U.S. Army Corps of Engineers

Omaha District
Offutt AFB, Nebraska

SENECA ARMY DEPOT
METAL SITES — SEAD s 50/54, 24 & 67
SENECA COUNTY
ROMULUS, NEW YORK

Contract No. DACA45-98-D-0004
Task Order No. 0035

FINAL
WORK PLAN, SITE SAFETY AND HEALTH PLAN & CHEMICAL SAMPLING AND ANALYSIS PLAN

NOVEMBER 2002

01M-0007

WESTON SOLUTIONS
Restoring Resource Efficiency

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LIST OF ACRONYMS

AAP	Asbestos Abatement Plan
ACM	asbestos containing material
ARARs	Applicable or Relevant and Appropriate Requirements
ASTs	above ground storage tanks
CIH	Certified Industrial Hygienist
CQCP	Contractor Quality Control Plan
CSAP	Chemical Sampling and Analysis Plan
ESI	Expanded Site Inspection
ft	foot/feet
mg/kg	milligrams per kilogram
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OSR	On-Site Representative
PAHs	polynuclear aromatic hydrocarbons
POTW	publicly owned treatment works
QC	Quality Control
SEDA	Seneca Army Depot Activity
SOW	Scope of Work
SSH/QCO	Site Safety and Health/Quality Control Officer
SSHP	Site Safety and Health Plan
SVOCs	semivolatile organic compounds
SWMUs	Solid Waste Management Units
TAGM	Technical and Administrative Guidance Memorandum
USACE	U.S. Army Corps of Engineers
$WESTON_{SM}$	Weston Solutions, Inc.
WP	Work Plan
yd^3	cubic yards

SECTION 1

INTRODUCTION

1. INTRODUCTION

1.1 PROJECT DESCRIPTION

This Work Plan (WP) was prepared by Weston Solutions, Inc. ($WESTON_{SM}$) for the Scope of Work (SOW) described by the U.S. Army Corps of Engineers (USACE), Omaha District for the Time-Critical Removal Action at the Seneca Army Depot Activity (SEDA) in Romulus, New York. This work will be performed under the Rapid Response/Immediate Response Contract for Control/Remediation of Hazardous, Toxic and Radioactive Waste, Task Order No. 0035 of Contract No. DACA45-98-D-0004. Seneca Army Depot Activity has been closed under the Department of Defense's Base Realignment and Closure process. The remedial action is intended to provide clean closure to four of SEDA's Solid Waste Management Units (SWMUs): the Tank Farm (SEAD 50/54), the Abandoned Powder Burning Pit (SEAD 24), and the Debris Piles East of the Sewage Treatment Plant No. 4 (SEAD 67) to facilitate transfer of these properties for public and private beneficial reuse.

The work for this project shall include the following activities:

- Mobilization of construction equipment and storage trailers to the project site.
- Site preparation including removal of brush and vegetation, installation of drainage and erosion control measures around excavation and temporary storage areas, construction of personnel and equipment decontamination stations.
- Surveying to delineate soil excavations, sampling locations, and wells.
- Removal and temporary storage of contaminated soils, sediments and waste piles.
- Sampling to verify clean-up goals have been achieved.
- Transportation and disposal of all waste material generated during the execution of this task order.
- Grading and seeding all excavation areas.
- Demobilization of equipment and restoration of the site.

Appropriate, Relevant and Applicable Requirements (ARARs) for this project include the following:

- New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) HWR089-4031, "*Fugitive Dust Suppression and Particulate Monitoring at Inactive Hazardous Waste Sites,*" October 27, 1989.
- New York State Department of Environmental Conservation Technical and Administrative Guidance Memorandum #4046, "*Determination of Soil Cleanup Levels,*" January 1994.
- New York State Department of Health (NYSDOH) Community Air Monitoring Program;
- New York Codes, Rules and Regulations (NYCRR) 364-376 Management of Remediation Waste.

A more comprehensive listing of ARARs and how they will be addressed for this removal action is presented in Table 1-1.

1.2 SITE DESCRIPTION

1.2.1 Site Location and Description

The Seneca Army Depot Activity is located in Romulus, Seneca County, New York (see Figure 1-1). Seneca Army Depot Activity is a U.S. Army facility and occupies approximately 10,600 acres. It is bounded to the west by State Route 96A and on the east by State Route 96. Geneva and Rochester are located to the northwest (14 and 50 miles, respectively); Syracuse is 50 miles to the northeast and Ithaca is 31 miles to the south. The surrounding area is generally used for agriculture.

As described in the *Final Action Memorandum* dated August 2002, time-critical removal actions are planned at four SWMUs at SEDA. The four SWMUs have been designated as SEADs 50/54, 24, and 67. Historical operations at these sites resulted in contamination of shallow soils with metals and in some cases semivolatile organic compounds (SVOCs), and contaminated waste piles. Some migration of contaminants to surficial soil in drainage ditches or in stream sediments located near the SWMUs may have occurred.

Table 1-1
Applicable or Relevant and Appropriate Requirements for Rapid Response Action

Regulatory Authority	Location Characteristic	Requirement	Status	Requirement Synopsis	Action to be Taken to Attain ARAR to the Extent Practicable
Federal	Disposal of Contaminated Materials	40 CFR 262 Subpart D	Applicable	Records will be maintained of all waste determinations, including appropriate results of analyses performed, substances and sample location, the time of collection, and all pertinent data.	Records will be maintained of all waste determinations as required.
Federal	Disposal of Contaminated Materials	40 CFR 262 and 40 CFR 263	Applicable	Utilization of a state-approved manifest system in conformance with said requirements.	All transportation of contaminated materials will be performed using appropriate uniform hazardous waste manifests.
Federal	Wetlands	Protection of Wetlands Executive Order No. 11990 [40 CFR Part 6, App. A]	Applicable	Under this Order, federal agencies are required to minimize the destruction, loss, or degradation of wetlands, and preserve and enhance natural and beneficial values of wetlands. If remediation is required within wetlands areas, and no practical alternative exists, potential harm must be minimized and action taken to restore natural and beneficial values.	No work is being performed in wetlands during the project. However, hay bales, silt fencing, and/or earthen berms will be placed as appropriate to eliminate any potential adverse from adjacent on-site construction activities. Erosion control will be maintained in accordance with Federal regulations.
Federal	Storage of hazardous waste in containers and tanks	Resource Conservation and Recovery Act, 42 U.S.C. §6901 et seq., Use and Management of Containers, 40 CFR 264 Subpart I, Tank Systems 40 CFR 264 Subpart J	Applicable	These regulations concern the storage of hazardous wastes in containers (including requirements addressing the condition of the containers, the compatibility of waste with the containers, the management of the containers, inspection of the containers and containment systems for the containers) and in tanks (including requirements regarding assessment of the tank system's integrity, design and installation of new tank systems or components, containment and detection of releases, general operating requirements, inspections, and responses to leaks or spills)	Tanks and containers used for storage of hazardous waste will be designed, installed, operated, and maintained in accordance with these requirements. A staging area will be established and maintained for proper storage of hazardous wastes.

TABLE 1-1
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
FOR RAPID RESPONSE ACTION

REGULATORY AUTHORITY	LOCATION CHARACTERISTIC	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTION TO BE TAKEN TO ATTAIN ARAR TO THE EXTENT PRACTICABLE
Federal	Surface Waters	Fish and Wildlife Coordination Act [16 USC 661 et seq.; 40 CFR Section 6.302(g); 33 CFR Part 320]	Applicable	Requires Federal agencies involved in actions that will result in the control of structural modification of any stream or body of water for any purpose, to take action to protect the fish and wildlife resources that may be affected by the action. EPA must consult with the Fish and Wildlife Service and the appropriate state agency to ascertain the means and measures necessary to mitigate, prevent, and compensate for project-related losses of wildlife resources and to enhance the resources.	No adverse impacts to fish and wildlife resources are anticipated since remediation activities are restricted to within the limits of the perimeter fence and no stream or body of water exists in close proximity to the site. However, hay bales silt fences, and/or earthen berms shall be placed in order to prevent any run-off from on-site construction activities into the adjacent ditches leading to surface waters.
Federal	Demolition of metal tanks	Clean Air Act , 42 U.S.C. §7401 et seq.; 40 CFR §61.145 Standard for demolition and renovation; 40 CFR §61.150 Standard for waste disposal for manufacturing, fabricating, demolition, renovation, and spraying operations	Potential	Provides requirements for demolition of tanks and for waste disposal as a result of the demolition.	***POTENTIALLY***, The Work Plan will specify procedures for demolishing the tank(s).
Federal	Asbestos Abatement and tasks relating to managing removal, transport, and disposal of asbestos containing material	Clean Air Act, National Emission Standards for Hazardous Air Pollutants (NESHAP)	Potential	These regulations specify minimal removal, notification, transportation, storage, licensing, and disposal requirements for projects exceeding 200 linear or 100 square feet.	***POTENTIALLY***, An Asbestos Abatement Plan will be incorporated into the Work Plan and submitted to NYDOH and EPA prior to initiation of any asbestos abatement work.
Federal	Disposal Characterization	RCRA, TSCA	Applicable	Provides requirements for soil characterization and disposal.	Contaminated materials will be characterized for disposal in accordance with the CSAP and the disposal facility requirements. The CSAP will incorporate requirements of RCRA and TSCA, and the s well as applicable facility

TABLE 1-1
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS FOR RAPID RESPONSE ACTION

REGULATORY AUTHORITY	LOCATION CHARACTERISTIC	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTION TO BE TAKEN TO ATTAIN ARAR TO THE EXTENT PRACTICABLE
State/Local	Discharge of wastewaters to Local POTW	Title 8 of Article 17 Environmental Conservation Law of NY State, Clean Water Act, as amended, (33 U.S.C.) and 40 CFR Part 136	Applicable	These regulations establish limits for testing procedures, monitoring requirements, and acceptance criteria for a POTW.	Characterization samples for water will be collected for parameters specified in the SPDES permit for the POTW chosen to accept waste water collected from the Various SEADs.
State	New York State Remedial Actions at Inactive Hazardous Waste Sites	New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) # 4046 – Determination of Soil Cleanup Objectives and Cleanup Levels	Applicable	This TAGM provides a basis and procedure to determine soil cleanup levels at individual Federal Superfund, State Superfund, 1986 EQBA Title 3 and Responsible Party (RP) sites, when the Director of the DHWR determines that cleanup of a site to predisposal conditions is not feasible.	TAGMs have been adopted as default cleanup goals for this project, and are incorporated into site work plans, and in particular into the Contractor Sampling and Analysis Plan (CSAP) during development of Data Quality Objectives.
State	New York State – Air Monitoring/Dust Control	NYSDEC – TAGM # 4031 - Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites	Applicable	This guidance provides a basis for developing and implementing a fugitive dust suppression and particulate monitoring programs and element of a hazardous waste site's health and safety program.	This TAGM has been considered in the development of the Site Safety and Health Plan, as well as the other project work plans. An air monitoring and dust suppression program has been incorporated into project planning and will be implemented, as needed, in the field.

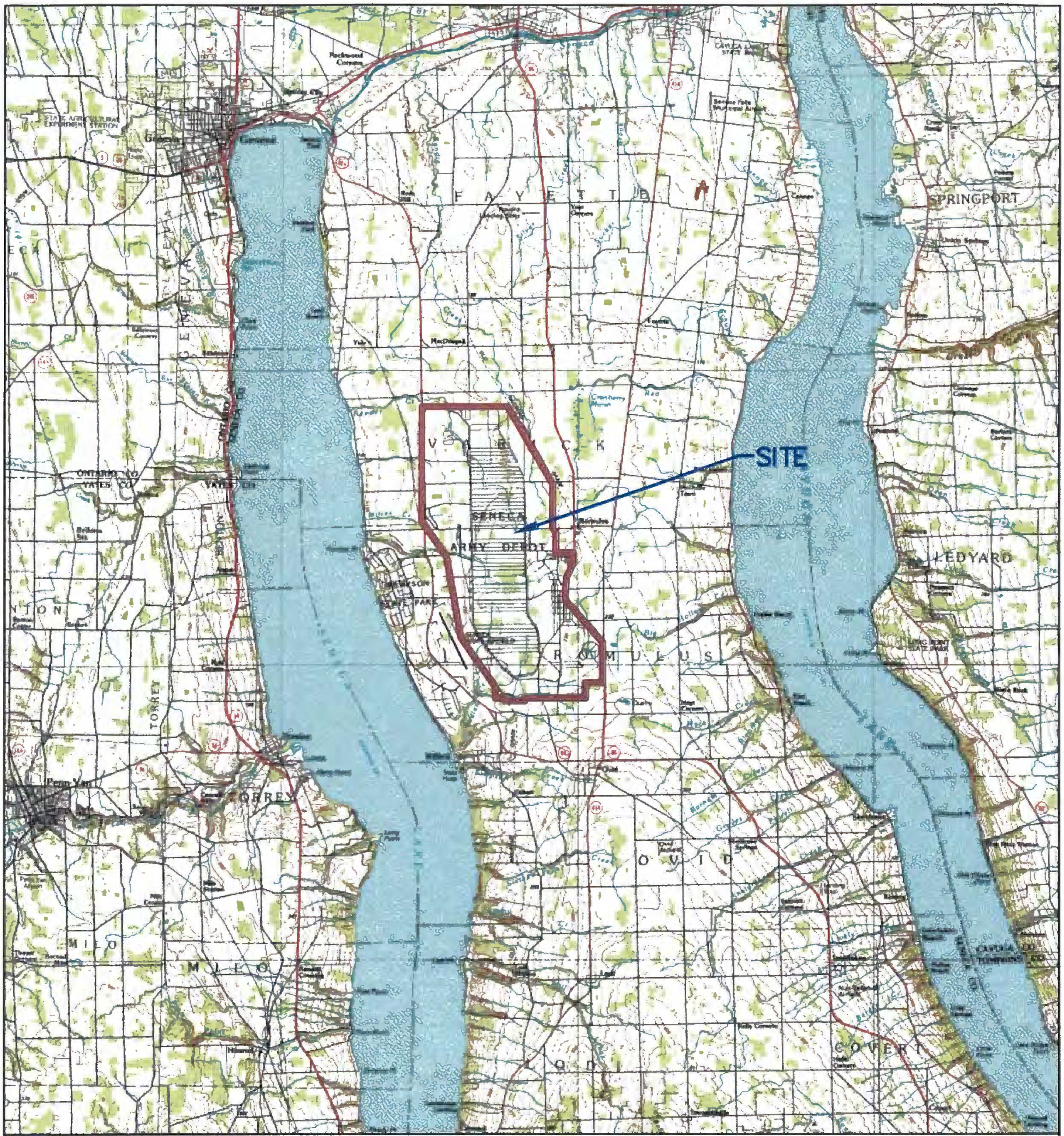
TABLE 1-1
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS FOR PESTICIDE SOIL REMEDIAL ACTION

GRANT, LOCUST, AND CAVITE HOUSING AREAS
FORMER FORT DEVENS, MASSACHUSETTS

REGULATORY AUTHORITY	ACTION	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTION TO BE TAKEN TO ATTAIN ARAR TO THE EXTENT PRACTICABLE
State	New York State – Air Monitoring	New York State Department of Health (NYSDOH) – Generic Community Air Monitoring Plan (CAMP)	Applicable	CAMP requires real-time monitoring for volatile organic compounds (VOCs) and particulates at downwind perimeter of designated work areas when certain activities are in progress at contaminated site.	This CAMP has been considered in the development of the Site Safety and Health Plan, as well as the other project work plans. The air monitoring program has been incorporated into project planning, and includes the contaminant-specific requirements for VOCs and particulates.
State	New York State – Asbestos Remediation	New York State Department of Labor (NYSDOL) – Industrial Code Rule 56	Applicable	Rule 56 contains the New York State requirements for asbestos abatement, including, but not limited to: licensing and certification, entry and exit procedures, equipment decontamination, personnel decontamination, asbestos handling and removal procedures, asbestos material enclosure procedures, and air sampling, monitoring, and analysis.	The applicable provisions of this rule have been incorporated into the Asbestos Abatement Plan, the Work Plan, the SSHP, and the CSAP. All necessary notifications will be made prior to commencing work in areas suspected to contain asbestos-containing material (ACM).
State	Management of Remediation Waste	NYSDEC, 6 New York Codes, Rules and Regulations (NYCRR) 364-376	Applicable	These rules establish performance standards for treatment, disposal, and/or storage of media contaminated with solid and hazardous waste. They include performance standards for hazardous waste piles, tanks, and miscellaneous units TSD facilities, and transporters.	All contaminated materials will be segregated and disposed of in accordance with all applicable federal, state, and local regulations. Materials will be analyzed as appropriate ad as described in this Work Plan and the project CSAP.

Notes:

ARAR	=	Applicable or Relevant and Appropriate Requirement
CFR	=	Code of Federal Regulations
POTW	=	Publicly Owned Treatment Works
ppm	=	parts per million
RCRA	=	Resource Conservation and Recovery Act
CSAP	=	Chemical Sampling and Analysis Plan
SSHP	=	Site Safety and Health Plan
TAGM	=	Technical and Administrative Guidance Memorandum
TSCA	=	Toxic Substances Control Act
TSD	=	treatment, storage, disposal
USC	=	United States Code
EPA	=	U.S. Environmental Protection Agency
$\mu g/m^3$	=	micrograms per cubic meter
VOC	=	volatile organic compound



<u>SOURCE</u>:
USGS TOPOGRAPHY MAPS; GENEVA SOUTH, DRESDEN, OVID, & ROMULUS – NEW YORK QUADS

GRAPHIC SCALE
3 1.5 0 1.5 3
APPROXIMATE SCALE IN MILES

TIME CRITICAL REMOVAL ACTION
METALS SITES – SEADS 50/54, 24, & 67
SENECA ARMY DEPOT ACTIVITY (SEDA)
ROMULUS, NEW YORK

DEPARTMENT OF THE ARMY
OMAHA DISTRICT
CORPS OF ENGINEERS
OFFUTT AFB, NEBRASKA

SITE LOCATION MAP

WESTON SOLUTIONS
MANCHESTER NEW HAMPSHIRE

DRAWN	BEG
DATE	OCT 2002
FIGURE NO.	1-1

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1.2.1.1 SEAD 50/54

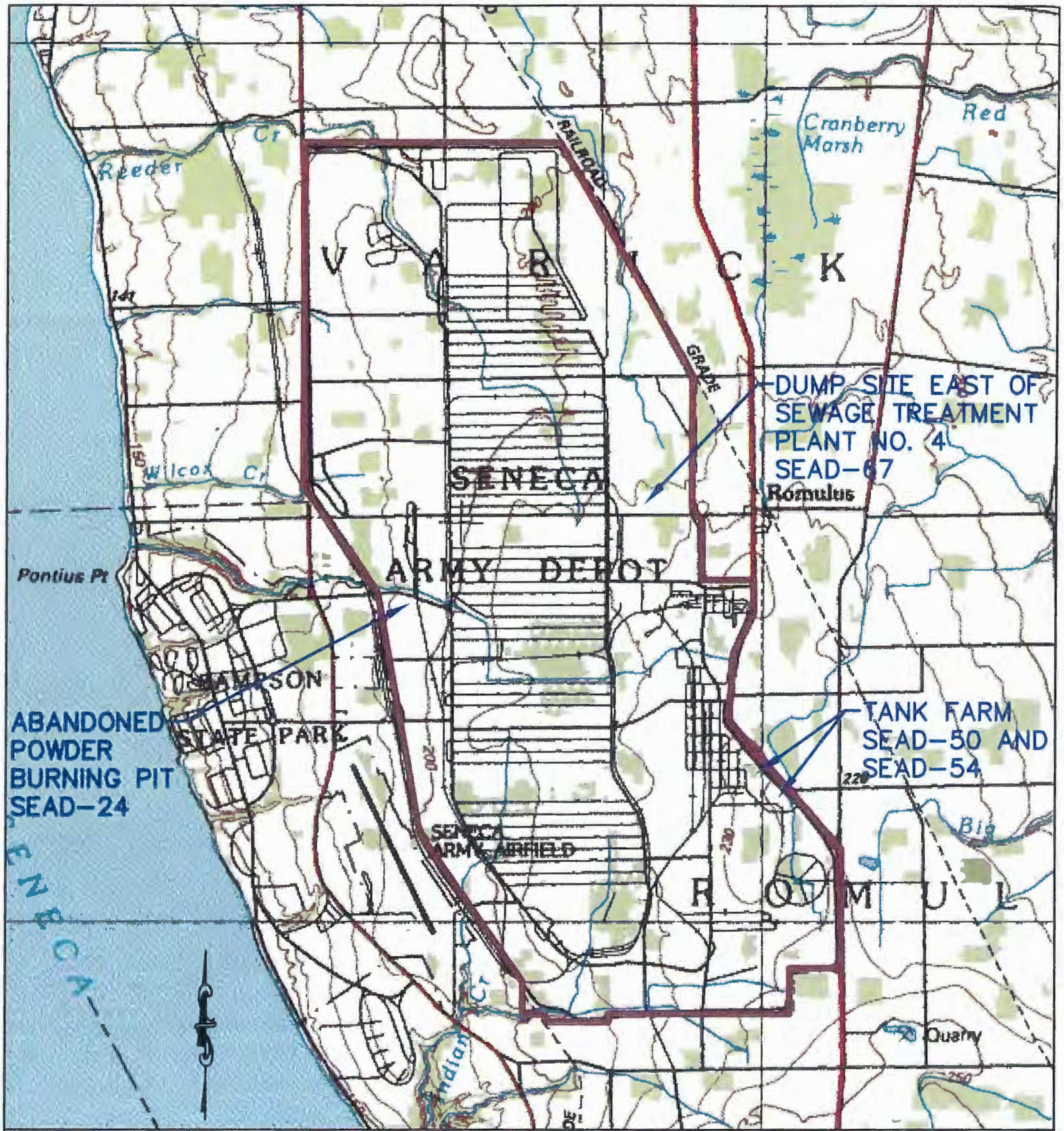
SEAD 50/54 is the location of a tank farm in the southeastern portion of SEDA. SEAD 50/54 is immediately west of the East Patrol Road between Buildings 350 and Buildings 356 and 357 (reference Figure 1-2). An unnamed road crosses the site from east to west. Drainage ditches are present adjacent to East Patrol Road and the unnamed east-west road. Currently, four tanks remain in the area, which are empty. Antimony ore was stored in two of the empty tanks. Rutile ore was stored in the third. The fourth tank, designated as SEAD-54 (Tank #88), was filled with asbestos. A ferro-chromate ore pile is located in the southern portion of the site. The topography of the site is relatively flat.

1.2.1.2 SEAD 24

This site is located in the west-central portion of SEDA. According to the SOW, an Abandoned Powder Burning Pit was operated at SEAD 24. The area is approximately 325-feet (ft) by 150-ft and is surrounded on the east, south and west by a U-shaped berm approximately 4-ft high (reference Figure 1-2). The site is bounded by West Kendaia Road to the north and open grasslands and brush to the east, south and west. Topography slopes to the west. Drainage swales located west of SEAD 24 drain from the site toward Kendaia Creek. A shale-covered area adjacent to the bermed area may also have been impacted by historical uses.

1.2.1.3 SEAD 67

SEAD 67 is located south of West Romulus Road and east of Sewage Treatment Plant No. 4 in the east-central area of SEDA (reference Figure 1-2). The site is undeveloped and is heavily vegetated with low brush and deciduous trees. A total of seven waste piles and berms are present. A grass-covered, 10-ft diameter waste pile and a 5-ft diameter waste pile are located approximately 50 and 70-ft, respectively, from south of West Romulus Road. A brush-covered berm 60-ft long and a 10-ft diameter pile are located approximately 175-ft south of West Romulus Road. Another 100-ft long berm is located approximately 225-ft south of the road and two smaller waste piles are located to the south of this berm. All the piles and berms are approximately 3 to 4-ft high except for the 10-ft diameter pile that is approximately 5-ft high. The topography of the site slopes gently to the west to an unnamed stream.



SOURCE:
USGS TOPOGRAPHY MAPS; GENEVA SOUTH, DRESDEN, OVID, & ROMULUS – NEW YORK QUADS

GRAPHIC SCALE
1 0.5 0 0.5 1
APPROXIMATE SCALE IN MILES

TIME CRITICAL REMOVAL ACTION METALS SITES – SEADS 50/54, 24, & 67 SENECA ARMY DEPOT ACTIVITY (SEDA) ROMULUS, NEW YORK	DEPARTMENT OF THE ARMY OMAHA DISTRICT CORPS OF ENGINEERS OMAHA, NEBRASKA	
SEDA MAP – SEADS 50/54, 24, & 67	WESTON SOLUTIONS MANCHESTER NEW HAMPSHIRE	DRAWN BEG DATE OCT 2002 FIGURE NO. 1-2

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1.2.2 Site Background

1.2.2.1 SEAD 50/54

This site is a tank farm. Historically, there were approximately 160 tanks in the area. There are currently four tanks (empty) at the site. It is not known when the tank farm was installed. All tanks were reportedly used to store dry materials such as ores and minerals.

