in the work area as required.

4.3 Employees shall use, clean, maintain, and replace PPE as appropriate.

5.0 PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING PROGRAM SPECIFIC ASPECTS

5.1 Hazard Identification, Selection and Use

5.1.1 Personal protective equipment shall be selected and used which will protect employees from the hazards and potential hazards they may encounter while performing work for Vista Technologies Inc.

5.1.2 Factors to be considered in the selection process are:

5.1.2.1 Identification of the hazards, or suspected hazards.

5.1.2.2 Routes of potential hazard to employees (inhalation, skin absorption, ingestion, and eye or skin contact).

5.1.2.3 Performance of the PPE materials in providing a barrier to these hazards.

5.1.3 Personal protective equipment selection shall be based on an evaluation of the performance characteristics of the PPE relative to the requirements and limitations of the work site, the task-specific conditions and duration, and the hazards and potential hazards identified at the work site. A hazard evaluation/assessment checklist is included in Appendix A.

5.2 Head Protection

5.2.1 Hard hats shall be worn when there is a hazard of bumping one's head, having it struck, contacting high voltage equipment or having harmful objects or materials fall upon the head.

5.2.2 Design, construction, testing, and use of hard hats shall be in accordance with American National Standard Safety Requirements for Industrial Head Protection, Z89.1-1969.

5.2.3 For operations and/or areas involving potential exposure to limited electric shock (600 volts or less) and burns, head protection must meet the ANSI requirements for Class A or Class D. Where there may be potential exposure to high voltage electric shock (above 600 volts) and burns, Class B is required.

5.3 Foot Protection

5.3.1 Approved safety toe footwear shall be worn by all Vista Technologies Inc. employees who are exposed to possible foot injuries from hot, corrosive, poisonous substances, falling objects, crushing or penetrating actions, which may cause injuries, or may be required to work in abnormally wet locations.

5.3.2 Safety-toe footwear for employees shall meet the requirements and specifications in American National Standard for Men's Safety-Toe Footwear, Z41.1-1967.

5.3.3 In addition to safety-toe footwear, overshoes of rubber or plastic may be required for specific job tasks.

5.4 Eye and Face Protection

5.4.1 Eye and face equipment shall be required where there is a reasonable probability of injury that can be prevented by such equipment e.g., when working in the presence of chemicals, flying objects, glare, injurious radiation, or a combination of these hazards. At a minimum, safety glasses with sideshields shall be worn when working in any of these environments. For additional protection, chemical goggles shall be worn when handling toxic/corrosive chemicals where there is a potential for a chemical splash.

5.4.2 Employees whose vision requires the use of corrective lenses in safety glasses shall wear goggles or safety glasses of one or the following types:

5.4.2.1 Safety glasses whose protective lenses provide optical correction.

5.4.2.2 Goggles that can be worn over corrective glasses without disturbing the adjustment of the prescription glasses.

5.4.2.3 Goggles that incorporate corrective lenses mounted behind the protective lenses.

5.4.3 Face shields shall be worn as splash protection when there is a potential for face contact with corrosive materials. Face shields are secondary protection; they must be worn with either safety glasses or chemical goggles.

5.4.4 Design, construction, testing, and use of devices for eye and face protection shall be in accordance with American National Standard for Occupational and Educational Eye and Face Protection, Z87.1-1968.

5.5 Respiratory Protection

5.5.1 Employees shall be protected from exposure to atmospheric contamination to the extent feasible by the implementation of accepted engineering control measures e.g., enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials.

5.5.2 Approved respiratory equipment shall be worn when it is clearly impractical to remove harmful dusts, fumes, mists, vapors or gases at their source. The use of respiratory protective equipment for routine activities shall be permitted while engineering controls are being implemented or as a supplement to engineering controls when required. Other activities that may require the use of respiratory protective equipment include nonroutine tasks, hazardous waste operations, and emergency situations.

5.5.3 Respiratory protection shall be selected, used, cleaned, inspected, and maintained in accordance with the Vista Technologies Inc. Respirator Program.

5.6 Arm and Hand Protection

5.6.1 Gloves shall be worn to protect against abrasions and cuts, electrical contact, chemical absorption, and potential contact with blood or other potentially infectious materials.

5.6.2 Arm and hand protective devices shall be selected to fit the job. For example, some gloves are designed to protect against specific chemical hazards. Vinyl, rubber or neoprene gloves are sufficient when working with most chemicals. A synthetic glove is needed, however, when working with petroleum-based products. Gloves made of leather or cotton are appropriate for handling most abrasive materials. Contact the Corporate Industrial Hygienist for further information, as necessary.

5.6.3 Oversleeves shall be worn with gloves as necessary to protect the arm.

5.7 Protective Clothing

5.7.1 Similarly to arm and hand protective devices, protective clothing shall be selected to fit the job task based upon anticipated exposure hazards.

5.7.2 Depending upon the job task, protective clothing may range from chemically resistant aprons, to disposable coveralls, to chemically resistant coveralls, for protection against extremely toxic substances (See the Corporate Industrial Hygienist for assistance).

5.8 Hearing Protection

5.8.1 Hearing protective devices shall be made available, at no cost, to all Vista Technologies Inc. employees, irrespective of whether or not employee exposure levels exceed the 85 dBA threshold established by OSHA.

5.8.2 Employees shall be required to wear hearing protective devices whenever exposed to an eight-hour time-weighted average of 85 dBA or greater.

5.8.3 In the absence of noise sampling data to identify a potentially high noise area, employees shall be instructed to wear hearing protective devices when it becomes necessary to raise their voice to be heard by someone less than 2 feet away.