Tank #88, formerly used to store asbestos, was designated SEAD 54. The tank farm area was designated as SEAD 50. The two sites are now referred to as SEAD 50/54.

An Expanded Site Inspection (ESI) was performed at SEAD 50/54 during 1993 and 1994. The ESI determined that surficial soils within the tank farm area and drainage ditches adjacent to the tank farm area have been impacted by historical use of the property.

The ESI sample results indicate concentrations for eight metals (antimony, arsenic, chromium, copper, lead, magnesium, mercury and zinc), seven SVOCs [six polynuclear aromatic hydrocarbons (PAHs) (i.e., benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and dibenz(a,h)anthracene) and phenol] and asbestos exceed cleanup goals in the tank farm area. A surface sample collected near Tank #88 indicated 10 to 15% chrystoline asbestos. Initially, approximately 5,000 cubic yards (yd^3) of surficially contaminated soil will be removed based on the ESI sample results.

In addition, the ESI identified the presence of six SVOCs (i.e., benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and dibenz(a,h)anthracene) and five metals (arsenic, lead, manganese, potassium, and zinc) exceeding cleanup goals in surficial soils and sediments in drainage ditches adjacent to East Patrol Road and the unnamed east-west road that crosses the site. Initially, approximately 150 yd^3 of contaminated surficial soils and sediments will be removed from drainage ditches based on the ESI.

1.2.2.2 SEAD 24

As previously stated, a Powder Burning Pit was operated SEAD 24 during the 1940's and 1950's. It is expected that black powder, M10 and M16 solid propellants and explosive trash were burned here. Petroleum hydrocarbon fuels may have been used to start fires. A shale-covered area adjacent to the bermed area may also have been used. Unexploded ordinance is not expected to be present.

An ESI was performed at SEAD 24 during 1993 and 1994. Metals are the most widespread contaminant at the site with arsenic, lead and zinc exceeding TAGM criteria at numerous sample locations. The highest arsenic concentration identified was 56.7 milligrams per kilogram (mg/kg) in one surficial soil sample. Arsenic concentrations in subsurface samples were below cleanup goals. Zinc concentrations in surficial samples exceeded cleanup goals at numerous locations with the highest level identified as 1,180 mg/kg. According to the *Final Action Memorandum* dated August 2002, numerous surficial soil samples analyzed for lead exceeded cleanup goals. Only one sample, the highest concentration detected (422 mg/kg) exceeded the U.S. Environmental Protection Agency guidance for lead in residential soil.

The ESI results identified three SVOCs and fourteen metals to be present at concentrations exceeding site cleanup goals (TAGM #4046) at the site. The three SVOCs present that exceed cleanup goals are PAHs (i.e., benzo(a)anthracene, benzo(a)pyrene, and dibenz(a,h)anthracene).

Initially, approximately 2,500 yd^3 of surficially contaminated soil will be removed based on the ESI sampling effort.

1.2.2.3 SEAD 67

Little is known about the origin of the five waste piles and two berms at this site. Due to the thick vegetation at the site, it is suspected that the waste piles and berms were placed in the area many years ago.

An ESI was conducted at the site in 1993. The ESI determine that soils contained in the waste piles and berms are contaminated with PAH's (i.e., benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene and dibenz(a,h)anthracene) and mercury. Sediment in the drainage ditch east of the sewage treatment plant contains levels of pesticides (alpha-chlordane, endosulfan 1 and 4,4-DDT), six PAHs (i.e., benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and ideno(1,2,3-cd)pyrene) and several metals (copper, manganese, nickel and silver) exceeding cleanup goals. Initially, approximately 240 yd^3 of contaminated soil and sediment will be removed based on the ESI sample results.

SECTION 2

PROJECT MANAGEMENT

2. PROJECT MANAGEMENT

2.1 MANAGEMENT

Aspects of management for this project will include scheduling, coordination and meetings, project submittals, and staffing. These items are discussed in the subsections that follow.

2.2 PROJECT SCHEDULE

The Project Schedule has been prepared using Primavera Systems, Inc. *SureTrak*® software and is organized by tasks outlined in the proposed Work Breakdown Structure. A copy of the updated Project Schedule is presented in Figure 2-1.

2.3 COORDINATION, PLANNING, AND MEETINGS

The Omaha District Rapid Response Project Engineer will schedule a pre-construction meeting. Attendees at this meeting will include the Rapid Response Project Engineer and On-Site Representative (OSR), representatives from the U.S. Army Corps of Engineers, New York District and/or Resident Office, and WESTON's key project staff including the Project Manager, Site Manager, and Site Safety and Health/Quality Control Officer (SSH/QCO). Other technical staff will be present, as needed. The meeting agenda will conform to the Omaha District Rapid guide for Pre-construction Convergence (see Rapid Standard Operating Procedure 3.2 for details).

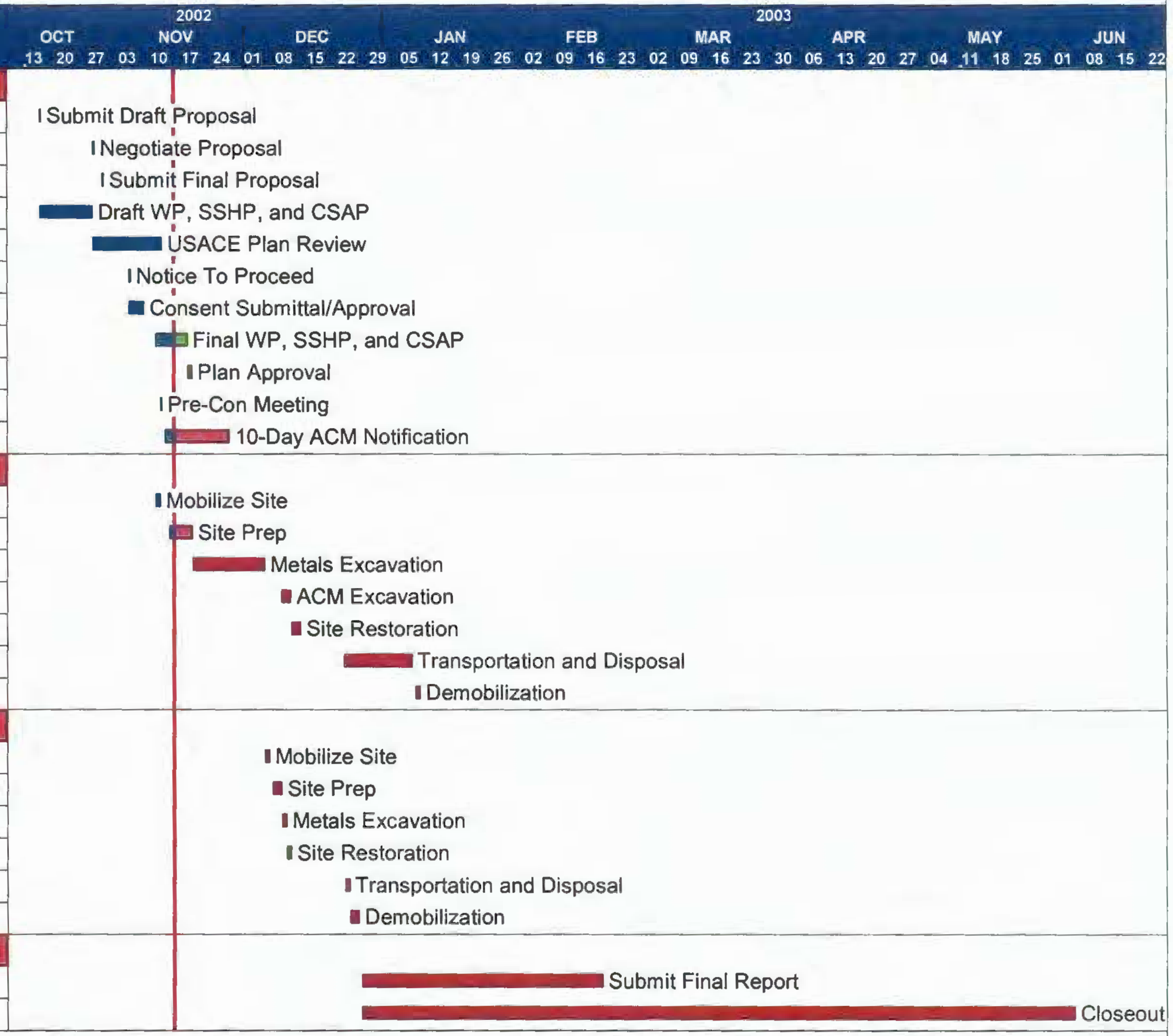
Daily meetings will be held at the site for safety, planned work, and accomplished work. The safety tailgate meetings will be held daily before any work is initiated at the site.

2.4 MEETING MINUTES, REPORTS, NOTICES, SUBMITTALS

Submittals required prior to mobilization of personnel, equipment, and materials include the WP, the Site Safety and Health Plan (SSHP), and the Chemical Sampling and Analysis Plan (CSAP). These deliverables will be submitted as one document to USACE prior to commencing work.

FIGURE 2-1
TIME CRITICAL REMOVAL ACTION
SEADS 50/54 & 67
SENECA ARMY DEPOT
ROMULUS, NY

Act ID	Description	Orig Dur	Rem Dur	Early Start	Early Finish
1000 - PLANNING					
1010	Submit Draft Proposal	1d	0	16OCT02 A	16OCT02 A
1020	Negotiate Proposal	1d	0	28OCT02 A	28OCT02 A
1030	Submit Final Proposal	1d	0	30OCT02 A	30OCT02 A
1040	Draft WP, SSHP, and CSAP	5d	0	16OCT02 A	28OCT02 A
1050	USACE Plan Review	3d	0	28OCT02 A	12NOV02 A
1060	Notice To Proceed	1d	0	05NOV02 A	05NOV02 A
1070	Consent Submittal/Approval	3d	0	05NOV02 A	08NOV02 A
1080	Final WP, SSHP, and CSAP	4d	1d	11NOV02 A	18NOV02
1090	Plan Approval	1d	1d	18NOV02	19NOV02
1100	Pre-Con Meeting	1d	0	12NOV02 A	12NOV02 A
1110	10-Day ACM Notification	10d	8d	13NOV02 A	27NOV02
2000 - SEAD 50/54 SITEWORK					
2010	Mobilize Site	1d	0	11NOV02 A	12NOV02 A
2020	Site Prep	3d	2d	14NOV02 A	19NOV02
2030	Metals Excavation	9d	9d	19NOV02	05DEC02
2040	ACM Excavation	2d	2d	09DEC02	11DEC02
2050	Site Restoration	2d	2d	11DEC02	13DEC02
2060	Transportation and Disposal	8d	8d	23DEC02	07JAN03
2070	Demobilization	1d	1d	08JAN03	09JAN03
2400 - SEAD 67 SITEWORK					
2410	Mobilize Site	1d	1d	05DEC02	06DEC02
2420	Site Prep	1d	1d	07DEC02	09DEC02
2430	Metals Excavation	1d	1d	09DEC02	10DEC02
2440	Site Restoration	1d	1d	10DEC02	11DEC02
2450	Transportation and Disposal	1d	1d	23DEC02	24DEC02
2460	Demobilization	1d	1d	24DEC02	26DEC02
3000 - CLOSEOUT					
3010	Submit Final Report	30d	30d	27DEC02	19FEB03
3020	Closeout Project	90d	90d	27DEC02	05JUN03



Start date	16OCT02
Finish date	05JUN03
Data date	15NOV02
Run date	18NOV02
Page number	1A

U.S. ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
CONTRACT NO.: DACA45-98-D-0004

Prepared by:
WESTON SOLUTIONS

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

Throughout the duration of the project, WESTON will prepare and submit the following meeting minutes, reports, and notices as required. These requirements are listed in the Contractor Quality Control Plan (CQCP) contained in Appendix A.

- Rapid Response Quality Control (QC) Daily and Weekly Reports.
- Daily Report.
- Rapid Response Work Orders submitted the Friday prior to the upcoming weeks work.
- Rapid Response Weekly Status Report.
- Rapid Response Weekly Cost Reports.
- Meeting minutes of weekly progress meetings.
- Conference minutes (when required).
- Construction progress schedules.
- Certified payrolls.
- Photo documentation.
- Forward cost projections and progress.
- Tailgate safety meeting minutes [daily with Construction Quality Control/Work Order Reports].
- Chain-of-Custody Reports, laboratory data reports, and manifests/non-hazardous manifests or bills of lading.

Final documentation and discussion of the activities performed under this Task Order will be presented in the Final Report, as specified in Subsection 4.4 of the SOW. This report will contain a summary of the work performed, that includes, but is not limited to:

- Narrative of the scope of services completed.
- Safety summary.
- Quality control summary.
- Summary of analytical data.
- Any other unique or special tasks performed or situations documented.

Additional documentation that will be submitted with the final report as supplementary information in the appendices shall include, but not be limited to:

- Completed permits and verbal conversation records concerning any permitting.
- Licenses.
- Waste Profile Sheets and shipping documents.
- Rapid Response QC Daily and Weekly Reports.
- Chain-of-Custody Records and Laboratory Data Packages.
- Photo Documentation.
- Project points of Contact address and phone (including Site Manager, Transportation & Disposal Contractors, Subcontractor names, USACE-PE, etc.).
- Completed Verbal Conversation records, especially ones that either impact the Scope of Work, Cost Proposal, or Final Report.
- Data Validation Reports.

2.5 STAFFING AND RESPONSIBILITIES

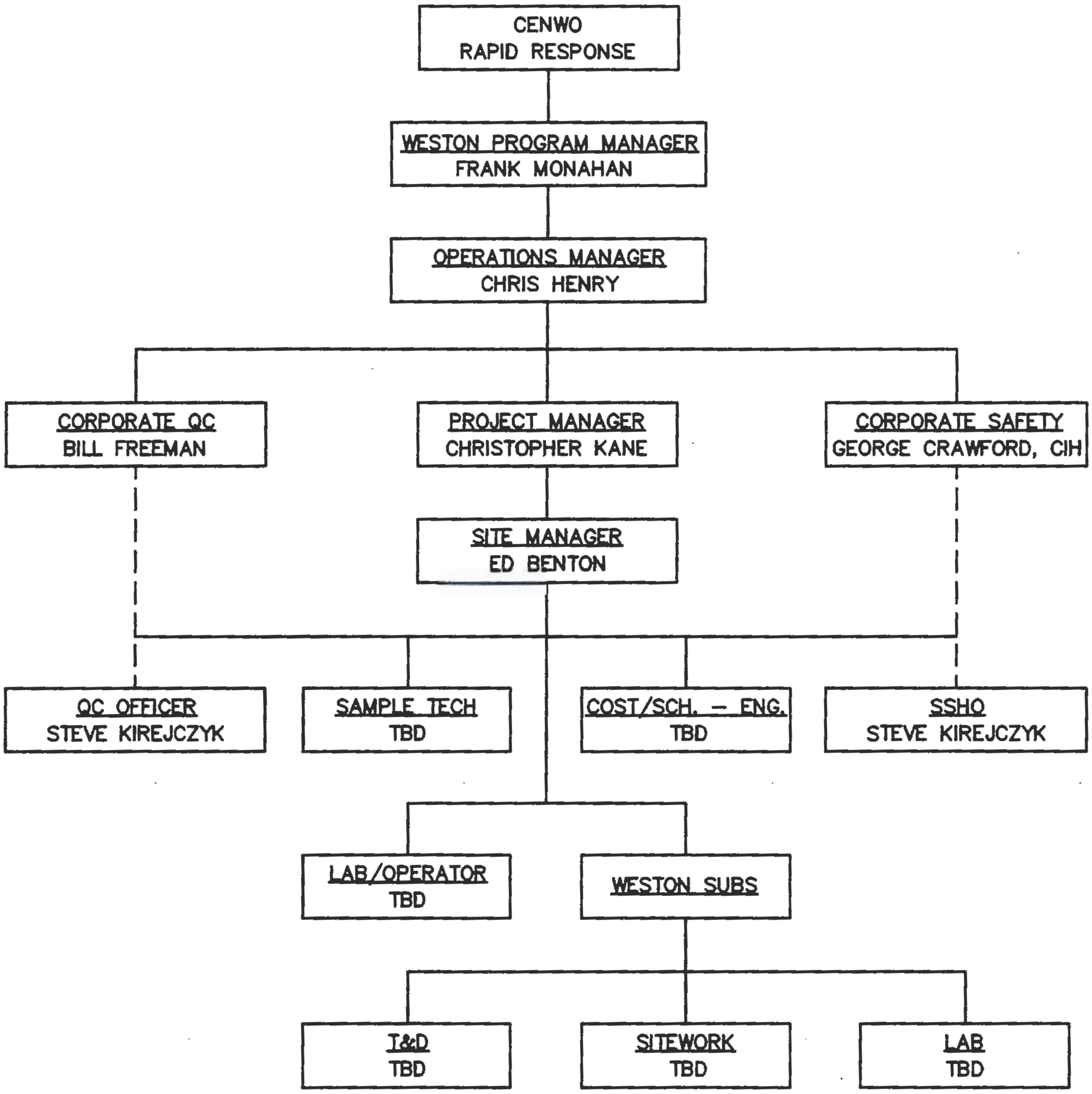
An organizational chart naming WESTON staff responsible for control and execution of this project is presented as Figure 2-2. A discussion of the roles and responsibilities of the key WESTON personnel is provided in the subsections that follow.

Program Manager: Mr. Frank Monahan serves as the Program Manager for all Rapid Response task orders. Mr. Monahan is responsible for ensuring that WESTON executes all task orders efficiently, expediently, and with the highest degree of competency.

Weston Solutions, Inc. Program Management Office will support the Project Manager with regard to purchasing, soliciting of vendors, and evaluation of bids including consent packages, property management, and Certified Industrial Hygienist (CIH) issues. Mr. William Freeman will ensure that the "complete manifest packages" are in order for submittal to CENWO-CD-RR, and will oversee the tracking of manifest packages if required under the task order.

ORGANIZATIONAL CHART

METALS SITES – SEADS 50/54, 24, & 67
SENECA ARMY DEPOT
ROMULUS, NEW YORK



TIME CRITICAL REMOVAL ACTION METALS SITES – SEADS 50/54, 24, & 67 SENECA ARMY DEPOT ACTIVITY (SEDA) ROMULUS, NEW YORK	DEPARTMENT OF THE ARMY OMAHA DISTRICT CORPS OF ENGINEERS OMAHA, NEBRASKA
ORGANIZATIONAL CHART	WESTON SOLUTIONS MANCHESTER NEW HAMPSHIRE

DRAWN	BEG
DATE	OCT 2002
FIGURE NO.	2-2

sign\DWG\ACOE\SENECA\seads 50-54 24 67\fig 2-2.dwg, Layout1, 10/28/2002 05:01:4 , girardeb, 1:1

Project Manager: Mr. Christopher Kane will serve as the Project Manager for the activities covered in this WP. He has overall financial and schedule responsibility for the project, will approve all vouchers to CENWO-CD-FC, and has the authority to negotiate change orders. A delegation letter authorizing Mr. Kane to negotiate on behalf of WESTON will be sent under separate cover.

Site Manager: Mr. Edwin Benton will serve as the Site Manager for this project. The Site Manager will be responsible for supervising all site activities, including:

- Supervision of WESTON and WESTON subcontractor work forces.
- Compliance with WESTON's WP, CQCP and SSHP.
- Submission of daily and weekly status reports.

Cost/Schedule Engineer: A Cost/Schedule Engineer will be assigned to this task order and will be responsible for tracking weekly project costs, maintaining schedule updates, and preparing weekly work orders. The cost report will be provided to the OSR on a weekly basis. The work orders will be submitted the Friday prior to the upcoming weeks work. The Cost/Schedule Engineer will be responsible for preparing and modifying field requisitions/purchase orders, preparing and submitting subcontractor consent forms to the Contracting Officer, and making field purchases. He will also assist in the preparation of the weekly status report to the OSR.

Program Safety Officer: Mr. George Crawford, CIH, will serve as the Program Safety Officer. Mr. Crawford has 20 years of experience in managing environmental health and safety programs, industrial hygiene programs, and emergency response programs for a variety of hazardous waste sites. Mr. Crawford will ultimately be responsible for the review, approval, oversight, and quality control related to the creation, administration, and implementation of the SSHP, its components, and amendments.

Site Safety and Health/Quality Control Officer: Steve Kirejczyk will serve as the SSH/QCO. The SSH/QCO will be responsible for the implementation of the SSHP and for ensuring that all project personnel follow the requirements of the SSHP. The SSH/QCO will conduct daily tailgate safety meetings and will be responsible to report any incidents that occur on the site to the Site Manager, Project Manager, Program Manager, and CIH. He is responsible to implement any safety corrective actions identified through training and reinforced awareness.

The SSH/QCO will also be responsible for the implementation of WESTON's quality control measures outlined in this WP and in the CQCP. The SSH/QCO will be responsible for implementing the four phases of construction (Preparatory Inspection, Initial Inspection, Follow-up Inspection, Completion Inspection) for each new definable feature of work. The SSH/QCO will be responsible for preparing the Rapid Response QC Daily Report, and will assist the Project Manager in the preparation of the Rapid Response Weekly Report and the Final Project Report.

SECTION 3

TECHNICAL APPROACH

3. TECHNICAL APPROACH

This section describes the general approach to be used by WESTON to complete the project objectives. These objectives have been briefly described in Section 1 of this document. A more detailed summary and description of the tasks and the methods, equipment, personnel, materials and procedures are described below.

The primary objective of this project is to provide "clean closure" for the site including SEAD's 50/54, 24,and 67. To accomplish this objective, WESTON will perform the following tasks.

- **Task 1. Mobilization**: This task will include procurement and mobilization of all equipment and personnel necessary to perform the work.
- **Task 2. Site Preparation**: This task will include layout of work areas, installation and maintenance of erosion and sedimentation controls (as applicable), clearing and grubbing, establishing work zones including equipment staging, installing decontamination and material stockpile areas, and installation of construction fencing.
- **Task 3. Demolition and Removal of Tanks (Optional)**: This task will include the demolition and removal of tanks located in SEADs 50/54.
- **Task 4. Soil Removal**: This task consists of the removal of approximately six inches of soil from the identified contaminant areas in SEADs 50/54, 24, & 67 and the collection of confirmatory soil samples to verify removal of contaminants.
- **Task 5. Sampling and Analysis**: This task outlines the soil verification and waste characterization sampling requirements for this scope of work.
- **Task 6. Transportation and Disposal**: This task will include the preparation of waste manifests and shipping papers and transportation and disposal of the liquids and soils to licensed waste disposal facilities.
- **Task 7. Site Restoration**: This task will include rough grading, seeding, removal of erosion and sedimentation controls, and other restoration activities as determined by the OSR.

3.1 TASK 1 – MOBILIZATION

The mobilization task includes the procurement and delivery of equipment and personnel necessary to implement all aspects of the work as defined in the Project Schedule. This task will include moving into office space provided by SEDA for use during the project, mobilizing construction equipment, fractional tanks, solid waste containers, project personnel, and familiarizing project personnel with the site and the requirements for the project. Prior to mobilization, any permits or licenses required to implement the work will be obtained.

It is anticipated that the following equipment will be utilized to execute the remediation:

Heavy Equipment

- Track excavators with bucket and/or shear attachments
- Loader
- Off road dump truck (2)
- Bulldozer
- Hydro-axe

Support Equipment

- Fractational tanks
- Stockpile liner/poly sheeting
- Hay bales
- Silt fence
- Lockable conex storage box/trailer
- 3-inch diameter trash pumps and hoses
- Portable sanitary facilities

Health and Safety Equipment

- Respiratory Protective Equipment
- Personnel decontamination station
- Emergency eyewash station
- First Aid kit(s)
- Fire extinguishers

The intent of this listing is to provide a basic understanding of the machines and equipment that may be used to perform the remediation. Changes in site conditions may require the use of alternative or additional methods and equipment.

3.2 TASK 2 - SITE PREPARATION

Site preparation tasks include: the establishment of support facilities, installation of a temporary decontamination area, and delineation and setup of the material stockpile areas. Additional activities will include the delineation of work areas with construction fencing; utility markouts and installations; clearing and grubbing; and installation of erosion and sedimentation controls.

Site work during this phase of the project will be limited to the four SEADs as indicated on the Site Plan. Weston Solutions, Inc. will utilize a Global Positioning System unit to locate excavation areas and to confirm coordinates using local benchmarks. Standard survey techniques will be used to control and measure soil removal progress. Construction fencing will be utilized along the perimeter of the exclusion zones to secure the areas from unauthorized access. Vehicles and equipment will be staged near each SEAD as work progresses. However, if site conditions change, work zones will be adjusted accordingly. Work zones will be further defined based on the criteria set forth in the SSHP.

Prior to commencement of work on the site, a Community Air Monitoring Program will be initiated in accordance with NYSDOH and NYSDEC requirements. Air monitoring will consist of continuous monitoring along the perimeter of the work zone and monitoring within the work zone with hand-held instruments. Stop work provisions will be in place for any exceedances of the established action levels. The details of this plan are presented in the SSHP.

Clearing and grubbing will consist of removing trees, shrubs and vegetation from the area surrounding each area of excavation within the four SEADs to allow access for the heavy equipment. The cleared material will be segregated outside the perimeter of the exclusion zone or as determined by OSR.

Erosion and sedimentation controls will be installed to manage storm water runoff within the work areas, along drainage ditches, adjacent to roads, at any drainage outlet points, and at the materials stockpile area. The types of erosion and sedimentation controls implemented will vary depending upon site specific details, but may include: hay bales with two stakes driven through the bails to secure them in-place, siltation fence, bermed soil, and polyethylene sheeting or tarps to cover stockpiled materials.

At a minimum, the soils staging area will be located on an existing concrete pad as designated and approved by the OSR. This area will be lined with 40-mil polyethylene sheeting and the perimeter lined with hay bales. Stockpiled materials will be covered with tarps and weighted down to prevent erosion of the pile by wind, rain, snow, and/or storm water. These controls will be maintained throughout the project and removed during site restoration activities. All accumulated storm water will be stored in a temporary double walled fractional tank pending waste characterization and transportation and disposal at an off-site facility [e.g., local publicly owned treatment works (POTW)].

A temporary decontamination pad will be constructed near the SEADs in an area designated by the OSR. The decontamination pad will be utilized to wash equipment that has been in one of the exclusion zones, equipment that is to be transitioned to handle clean materials, and equipment that is to be transitioned from one SEAD to one of the other SEADs. Equipment arriving from off post will be inspected to ensure that the equipment is visually clean. Weston Solutions, Inc. reserves the right to reject any equipment that arrives onsite in questionable condition. All decontamination water will be pumped and stored in a temporary double walled fractional tank pending waste characterization and transportation and disposal at an off-site facility (e.g., local POTW).

3.3 TASK 3 - DEMOLITION AND REMOVAL OF TANKS (OPTIONAL)

A total of four (4) steel above ground storage tanks (ASTs) are to be dismantled and removed from the SEAD 50/54 area. Two of these ASTs were previously used to store antimony ore and have a capacity of approximately 9,000 gallons. The third AST was previously used to store rutile ore and has a capacity of approximately 507,000 gallons. The fourth AST was previously used to store asbestos containing material (ACM) [e.g., amosite] and has a capacity of 9,000 gallons. All tanks are coated with paint and are assumed to be situated on the ground (no concrete pad).

All tanks will be dismantled using a combination of hydraulic shears and grapplers. The dismantled sections of the ASTs will be staged on polyethylene sheeting in order to contain potential lead-paint particulates.

With the exception of the ACM AST, all tanks will be dismantled, rinsed (if necessary), and recycled off-site. The ACM AST is assumed to have been previously decontaminated and is to be certified to contain no asbestos materials. The ACM AST will be dismantled and subsequently recycled off-site. Soil sampling for Target Analyte List metals will be performed at a frequency approved of by the USACE for surface soils beneath the tank bottoms.

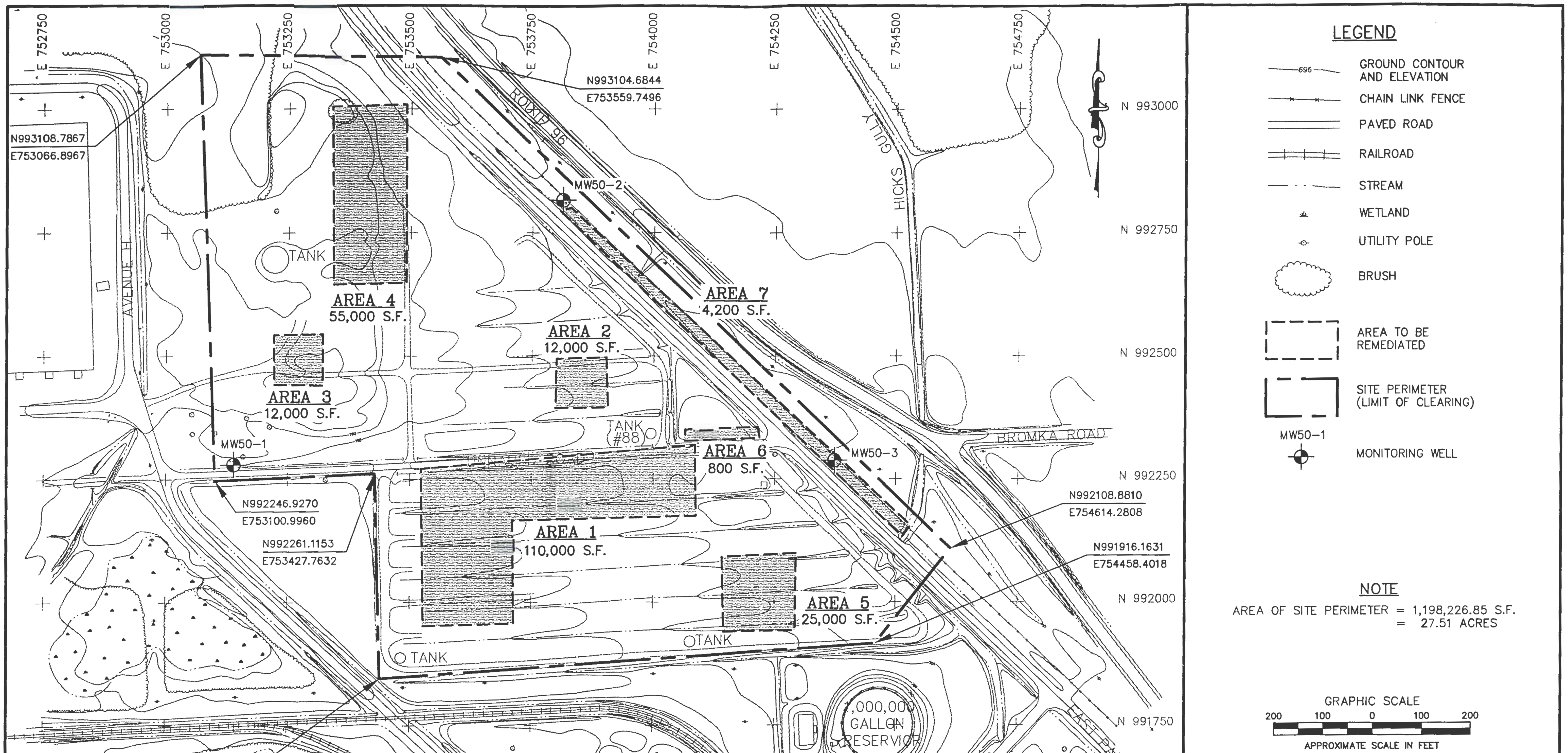
During dismantling operations, WESTON will utilize particulate air monitors to verify air quality surrounding the work areas. Details of the air monitoring requirements can be found in the SSHP.

3.4 TASK 4 - SOIL REMOVAL

Excavation activities will commence at SEAD 50/54 and proceed to SEAD 24 followed by SEAD 67. Although a rapid turn-around-time is anticipated for confirmatory samples, i.e., 24 hours (for contaminants of concern), the additional sites will allow equipment to be utilized efficiently without down-time. Within each SEAD, excavation work will focus on individual excavation areas in succession, as directed by the OSR and site conditions.

3.4.1 SEAD 50/54

A total of seven areas have been identified as containing elevated concentrations of metals, SVOCs, and/or ACM. Figure 3-1 depicts the excavation areas based on the investigation sampling performed to date by Parsons. These areas represent a total of approximately 5,150 yd^3 of impacted material. At least one of the seven excavation areas has been reported to contain ACM at concentrations greater than 1%. In order to facilitate waste characterization, further



AREA 1		AREA 2		AREA 3		AREA 4		AREA 5		AREA 6		AREA 7	
N	E	N	E	N	E	N	E	N	E	N	E	N	E
992270.9348	753522.5133	992494.6745	753800.6250	992542.8942	753220.7618	993004.7862	753338.3752	992091.8668	754140.8517	992350.3694	754064.3902	992793.9372	753806.8377
992318.8476	754084.5006	992497.4918	753903.1851	992544.4436	753320.9511	993008.9572	753490.2122	992099.2867	754294.2031	992355.6872	754214.1910	992800.5518	753828.7070
992175.3797	754086.8379	992395.3543	753906.7926	992440.2039	753321.0081	992648.1522	753491.3030	991942.0655	754292.1071	992332.9506	754218.4240	992155.9129	754531.1996
992166.2588	753711.0183	992394.3861	753798.5688	992441.8925	75.3221.9325	992645.2602	753342.2374	991939.6291	754145.0336	992327.1001	754063.8266	992133.3833	754513.7767
991956.6547	753713.9696												
991951.5373	753527.6788												

WESTON SOLUTIONS
MANCHESTER NEW HAMPSHIRE

DEPARTMENT OF THE ARMY
OMAHA DISTRICT
CORPS OF ENGINEERS
OFFUTT AFB, NEBRASKA

SENECA ARMY DEPOT ACTIVITY
TANK FARM
SEAD-50 AND SEAD-54

PROPOSED REMOVAL ACTION AREAS

DRAWN	DATE	FIGURE NO.
A.J.M.	OCT. 2002	3-1
CHECKED C.G.K.	W.O. NO. 20074-515-035	

M:\ \DWG\ACOE\SENECA\seads 50-54 24 67\TANK FARM.dwg, Removal, 11/11/2002 :46 AM, girardeb, 1:1

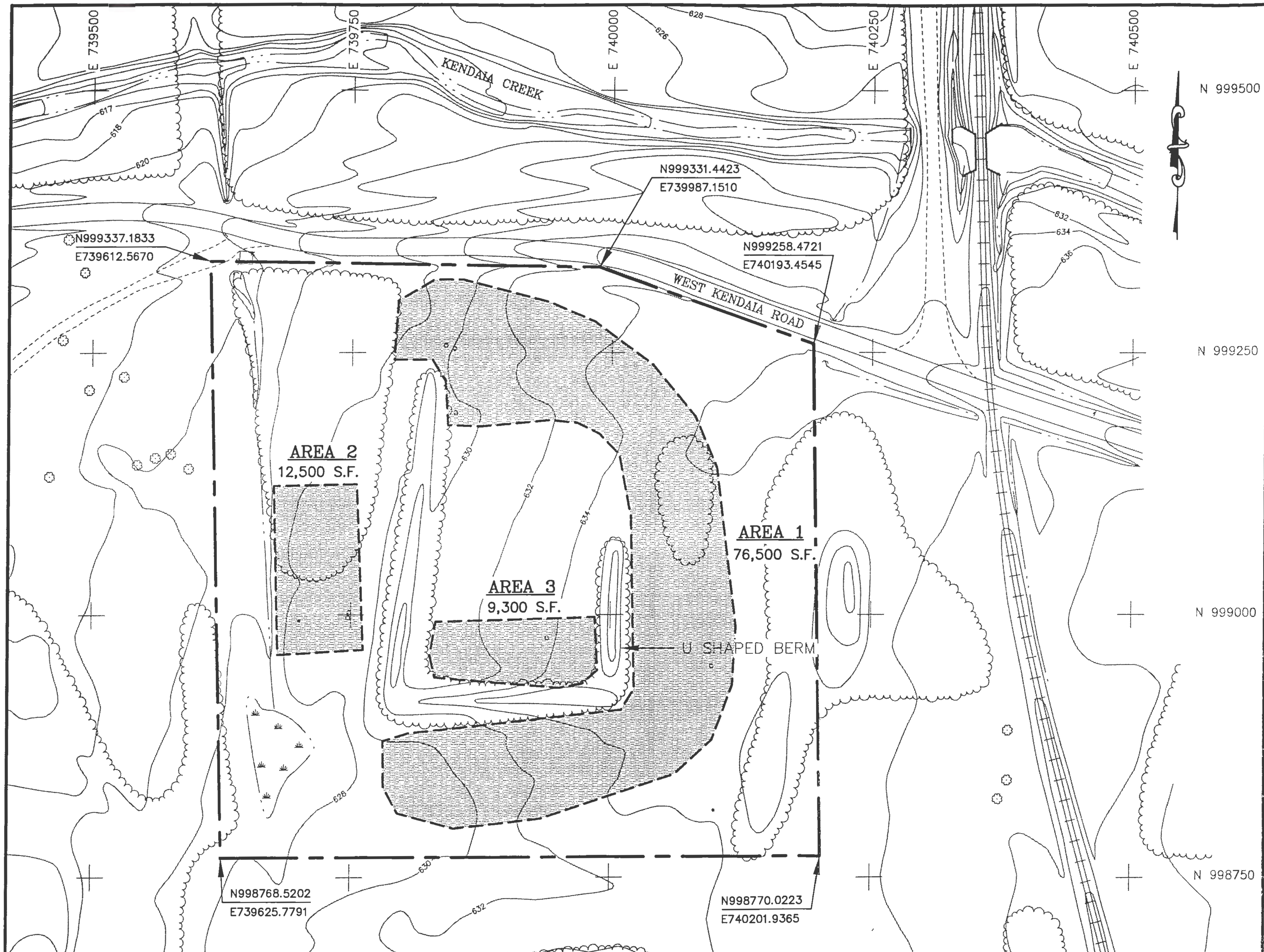
define the extent of contaminants, and confirm the presence of ACM within the one excavation area, WESTON proposes to collect in-situ pre-characterization samples from the proposed ACM excavation areas. The frequency and type of samples is outlined in the CSAP. If the pre-characterization samples confirm the presence of ACM (greater than or equal to 1%), then WESTON will follow the soil excavation procedures for ACM prepared by an Asbestos Supervisor/Planner and outlined in the Asbestos Abatement Plan (AAP) (Appendix B). Otherwise, all excavation activities will follow the procedures discussed in the following paragraphs.

Once the work areas within the SEADs have been established and the results of the pre-characterization sampling have been reviewed, standard survey techniques will be utilized to control and measure soil removal progress. Excavation depths will be limited to 6-inches with a tolerance of 2-inches. Excavation beyond the initial depth and horizontal boundaries will only be performed at the direction of the OSR or if confirmation soil sampling indicates that the removal of additional material is warranted. It is anticipated that the area adjacent to each excavation will be temporarily bermed, as necessary, to minimize potential in-flow and out-flow of storm water.

All soil excavated from SEAD 50/54 will be loaded onto off-road dump trucks and transported to the central staging area. All of the soil generated from this SEAD, with the exception of any ACM soil, will be stockpiled into one pile or windrow. All ACM will be handled as outlined in the AAP outlined in Appendix B.

3.4.2 SEAD 24

A total of three areas have been identified containing elevated concentrations of metals and/or SVOCs. Figure 3-2 depicts the excavation areas based on investigation sampling performed to date. These areas represent a total of approximately 2,500 yd^3 of impacted material. In order to facilitate waste characterization, WESTON proposes to collect in-situ pre-characterization samples from the proposed excavation areas. However, this will need to be approved of in advance by the USACE.



LEGEND

696	GROUND CONTOUR AND ELEVATION
	PAVED ROAD
	RAILROAD
	STREAM
	WETLAND
	BRUSH
	AREA TO BE REMEDIATED
	SITE PERIMETER (LIMIT OF CLEARING)

NOTE

AREA OF SITE PERIMETER = 318,437.6132 S.F.
= 7.31 ACRES

GRAPHIC SCALE

100 50 0 50 100

APPROXIMATE SCALE IN FEET

AREA 1

N	E	N	E	N	E	N	E	N	E
999299.5858	739793.8571	999188.8868	740080.8133	998805.8587	739933.4332	998909.1083	740010.7625	999185.3542	739940.0481
999319.7008	739828.6978	999140.3110	740101.7407	998796.3942	739849.8358	998928.6722	740023.3129	999179.5952	739874.4351
999319.7008	739856.1833	998988.9720	740120.6724	998810.7967	739795.4768	999093.8128	740019.4405	999180.7343	739842.5496
999298.0385	739939.8009	998932.6002	740117.5122	998835.8981	739781.8871	999152.5725	740007.6561	999222.7870	739839.8345
999279.4040	739983.2594	998880.7514	740098.1572	998879.5118	739781.3407	999172.2858	739988.1495	999243.3047	739827.1073
999238.4005	740040.1658	998847.8315	740062.3297	998887.0363	739805.9395	999182.6962	739967.0913	999243.3756	739790.2515

AREA 2

N	E
999122.6840	739675.3678
999124.2489	739755.1047
998966.4665	739761.8009
998961.8375	739679.7342

AREA 3

N	E
998993.4452	739831.6910
998997.6190	739984.7250
998946.9728	739987.3767
998933.9823	739972.6639
998930.2290	739950.5075
998940.3063	739830.7962
998961.6367	739826.0611

WESTON SOLUTIONS
MANCHESTER NEW HAMPSHIRE

DEPARTMENT OF THE ARMY
OMAHA DISTRICT
CORPS OF ENGINEERS
OFFUTT AFB, NEBRASKA

SENECA ARMY DEPOT ACTIVITY
ABANDONED POWDER BURNING PIT
SEAD-24

PROPOSED REMOVAL ACTION AREAS

DRAWN	DATE	FIGURE NO.
A.J.M.	OCT. 2002	3-2
CHECKED	W.O. NO.	
C.G.K.	20074-515-035	

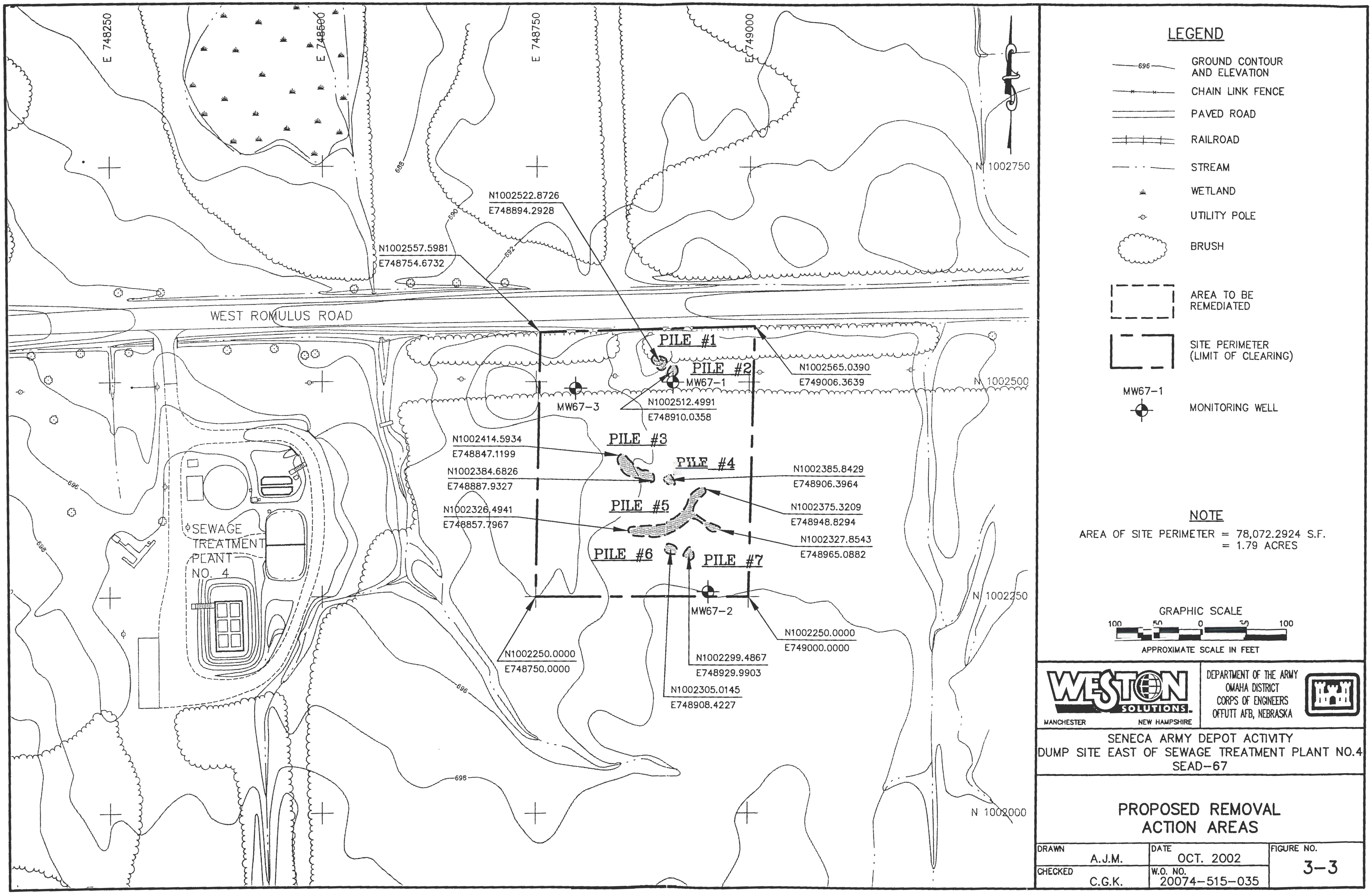
Once the work areas within the SEADs have been established and the results of the pre-characterization sampling have been reviewed, standard survey techniques will be utilized to control and measure soil removal progress. Excavation depths will be limited to 6-inches with a tolerance of 2-inches. Excavation beyond the initial depth and horizontal boundaries will only be performed at the direction of the OSR or if soil confirmation sampling indicates that the removal of additional soil is warranted. It is anticipated that the area adjacent to each excavation will be temporarily bermed, as necessary, to minimize potential in-flow and out-flow of storm water. All soil excavated from SEAD 24 will be loaded onto off-road dump trucks and transported to the central staging area. All of the soil generated from this SEAD will be stockpiled into one pile or windrow.

3.4.3 SEAD 67

A total of six waste piles and one drainage swale have been identified containing elevated concentrations of metals and/or SVOCs. Figure 3-3 depicts the excavation areas based on the investigation sampling performed to date. These areas represent a cumulative total of approximately 240 yd^3 of impacted material. In order to facilitate waste characterization, WESTON proposes to collect in-situ pre-characterization samples from the proposed excavation areas. However, this will need to be approved of in advance by the USACE.

Once the work areas within the SEADs have been established and the results of the pre-characterization sampling have been reviewed, standard survey techniques will be utilized to control and measure soil removal progress. Excavation depths will be limited to 6-inches with a tolerance of 2-inches. Excavation beyond the initial depth and horizontal boundaries will only be performed at the direction of the OSR or if soil confirmation sampling indicates that the removal of additional soil is warranted. It is anticipated that the area adjacent to each excavation will be temporarily bermed, as necessary, to minimize potential in-flow and out-flow of storm water.

All soil excavated from SEAD 67 will be loaded onto off-road dump trucks and transported to the staging area. All of the soil generated from this SEAD will be stockpiled into one pile or windrow.



M: \DWG\ACOE\SENECA\seads 50-54 24 67\DUMP SITE.dwg, Removal, 11/11/2002 .31 AM, girardeb, 1:1

3.5 TASK 5 - SAMPLING AND ANALYSIS

A summary of the sampling and analysis to be performed is outlined in the following paragraphs. Complete analyte lists and additional sampling and analysis information is contained in the CSAP.

3.5.1 Soil Sampling

Upon completion of soil removal within a specific excavation area, confirmatory soil samples will be collected from the area. At a minimum, a five-point composite sample will be collected from a depth of 1 to 6-inches from the bottom of each excavation area once excavation limits have been achieved. In addition, sidewall samples will be collected as discretes along the outer perimeter of the excavation. These samples will be collected from the horizontal ground surface a distance of 1-ft outside the limits of the excavation. For larger excavation areas, additional samples will be collected for each 900 square feet of surface area and for every 30 linear feet of length on each edge of the excavation. In addition, a total of five (5) samples will be collected from areas surrounding the each site for areas that are considered not to have been impacted by the releases as part of an effort to establish background concentrations. The samples will be sent to a NYSDOH Environmental Lead Laboratory Accreditation Program certified and USACE certified laboratory for analysis.

At the time of collection, the following soil properties will be documented by the sample technician:

- Soil type
- Color
- Moisture Content
- Texture
- Grain size and shape
- Consistency
- Visible evidence of staining or discoloration
- Any other observations

All sampling will be completed using decontaminated, inert sampling equipment. Samples collected for volatile compound analyses will be collected first and will be transferred directly from the ground to the appropriate container and will not be homogenized. Samples collected for non-volatile analyses will be collected and transferred to an inert mixing bowl and homogenized prior to being placed into their final sample bottles.

3.5.2 Waste Characterization Sampling

Waste characterization samples will be collected at the rate of approximately one (1) composite sample per 150 yd^3 of impacted soil (or lower frequency based on disposal facility approval). In order to expedite the excavation activities, WESTON proposes to collect the waste characterization samples in-situ prior to commencement of excavation activities. If additional soils outside of the preliminary excavation boundaries are determined to require excavation, WESTON will collect additional waste characterization samples of the stockpiled soil at the above-specified frequency (unless an alternative sampling frequency is approved).