5.8.4 All employees whose exposures equal or exceed an 8-hour time-weighted average of 85 dBA shall be included in a mandatory audiometric testing program.

5.9 Medical Monitoring

5.91 Employees shall not be assigned to tasks requiring the use of respirators unless it has been determined that they are physically able to perform the work while using the required respiratory equipment. The contracted physician shall determine what health and physical conditions are pertinent. The respirator user's medical status shall be reviewed annually.

5.10 Environmental Surveillance

5.10.1 Personal protective equipment requirements shall be established based upon the hazards and/or potential hazards employees may encounter during the course of work for Vista Technologies Inc.

5.10.2 The level of protection provided by PPE requirements shall be increased when additional information becomes available that indicates increased protection is necessary to reduce employee exposures below permissible exposure limits and published exposure levels for hazardous substances and health hazards.

5.10.3 The level of protection provided by PPE requirements shall be decreased when additional information becomes available that indicates decreased protection will not result in hazardous exposures to employees.

5.11 Decontamination Procedures

5.11.1 Decontamination protects workers from hazardous substances that may contaminate and eventually permeate the protective clothing and/or equipment used for hazardous waste site activities.

5.11.2 Decontamination methods involve physically removing contaminants, inactivating contaminants by chemical detoxification or disinfection/sterilization, or removing contaminants by a combination of both physical and chemical means.

5.11.3 Specific decontamination procedures shall be established for all hazardous waste site activities using the NIOSH/OSHA/USCG/EPA, Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities.

5.12 Inspection and Maintenance

5.12.1 Employees shall physically inspect all PPE prior to use to ensure PPE is in proper working order.

5.12.2 Employees shall request replacement of PPE items through their Program Managers.

Appendix A

Personal Protective Equipment Hazard Evaluation/Assessment and PPE Checklist

Employee Name:_____

Job Classification:_____

Instructions: Conduct an evaluation of the workplace hazards for the employee. Place a check in the left column for any possible hazards for routine duties, non-routine duties, possible emergency situations or any possible exposure. Then, check the PPE in the right hand column necessary to match the hazard assessment.

HAZARDS ENCOUNTERED	PPE SELECTION
Eye/Face	*Eye/Face*
___ Flying particles/objects	___ Safety glasses w/ side Type _____
___ Molten metals	___ Goggles Type _____ Lens shade _____
___ Liquid chemicals	___ Face shield
___ Acids or caustic liquids	
___ Injurious light radiation	
___ Welding/cutting	___ Welding helmet Lens shade _____
___ Laser use	___ Laser glasses Intensity _____ Attenuation _____
___ Other _____	
___ Bloodborne pathogens MSDS requirement	
Head	*Head*
___ Flying or falling objects	___ Hard hat
___ Exposed electrical conductors	___ Safe for electricity
___ Other _____	___ Bump cap
Foot	*Foot*
___ Falling/rolling objects	___ Leather work boot
___ Objects piercing sole	___ Steel toed shoes
___ Electrical hazards	___ Metatarsal guard
Other _____	
Hand	*Hand*
___ Absorption of harmful materials	___ Chemical protective glove
___ Cuts or lacerations	___ Cut/laceration/abrasion Type _____
___ Abrasions/punctures	
___ Chemical burns	___ Temperature protective glove Type _____
___ Thermal burns	

___ Temp extremes (hot and cold)
___ MSDS requirement
___ Other _____

___ Other _____

Hearing

___ 8 hour TWA over 85 dBA? (Implement CFR 1910.95, Hearing Conservation Standard)
___ Exposure to harmful noise

Hearing

___ Earplugs

Earmuffs
Type _____

Respiratory Protection

___ Breathing harmful materials

___ MSDS requirement

Respiratory Protection

___ Respirator/cartridge
Type _____
___ SCBA/Airline
(If needed, implement CFR 1910.134, Respiratory Protection Program)

Protective Clothing

Physical hazard (hot, sharp, abrasive materials)
___ Chemical or Bio-hazard

Protective Clothing

Clothing
Type _____

Fall Protection/Confined Space

Fall greater than 6 feet
___ Required by equipment use (Snorkle, JLG, etc.)
___ Confined space entry (If needed, implement CFR 1910.146, Confined Space Entry)

Fall Protection/Confined Space

Safety belt/lanyard
___ Rescue/retrieval harness

___ Other _____

_____ _____
Immediate Supervisor Signature Date

_____ _____
Employee Signature Date

_____ _____
Safety Officer Signature Date

Appendix B

PPE Training Records

Employee Name _____ _____ SS# ___ _____

(Check one) __ Initial Training __ Annual Training
__ Job Duties Changed __ New Hazard in Workplace

Training on the proper use of Personal Protective Equipment (PPE) is provided prior to allowing employees to work in a hazardous condition. The training includes the following:

1. Discussion of when PPE is necessary and what hazards may be encountered.
2. Discussion of what PPE is needed (See Appendix A - Hazard Evaluation and PPE Checklist for employee)
3. Demonstration of how to properly put on, take off, adjust and wear PPE.
4. Employee allowed to practice during training.
5. Discussion of the limitations of the PPE.
6. Explanation of the proper maintenance, care, useful life, and disposal of the PPE.
7. The location of training materials and company written PPE program

Employee Acknowledgment
I acknowledge that I have completed the training on PPE. My signature affirms that I will apply the practices set forth in this section of the training as I perform my duties:

_____ _____
Signature of Employee Date

As the employee's supervisor or safety officer, I have responded to all questions and comments from the employee.

_____ _____
Signature of Authorized Person Date