3.6 TASK 6 - TRANSPORTATION & DISPOSAL

The anticipated remediation wastes that will result from the site work include liquids, solids, and other remediation-derived waste. Liquids include accumulated storm water within the excavation, additional fluids resulting from dewatering of the work areas, and remediation-derived waste liquids including decontamination fluid. Solids include excavated soil, solids removed from materials handling equipment, and fractional tank sludge bottoms. Other remediation-derived waste includes used personal protective equipment, tarps/polyethylene sheeting, and spent absorbent pads or booms. It is intended that stormwater runoff will not be collected.

Wastes will be transported to licensed disposal facilities based on the results of the waste characterization sampling. Potential disposal options include landfilling (for solids) and pre-treatment followed by discharge to a POTW (for waste water).

Prior to the removal of any waste materials from the stockpile staging area, WESTON will prepare a complete manifest package for each waste stream for the OSR's review and approval. Weston Solutions, Inc. assumes the OSR will expeditiously review and obtain approval for the complete manifest package packages. No waste will be transported or shipped prior to the OSR's approval of the complete manifest package. At a minimum, the complete waste manifest package will include:

- All hazardous waste manifests
- Hazardous material shipping papers
- Waste profile sheets
- All analytical results
- Any other supporting documentation

In addition, WESTON will verify that the waste transporter(s) and/or the disposal facility(ies) comply with the following criteria, as applicable:

- Be in compliance with all applicable local, state, and federal regulations applicable to the shipment, transport, treatment (if applicable), and/or disposal of non-hazardous and hazardous material, including NYCRR 360 and/or 364.
- Provide a letter from the NYSDEC stating that the proposed landfill facility is in compliance with all applicable regulations.
- Provide all required waste profile sheets.
- Provide a copy of current operating permits, insurance certificates (listing WESTON, the Army, and the USACE as additional insureds), and a letter of acceptance of the waste stream from the facility.
- Provide information pertaining to annual and/or biennial reporting (in accordance with 40 CFR 262.41).
- Tabulation of all shipping/disposal data including manifest number, transporter, shipment date, shipping quantity, disposal date, and receipt of disposal certificate date.

Once a waste stream's complete manifest package has been approved by the OSR, WESTON will coordinate with the OSR to determine appropriate haul routes. Weston Solutions, Inc. will utilize the Off-Site Transportation and Disposal Checklist and the Transportation and Disposal Tracking Forms to track all material shipped off-site.

3.6.1 Liquids

Liquid wastes will be characterized in accordance with the applicable NYSDEC TAGM requirements, 40 CFR 261, as well as any site specific testing criteria required by the disposal facilities. Liquids will be staged and managed in the appropriate containers. Containers will be closed to prevent the addition of water via precipitation and release of organic vapors. Care will be taken to prevent the release or spillage of liquids from their containers.

3.6.2 Soil

Soils and other solid wastes will be characterized in accordance with NYSDEC TAGM requirements, 40 CFR 261, as well as any site specific testing criteria required by the disposal facilities. Soils will be staged and managed in the stockpile staging area. After load-out of the soils into trucks for transportation to a designated disposal facility, all loads will be covered before leaving the site and during transportation.

3.7 TASK 7 - SITE RESTORATION

Upon completion of soil removal from work area, WESTON will grade all shallow excavation sidewalls into the open excavation to match the top of to the slope while maintaining sufficient grade and/or tolerance for surface drainage. The areas will be seeded with a native rye grass mix (or other mix approved by the OSR) once grading is completed. Backfill, topsoil, water, mulch, or perpetual care is not anticipated. It is not anticipated that a separate mobilization will be performed for seeding operations.

Erosion and sedimentation controls will be removed at the direction of the OSR. Additional site restoration (if any) will be determined by the OSR.

3.8 TASK 7 - DEMOBILIZATION

Upon completion of site restoration activities, WESTON will request the OSR to perform an Initial Project Completion Inspection. Any punch list items generated as a result of the completion inspection shall be made to the satisfaction of the USACE. Weston Solutions, Inc.

will remove all material and equipment from the work site once the Final Project Completion Inspection is performed and the site is accepted for release.

APPENDIX A

CONTRACTOR QUALITY CONTROL PLAN (CQCP)

FINAL

CONTRACTOR QUALITY CONTROL PLAN
SOIL AND SEDIMENT REMEDIATION
OPEN BURNING GROUNDS
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Contract No. DACA45-98-D-0004
Task Order No. 0035

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
Offutt AFB, Nebraska

Prepared by:

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

November 2002

W.O. No. 20074.515.035

TABLE OF CONTENTS

Section **Page**

LIST OF TABLES

Title **Page**

LIST OF ACRONYMS

CQCP	Contractor Quality Control Plan
CSAP	Chemical Sampling and Analysis Plan
OSR	On-Site Representative
QA	Quality Assurance
QC	Quality Control
SEDA	Seneca Army Depot Activity
SOW	Scope of Work
USACE	U.S. Army Corps of Engineers
WESTON$_{SM}$	Weston Solutions, Inc.
WP	Work Plan

SECTION 1

OVERVIEW

1. OVERVIEW

This Contractor Quality Control Plan (CQCP) was developed to identify and implement quality requirements to ensure that project activities are conducted appropriately. The CQCP was prepared for the U.S. Army Corps of Engineers (USACE), Omaha District Corps of Engineers through the use of the Rapid Response Program, in compliance with the specifications and the Scope of Work (SOW), Contract No. DACA45-98-D-0004 at the Seneca Army Depot Activity (SEDA) in Romulus, New York.

This plan was prepared to ensure that all work is accomplished with an acceptable level 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. This plan 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 Guidance Document for the Preparation of Quality Assurance Project Plans*, dated 9 September 1987.

Under contract with USACE, Weston Solutions, Inc. (WESTON$_{SM}$) will implement a Time-Critical Removal Action to provide clean closure to SEADs 50/54, 24, and 67. To achieve this goal, sampling, soil and sediment excavation, and off-site disposal will be performed. The work will consist of the following:

The work will consist of the following:

- Mobilization
- Site preparation
- Demolition and removal of tanks (optional)
- Soil removal
- Sampling and analysis
- Transportation and off-site disposal
- Site Restoration
- Demobilization

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 remediation 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 QC 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.

SECTION 3

PROJECT ORGANIZATION AND RESPONSIBILITIES

3. PROJECT ORGANIZATION AND RESPONSIBILITIES

Under the direction of USACE, WESTON is responsible for implementing the SOW. Weston Solutions, Inc. 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 and a project organizational chart is presented in Section 2 of the Work Plan (WP).

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 all field activities that affect the quality of work and work products. The quality requirements associated with sampling and analysis are identified in the Chemical Sampling and Analysis Plan (CSAP). The approved CSAP will be followed for sampling activities, except in cases where field conditions may not coincide with the conditions outlined in the CSAP.

Quality Control checks will be conducted as follows:

- **Daily Briefings** - The Site QC Officer will ensure that daily safety and operational briefings are conducted routinely. The Site Quality Assurance (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.

- **Training** - The Site Safety and Health Officer 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 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
Rapid Response Action – SEADs 24, 50/54 & 67
Seneca Army Depot Activity

Objective	Activity	Activity Quality Requirement	Quality Control Verification
Prepare Site	Mobilization and site preparation.	Mobilize equipment and personnel according to schedule. Prepare site for remedial activities.	Rapid Response Daily Work Order. Daily Site Health and Safety Meeting Report. Daily Equipment Checklist. USACE Safety Inspection Checklist for Equipment (Form 478).
Site-work	Demolition and Removal of Tanks (optional)*	Perform demolition activites, as needed to safely and efficiently remove and properly dispose several on-site above-ground storage tanks (ASTs).	Rapid Response Daily Work Order. Prep./Initial/Follow-up/Completion Checklist. Rapid Response QC Daily Report. Weekly Status Report. QA Audit Checklist and Audit Form. Daily Site Health and Safety Meeting Report. Daily Equipment Checklist. USACE Safety Inspection Checklist for Equipment (Form 478). Health and Safety Compliance Inspection.
Site-work	Soil excavation*	Excavate soils as per Parsons Action Memo Figures 1-3, 2-3, and 3-3, load trucks, stage soils on-site.	Rapid Response Daily Work Order. Prep./Initial/Follow-up/Completion Checklist. Rapid Response QC Daily Report. Weekly Status Report. QA Audit Checklist and Audit Form. Daily Site Health and Safety Meeting Report. Daily Equipment Checklist. USACE Safety Inspection Checklist for Equipment (Form 478). Health and Safety Compliance Inspection.
Site-work	Sampling and analysis*	Pre-characterization of asbestos in soil, confirmation of excavation limits and achievement of cleanup goals, characterization of soils for off-site disposal.	Rapid Response Daily Work Order. Rapid Response QC Daily Report. Weekly Status Report QA Audit Checklist and Audit Form. Daily Site Health and Safety Meeting Report. Daily Equipment Checklist. USACE Safety Inspection Checklist for Equipment (Form 478) Health and Safety Compliance Inspection
Disposal	Transportation and off-site disposal*	Transport soils for off-site disposal	Rapid Response Daily Work Order. Prep/Initial/Follow-up/Completion Checklist. Rapid Response QC Daily Report. Weekly Status Report. QA Audit Checklist and Audit Form.

Table 4-1

Remediation Activities
Rapid Response Action – SEADs 24, 50/54 & 67
Seneca Army Depot Activity
(Concluded)

Objective	Activity	Activity Quality Requirement	Quality Control Verification
			Daily Site Health and Safety Meeting Report. Daily Equipment Checklist. USACE Safety Inspection Checklist for Equipment (Form 478). Health and Safety Compliance Inspection. Off-Site Transportation & Disposal Checklist. Transportation & Disposal Tracking Form.
Site-work	Site restoration	Restore site to original conditions.	Rapid Response Daily Work Order. Rapid Response QC Daily Report. Weekly Status Report. QA Audit Checklist and Audit Form Daily Site Health and Safety Meeting Report. Daily Equipment Checklist. USACE Safety Inspection Checklist for Equipment (Form 478). Health and Safety Compliance Inspection.
Site-work	Demobilization	Demobilize equipment and personnel according to schedule.	Rapid Response Daily Work Order. Rapid Response QC Daily Report. Weekly Status Report. QA Audit Checklist and Audit Form Daily Site Health and Safety Meeting Report. Daily Equipment Checklist. USACE Safety Inspection Checklist for Equipment (Form 478). Health and Safety Compliance Inspection.

* Denotes definable work feature.

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. During all field activities, WESTON will use the following reporting forms:

- Rapid Response Daily Work Order
- Preparatory Inspection Checklist
- Initial/Follow-up/Completion Inspection Checklist
- Rapid Response Quality Control Daily Report
- Weekly Status Report
- QA Audit Checklist and Audit Form
- Daily Site Health and Safety Meeting Report
- Daily Equipment Checklist
- Construction Equipment Inspection Form
- Health and Safety Compliance Inspection
- Off-site Transportation and Disposal Checklist
- Transportation and Disposal Tracking Form
- Field Logbooks

These forms will be filed on-site and completed daily or as necessary based on the quality control function of the activity. Related laboratory test reports and vendor data will be attached to these QC reports when daily work activities are associated with these data. Copies of these forms will be submitted to the USACE upon request or distributed at the Preconstruction Meeting prior to any fieldwork.

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 Rapid Response Quality Control Daily Report. The Rapid Response Quality Control Reports will be submitted daily [unless approved otherwise by the On-Site Representative (OSR)]. All other documentation will be submitted with the Weekly Status Reports to the OSR. 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 QC Officer.

The Rapid Response Quality Control Daily Reports and the Rapid Response Daily Work Order 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 Rapid Response Quality Control Daily Reports (Form 4). 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 QA Audit Checklist and Audit Notes (Form 6). In addition, copies of the audit findings will be provided to USACE within one 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 B

ASBESTOS ABATEMENT PLAN

FINAL

SENECA ARMY DEPOT ASBESTOS ABATEMENT TECHNICAL PLAN SEAD 54 ASBESTOS SOIL ABATEMENT

Contract No. DACA45-98-D-0004
Delivery Order No. 035

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
Offutt AFB, Nebraska

Prepared by:

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

November 2002

W.O. No. 20074.515.035

TABLE OF CONTENTS

LIST OF ACRONYMS

ACM	asbestos contaminated materials
ft	feet
NESHAP	National Emissions Standards for Hazardous Air Pollutants
SEDA	Seneca Army Depot Activity
$\text{WESTON}_{\text{SM}}$	Weston Solutions, Inc.
WP	Work Plan

SECTION 1

GENERAL

1. GENERAL

The publications listed below form part of this Work Plan (WP) to the extent referenced and are referred to within the text by the basic designation only. The work procedures of this WP have been developed to incorporate the substantive requirements of these codes and standards. The current edition of each reference shall be utilized.

- 40CFR Part 61 National Emissions Standards for Hazardous Air Pollutants (NESHAP)
- EPA 340/1-90/019 Asbestos/NESHAP Adequately Wet Guidelines (December 1990)
- EPA 340/1-90-018 Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance (1990)
- State of New York, Department of Labor Industrial Code Rule No. 56
- 9CFR 1910.1001 General Industry
- 29CFR 1926.1101 Asbestos Standard for the Construction Industry
- 29CFR 1910.134 Respiratory Protection
- U.S. Army Corps Engineers Safety and Health Requirements Manual EM 385-1-1

SECTION 2

BACKGROUND

2. BACKGROUND

SEAD-54 is located at the Depot's historic Tank Farm, which is located in the southeastern portion of Seneca Army Depot Activity (SEDA) in an area of the Depot where the designated future land use is Warehousing. The tank Farm was sited in a triangular-shaped tract of land immediately west of East Patrol Road between building 350 and buildings 356 and 357. The topography of SEAD 54 is relatively flat, with a total relief of 2 to 3 feet (ft). There is an east-west running access road that bisects the site and connects Avenue H with the East Perimeter Road. A drainage ditch is located on both sides of the access road, and water captured in these ditches flow east towards intersecting ditches bordering the East Patrol Road. North of the access road, SEAD 54 is generally overgrown with vegetation, exclusive of spots where the circular footprints of former tanks are located. The area south of the access road is flat and grassy.

Based on site history, one of the four existing empty above ground storage tanks located in SEAD 54 was previously used to store asbestos (amosite). This tank has since been abated to remove all asbestos contaminated materials (ACM) located within the tank and a certificate is on file with SEDA. However, based on additional surface sampling performed by Parsons for ACM at SEAD's 50 and 54, one out of the 15 sample locations was identified as containing a total concentration of 10-15% ACM. Since this concentration is above the state threshold of 1% the area will require abatement to remove any soil containing ACM.

SECTION 3

SCOPE OF WORK

3. SCOPE OF WORK

SEAD 54 is a 25,000 square foot site located within the Seneca Army Depot former Tank Farm. An estimated volume of 415 to 465 cubic yards of asbestos containing soil is targeted for removal based on the investigation sampling performed to date for ACM. In order to confirm the lateral and vertical extent of ACM removal, the area will be sampled prior to excavation. Sampling will be performed in accordance with the Chemical Sampling and Analysis Plan. Currently, the proposed area to be excavated is 150 ft x 150 ft x 6 inches deep; however, this area may be sectioned off based on the results of the pre-excavation sampling.

Weston Solutions, Inc. ($WESTON_{SM}$) will be required to remove all ACM from the site (to be confirmed via analytical sampling).

SECTION 4

SEQUENCE OF ACTIVITIES

4. SEQUENCE OF ACTIVITIES

The work area will be clearly delineated and all personnel not engaged in the excavation operation will be excluded from the work area. The work area shall be delineated off utilizing Asbestos Danger Tape and warning signs shall be posted at all approaches to the work areas stating:

DANGER
ASBESTOS
Cancer and Lung Hazard
Authorized Personnel Only
Respirators and Protective Clothing
Required in this Area

During excavation and loading of asbestos contaminated soil, adequate watering will be performed to keep airborne particles to a minimum. The water will be provided using a water truck or local hydrant system (if available). The surfactant agent used shall be effective for fugitive emissions, and shall be non-toxic, non-hazardous, non-flammable, be utilized within shelf life limitations, require no chemical mixing, require minimal clean-up, and contain no temperature limitations. The asbestos contaminated soil being excavated will either be loaded directly into lined dump trailers or stockpiled for future loading depending on the volume to be excavated. If the soil is to be stockpiled, it will be stockpiled within the area designated as asbestos contaminated, adequately wetted, covered, and secured (if left overnight). The dump trailers will be of sound construction (no holes or rusted areas) and will be lined with two (2) layers of ten (10) mil polyethylene pre-formed liners at a minimum. Each dump trailer will be properly placarded to indicate that asbestos waste is being loaded and hauled. All material will be covered and transported in accordance with all federal, state, and local regulations. All equipment associated with the excavation and transport of asbestos contaminated soil will be decontaminated on a daily basis and before being released to other service or use. All waste generated as a result of decontamination performed during removal of ACM containing soil will be shipped offsite with the soil or drummed for separate transport and disposal.

SECTION 5

DECONTAMINATION FACILITIES

5. DECONTAMINATION FACILITIES

Personnel, equipment, and waste decontamination areas will be constructed adjacent to the exit of the work site. All personnel will use the on site portable decontamination facility to change into and out of protective clothing and required respiratory protection. The portable decontamination facility will also contain a wash station for all workers.

All authorized visitors to the work site will enter and exit through the decontamination facility.

A truck wash station will be constructed at the exit from the site. Construction of the truck wash station will be accomplished using heavy-duty rubber membrane material so as not to be damaged from the trucks. Water used to decontaminate trucks will be collected and filtered through a 5-micron filtration system if not transported off-site.

SECTION 6

PERSONNEL PROTECTIVE EQUIPMENT

6. PERSONNEL PROTECTIVE EQUIPMENT

All personnel entering the work site will wear personal protective equipment. This includes authorized visitors. The following is a list of personnel protective equipment to be used:

- Tyvek (or similar) Coveralls with hood
- Gloves
- Booties
- Hard Hat
- Air purifying respirator or
- Powered air purifying respirator
- Safety Glasses

SECTION 7

OSHA PERSONNEL EXPOSURE MONITORING/AREA MONITORING

7. OSHA PERSONNEL EXPOSURE MONITORING/AREA MONITORING

Personal air samples will be taken by each contractor on the site as required by Occupational Safety and Health Administration (OSHA). An individual certified by the State of New York as an air-sampling technician will conduct area monitoring as required. Results will be provided to the site manager within 24 hours.

SECTION 8

WASTE DISPOSAL

8. WASTE DISPOSAL

Waste will be disposed of in a landfill approved by the State of New York for the acceptance of Asbestos contaminated material.

A copy of the waste manifest will be provided to the site manager in accordance with the procedures listed in the WP. A copy of the completed waste manifest will be provided within 45 days to the On-Site Representative along with a certificate of destruction.

U.S. Army Corps
of Engineers
Omaha District
Offutt AFB, Nebraska

SENECA ARMY DEPOT
METAL SITES — SEAD s 50/54, 24, & 67
SENECA COUNTY
ROMULUS, NEW YORK

Contract No. DACA45-98-D-0004
Task Order No. 0035

FINAL
SITE SAFETY AND HEALTH PLAN

NOVEMBER 2002

01M-0007

WESTON SOLUTIONS
Restoring Resource Efficiency

FINAL
SITE SAFETY AND HEALTH PLAN
SENECA ARMY DEPOT ACTIVITY
METAL SITES – SEAD's 50/54, 24 & 67
SENECA COUNTY
ROMULUS, NEW YORK

Contract No. DACA45-98-D-0004
Task Order No. 0035

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
Castle Hall Building No. 525,
3rd Floor
Offutt AFB, Nebraska 68113

Prepared by:

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

November 2002

W.O. No. 20074.515.035

Site Safety and Health Plan
Approval/Signoff Form
Metals Sites – SEAD's 50/54, 24 & 67
Seneca Army Depot Activity
Romulus, NY

Contract No. DACA45-98-D-0004

SITE SAFETY AND HEALTH PLAN APPROVALS

By their specific signature, the undersigned certify that this Site Safety and Health Plan is approved for utilization during site remediation activities at the Metals Sites – SEAD's 50/54, 24 & 67 located at the Seneca Army Depot in Romulus, New York.

Signature, Name, Title

WESTON – Operations Manager Christopher Henry	Date
WESTON - Project Manager Christopher G. Kane	11/18/02 Date
WESTON - Program CIH George M. Crawford, CIH	Date
WESTON - Site Safety and Health Officer Steve Kirejczyk	Date

Site Safety and Health Plan
Approval/Signoff Form
Metals Sites – SEAD's 50/54, 24 & 67
Seneca Army Depot Activity
Romulus, NY

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Signature, Name, Title

WESTON – Operations Manager
Christopher Henry

11/18/02
Date

WESTON - Project Manager
Christopher G. Kane

Date

WESTON - Program CIH
George M. Crawford, CIH

11/18/02
Date

WESTON - Site Safety and Health Officer
Steve Kirejczyk

Date

Site Safety and Health Plan
Approval/Signoff Form
Metals Sites – SEAD's 50/54, 24 & 67
Seneca Army Depot Activity
Romulus, NY

Contract No. DACA45-98-D-0007

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

Name	Signature	Date

Name	Signature	Date

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LIST OF ACRONYMS

ACGIH	American Conference of Governmental Industrial Hygienists
AIHA	American Industrial hygiene Association
ANSI	American National Standards Institute
APRs	Air Purifying Respirators
ASTs	aboveground storage tank
BRAC	Base Realignment and Closure
CAMP	Community Air Monitoring Plan
CGI	combustible gas indicator
CIH	Certified Industrial Hygienist
cm^3	cubic centimeter
E&S	erosion and sedimentation
EPA	U.S. Environmental Protection Agency
ESI	Expanded Site Inspection
FLDs	Field Operating Procedures
FID	Flame ionization detection
ft	feet
GFCI	ground fault circuit interrupter
HEPA	high-efficiency particulate absolute
LEL	lowest effective level
mg/kg	milligrams per kilogram
mg/m^3	milligrams per cubic meter
MSDSs	Material Safety Data Sheets
MSHA	Mine Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O_2	oxygen
OSHA	Occupational Safety and Health Administration
OSR	On-Site Representative
PAHs	polynuclear aromatic hydrocarbons
PEL	Permissible Exposure Limit
PID	Photoionization detector
PNOC	Particulates Not Otherwise Classified
PPE	personal protective equipment
QC	Quality Control

LIST OF ACRONYMS (continued)

SEDA	Seneca Army Depot Activity
SOW	Scope of Work
SSH/QCO	Site Safety and Health/Quality Control Officer
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
SVOCs	semi-volatile organic compounds.
SWMUs	Solid Waste Management Units
TAGM	Technical and Administrative Guidance Memorandum
TLVs	threshold limit values
ug/kg	microgram per kilogram
ug/m^3	microgram per cubic meter
USACE	U.S. Army Corps of Engineers
UXO	Unexploded ordnance
WESTON$_{SM}$	Weston Solutions, Inc.
WP	Work Plan
yd^3	cubic yards

SECTION 1

INTRODUCTION

1. INTRODUCTION

1.1 PROJECT DESCRIPTION

Site Safety and Health Plan (SSHP) was prepared by Weston Solutions, Inc. (WESTON$_{SM}$) for the Scope of Work (SOW) described by the U.S. Army Corps of Engineers (USACE) for the work at the Seneca Army Depot Activity (SEDA) in Romulus, New York. This work will be performed under the Rapid Response/Immediate Response Contract for Control/Remediation of Hazardous, Toxic and Radioactive Waste, Task Order No. 0035 of Contract No. DACA45-98-D-0004. Seneca Army Depot Activity has been closed under the Department of Defense's Base Realignment and Closure (BRAC) process. The remedial action is intended to provide clean closure to the Tank Farm (SEAD 50/54), Abandoned Powder Burning Pit (SEAD 24), and the Debris Piles East of the Sewage Treatment Plant No. 4 (SEAD 67) to facilitate transfer of these properties for public and private beneficial reuse.

The work for this project generally shall include the following:

- Mobilization of construction equipment and temporary office and storage trailers to the project site.
- Site preparation including removal of brush and vegetation, installation of drainage and erosion control measures around excavation and temporary storage areas, construction of personnel and equipment decontamination stations.
- Surveying to delineate soil excavations, identify sampling locations and prepare project record drawings.
- Removal and temporary storage of contaminated soils, sediments and waste piles.
- Sampling to verify clean-up goals have been achieved.
- Transportation and disposal of all waste material generated during the execution of this task order.
- Seeding all excavation areas.
- Demobilization of equipment and restoration of the site.

Appropriate, Relevant, and Applicable Requirements for the technical portions of this project include, but are not limited to the following:

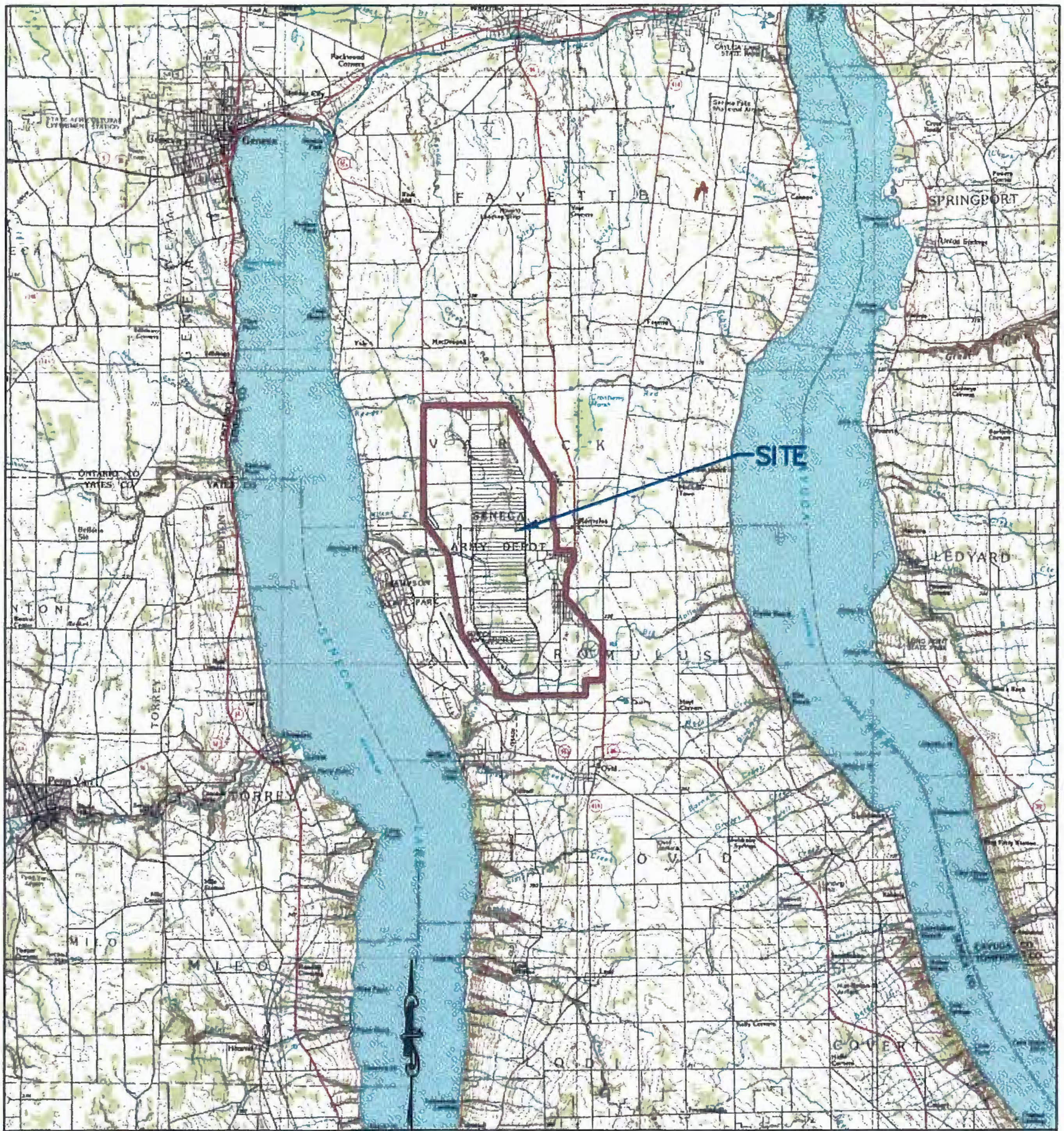
- New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) HWR089-4031, "Fugitive Dust Suppression and Particulate Monitoring at Inactive Hazardous Waste Sites," October 27, 1989;
- New York State Department of Environmental Conservation Technical and Administrative Guidance Memorandum (TAGM) #4046, "Determination of Soil Cleanup Levels," January 1994.
- New York State Department of Health (NYSDOH) Community Air Monitoring Program.
- New York Codes, Rules, and Regulations 364-376.

1.2 SITE DESCRIPTION

1.2.1 Site Location and Description

The Seneca Army Depot Activity is located in Romulus, Seneca County, New York (see Figure 1-1). Seneca Army Depot Activity is a U.S. Army facility and occupies approximately 10,600 acres. It is bounded to the west by State Route 96A and on the east by State Route 96. Geneva and Rochester are located to the northwest (14 and 50 miles, respectively); Syracuse is 50 miles to the northeast and Ithaca is 31 miles to the south. The surrounding area is generally used for agriculture

As described in the *Final Action Memorandum* dated August 2002, time-critical removal actions are planned at four Solid Waste Management Units (SWMUs) at SEDA. The four SWMUs have been designated as SEADs 50/54, 24, and 67. Historical operations at these sites resulted in contamination of shallow soils with metals and in some cases semi-volatile organic compounds. (SVOCs), and the placement of contaminated soils in waste piles. Some migration of contaminants to surficial soil in drainage ditches or in stream sediments located near the SWMUs may have occurred.



SOURCE:
USGS TOPOGRAPHY MAPS; GENEVA SOUTH, DRESDEN, OVID, & ROMULUS – NEW YORK QUADS

GRAPHIC SCALE
3 1.5 0 1.5 3
APPROXIMATE SCALE IN MILES

TIME CRITICAL REMOVAL ACTION METALS SITES – SEADS 50/54, 24, & 67 SENECA ARMY DEPOT ACTIVITY (SEDA) ROMULUS, NEW YORK	DEPARTMENT OF THE ARMY OMAHA DISTRICT CORPS OF ENGINEERS OMAHA, NEBRASKA		
SITE LOCATION MAP	WESTON SOLUTIONS MANCHESTER NEW HAMPSHIRE	DRAWN	BEG
		DATE	OCT 2002
		FIGURE NO.	1–1

M:\...\DWG\ACOE\SENECA\seads 50-54 24 67\fig 1-1.dwg, Layout1, 10/28/2002 05:00:09 girardeb, 1:1

1.2.1.1 SEAD-50/54

SEAD 50/54 is the location of a former tank farm in the southeastern portion of SEDA. SEAD 50/54 is located immediately west of East Patrol Road between Buildings 350 and Buildings 356 and 357 (see Figure 2-3 of the *Parsons Action Memorandum* document dated August 2002). An unnamed road crosses the site from east to west. Drainage ditches are present adjacent to East Patrol Road and the unnamed east-west road. Currently, four tanks remain in the area which are empty. Antimony ore was stored in two of the empty tanks. Rutile ore was stored in the third. The fourth tank, designated as SEAD-54 (Tank #88), was filled with asbestos. A ferro-chromate ore pile is located in the southern portion of the site. The topography of the site is relatively flat.

1.2.1.2 SEAD-24

This site is located in the west-central portion of SEDA. According to the SOW, an abandoned powder burning pit was operated at SEAD-24. The area is approximately 325 feet (ft) by 150 ft and is surrounded on the east, south, and west by a U-shaped berm approximately 4 ft high (see Figure 1-3 of the *Parsons Action Memorandum* document dated August 2002). The site is bounded by West Kendaia Road to the north and open grasslands and brush to the east, south and west. Topography slopes to the west. Drainage swales located west of SEAD-24 drain the site toward Kendaia Creek. A shale-covered area adjacent to the bermed area may also have been impacted by historical uses.

1.2.1.3 SEAD-67

SEAD 67 is located south of West Romulus Road and east of Sewage Treatment Plant No. 4 in the east-central area of SEDA (See Figure 3-3 of the *Pardons Action Memorandum* document dated August 2002). The site is undeveloped and is heavily vegetated with low brush and deciduous trees. Approximately seven waste piles and berms are present. A grass-covered, 10-foot diameter waste pile and a 5-foot diameter waste pile are located approximately 50 and 70 ft, respectively, from south of West Romulus Road. A brush-covered berm 60 ft long and a 10-foot diameter pile are located approximately 175 ft south of West Romulus Road. Another 100-foot long berm is located approximately 225 ft south of the road and two smaller waste piles are located to the south of this berm. All the piles and berms are approximately 3 to 4 ft high except for the 10-foot diameter pile which is approximately 5 ft high. The topography of the site slopes gently to the west to an unnamed stream.

1.2.2 Site Background

1.2.2.1 SEAD-50/54

This site is a tank farm. Historically, there were approximately 160 tanks in the area. There are currently 4 tanks (empty) at the site. It is not known when the tank farm was installed. All tanks were reportedly used to store dry materials such as ores and minerals.

Tank #88, formerly used to store asbestos, was designated SEAD-54. The tank farm area was designated as SEAD-50. The two sites are now referred to as SEAD-50/54.

An Expanded Site Inspection (ESI) was performed at SEAD-24 during 1993 and 1994. The ESI determined that surficial soils within the tank farm area and drainage ditches adjacent to the tank farm area have been impacted by historical use of the property.

The ESI sample results indicate concentrations for eight metals (antimony, arsenic, chromium, copper, lead, magnesium, mercury and zinc), seven SVOCs [six polynuclear aromatic hydrocarbons (PAHs) (i.e., benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and dibenz(a,h)anthracene) and phenol] and asbestos exceed cleanup goals in the tank farm area. A surface sample collected near Tank #88 indicated 10 to 15% chrystoline asbestos. Initially, approximately 5,000 cubic yards (yd^3) of surficially contaminated soil will be removed based on the ESI sample results.

In addition, the ESI identified the presence of six SVOCs (i.e., benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and dibenz(a,h)anthracene) and five metals (arsenic, lead, manganese, potassium, and zinc) exceeding cleanup goals in surficial soils and sediments in drainage ditches adjacent to East Patrol Road and the unnamed east-west road that crosses the site. Initially, approximately 150 yd^3 of contaminated surficial soils and sediments will be removed from drainage ditches based on the ESI.

1.2.2.2 SEAD-24

As previously stated, a powder burning pit was operated at SEAD-24 during the 1940's and 1950's. It is expected that black powder, M10 and M16 solid propellants and explosive trash were burned here. Petroleum hydrocarbon fuels may have been used to start fires. A shale-covered area adjacent to the bermed area may also have been used. Unexploded ordinance (UXO) is not expected to be present.

An ESI was performed at SEAD-24 during 1993 and 1994. Metals are the most widespread contaminant at the site with arsenic, lead and zinc exceeding TAGM criteria at numerous sample locations. The highest arsenic concentration identified was 56.7 milligrams per kilograms (mg/kg) in a surficial soil sample. Arsenic concentrations in subsurface samples were below cleanup goals. Zinc concentrations in surficial samples exceeded cleanup goals at numerous locations with the highest level identified as 1180 mg/kg. According to the *Final Action Memorandum* dated August 2002, numerous surficial soil samples analyzed for lead exceeded cleanup goals. Only one sample, the highest concentration detected (422 mg/kg) exceeded U.S. Environmental Protection Agency (EPA) guidance for lead in residential soil.

The ESI results identified three SVOCs and fourteen metals were present at concentrations exceeding TAGM #4046 at the site. The three SVOCs present exceeding cleanup goals are PAHs (i.e., benzo(a)anthracene, benzo(a)pyrene, and dibenz(a,h)anthracene).

Initially, approximately 2,500 yd^3 of surficially contaminated soil will be removed based on the ESI sampling effort.

1.2.2.3 SEAD-67

Little is known about the origins of the five waste piles and two berms at this site. Due to the thick vegetation at the site, it is suspected that the waste piles and berms were placed in the area many years ago.

An ESI was conducted at the site in 1993. The ESI determine that soils contained in the waste piles and berms are contaminated with PAH's (i.e., benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene and dibenz(a,h)anthracene) and mercury. Sediment in the drainage ditch east of the sewage treatment plant contains levels of pesticides (alpha-chlordane, endosulfan 1 and 4,4-DDT), six PAHs (i.e., benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and ideno(1,2,3-cd)pyrene) and several metals (copper, manganese, nickel and silver) exceeding cleanup goals. Initially, approximately 160 yd^3 of contaminated soil and sediment will be removed based on the ESI sample results.

SECTION 2

PERSONNEL AND RESPONSIBILITIES

2. PERSONNEL AND RESPONSIBILITIES

All operations and personnel having the potential for exposure to site hazards are subject to the requirements of this SSHP. Roles and responsibilities for site personnel are summarized in the following sections and are described in the SSHP. An organizational chart depicting the chain of command for this project is presented in Figure 2-2 in the Work Plan (WP).

2.1 PROGRAM MANAGER

Mr. Frank Monahan serves as the Program Manager for all Rapid Response task orders. Mr. Monahan is responsible for ensuring that WESTON executes all task orders efficiently, expediently, and with the highest degree of competency.

Weston Solutions, Inc.'s Program Management Office will support the Project Manager with regard to purchasing, soliciting of vendors, and evaluation of bids including consent packages, property management, and Certified Industrial Hygienist (CIH) issues. He will also ensure that the "complete manifest packages" are in order for submittal to CENWO-CD-FC, will oversee the tracking of manifest packages if required under the task order, and, will prepare vouchers for submittal to CENWO-CD-FC.

2.2 PROJECT MANAGER

Mr. Chris Kane will serve as the Project Manager for the activities covered in the Final WP. He has overall financial and schedule responsibility for the project, will approve all vouchers to CENWO-CD-FC, and has the authority to negotiate change orders. A delegation letter authorizing Mr. Kane to negotiate on behalf of WESTON will be sent under separate cover.

2.3 SAFETY AND HEALTH MANAGEMENT

2.3.1 Program Safety Officer

The Program Safety Officer for this project is George M. Crawford, CIH. Mr. Crawford is certified in comprehensive practice of industrial hygiene by the American Board of Industrial

Hygiene. He has over 20 years of industrial hygiene and safety experience. The CIH will have the following responsibilities:

- Review and final approval of the SSHP.
- Ensure that the SSHP complies with all federal, state, and local health and safety requirements. If necessary, modify specific aspects of the SSHP to adjust for on-site changes that affect safety.
- Evaluate and authorize any changes to the SSHP.
- Implementation and oversight of the Health and Safety Program.
- Assist in acting as liaison with government officials regarding health and safety-related site matters.
- Maintain frequent communication with the Site Safety and Health Officer (SSHO) regarding site activities and implementation of the SSHP.
- Assist in training site personnel in the site-specific hazards.
- Ensure site and personnel compliance with the WESTON Safety Program.

2.3.2 Site Safety and Health Officer

Mr. Steven Kirejczyk will serve as the Site Safety and Health/Quality Control Officer (SSH/QCO) The SSH/QCO will be responsible for the implementation of the SSHP and for ensuring that all project personnel follow the requirements of the SSHP. The SSH/QCO will conduct daily tailgate safety meetings and will be responsible to report any incidents that occur on the site to the Site Manager, Project Manager, Program Manager, and CIH. He is responsible to implement any safety corrective actions identified through training and reinforced awareness.

The SSH/QCO will also be responsible for the implementations of WESTON's quality control (QC) measures outlined in this Draft WP. The SSH/QCO will be responsible for implementing the four phases of construction (Preparatory Inspection, Initial Inspection, Follow-up Inspection, and Final Inspections) for each new feature of work and throughout the workday. The SSH/QCO will be responsible for preparing the Rapid Response QC Daily Report, and will assist the Project Manager in the preparation of the Rapid Response Weekly Report and the Final Project Report.

2.4 SITE MANAGER

Mr. Edwin Benton will serve as the Site Manager for this project. The Site Manager will be responsible for coordinating and supervising all site activities, including:

- Supervision of WESTON and WESTON subcontractor work forces.
- Compliance with WESTON's SSHP.
- Supervision of WESTON's Contractors Quality Control Plan.
- Submission of daily cost tracking, construction reporting, and scheduling information.

2.5 CORE FIELD TEAM

Weston Solutions, Inc. will designate a Core Field Team that will assist the Site Manager with managing the daily progress, technical issues, and property management issues associated with the project. The Core Field Team will include a cost/schedule engineer, and sampling technicians as is necessary.

2.6 WESTON SUBCONTRACTORS

Subcontractors will be brought onto the site for specialty services. These subcontractors will be under the ultimate direction of the Site Manager.

SECTION 3

CONTAMINANT CHARACTERIZATION

3. CONTAMINANT CHARACTERIZATION

Four historical Solid Waste Management Units (SWMUs) are located at the Seneca Army Depot (SEADS 50/54, 24, and 67). These sites were investigated for contamination as reported in the *Final Action Memorandum* prepared by Parsons dated August 2002. SEAD 50/54 consisted of an above ground tank farm that was used to store mineral ores. SEAD 24 is a former powder burning pit potentially containing black powder M10 and M16 solid propellants. SEAD 67 consists of several small stockpiles of impacted soil east of the sewage treatment plant. According to the *Memorandum and Decision Document,* metals and to a lesser extent, SVOC and pesticides/polychlorinated biphenyl are present at each of the four SWMUs discussed. The contaminants, primarily metals, identified in shallow soils, drainage ditch soils, and sediments at the four SWMUs may be mobilized and move away from the identified sites via solution and suspension in storm water run-off, or infiltration in groundwater. Once mobilized, contaminants may impact deeper soils, groundwater and surface water or sediments. Specific inorganic contaminants of immediate concern identified in the Memorandum include; arsenic (SEADs 50/54 and 24), lead (SEAD-24), mercury (SEADs 50/54 and 67), and zinc (SEADs 50/54 and 24). Specific SVOCs of interest include (PAHs at each of these areas. Asbestos has been identified in one sample from SEAD 50/54. It is presumed that the Aboveground Storage Tanks (ASTs) located in SEAD 50/54 are coated with lead based paints.

3.1 CHEMICAL HAZARDS: ON SITE ACTIVITIES

The remedial activities require the use of concentrated chemicals for proper decontamination of equipment. The following chemicals are expected to be used during the activities on-site:

- Alconox/liquinox
- PH buffer solution
- Calibration gases (methane, isobutylene, pentane)
- Diesel fuel
- Gasoline
- Oil & Grease
- 10% nitric acid
- Acetone (pesticide grade) rinse

Table 3-1

Contaminants of Concern (SEADs 50/54, 24 & 67)
Highest Reported Concentrations

Contaminant	Maximum Concentrations in soil or sediment
Arsenic	151 mg/kg
Asbestos*	10-15%
Lead**	422 mg/kg
Mercury	4 mg/kg
Copper	324 mg/kg
Chromium	60 mg/kg
Cadmium	8 mg/kg
Zinc	1180 mg/kg
Benzo(a)anthracene	5200 microgram/kilogram (ug/kg)
Benzo(b)fluoranthene	3700 ug/kg
Benzo(g,h,i)perylene	4400 ug/kg
Benzo(k)fluoranthene	4000 ug/kg
Chrysene	5500 ug/kg
Dibenz(a,h)anthracene	840 ug/kg

*Asbestos has been identified in only one sample at SEAD 50/54.
** Assume ASTs have lead painted exteriors.

A Site Specific Hazard Communication Program is contained in Appendix A. An inventory of the chemicals and the Materal Safety Data Sheets (MSDSs) can be reviewed in the MSDS binder maintained in the site trailer. All subcontractors shall inform WESTON of all chemical materials brought on-site and the location of their MSDSs.

SECTION 4

SCOPE OF WORK AND FIELD ACTIVITIES

4. SCOPE OF WORK AND FIELD ACTIVITIES

The scope of work (SOW) consists of mobilization, site preparation, tank demolition, soil removal, sampling and analytical, transportation and disposal, site restoration, and demobilization. Field activities are summarized below.

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

- **Task 1. Mobilization**. This task will include setting up temporary facilities, mobilizing construction equipment and resources, and familiarizing project personnel with the site, the work and the requirements for the work.
- **Task 2. Site Preparation**. Layout of work areas, installation of erosion and sedimentation controls, clearing and grubbing, establishing equipment staging and material stockpile areas, and setting up a temporary decontamination pad.
- **Task 3. Tank Demolition and Removal (optional)**. If required, this task will include the decontamination and abatement and the demolition or disassembly of the ASTs in SEAD 50/54.
- **Task 4. Soil removal**: This task will include removal of approximately 6-inches of soil from each of the areas identified in the various SWMUs (SEAD 50/54, 24 & 67). The methods used to accomplish this task will be determined by evaluating the existing site conditions and the most efficient removal practice. It is assumed that the soil will be removed by heavy equipment.
- **Task 5. Sampling & Analysis**: This task will include the characterization of remediation waste stream samples, the collection and review of worker health and safety and compliance monitoring samples, and the collection and review of post excavation documentation samples.
- **Task 6. Transportation and Disposal of Wastes**: This task will include the preparation of waste manifests and shipping papers for the disposal of remediation wastes after waste characterization. It is assumed that soil, personal protective equipment (PPE), waste water, and tank demolition debris will be transported to an offsite facility for treatment and/or disposal.
- **Task 7. Site Restoration**: This task will include rough grading and seeding of the exposed soil surfaces across the excavation. Erosion and sedimentation controls will be maintained or removed as determined by the On-Site Representative (OSR).
- **Task 8. Demobilization**: This task will include completing the "punch list" items, removing all equipment from the site, removing all temporary structures, frac tanks, and other equipment and materials from the site.

SECTION 5

ACTIVITY HAZARD ANALYSIS

5. ACTIVITY HAZARD ANALYSIS

The activity hazard analysis is an ongoing process from the initiation of the SSHP preparation through the implementation and completion of the project. Therefore, the activity hazard analyses shall be completed for each task associated with the project. Site-specific activity hazard analyses are presented in this Section. Weston Solutions, Inc. Field Operating Procedures (FLDs) are contained in the WESTON's Safety Officer Field Manual. The manual will be maintained on-site. The hazards associated with each activity and the control measures are provided Table 5-1.

Equipment, inspection and training requirements for each activity are identified in Table 5-2. Inspection and training requirements for the FLDs referenced in the Activity Hazard Analysis tables in this section are described in WESTON Safety and Health program. Health and safety equipment to be used, such as monitoring instruments and PPE, is specified in sections of this SSHP. Additional field equipment is specified in the WP and Chemical Sampling and Analysis Plan for this project.

5.1 PHYSICAL HAZARDS

In addition to the physical hazards outlined in the Activity Hazard Analysis Sheets (see Table 5-1), special physical hazards that have the potential to affect worker and public safety are addressed below.

5.1.1 Excavations

Excavations will be delineated by stakes and flagging during soil removal activities. Excavations will remain delineated prior to confirmation sampling. Compliance with Occupational Safety and Health Administration (OSHA), 29CFR1926 Subpart P, and COE EM 385-1-1, Section 25, will be maintained. The planned depth of soil excavations is currently 6-inches below existing grade. After source removal and confirmatory sampling the edge of the excavations will be gently sloped to meet existing grade.

Table 5-1
Activity Hazard Analysis

Tasks 1 & 2 - Mobilization and Site Preparation

Task	Hazards	Hazard Control
Mobilization of man power and equipment, establish work zones, locate underground utilities, site specific training, clearing and grubbing, installation of erosion and sedimentation (E&S) controls.	***Chemical Hazards***—Non-intrusive activities and therefore, the risk level of exposure to site contaminants during this activity is low. Focus on hazard awareness and change of conditions.	No intrusive activities allowed during this task. Wear appropriate PPE for splash and to prevent dermal contact. Avoid liquid pools and stained areas if possible. An initial visual survey will be conducted to confirm the levels of protection are correct for the task. Pay particular attention to shallow subsurface soil during E&S control installation with emphasis on hazard recognition. Action levels established in the Table 6-1 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. Work to be completed in adequate natural light or assure sufficient illumination is maintained. Site personnel shall conduct an initial walkover in groups of two at a minimum. Site personnel shall refer to and follow WESTON FLDs 02-Inclement weather and 39-Illumination. Also, see FLD 11 and 12.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work areas will be kept organized and ice, snow and mud will be cleared from steps to reduce slip hazards. See FLD 12.
	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 cabinets. 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 within 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 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.

Table 5-1
Activity Hazard Analysis

Tasks 1 & 2 - Mobilization and Site Preparation (continued)

	Electric Hazards	Generators will be grounded unless self-grounded. Extension cords will be properly rated for intended use. Prior to any intrusive activity, authorities will be contacted for permits. Elevated parts of machinery, ladders, and antennas will be kept at least 10 ft from overhead electric lines. Electrical Installations will be made by qualified electricians. A lockout/tagout program consistent with FLD 42 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. See FLD 22.
	Hand tools, manual and power.	Tools shall be inspected prior to use. Damaged tools will be tagged out of service until repair can be performed by a qualified person. Use tools properly and for their intended purpose. All power circuits used for hand tools will be protected by a ground fault circuit interrupter. See FLD 38.
	Grubbing and vegetation removal. Chain saws and chippers.	Chain saws, chippers, and land clearing equipment will be operated by qualified persons. Chain saw operators will wear chaps. Chippers will be inspected before use, operators will be refreshed in operation by the vendor, all guards will be in place, and per EM 385-1-1 direction, the distance from chipping blades to the ground along the center line of the feed hopper will be maintained at 72-inches. Persons cutting trees will be appropriately trained and experienced. Trees to be cut will be checked by experienced persons prior to cutting to identify increased hazard situations. Retreat routes from trees to be cut will be planned before cutting begins, and no one will be permitted within 2 tree lengths of trees being cut. See FLD 47.

Tasks 1 & 2 - Mobilization and Site Preparation (concluded)

	Striking and being struck by operating equipment, loads, falling objects, and pinch points. Inclement weather, Heat/Cold stress Traffic	Workers shall stay out of the swing area of all equipment and from under loads. No personnel shall ride on the equipment unless seats are provided. See FLD 20, 22A, 23, and 24. Workers exposed to traffic hazards will wear traffic/reflectorized vests. Vehicles will be checked during maintenance and cribbed if wheels need to be changed. Due to the remote nature of the sites, it is anticipated that vests will not be required, however, this shall be monitored by the SSHO. 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 American Conference of Governmental Industrial Hygienists (ACGIH) and National Institute for Occupational Safety and Health (NIOSH) guidelines. Salt will be applied to walkway and roadway surfaces where ice is a problem. Work areas will be clearly barricaded and appropriate signs displayed. Traffic will be rerouted as necessary. Persons working near roadways or directing traffic will wear high visibility vests. See FLD 20.
	Biological—Poisonous plants, insects, 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 43.
	Radiation—Potential sun burn/sun poisoning hazard on bright, sunny days. Based on-site history, no historical records of ionizing radiation use or storage in SEADs 2424, 50/54 & 67.	Use sunblock as appropriate. Avoid direct exposure to sun for long periods of time. There is no known source of radioactive material at this site.

Task 3—AST Demolition & Removal (Optional)

Task	Hazards	Hazard Control
Three ASTs will be demolished, disassembled and loaded for disposal. It is assumed that the tanks have been painted with lead paint. Utilize a mechanical shear to demolish the tanks.	***Chemical Hazards***—The potential for exposure to lead dust is present while conducting these activities. The tanks are presumed to be painted with lead based paint. The risk level associated with these activities is moderate.	Engineering controls will be utilized as necessary to minimize dust. Avoid direct contact with paint chips. Follow the requirements outlined in 29CFR1926.62 to minimize occupational exposure to lead. Only trained qualified personnel will perform lead abatement work. Appropriate PPE including full face Air Purifying Respirators (APRs) with efficiency filters utilized during lead abatement activities. Utilize chemical protective clothing to prevent dermal contact. Decontaminate tools equipment and reuseable PPE. Discard expendable PPE at the end of the shift or when leaving the controlled zone. Air monitoring and sampling will be performed as described in Section 7.
	Physical Hazards—Slip, trips, falls, equipment, materials, tools, terrain, uneven walking surfaces. Weather hazards, such as severe weather and lightning; poor visibility.	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.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Loose paint chips will be vacuumed up with a high-efficiency particulate absolute (HEPA) vacuum to minimize dust generation and reduce the risk of exposure. Work areas will be kept organized and free of ice, snow and mud to reduce slip hazards. See FLD 12.
	Inclement weather, including rain/snow, lightning, and heat/cold stress.	Personnel shall be dressed according to weather conditions; personnel working in high temperatures or direct sunlight shall follow FLD 05. Personnel working in cold temperatures or rain shall follow FLD 06. Work will cease during lightning. Inspect roadway and walk surfaces for ice apply salt as needed.
	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.

Task 3—AST Demolition & Removal (Optional) (continued)

	Hands or fingers caught between objects; abrasions and lacerations. Noise during the operation of heavy equipment and during tank demolition.	Personnel shall be made aware of potential hazards and will coordinate carefully the handling and placement of heavy objects. Materials and objects being handled will be inspected for ice and 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. A hearing conservation program consistent with FLD 01 will be established. High noise areas will be identified. Hearing protection will be provided as appropriate. The latest ACGIH threshold limit values (TLVs) will be used.
	Fire	Flammable liquids will be stored in safety containers and flammable storage cabinets. 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 within 50 ft of the fuel storage area, in construction equipment, and strategically in the construction area.
	Electric Hazards	Generators will be grounded unless self-grounded. Extension cords will be properly rated for intended use. Prior to any intrusive activity, authorities will be contacted for permits. Elevated parts of machinery, ladders, and antennas will be kept at least 10 ft from overhead electric lines. Electrical Installations will be made by qualified electricians. A lockout/tagout program consistent with FLD 42 will be used for equipment maintenance.
	Biological—Poisonous plants, insects, 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 43.
	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. There is no known source of radioactive material at this site.

Task 4—Soil Removal

Task	Hazards	Hazard Control
Soil and sediment will be removed from impacted surface areas and drainage swales and ditches.	***Chemical Hazards***—The potential for exposure is present while conducting these activities because the soil and sediment may be contaminated. The risk level associated with these activities is moderate.	Engineering controls will be utilized as necessary. Avoid direct contact with sediment and also spills and splash of water. Appropriate PPE will be utilized during these activities. Air monitoring will be performed as described in Section 7. Asbestos abatement procedures may be required for soil in SEAD 50/54 based on characterization sampling results. If asbestos contamination is confirmed asbestos abatement, sampling and monitoring will be performed in accordance with the applicable federal, state and local requirements.
	Physical Hazards—Slip, trips, falls, equipment, materials, tools, terrain, uneven walking surfaces. Weather hazards, such as severe weather and lightning; poor visibility.	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.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work areas will be kept organized and ice, snow and mud will be cleared from steps to reduce slip hazards. See FLD 12.
	Inclement weather, including rain/snow, lightning, and heat/cold stress.	Personnel shall be dressed according to weather conditions; personnel working in high temperatures or direct sunlight shall follow FLD 05. Personnel working in cold temperatures or rain shall follow FLD 06. Work will cease during lightning.
	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.

Task 4—Soil Removal (continued)

	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and will 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.
	Noise during the operation of heavy equipment and during operation of the treatment system.	A hearing conservation program consistent with FLD 01 will be established. High noise areas will be identified. Hearing protection will be provided as appropriate. The latest ACGIH TLVs will be used.
	Fire	Flammable liquids will be stored in safety containers and flammable storage cabinets. 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 within 50 ft of the fuel storage area, in construction equipment, and strategically in the construction area.
	Electric Hazards	Generators will be grounded unless self-grounded. Extension cords will be properly rated for intended use. Prior to any intrusive activity, authorities will be contacted for permits. Elevated parts of machinery, ladders, and antennas will be kept at least 10 ft from overhead electric lines. Electrical Installations will be made by qualified electricians. A lockout/tagout program consistent with FLD 42 will be used for equipment maintenance.
	Biological—Poisonous plants, insects, 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 43.
	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. There is no known source of radioactive material at this site.

Task 5—Sampling and Analysis

Task	Hazards	Hazard Control
Soil and sediment will be removed from impacted surface areas and drainage swales and ditches.	***Chemical Hazards***—The potential for exposure is present while conducting these activities because the soil and sediment may be contaminated. The risk level associated with these activities is moderate. Both asbestos and lead paint have been identified as potential contaminants of concern in SEAD 50/54.	Engineering controls will be utilized as necessary. Avoid direct contact with sediment and also spills and splash of water. Appropriate PPE will be utilized during these activities. Until lead paint and asbestos contamination are ruled out, characterization sampling procedures in SEAD 50/54 will conform to the requirements federal, state and local regulations for asbestos contaminated soil and lead paint. Air monitoring will be performed as described in Section 7.
	Physical Hazards—Slip, trips, falls, equipment, materials, tools, terrain, uneven walking surfaces. Weather hazards, such as severe weather and lightning; poor visibility.	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.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work areas will be kept organized and ice, snow and mud will be cleared from steps to reduce slip hazards. See FLD 12.
	Inclement weather, including rain/snow, lightning, and heat/cold stress.	Personnel shall be dressed according to weather conditions; personnel working in high temperatures or direct sunlight shall follow FLD 05. Personnel working in cold temperatures or rain shall follow FLD 06. Work will cease during lightning.
	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.

Task 5—Sampling and Analysis (continued)

	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and will 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.
	Noise during the operation of heavy equipment and during operation of the treatment system.	A hearing conservation program consistent with FLD 01 will be established. High noise areas will be identified. Hearing protection will be provided as appropriate. The latest ACGIH TLVs will be used.
	Fire	Flammable liquids will be stored in safety containers and flammable storage cabinets. 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 within 50 ft of the fuel storage area, in construction equipment, and strategically in the construction area.
	Electric Hazards	Generators will be grounded unless self-grounded. Extension cords will be properly rated for intended use. Prior to any intrusive activity, authorities will be contacted for permits. Elevated parts of machinery, ladders, and antennas will be kept at least 10 ft from overhead electric lines. Electrical Installations will be made by qualified electricians. A lockout/tagout program consistent with FLD 42 will be used for equipment maintenance.
	Biological—Poisonous plants, insects, 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 43.
	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. There is no known source of radioactive material at this site.

Activity 6—Transportation and Disposal

Task	Hazards	Hazard Control
Field activities will include transportation and disposal instructions. Heavy equipment operation during excavation, loading, transferring, and unloading staging activities, verification soil sampling, and pressure washing equipment.	***Chemical Hazards***—The likelihood of exposure is present while conducting these activities because the soil and sediments were found to be contaminated with metals, semivolatile organics, and asbestos. Lead paint is also a concern in SEAD 50/54. The risk level associated with these activities is moderate.	Engineering controls will be utilized as necessary to control dust problems. Appropriate PPE will be utilized during excavation activities to prevent dermal contact with soil. Air monitoring will be conducted to monitor the exposure levels of contaminants.
	Physical Hazards—Slip, trips, falls while covering soil stockpiles and from construction debris, equipment, materials, tools, terrain; uneven walking surfaces or deep excavation limits. Weather hazards, such as severe weather and lightning; poor visibility.	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.
	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.
	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.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work areas will be kept organized and ice, snow and mud will be cleared from steps to reduce slip hazards. See FLD 12.
	Water Hazards, Inclement weather, including rain, lightning, and cold stress.	Personnel shall have appropriate PPE; personnel working in water, rain or cold shall follow FLDs 02, 06 and 19.

Activity 6—Transportation and Disposal (continued)

	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and will 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.
	Striking and being struck by operating equipment, loads, falling objects, and pinch points.	Workers shall stay out of the swing range of all equipment and from under loads. No personnel shall ride on the equipment. Remain within view of operator. All heavy equipment should be equipped with back-up alarms. See FLD 20, 22A, 23, and 24. Workers exposed to traffic hazards will wear traffic/reflectorized vests. A traffic control system for positioning and moving haul vehicles will be established. Heavy vehicle operators may remain in their vehicles only if they have cab over protection. If operators must check loads, loading will cease until the operator is back in the cabin or away from the vehicles in a safe location.
	Fire	Flammable liquids will be stored in safety containers and flammable storage cabinets. 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 within 50 ft of the fuel storage area, in construction equipment, and strategically in the construction area.
	Electric Hazards	Generators will be grounded unless self-grounded. Extension cords will be properly rated for intended use. Prior to any intrusive activity, authorities will be contacted for permits. Elevated parts of machinery, ladders, and antennas will be kept at least 10 ft from overhead electric lines. Electrical Installations will be made by qualified electricians. A lockout/tagout program consistent with FLD 42 will be used for equipment maintenance.
	Noise during the operation of heavy equipment.	A hearing conservation program consistent with FLD 01 will be established. High noise areas will be identified. Hearing protection will be provided as appropriate. The latest ACGIH TLVs will be used.

Activity 6—Transportation and Disposal (concluded)

	Soil excavating.	Personnel working near or around an open excavation shall avoid walking or standing near the edge of the excavation. Proper sloping and benching will be used to prevent cave-ins and undermining. Excavation equipment and stockpiled soil will not be closer than two ft from the edge of excavation. No personnel are allowed in excavations unless the required bracing, shoring, inspection, and monitoring is performed. Excavation edge will be flagged and barricaded. Visually inspect excavation daily for signs of stress fractures. See FLD 28.
	Underground and aboveground utilities. Pressure washing equipment. Inclement weather, Heat and Cold stress Covering Stockpiles(see physical)	Utility companies will be contacted prior to any excavation. All known utilities will be marked prior to digging. Proper clearances from above ground wires will be maintained during all activities. SSHO to be notified upon detection of any buried utilities. See FLD 34. Personnel will be informed of the hazards associated with the operation of pressure washers including water under pressure and steam. Personnel will wear appropriate PPE including splash protection. See FLD 37. Personnel will be informed of the heat/cold stress symptoms. Appropriate PPE and fluids will be supplied to workers. See FLD 05 and 06. Work rest periods will be established according to ACGIH and NIOSH guidelines.
	Biological—Poisonous plants, insects, 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 43.
	Radiation—Potential sun burn/sun poisoning hazard on bright, sunny days. The historical use of the site does not indicate the potential for radiation hazards.	Use sunblock as appropriate. Avoid direct exposure to sun for long periods of time. There is no known source of radioactive material at this site.

Task 7—Site Restoration

Task	Hazards	Hazard Control
Soil surrounding the excavation areas will be gently sloped to transition from existing grade to approximately 6-inches below grade. The work area will be seeded after soil and sediment removal to reestablish vegetation. Site roads will be removed as necessary. Erosion and sedimentation controls will be maintained to prevent soil erosion into surrounding streams and surface water bodies until vegetation is sufficiently established.	***Chemical Hazards***—Contaminated source areas will have been removed, therefore, the risk level associated with these activities is low.	Use dust suppression as necessary during seeding and site restoration. Appropriate PPE will be utilized during these activities.
	Physical Hazards—Slip, trips, falls from construction debris, materials, tools, terrain or vegetation; uneven walking surfaces; weather hazards, such as severe weather and lightning; 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 to ensure a safe working environment and weather conditions to be continuously monitored. See FLD 11, 12, and 39.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work areas will be kept organized and ice, snow and mud will be cleared from steps to reduce slip hazards. See FLD 12.
	Striking and being struck by operating equipment, crushing, pinch points, and overhead hazards from use of heavy equipment.	Workers shall stay out of the swing area of all equipment and from under loads. No personnel shall ride on the equipment unless seats are provided. See FLD 20, 22A, 23, and 24. Workers exposed to traffic hazards will wear traffic/reflectorized vests. A traffic control system for positioning and moving haul vehicles will be established. Heavy vehicle operators may remain in their vehicles only if they have cab over protection. If operators must check loads, loading will cease until the operator is back in the cabin or away from the vehicles in a safe location.
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefully the handling equipment operations. Maintain safe distance from moving mechanical parts. Always use appropriate PPE. See FLD 22.

Task 7—Site Restoration (continued)

	Fire	Flammable liquids will be stored in safety containers and flammable storage cabinets. 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 within 50 ft of the fuel storage area, in construction equipment, and strategically in the construction area.
	Noise during the operation of heavy equipment Traffic Electric Hazards Inclement weather, including rain, lightning, and heat/cold stress.	A hearing conservation program consistent with FLD 01 will be established. High noise areas will be identified. Hearing protection will be provided as appropriate. The latest ACGIH TLVs will be used. Work areas will be clearly barricaded and appropriate signs displayed. Use traffic vests as necessary. See FLD 20. Generators will be grounded unless self-grounded. Extension cords will be properly rated for intended use. Prior to any intrusive activity, authorities will be contacted for permits. Elevated parts of machinery, ladders, and antennas will be kept at least 10 ft from overhead electric lines. Electrical Installations will be made by qualified electricians. A lockout/tagout program consistent with FLD42 will be used for equipment maintenance. Personnel shall be dressed according to weather conditions; personnel working in high temperatures or direct sunlight shall follow FLD 05; personnel working in cold temperatures or rain/snow shall follow FLD 06. Work will cease during lightning.
	Biological—Poisonous plants, insects, snakes. ***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.	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 43. Use sunblock as appropriate. Avoid direct exposure to sun for long periods of time.

Task 8—Demobilization

Task	Hazards	Hazard Control
All equipment, materials, and personnel and temporary facilities will be removed from the site.	***Chemical Hazards***—Contaminated source areas will have been removed, therefore, the risk level associated with these activities is low.	Use dust suppression as necessary during seeding and site restoration. Appropriate PPE will be utilized during these activities.
	Physical Hazards—Slip, trips, falls from construction debris, materials, tools, terrain or vegetation; uneven walking surfaces; weather hazards, such as severe weather and lightning; 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 to ensure a safe working environment and weather conditions to be continuously monitored. See FLD 11, 12, and 39.
	Housekeeping	Materials will be stored to prevent intrusion into the work areas. Work areas will be kept organized and ice, snow and mud will be cleared from steps to reduce slip hazards. See FLD 12.
	Striking and being struck by operating equipment, crushing, pinch points, and overhead hazards from use of heavy equipment.	Workers shall stay out of the swing area of all equipment and from under loads. No personnel shall ride on the equipment unless seats are provided. See FLD 20, 22A, 23, and 24. Workers exposed to traffic hazards will wear traffic/reflectorized vests. A traffic control system for positioning and moving haul vehicles will be established. Heavy vehicle operators may remain in their vehicles only if they have cab over protection. If operators must check loads, loading will cease until the operator is back in the cabin or away from the vehicles in a safe location.
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefully the handling equipment operations. Maintain safe distance from moving mechanical parts. Always use appropriate PPE. See FLD 22.
	Fire	Flammable liquids will be stored in safety containers and flammable storage cabinets. 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 within 50 ft of the fuel storage area, in construction equipment, and strategically in the construction area.

Task 8—Demobilization (continued)

	Noise during the operation of heavy equipment	A hearing conservation program consistent with FLD 01 will be established. High noise areas will be identified. Hearing protection will be provided as appropriate. The latest ACGIH TLVs will be used.
	Traffic	Work areas will be clearly barricaded and appropriate signs displayed. Use traffic vests as necessary. See FLD 20.
	Electric Hazards	Generators will be grounded unless self-grounded. Extension cords will be properly rated for intended use. Prior to any intrusive activity, authorities will be contacted for permits. Elevated parts of machinery, ladders, and antennas will be kept at least 10 ft from overhead electric lines. Electrical Installations will be made by qualified electricians. A lockout/tagout program consistent with FLD 42 will be used for equipment maintenance.
	Inclement weather, including rain, lightning, and heat/cold stress.	Personnel shall be dressed according to weather conditions; personnel working in high temperatures or direct sunlight shall follow FLD 05; personnel working in cold temperatures or rain/snow shall follow FLD 06. Work will cease during lightning.
	Biological—Poisonous plants, insects, 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 43.
	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.

Table 5-2

Equipment and Training Requirements

Task/Activity	Equipment	Inspection	Training
Mobilization/Demobilization and Site Preparation	Equipment to be brought by subcontractor. Also air monitoring equipment, and Level D/Modified Level D PPE.	The subcontractor shall be required to conduct daily inspections and necessary maintenance for the equipment. Follow WESTON Inspection requirements per WESTON Health & Safety Program.	Equipment will be operated by qualified operators with 40-hr training with 8-hr refresher course. An initial site specific training will be conducted. Daily safety meetings will be conducted before beginning the work. Safe work practices, and good housekeeping will be followed. Personnel will be informed of the contaminants and chemicals at the site and availability of MSDS.
Tank Demolition and Disassembly	Excavator with shear attachment, Air sampling pumps, Level C PPE, HEPA Vacuum, miscellaneous hand tools and plastic sheeting.	Pumps and APRs will be inspected daily at a minimum. Cartridges and disposable PPE shall be discarded at the end of the shift at a minimum. HEPA vacuum shall be inspected to assure proper operation.	Workers involved with the tank removal must meet the training and medical monitoring requirements of 29 CFR 1926.62. Copies of current fit test, training and medical monitoring will be maintained.
Soil &Sediment Removal	Heavy equipment such as loaders, excavators, and bulldozers, hand tools, air monitoring equipment, and Modified Level D PPE.	Heavy equipment inspected daily and maintained based on use. Pumps and monitoring equipment inspected and calibrated daily. PPE inspected for proper fit and chemical compatibility prior to use.	Equipment will be operated by qualified operators with 40-hr training with 8-hr refresher course. An initial site specific training will be conducted. Daily safety meetings will be conducted before beginning the work. Safe work practices, and good housekeeping will be followed. Personnel will be informed of the contaminants and chemicals at the site and availability of MSDS.
Transportation and Disposal	Off-road trucks, Excavators, Water trucks, decontamination equipment, air monitoring equipment, and Modified Level D PPE.	As above	As above

Contaminated source area soil will be removed and placed in a staging location where it will be covered. It is currently anticipated that the existing on-site concrete pads will be utilized for soil staging. Persons involved in handling the soil should handle it carefully to avoid spreading the contamination. Equipment used to remove the soil and sediment will be inspected daily, maintained according to the manufacturer's directions, and will be operated by qualified operators. Personnel shall not walk underneath the loads being removed and shall stay clear of the turning and/or swing radius of the machinery. A two-way radio communication system will be used for the excavation and transportation to avoid traffic hazards. High visibility vests will be worn.

5.1.2 Asbestos

Asbestos was previously stored in one of the ASTs at SEAD 54. One of the soil sample contained elevated concentrations of asbestos (10-15%). Historical information indicates that the former asbestos storage tank's interior has been certified clean by a previous contractor. Prior to initiating soil removal in SEAD 50/54 characterization, samples will be collected and analyzed for asbestos to define the extent of asbestos contamination in the soil. Soil sampling will be conducted by a New York certified asbestos inspector. If asbestos concentrations in soil are greater than New York State action levels, the asbestos contaminated soil will be remediated prior to other work activities in that area. Heavy equipment (i.e., excavators and loaders) will be utilized to remove the soil, which will then be live loaded or stockpiled for future loading. The asbestos contaminated area will be remediated in accordance with the applicable local, state and federal guidelines. Personal air samples and area air samples will be collected to assure worker and community protection from asbestos hazards. Air sampling will be performed by trained qualified personnel in accordance with New York State and federal guidelines. An Asbestos Project Notification will be filed with the New York State Division of Safety and Health. Appendix B of the Final WP contains the Asbestos Abatement Technical Plan.

5.1.3 Lead

It is presumed that the steel ASTs were historically coated with lead paint. If WESTON is tasked with the demolition, removal and disposal of the ASTs the work shall be performed in accordance with the requirements of 29 CFR 1926.62. Only trained qualified personnel will perform the lead abatement work. Workers will participate in a medical monitoring program including pre-abatement lead and zinc blood level screening. Air samples will be collected to document and verify potential exposure levels, compliance with worker and community protection and proper PPE selection. The work area will be properly identified and segregated from the surrounding site. Polyethylene sheeting or equivalent will be utilized to contain loose paint chips while a mechanical shear dismantles the steel tanks. A high-efficiency particulate absolute (HEPA) vacuum may be utilized (if required) to collect pealing and chipping paint during disassembly and to meet lead abatement. Workers will utilize the proper respiratory protection including full face APRs and chemical protective clothing while working in the tank demolition area and when handling containment tarps. Record keeping will include certificates of training, respirator fit test records and medical monitoring data. Hand washing facilities and suitable dressing areas will be provided outside of the abatement exclusion zone for workers.

5.1.4 Unexploded Ordnance

SEAD 24 was formerly operated as a burning pit for black powder, M10 and M16 solid propellants. There is currently no historical information suggesting that SEAD 24 was used for the disposal of ordnance explosive waste items other than powder, however, if any potentially hazardous item(s) are found, work will stop. The situation will be evaluated, and the OSR, SEDA, and WESTON Senior UXO Supervisor or QC/Safety UXO Supervisor will be consulted. In the event excavation activities need to adjusted based on finding a hazardous item (or substance) at SEAD 24, an amendment to this SSHP will be submitted for review and approval.

SECTION 6

ACTION LEVELS

6. ACTION LEVELS

As shown in Table 3-1, the soil and sediments at the four SEADs are contaminated with metals and SVOCs. The contaminants of concern for this project can all be monitored by measuring air born particulate concentrations. Real time data will be confirmed with analytical sampling results.

Location specific action levels will be presented to deal with asbestos, lead paint and ordnance related hazards. General action levels will be presented based on the primary contaminants of concern (i.e., metals and SVOCs).

The action levels presented in Table 6-1 will be followed, using monitoring procedures as described in Section 7 of this SSHP. Action levels are based on particulate monitoring data detected in the immediate work area, at the perimeter of control zones and the overall site. In addition, visual and olfactory observation criteria consisting on ordnance items, or petroleum/fuel odor in the breathing zone will be employed. Air monitoring will be performed around the perimeter of the excavation and staging area to detect possible migration of airborne contaminants. Furthermore, the analytical results of the air sampling will indicate the levels of specific contaminants of concern. Action levels may be modified based on air monitoring, air sampling, and change in site conditions or activity.

Historical operations and existing work area analytical data rule out volatile organic compounds as contaminants of concern. Based on this information monitoring of volatile organics will not be required. Air monitoring for compliance and rescue provisions of 29 CFR1926.51(g) will be implemented in the event workers are required to enter any excavation greater than 5 ft deep where inadequate natural ventilation may be a factor (i.e., trench vs. open excavation). A combustible gas indicator (CGI) and oxygen (O_2) meter will be used as necessary for the intrusive activities.

6.1 PARTICULATE-BASED CONTAMINANTS

Particulate-based action levels for work at SEADs 50/54, 24, and 67 will fall under three scenarios; asbestos abatement, lead abatement and general construction. Asbestos sampling and abatement activities will be conducted in Level C PPE. Full face APRs with high efficiency filters will be required during work in the control zone from the onset of abatement through completion. Personal

Table 6-1
Action Levels for All Appropriate Tasks Using Direct-Reading Air Monitoring Instruments

Hazard	Instrument	Action Level
Explosive atmosphere	CGI as required	<10% lowest effective level (LEL): Continue investigation. >10% and <20% LEL (ambient air): Continue work with caution, continue monitoring. >10% LEL (confined space): Stop work and evacuate site until levels <10% are measured. >20% LEL (ambient air): Stop work and evacuate site until levels <20% are measured.
Oxygen content	O_2 meter (included with CGI instrument) as required	<19.5%: Stop work, and evacuate site until levels are >19.5% and <25% (ambient air) or >19.5% and <25% (confined space) are measured. 19.5% to 25% (ambient air) or 19.5% to 25% (confined space): Acceptable levels for Oxygen. >25% (ambient air) or >25% (confined space): Fire hazard potential, stop work and consult CIH and USACE.
Organic vapors	Photoionization detector (PID)/Flame-ionization detection (FID)	0 to 5 units: Level D, continue monitoring and work activities. >5 units: Halt work, notify Program Safety Manager and CIH, re-evaluate conditions.
Particulates Particulates Not Otherwise Classified (PNOC) General construction	Mini-Ram Data-Ram	Worker breathing zone :>2.5 milligrams per cubic meter (mg/m^3): Upgrade PPE to Level C. Site perimeter 100 microgram per cubic meter implement engineering controls. 150 ug/m^3 stop work reevaluate engineering controls.
Particulate Lead abatement	Mini-Ram Data-Ram	Worker breathing zone:0-2,500 (um^3): Personal Level C, Full Face APR with high efficiency filters for concentrations not in excess of 2,500 um^3. Abatement area perimeter: 30 um^3: Area
Particulate Asbestos abatement	Mini-Ram Data-Ram	Worker breathing zone: 1 fiber/cubic centimeter (cm^3): Personal Level C, Full Face APR with high efficiency filters Abatement area perimeter 1 fiber/cm^3: Area monitoring edge of control zone.

air samples will be collected during abatement to assure that the allowable concentration (of 1 fiber/cm^3) is not exceeded. Perimeter air monitoring will be conducted to assure that workers are not affected outside the control zone. The perimeter monitoring action level during asbestos abatement is 1 fiber/cm^3. When the asbestos hazard has been abated, and lead paint dust has been ruled out, particulate action levels will default to the general construction action level. Engineering controls will be utilized to manage particulate in air.

Lead abatement activities will be conducted in Level C PPE. Full face APRs with high efficiency filters will be required during work in the control zone from the onset of abatement through completion. Personal air samples will be collected during abatement to assure that the allowable concentration for lead exposure while in full face APRs is not exceeded. Perimeter air monitoring will be conducted to assure that workers are not affected outside the control zone. The perimeter monitoring action level during lead abatement is 30 um^3. When the lead paint hazard has been abated particulate action levels will default to the general construction action level.

For general construction respiratory protection will be initiated at 2.5 mg/m^3 based upon WESTON's action level for PNOC, respirable fraction. Engineering controls will be utilized to limit exposure to less than the PNOC action level. Action levels may be modified (lowered) based upon initial air sampling results. Compliance monitoring for the overall jobsite will be conducted in accordance with NYSDEC's general Community Air Monitoring Plan (CAMP). Particulate monitoring data loggers with audible alarms will be strategically placed around the perimiter of the overall site to assure that site activities are not impacting community air quality. The action notification level for CAMP compliance is based on 15 minute averages which compare upwind and down wind concentrations of air born particulate in the PM-10 range (i.e., particulate that is less than 10 micrometers in size). When down wind readings reach 100 ug/m^3 above upwind readings implement engineering controls. Work may continue until down wind particulate concentrations reach or exceed 150 ug/m^3 greater than upwind concentrations, or visible dust is seen leaving the property. After engineering controls have been implemented and downwind readings reach or exceed 150 ug/m^3, stop work. Reevaluate dust suppression techniques and resume work if downwind particulate can be maintained below 150 ug/m^3 based of 15 minute averages. All readings must be recorded and available for state personnel (NYSDEC & NYSDOH) to review.

An amendment to this SSHP will be required to modify action levels. Location specific action levels have been developed for work related to asbestos abatement at SEAD 50/54.

SECTION 7

AIR MONITORING

7. AIR MONITORING

Air monitoring will be conducted during site activities to evaluate potential chemical hazards to determine the effectiveness of control measures, and to evaluate the PPE requirements. Real-time air monitoring using direct reading instruments as well as air sampling will be used to quantify the presence of airborne chemical hazards. Task specific air monitoring will be conducted for the asbestos and lead abatement tasks.

7.1 DIRECT READING INSTRUMENTS

Real-time monitoring using direct reading instruments will be conducted to identify potential exposure levels or immediately dangerous to life or health conditions. Air monitoring in breathing zones and around the exclusion or control zone will be conducted during the asbestos and lead abatement activities for worker health and safety and compliance monitoring. Areas monitored will be chosen to determine worst-case exposure potential.

In addition perimeter air monitoring will be conducted to assure that air born hazards are not exiting the overall work site in compliance with NYSDOH general CAMP and NYSDEC TAGM # 4031. Background readings will be taken in an area known or presumed to be clean.

Since the contaminants of concern at the site are primarily metals and SVOCs, continuous real-time monitoring for airborne particulates will be conducted using a Mini-Ram and Data-Ram aerosol monitors. Airborne concentrations of asbestos and lead are also measured by particulate monitoring. If confined space entry activity is necessary, compliance monitoring of the confined space will be conducted for volatile organics using a PID (HNu with 10.2 or 11.7) or a FID (TVA-1000) or equivalent and a CGI/O_2 meter will be used to monitor explosive or oxygen-deficient or rich atmospheres.

7.2 PERSONNEL AND PERIMETER AIR SAMPLING

For general construction activities a preliminary review of the sample data suggests that maintaining airborne dust levels below 2.5 mg/m^3 (1/2 the OSHA Permissible Exposure Limit (PEL) for Respirable PNOC in the work zone) should provide protection for workers in general work areas. Work in SEAD 50/54 will be conducted in accordance with asbestos and lead abatement protocols as previously outlined in Subsection 6.2 until it has been determined that lead paint and asbestos hazards no longer exist.

For general site work personnel air sampling will be performed on two of the site personnel who have the greatest potential for exposure for the first three (3) days of each phase of the scope of work, which involves intrusive activity in the contaminated area. The samples will be sent to an American Industrial hygiene Association (AIHA) and PAT-accredited laboratory for 24-hour turnaround. Thereafter, one sample will be collected each day in the work area to represent workplace area levels. The sample trains will be archived and analyzed only if real-time air monitoring dust action levels are exceeded. The sampling and analysis procedure for heavy metals will follow NIOSH 7300 & 7600. Air sampling pumps will be calibrated at the beginning and end of each day. Calibrations will be documented in the log book.

In addition to the personnel air monitoring, a perimeter air sampling program in accordance with the NYSDOH Community Air Monitoring Program will be instituted. The area wind rose will be obtained to determine the most frequent wind direction. This will be used to position a minimum of four air sampling pumps at predetermined locations around the site. The sampling and analysis will follow a modification of EPA Method TO10.

One day of background sampling will be performed prior to any intrusive activities in each contaminated area. Perimeter sampling will be conducted the first three days of each phase of the scope of work which involves intrusive activity in the contaminated area. The samples will be sent to an AIHA and PAT accredited laboratory for 24-hour turnaround. Thereafter, one sample will be collected each day at one of the fixed perimeter sampling locations. The sample filters will be archived and analyzed only if real-time monitoring dust action levels are exceeded. The action levels for the specific contaminants of concern for tasks using air monitoring are provided in Table 7-1.

If it is determined through characterization samples of the soil and paint chips in SEAD 50/54 that asbestos and lead paint present work place hazards and WESTON is tasked with the abatement of soil and lead painted ASTs, task specific air monitoring and sampling will be

Table 7-1

Action Levels for All Appropriate Tasks Using Air Sampling

Contaminant	Exposure Value	Action Level Metals (mg/m3)	Comments
Arsenic	0.5 mg/m^3	2.5 mg/m^3	
Lead	0.05 mg/m^3	2.5 mg/m^3	
Lead paint	30 um^3	2,500um^3	Full face APR, monitor + Sampling
Mercury	0.01 mg/m^3	2.5 mg/m^3	
Copper	1.0 mg/m^3	2.5 mg/m^3	
Chromium	0.5 mg/m^3	2.5 mg/m^3	
Cadmium	0.005 mg/m^3	2.5 mg/m^3	
Zinc	5 mg/m^3	2.5 mg/m^3	
Semi-volatiles Coal tar pitch*	0.1 mg/m^3	2.5 mg/m^3	
Asbestos**	ALARA	0.1 fibers/cm	Full face APR, monitor + Sampling

* The Coal tar pitch suite of SVOCs are listed as potential occupational carcinogens by OSHA, NIOSH, and ACGIH.

** Asbestos NIOSH considers asbestos to be a potential occupational carcinogen and recommends that exposures be reduced to the lowers possible concentration.

conducted for asbestos and lead abatement activities in SEAD 50/54. The asbestos abatement monitoring and sampling procedures shall conform to the requirements of 29 CFR 1926.1101. The lead abatement monitoring and sampling will conform to the requirements of 29 CFR 1926.62.

Air monitoring in SEADs 24 and 67 will be conducted in accordance with the general requirements for the monitoring of fugitive dust based on the existing analytical results of contaminants detected in these SWMUs.

Utilizing the hazardous waste action coalition action level calculation for particulate based contaminants, and the highest concentration verified through previous laboratory analysis (lead at approximately 422 mg/kg), a concentration of total dust in air of approximately 59.24 mg/m^3 would be required before a lead action level concentration (1/2 of the PEL or

TLV/Time-weighted average) of 0.05 mg/m^3 would be reached. The OSHA PEL for PNOC of 2.5 mg/m^3, therefore, will be utilized for employee protection.

Monitoring and exposure concentrations listed for asbestos and lead abatement activities have been taken directly from the applicable federal regulations,29CFR1910.1101 and 29CFR1926.62 respectively, and WESTON's FLD #46.

SECTION 8

LEVELS OF PROTECTION

8. LEVELS OF PROTECTION

All personnel performing operations on-site shall be required to use the appropriate level of protection. The minimum level of protection required to begin each activity of this project is shown in Table 8-1. If hazards are identified requiring a lower or a higher level of protection, then this SSHP will be re-evaluated and upgraded or downgraded prior to re-entry to the site.

Table 8-1

Minimum Level of Protection Requirements

Activity	Level of Protection
Mobilization/Demobilization/Site Preparation	Level D or Modified Level D
Asbestos Delineation & Abatement	Level C (APR)
Tank Demolition and Removal	Level C (APR)
Soil/Sediment Removal	Level D or Modified Level D
Transportation & Disposal	Level D or Modified Level D
Site Restorations	Level D or Modified Level D

* Consult action levels and notes in Table 7-1 for necessary upgrades

8.1 LEVEL D PERSONAL PROTECTION EQUIPMENT

Level D PPE will be worn during site mobilization/demobilization and other non-intrusive activities where no known contamination is present. Level D PPE consists of:

- Work clothes, e.g., coveralls (cotton).
- Work gloves - leather or cotton as necessary for physical hazards.
- Boots, certified according to American National Standards Institute (ANSI).
- Safety glasses (as necessary).
- Hard hat (as necessary).

8.2 MODIFIED LEVEL D PERSONAL PROTECTION EQUIPMENT

Modified Level D PPE will be worn when conducting activities with known or potential contact with minimally contaminated materials. In addition to Level D components, Modified Level D consists of:

- Chemical resistant coveralls.

- Chemical resistant overboots or chemical boot covers.
- Gloves-nitrile or latex inner; chemical resistant outer.
- Eye protection-safety glasses or goggles.

8.3 LEVEL C PERSONAL PROTECTION EQUIPMENT

Level C PPE consists of:

- Innerboots certified according to ANSI or chemical resistant boots with toe protection certified according to ANSI.
- Chemical resistant coveralls.
- Chemical resistant overboots or chemical boot covers.
- Fullface air purifying respirator with filter (NIOSH/Mine Safety and Health Administration (MSHA) approved).
- Chemical-resistant gloves-nitrile or latex inner; and chemical resistant outer.

8.4 LEVEL B PERSONAL PROTECTION EQUIPMET

Level B PPE will be worn if appropriate action levels are reached during site activities. Level B PPE consists of:

- Innerboots certified according to ANSI or chemical resistant boots with toe protection certified according to ANSI.
- Chemical resistant coveralls.
- Self-contained breathing apparatus or air-line system (NIOSH/MSHA approved).
- Coveralls-cotton.
- Chemical resistant overboots.
- Chemical resistant gloves-nitrile or latex inner; and chemical resistant outer.

SECTION 9

EMERGENCY RESPONSE

9. EMERGENCY RESPONSE

9.1 EMERGENCY CONTACTS

The following emergency telephone numbers shall be prominently posted in WESTON's field office:

Service	Telephone Number
Emergency Service (Ambulance, fire, Police) Seneca County Sheriff's Dispatch	911
Ambulance (non-emergency) South Seneca Ambulance service	(607) 869-5313
Seneca County Police – (non-emergency)	(315) 539-9241
Romulus Fire Department – (non-emergency)	(607) 869-9611
Spill Response- CHEMTREC	(800) 424-9300
EPA Region 2 Emergency Response	(212) 264-024248
Hospital: Geneva General Hospital 196 North Street Geneva, New York 14456	(315) 787-4000
Poison Control Center (New York)	(800) 962-1253
WESTON Medical Emergency (Continuum)	(800) 229-3674
WESTON Emergency (24 hour) (West Chester)	(610) 692-3000
Site Manager- Ed Benton	
SHSC/ERC- Steve Kirejczyk	(607) 869-2485
UXO Safety Officer- Frank Henderson	(781) 799-9693 cell
SUXO – Curtis Hightower	(316) 548-5362 cell
WESTON Technical Director Ted Blackburn (pager)	(800) 206-0364
WESTON CIH George Crawford (pager)	(800) 206-1507
WESTON PM- Chris Kane	(603) 656-5428
Rapid OSR Tom Westenburg	
SEDA BRAC Coordinator- Steve Absolom	(607) 869-1309
CENAN PM- Randy Battaglia	(607) 869-1523
CENAN PE- Tom Battaglia	(607) 869-1353

In the event of an emergency requiring outside emergency services, WESTON personnel will immediately dial 911 to contact the appropriate organization. Following the phone call, WESTON personnel will contact on-site U.S. Army Corps of Engineers on-site personnel to inform them that emergency service personnel and equipment will be entering the facility. Subsequent to these notifications, appropriate off-site personnel of the USACE and WESTON will be contacted and informed about the situation. The Emergency Response Contingency Plan is contained in Appendix B.

9.2 HOSPITAL ROUTE

A map showing the route to the hospital will be posted near the site telephone and will be posted in each site vehicle. The hospital route will be field verified prior to work initiation. Since the access routes and/or gates to the site have not been verified, the hospital route will be finalized during mobilization and submitted as an amendment to the plan. A written description of the directions to the hospital facility will be attached to the figure.

APPENDIX A

SITE-SPECIFIC HAZARD COMMUNICATION PROGRAM

APPENDIX A
SITE-SPECIFIC HAZARD COMMUNICATION PROGRAM

Location-Specific Hazard Communications Program/Checklist

In order to ensure an understanding of and compliance with the Hazard Communication Standard, Weston Solutions, Inc. (WESTON$_{SM}$) will utilize this checklist/document (or similar document) in conjunction with the WESTON Written Hazard Communications Program as a means of meeting site or location specific requirements. While responsibility for activities within this document reference the WESTON Safety Officer (SO), it is the responsibility of all personnel to effect compliance. Responsibilities under various conditions can be found within the WESTON Written Hazard Communication Program.

To ensure that information about the dangers of all hazardous chemicals used by WESTON are known by all affected employees, the following hazardous information program has been established. All affected personnel will participate in the hazard communication program. This written program as well as WESTON's Corporate Hazard Communication Program will be available for review by any employee, employee representative, representative of Occupational Safety and Health Administration, National Institute for Occupational Safety and Health or any affected employer/employee on a multi-employer site.

___ Site or other location name/address: ***Seneca Army Depot SEAD's 50/54, 24 & 67 Seneca, New York***

___ Site/Project/Location Manager: ______________________

___ Site/Location Safety Officer: ______________________

___ List of chemicals complied, format: HASP: X Other:____

___ Location of Material Safety Data Sheets (MSDS) Files: ***On-site trailer***

___ Training Conducted by (name and date): ______________________

___ Indicate format of training documentation: Field Log: X Other:____

___ Client briefing conducted regarding hazard communication: ______________

___ If multi-employer site, indicate name of affected companies:

____

___ Other employer(s) notified of chemicals, labeling and MSDS information: ______________

___ WESTON notified of other employer's or clients hazard communication program as necessary.

List of Hazardous Chemicals

A list of known hazardous chemicals used by WESTON personnel must be prepared and attached to this document or in a centrally identified location with the MSDS. Further information on each chemical may be obtained by reviewing the appropriate MSDS. The list will be arranged to enable cross-reference with the MSDS file and the label on the container. The SO or location manager is responsible for ensuring the chemical listing remains up-to-date.

Container Labeling

The WESTON SO will verify that all containers received from the chemical manufacturer, importer or distributor for use on site will be clearly labeled.

The SO is responsible for assuring labels are placed where required and for comparing MSDS and other information with label information to ensure correctness.

Material Safety Data Sheets

The SO is responsible for establishing and monitoring WESTON's MSDS program for the location. The SO will make sure procedures are developed to obtain the necessary MSDS and will review incoming MSDS for new or significant health and safety information. He/she will see that any new information is passed on to the affected employees. If an MSDS is not received at the time of initial shipment, the SO will call the manufacturer and have a MSDS delivered for that product in accordance with the requirements of WESTON's Written Hazard Communication Program.

A log for, and copies of, MSDS for all hazardous chemicals in use will be kept in the MSDS folder at a location known to all site workers. MSDS will be readily available to all employees during each work shift. If an MSDS is not available, immediately contact the WESTON SO or designated alternate. When revised MSDS are received the SO will immediately replace the old MSDS.

Employee Training and Information

The SO is responsible for the WESTON site-specific personnel training program. The SO will ensure that all program elements specified below are supplied to all affected employees.

At the time of initial assignment for employees to the work site or whenever a new hazard is introduced into the work area employees will attend a health and safety meeting or briefing that includes the information indicated below.

- Hazardous chemicals present at the worksite.
- Physical and health risks of the hazardous chemicals.
- The signs and symptoms of overexposure.
- Procedures to follow if employees are overexposed to hazardous chemicals.
- Location of the MSDS file and written hazard communication program.
- How to determine the presence or release of hazardous chemicals in the employees work area.
- How to read labels and review MSDS to obtain hazard information.
- Steps WESTON has taken to reduce or prevent exposure to hazardous chemicals.
- How to reduce or prevent exposure to hazardous chemicals through use of controls procedures, work practices and personal protective equipment.
- Hazardous, non-routine tasks to be performed (if any).
- Chemicals within unlabeled piping (if any).

When employees are required to perform hazardous non-routine tasks the affected employee(s) will be given information by the SO about the hazardous chemicals he or she may utilize during such activity. This information will include specific chemical hazards, protective and safety measures the employee can use and steps WESTON is using to reduce the hazards. These steps include, but are not limited to; ventilation, respirators, presence of another employee, and emergency procedures.

Chemicals in Unlabeled Pipes

Work activities may be performed by employees in areas where chemicals are transferred through unlabeled pipes. Prior to starting work in these areas, the employee shall contact the SO at which time information as to; the chemical(s) in the pipes, potential hazards of the chemicals or the process involved, and safety precautions, which should be taken, will be determined and presented.

Multi-Employer Worksites

It is the responsibility of the SO to provide other employers with information about hazardous chemicals imported by WESTON to which their employees may be exposed, along with suggested safety precautions. It is also the responsibility of SO and the site manager to obtain information about hazardous chemicals used by other employers to which WESTON employees may be exposed. WESTON's chemical listing will be made available to other employers as requested. MSDS will be available for viewing as necessary. The location, format and/or procedures for accessing MSDS information must be relayed to affected employees.

APPENDIX B

EMERGENCY RESPONSE CONTINGENCY PLAN

FINAL

SENECA ARMY DEPOT
EMERGENCY RESPONSE AND CONTINGENCY PLAN
SENECA COUNTY
ROMULUS, NEW YORK

Contract No. DACA45-98-D-0004
Task Order No. 035

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
Offutt AFB, Nebraska

Prepared by:

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

November 2002

W.O. No. 20074.515.035

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LIST OF ACRONYMS

ACOE	Army Corps of Engineers
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CPR	Cardiopulmonary resuscitation
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-To-Know Act
ERC	Emergency Response Coordinator
ERCP	Emergency Response and Contingency Plan
EZ	Exclusive Zone
HAZWOPER	Hazardous Waste Operations
LEPC	Local Emergency Planning Commission
MSDS	Material Safety Data Sheets
NRC	National Response Center
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
ppm	parts per million
PSO	Program Safety Officer
RCRA	Resource Conservation and Recovery Act
RQ	reportable quantity
RSO	Regional Safety Officer
SEDA	Seneca Army Depot Activity
SERC	State Emergency Response Commission
SHSC	Site Health and Safety Coordinator
SSHO	Site Safety and Health Officer
TPQ	threshold planning quantity
TSCA	Toxic Substance Control Act
$WESTON_{SM}$	Weston Solutions, Inc.

SECTION 1

INTRODUCTION

1. INTRODUCTION

This Emergency Response and Contingency Plan (ERCP) was prepared by Weston Solutions, Inc. (WESTON$_{SM}$) for the Scope of Work described by the U.S. Army Corps of Engineers, Omaha District for the Time-Critical Removal Action at the Seneca Army Depot Activity (SEDA) in Romulus, New York. This work will be performed under the Rapid Response/Immediate Response Contract for Control/Remediation of Hazardous, Toxic and Radioactive Waste, Task Order No. 0035 of Contract No. DACA45-98-D-0004. Seneca Army Depot Activity has been closed under the Department of Defense's Base Realignment and Closure process. The remedial action is intended to provide clean closure to four of SEDA's Solid Waste Management Units: the Tank Farm (SEAD 50/54), the Abandoned Powder Burning Pit (SEAD 24), and the Debris Piles East of the Sewage Treatment Plant No. 4 (SEAD 67) to facilitate transfer of these properties for public and private beneficial reuse.

The work to be performed under the ERCP is described in the Work Plan, Chemical Sampling and Analysis Plan, and Site Safety and Health Plan – to which this ERCP is appended). This ERCP has been prepared to describe actions that will be taken by WESTON site personnel in the event of an emergency situation.

The purpose of this plan is to:

- Anticipate events to ensure proper planning and preparation.
- Act as a guide in the event of an emergency situation.
- Minimize hazards to human health and the environment from anticipated emergency events.
- Familiarize response personnel with equipment and procedures.

This ERCP is determined to comply (where necessary) with the requirements of Occupational Safety and Health Administration (OSHA) [including emergency action planning, Process Safety Management and Hazardous Waste Operations (HAZWOPER)], Department of Transportation (reporting and response actions), and U.S. Environmental Protection Agency

(EPA) [including Spill Prevention, Containment, Countermeasure, Resource Conservation and Recovery Act (RCRA) and Risk Management Plan].

SECTION 2

PRE-EMERGENCY PLANNING

2. PRE-EMERGENCY PLANNING

In order to handle emergencies properly and effectively, planning and training is essential. Pre-emergency planning procedures must be in place to immediately respond to emergency situations. Site personnel must be knowledgeable of their roles and responsibilities and act within their abilities and training. Weston Solutions, Inc. will prohibit its employees from responding to emergency situations that would require them to be exposed to hazards beyond their degree of training. As necessary (by regulation) and prior to site activities, the Site Safety and Health Officer (SSHO) or project staff will communicate with outside response agencies (e.g., fire, police, ambulance, and medical) to coordinate response efforts. Contacts with each response agency will be informed of any changing site conditions that may affect emergency response. Copies of this ERCP will be made available to any agency [e.g., police, fire, hospital, State Emergency Response Commission (SERC), and Local Emergency Planning Commission (LEPC)] required to hold a copy. Should any of these listed agencies choose not to receive a copy or refuse to assist in the event of an emergency those names and contacts will be documented in Attachment 4. A complete list of emergency contacts can be found in Attachment 1.

SECTION 3

ROLES AND RESPONSIBILITIES

3. ROLES AND RESPONSIBILITIES

The Site Health and Safety Coordinator (SHSC), aka Site Safety and Health Officer (SSHO) will be the primary Emergency Response Coordinator (ERC) or Incident Commander as termed through Uniform Incident Command. The SHSC or designated alternate will contact the appropriate personnel or authorities as determined by the type and nature of incident. **Attachment 1 lists emergency contacts** and serves as documentation of this site-specific chain-of-command**.** **Attachment 3 includes checklists** for use during emergency incidents.

This chain-of-command is established to minimize confusion and to leave no doubt as to whom has decision-making authority in the event of an emergency situation.

3.1 EMERGENCY RESPONSE COORDINATOR ROLE

The ERC responsibilities during emergency situations are as follows:

- Evaluate emergency situation and special needs.
- Direct all emergency efforts, including evacuation of personnel and assignment of personnel to response roles.
- Notify and interact with emergency response agencies.
- Oversee medical and decontamination procedures.
- Serve as the point of contact for local fire department(s) and/or hazardous material team(s).

The ERC responsibilities after the emergency phase is complete includes:

- Supervise cleanup efforts; ensure proper recovery, disposal and accounting of any hazardous material/waste.
- Ensure all emergency equipment and supplies are cleaned and/or made available for future use.
- Document incident, advise management, and initiate debriefing.

The ERC will delegate, as necessary, specific roles and duties outlined above.

3.2 ALTERNATE ERC'S ROLE

- The Site Manager is the primary backup to the ERC.
- Additional personnel may be trained as alternate ERC's based upon site complexity and/or size.

3.3 SITE MANAGER ROLE

- Alternate ERC
- Initial Media Contact

3.4 PROGRAM OR OPERATIONS SAFETY MANAGER ROLE

- Provide technical assistance and lead post-event investigations.

3.5 REGIONAL SAFETY OFFICER ROLE

- Receive reports from the ERC
- Provide information to appropriate management and track reports
- Workers compensation liaison
- Focal point for medical return to work
- Incident investigation as necessary

3.6 PROJECT MANAGER ROLE

- Assure funding as necessary for emergency operations
- Report and interact with regulatory agencies and client as necessary
- Media Contact * (note that all media contacts will be governed by applicable contract provisions. Weston Solutions, Inc.'s Marketing Department will be consulted in the event of a media contract or as necessary).

3.7 EMERGENCY RESPONSE TEAMS

Based upon the size and complexity of the site or task activities, Emergency Response Teams will either be jointly comprised of all personnel on-site, cross-trained to actions necessary (e.g., spills, confined space rescue, high-angle rescue), comprised of named individuals, local response agencies or a combination of the above. Attachments 1 and 4 indicate roles and responsibilities for this site.

SECTION 4

EMERGENCY RECOGNITION, PREVENTION, AND TRAINING

4. EMERGENCY RECOGNITION, PREVENTION, AND TRAINING

All WESTON personnel will be instructed on a daily basis to be constantly alert for potentially hazardous situations or conditions. Immediate recognition with necessary corrective actions of potential hazardous conditions can avert an emergency. Emergency response discussions will be incorporated into regular safety meetings and will include such topics as:

- Tasks to be performed.
- Hazards that may be encountered, along with their effects and how to recognize symptoms.
- Emergency procedures, including evacuation.

Training required to be given (initially and periodically) to all site workers includes the following:

- Site topography, site layout and prevailing weather conditions.
- Procedures for reporting incidents.
- Roles and procedures in the event response may include local, state or federal responders.
- Alarm systems and all applicable aspects of this ERCP.

4.1 IF SITE IS REGULATED UNDER 29 CFR 1910.120 (HAZWOPER)

In addition to the above requirements, all WESTON site personnel shall have a minimum of the following safety training:

- 40-hour HAZWOPER.
- 8-hour Annual Refresher Course.

- Site-specific Training.
- At least (1) member of the WESTON team shall have First Aid/cardiopulmonary resuscitation (CPR) training. *
- At least (1) member (SSHO) shall have 8-hour Site Health and Safety Coordinator Training.

4.2 IF SITE IS NON-HAZWOPER

In addition to the above requirements, all WESTON personnel shall have a minimum of the following safety training:

- Hazard Communication Training
- Site Specific Training.
- At least one person shall have First Aid/CPR training.

* Note: If work is for Corps of Engineers, minimum number of trained personnel is two (2).

SECTION 5

COMMUNICATION

5. COMMUNICATION

Daily environmental health and safety briefings will be used to remind personnel of their roles, responsibilities, and emergency procedures. A record of the safety briefings will be completed and maintained on-site.

Emergency communications will be voice, audible horn/alarm or 2-way radio. Telephone capability will be a requirement for all sites; the location of either a site telephone or the nearest off-site phone is listed in Attachment 1. Emergency telephone numbers will be kept in the WESTON site vehicle and/or site office. Personnel will be instructed to immediately contact the SHSC or Site Manager if an emergency situation arises.

A backup emergency notification system will also be used during all site activities (e.g., air horns located at each work location). In the case of an emergency the signal for personnel to evacuate the area will be a series of long blasts. The assembly/gathering point for individual work locations will be provided during the daily safety briefing. After a head count has been taken further evacuation may be required based on wind direction and weather conditions. Five short blasts of the air horn will signal all clear, workers may than return to designated work areas.

Each type of communication will be tested to insure that site personnel can identify the signals above background noise, as well as to check for system efficacy and accuracy. In the event that air horns prove to be inefficient, alternative methods (e.g., 2-Way Radios) will be implemented and tested to prove efficient use. A listing of emergency response equipment can be found in Attachment 2.

In the event of an emergency requiring outside assistance the ERC or designated alternate will contact outside help using the nearest telephone or other pre-established means.

SECTION 6

SUPPORT AREAS, EVACUATION PROCEDURES, AND PERSONNEL ACCOUNTING

6. SUPPORT AREAS, EVACUATION PROCEDURES, AND PERSONNEL ACCOUNTING

The primary support area for all work at the site will be determined before commencement of work at the site.

Evacuation routes and assembly areas will be determined. Means of accounting for site personnel and visitors will be based upon site size and complexity (typical methods include sign-in logs). In the event of an evacuation these logs will be brought to the assembly area in order to verify safe evacuation by all.

Alternate routes and assembly areas will be determined and utilized based upon wind speed and direction as well as emergency requirements. See Attachment 5 for site map, location and information.

SECTION 7

EMERGENCY PROCEDURES

7. EMERGENCY PROCEDURES

7.1 GENERAL

During an emergency, the following actions will be taken, with some actions conducted concurrently. No one will attempt an emergency response/rescue until the situation has been assessed and the appropriate response outlined by the ERC or local responders.

It will be determined prior to work initiation, whether any tasks on site are critical operations requiring one or more persons to shut down sensitive equipment in a time-critical manner. If it is determined that critical operations are evident, specific procedures will be outlined in Attachment 4.

Certain sites (e.g., Unexploded ordnance, chemical surety material) or clients (e.g., Department of Energy, Department of Defense) may have specific criteria and actions to be followed in the event of an emergency situation. If so, these procedures will be outlined in Attachment 4.

General guidelines for rescue/response may include the following:

- Assessment: Assess the type and extent of the emergency, then determine and verify existing and potential hazards to site personnel and the off-site population. Determine, based on the type and extent of the emergency, the following:
  - Whether and how to respond
  - The extent of any injuries and/or damage
  - The need for evacuation of site personnel and off-site population
  - The resources needed for evacuation and response
- Evacuate:
  - Move site personnel to a safe distance upwind of the incident.
  - Monitor the incident for significant changes. The hazards may diminish, permitting personnel to re-enter the site, or hazards may increase and require public evacuation.

Note: *Should site personnel or visitors be handicapped to the point of needing assistance during an evacuation, the ERC will ensure that appropriate numbers of site workers are trained to provide any needed assistance.*

Note: Work sites with potential hazards that could involve adverse community risk, and require evacuation of the local community must be discussed and coordinated with the client and local fire and police agencies before fieldwork begins.

- **Enforcing the buddy system:** Allow no one (including rescuers) to enter a contaminated area or hazardous area without a partner or without appropriate communications means and proper PPE. At the time of the incident, one person will be designated to record the names, time of entry, and time of exit for all personnel entering the Exclusive Zone (EZ). At all times, personnel in the EZ should be in line-of-sight or communications contact with the ERC or his designee.

- **Survey casualties:**

  - Locate all victims and assess their condition.
  - Determine resources needed for stabilization and transport.

- **Request aid:** Contact the required off-site/on-site personnel or agencies (such as the ambulance, fire department, police, etc). Ensure that previous communications and understanding or response actions to be conducted by the off-site resources have been accomplished. In certain cases (e.g., confined space rescue) the off-site responder(s) must be brought to the site before work is initiated so that an evaluation of and training on the confined spaces is accomplished.

- **Allocate resources:** Allocate appropriately qualified on-site personnel and equipment to the rescue and initiate incident response operations.

- Remove or assist victims from the area, using appropriate equipment and procedures.

- **Control measures, including containment:** Assist in bringing the hazardous situation under complete or temporary controls and use measures to prevent any escalation of the emergency.

- **Decontaminate:** Use established procedures to decontaminate personnel in the decontamination area. If the emergency makes this area unsafe, establish a new decontamination area at an appropriate distance. Decontaminate victims before or after stabilization as their medical condition indicates. Decontamination may be delayed if the injuries suffered by the victim pose an immediate threat to the victim's life or health. Instead, the victim should be placed on a tarp, sheet of plastic or non-absorbent backboard to allow handling of the victim without the threat of contaminating support personnel until the victim is stabilized.

- **Stabilize:** Administer any medical procedures that are necessary before the victim can be moved. Stabilize or permanently remediate the hazardous condition. Address the cause of the emergency and anything that was damaged or endangered by the emergency (e.g., drums, and tanks).

- **Transport:** No one will be transported without being decontaminated or protected from contaminating others. Measures will be taken to minimize chemical contamination of the transport vehicle, ambulance, and hospital personnel.

- **Casualty Logging:** Record the name(s) of the victim(s), the time, the destination, and their condition upon transport.

- **Casualty tracking:** Record the disposition, condition, and location of the casualties.

- **Media Reporting:** Media contacts should be named (see Attachment 1) and utilized whenever contact with reporters is necessary. The Site Manager will be the immediate media contact. The Project Manager is listed as the media contact for most sites.

7.2 SECURITY ISSUES

Both routine and emergency response actions dictate the need for prevention of unauthorized access and for the protection of vital records and equipment. Site size, location, political or social environment, and equipment needs are criteria necessary to evaluate whether security (private or public) is needed.

- Local Police Departments should be notified of site activities conducted, personnel on site, site hazards and risks, and regulatory issues before work begins. Notifications will assist in coordination of efforts should police present be required.

In the event of unauthorized access, personnel should avoid confrontation (verbal or physical). Attempts must be made to explain site hazards, and Corporate and client expectations for a safe worksite. Continued presence by unauthorized persons will require a team member to notify the local police force. Site activities may need to be halted in the event unauthorized persons create an adverse risk to themselves, to WESTON personnel or to subcontractor personnel.

7.3 SEVERE WEATHER/NATURAL DISASTERS

In the event of adverse weather conditions occurring on-site such as lightning, high winds, tornado, hurricane or extreme heat the SHSC will instruct the workers to discontinue or modify field operations. These natural phenomena complicate work activities and add or increase risk to all site personnel. The following actions should be evaluated or taken in the event of severe weather:

- Stop work
- Secure all loose materials, toolboxes, plywood, and trashcans, etc.
- Bring all workers to safe areas indoors when lightning or severe weather is in the immediate area.
- Verify that all buildings and trailer doors are locked and windows closed.
- Shut down and disconnect all non-critical electrical equipment to protect the equipment from electrical surges and abrupt power loss.

7.4 INJURY OR ILLNESS

In the event of injury or illness, site personnel will take the following action:

- Evaluate the scene for safe entry.
- Notify SHSC and Site Manager.
- Assess the type and extent of injury.
- Provide initial First Aid to injured person.
- Decontaminate the injured personnel, if or as necessary.
- If required and injury or illness not potentially life-threatening, transport to local medical facility.
- If injury or illness potentially life-threatening notify emergency medical services of need for transportation.
- Notify Regional Safety Officer (RSO) Project Manager.

7.5 EXTRICATION

In the event a person becomes trapped and requires extrication site personnel will take the following action:

- Notify SHSC and Site Manager
- Evaluate the scene for safe entry
- Contact the local Fire Department or Rescue Service
- Provide first aid as necessary
- Notify RSO and Project Manager

7.6 CHEMICAL EXPOSURE

In the event of chemical exposure site personnel will take the following action:

- Evaluate the scene for safe entry.
- Notify SHSC and Site Manager.
- Provide assistance with emergency shower, eyewash, or other initial First Aid, as required.
- Decontaminate exposed personnel.
- Notify emergency medical services of need for transportation as necessary.
- Notify RSO and Project Manager.

7.7 SMALL FIRE

A small fire is defined as a fire that can be extinguished with a 4A:20BC type fire extinguisher or incipient stage fires, which can safely be extinguished with material readily at hand. In the event of a small fire, site personnel will take the following actions:

- Evacuate all unnecessary personal from the area, if possible, to an upwind location.
- Notify SHSC and Site Manager.
- Attempt to extinguish fire using portable fire extinguishers or by smothering from an upwind location.

- Request emergency response assistance as appropriate.
- Notify the RSO and Project Manager.

7.8 LARGE FIRE

In the event of a large fire, or a small fire, which cannot be extinguished, the following actions will be taken:

- Sound alarm.
- Evacuate all unnecessary personnel from the area, if possible, to an upwind location.
- Notify local fire department; request other emergency response services (police, ambulance, and hospital) as needed.
- Notify Site Manager and RSO and other appropriate personnel or agencies.

7.9 EXPLOSION

In the event of an explosion, all nonessential personnel will evacuate the site. Required support equipment, services, and personnel will be requested. Response will follow steps identified under the Chemical Exposure section. Notification action as indicated in the Large Fires section will be followed.

7.10 SMALL SPILL

In the event of a small spill, appropriate actions will be taken to prevent the spill from reaching groundwater, surface water or drains.

Actions include:

- Verification of spilled material, volume and hazards.
- Determine appropriate response procedures including personal protection equipment [see Material Safety Data Sheets (MSDS) or Chemical Data Sheet].
- Assess quantity and size of the spill to determine the level of response to contain and clean it up.
- Confine or contain spill with booms, pads, or berm.

- Neutralize spill with appropriate agents (if safe/possible).
- Notify RSO and Site Manager.
- Weston Solutions, Inc. will collect spilled material including absorbent material and place in appropriate containers. All hazardous material shall be disposed of in accordance with all applicable hazardous waste regulations and client requirements.

Weston Solution, Inc. will keep all records related to the spill of hazardous waste for a period of at least three years after the spill has been cleaned up or such longer period of time as required in any unresolved enforcement action.

Note: MSDS's for materials onsite with potential to spill (e.g., gasoline, diesel, acids, solvents) will be provided as Attachment 4 to this emergency response plan or the location of MSDS's will be documented in Attachment 4. Procedures and requirements for spill response will follow criteria outlined in the MSDS.

7.11 LARGE SPILL

A volume equal to or greater than state or federal reportable quantity (RQ) and/or those beyond the capabilities and resources of on-site personnel defines large spills. Appropriate remedial actions will be conducted according to state and federal regulations.

General procedures as follows:

- Verification of spilled material, volume and hazards.
- As safe to do so, confine the spill to the smallest area possible using booms, pads, berms or any other effective material.
- Assess type and extent of damages and injuries to personnel; take appropriate first aid steps if necessary.
- Notify RSO and Site Manager.
- In the event the additional emergency clean-up assistance is needed, WESTON will request assistance from off-site response contractors.

- Weston Solutions, Inc. will collect all hazardous waste including contaminated booms and absorbent material. All hazardous clean-up residues shall be disposed of in accordance with all applicable hazardous waste regulations.

- All emergency equipment will be decontaminated prior to being put back into service. Expendable or damaged supplies will be immediately replaced.

Weston Solutions, Inc. will keep all records related to the spill of hazardous waste for a period of at least three years after the spill has been cleaned up or such longer period of time as required in any unresolved enforcement action.

In the event of a spill or a release requiring agency reporting, the Project Manager will notify the client and appropriate regulatory agencies (see Attachments 1 and 4).

SECTION 8

CRITIQUES AND CORRECTIVE ACTIONS

8. CRITIQUES AND CORRECTIVE ACTIONS

Post emergency response activities include documentation, investigation and appropriate corrective actions to avoid future problems. The Program Safety Officer (PSO), operations safety staff, the RSO or the SHSC will lead the post-incident critique to assure worker knowledge of actions taken and proposals for changes as necessary. The SHSC and the RSO are responsible for documenting incident reports and providing communication to management. The PSO and/or operations safety staff is responsible for providing direction and assistance. Corrective actions necessary based upon appropriate review and investigation of the incident are required prior to assumption of work. In the event corrective actions cannot be made on an immediate basis, documented plans and schedules will be formulated.

ATTACHMENTS

ATTACHMENT 1
EMERGENCY CONTACTS

A copy of this form is to be posted near the site telephone and available in all site vehicles.

EMERGENCY CONTACTS AND PHONE NUMBERS	
SERVICE	**TELEPHONE NUMBER**
Ambulance Service	911
Police	911
Fire	911
Hospital:	(315) 787-4000
Local Medical Clinic - Geneva General Hospital	(315) 787-4000
WESTON Medical Emergency (CONTINUUM)	(800) 229-3674
WESTON Emergency (Local Office) (Devens Field Office)	(978) 772-7190
WESTON Emergency (24 hour) (West Chester)	(610) 701-3000
WESTON Program or Operations Safety Officer: (George Crawford)	(601) 701-7406 (office) (800) 206-1507 (pager)
WESTON Regional Safety Officer (Ted Blackburn)	(603) 656-5442 (office) (603) 860-4457 (cell phone)
Other: (Project Director, Bruce Campbell)	(603) 656-5452
Client or Media Contact (Tom Battaglia – CENAN Project Engineer, Randy Battaglia CENAN Project Manager, and Tom Westenburg – OSR – Omaha District)	(607) 869-1353 (Tom B.) (607) 869-1523 (Randy) (402) 880-7329 (Tom W.)
Spill Response Contractor(s)	(800) 424-9300
National Response Center	(800) 424-8802
Federal Regulatory Agency EPA Region 2 - Carla Struble	(212) 637-4322
State Regulatory Agency NYSDEC - Jim Quinn	(518) 457-3976
SHO/ERC – Steve Kirejzcyk	(607)-869-5767
Site Manager – Ed Benton	(607)-869-5767
Alternate ERC(s) – Ed Benton	(607)-869-5767
Project Manager (Chris Kane)	(603) 656-5428
WESTON Risk Management	(610) 701-7413
WESTON Risk Management	Fax (610) 701-3656

ATTACHMENT 2
EMERGENCY RESPONSE EQUIPMENT

1. Equipment Listing

Weston Solutions, Inc. will maintain the following emergency response equipment on-site in the event of an emergency. Emergency equipment will be stored in the site vehicle. Minimal equipment (specify type or classification and quantity) will be listed below. Should additional equipment be necessary and/or equipment determined no longer necessary additions or deletions to the following lists will be made.

Communications Equipment and Alarms

- Two-way radios and cell phones will be on site

Fire Control Equipment

- Two 10-pound ABC Fire Extinguishers will be on site

Spill Control Equipment

- Spill Control Kit

Personal Protective Equipment

- Tyvek suits, hardhats, safety glasses, steel toed boots, boot covers, hearing protection and nitrile gloves will be on site.

Emergency Decontamination Equipment

- Subcontractor to provide decontamination equipment.

First Aid Equipment

- One medkit, including a Bloodborne Pathogens kit per each WESTON field vehicle.

1. Rescue Equipment

- None anticipated for this phase.

2. Equipment Testing

It is the responsibility of the Emergency Coordinator to periodically test communications and fire control equipment and to ensure that all spill response/control, personal protective equipment; first aid supplies and rescue equipment is available and usable.

3. Maintenance of Equipment

Fire extinguishers are to be inspected monthly with annual testing by an outside firm. First aid supplies are to be inspected weekly on construction sites and monthly otherwise. The wearer will inspect personal protective equipment prior to donning.

ATTACHMENT 3
FORMS (E.G., INCIDENT REPORT, INVESTIGATION REPORT, CLIENT REPORT FORM)

Indicate forms to be used:

- Forms are attached
- Forms will be provided in SSHO file

Minimum forms required on-site include:

- Notice of Incident
- Incident Report Log (e.g., OSHA 200 Log)
- Incident Investigation Form
- Army Corps of Engineers (ACOE) Accident Report Form 3394 (if ACOE Site)
- Spill Report Form
- ERC Incident Checklists
- General
- HazMat
- Fire
- Safety and Research
- Incident Termination
- Safety Observation/Suggestion Form
- Investigators Interview Preparation Form
- Incident Observation Form
- Other

EMERGENCY RESPONSE COORDINATOR
INCIDENT CHECKLIST

Nature of Incident

- Hazardous Material Release
- Medical
- Fire
- Technical Rescue
- Other

Checklist

- Date and Time
- Command Established
- Command Post Location
- ERC (name)
- Safety and Research Support Officer (name)
- Decontamination Officer (name)
- Entry Team (names)
- Extent of Incident Identified
- Site Secured
- Evacuation Determined/Initiated
- Decontamination Setup (where necessary)
- Personnel Accounted For
- Emergency Response Teams Activated
- Internal
- External
- Medical Treatment Determined/Provided
- Control and Containment Determined/Initiated
- Release from Emergency Condition (date/time)
- Cleanup and Return to Normal Condition (date/time)
- Critique and Follow-up (date/time)

EMERGENCY RESPONSE COORDINATOR
HAZMAT INCIDENT CHECKLIST

Situation

- Spill
- Air
- Land
- Water
- Contained Within Structure
- Fire
- Leak
- Reaction
- Chemical(s) Involved
- Amount and Concentrations Estimated
- Container Types

Involving

- Fixed Location
- Transportation
- Piping
- Other
- Monitoring and Readings from Entry Team

Notifications

- Fire Department
- HazMat Response
- Police
- U.S. Coast Guard
- State
- Local
- National Response Center
- Client
- WESTON
- Other

Key Steps:

- Identify Chemical(s), Hazards and Risk
- Determine Objectives (evacuation, external response or internal control)
- Establish Command Structure
- Establish Control Zones
- Ensure Response Teams Activated
- Ensure Personnel Accounted For
- Ensure Appropriate Medical Treatment as necessary
- Ensure Proper Equipment/PPE where necessary
- Ensure Decontamination Established where necessary
- Ensure Objectives for Entry Established
- Ensure Briefing Prior to Entry
- Ensure Debriefing of Entry Team

EMERGENCY RESPONSE COORDINATOR
FIRE INCIDENT CHECKLIST

Location:

Type of Fire:

- Building/Structure
- Vehicle
- Other

Extent of Fire:

Building and Location Information:

- Type of Construction
- Sprinkler System
- Age of Structure
- Occupancy
- Contents
- Hazardous Materials

Shut-Offs and Utilities:

- Gas
- Electric
- Steam
- Pits/Sumps
- Shafts/Elevators

Water Supply (type and location)

SAFETY AND RESEARCH OFFICER
HAZMAT INCIDENT RESPONSE CHECKLIST
AND RISK ASSESSMENT GUIDE

Establish Control Zones

Research:

- Chemical(s) Identified
- Chemical Data Sheets Available
- Chemical Hazards Determined
- Major Hazards
- Physical
- Flammable
- Toxic
- Corrosive
- Reactive
- Specific Medical Treatment(s)

Amount of Chemical(s) Released or Potential for Release:

Container Types and Volumes:

Containers Stressed:

- Fire
- Reaction
- Corrosion
- Other

Exposures

- Workers
- Public
- Environmental

Protective Clothing and Equipment Required:

Decontamination Established:

Objectives Identified and Briefing Conducted

Entry Team Established (names/roles)

Level of Protection Established

Entry Controlled and Timed

EMERGENCY RESPONSE COORDINATOR TERMINATION CHECKLIST

Type Incident, Incident Number and Date:

On-Site Debriefing:

- Personnel Exposures/Health Effects
- Equipment Needs/Restocking Requirements
- Operations Review
- Need for Crisis Intervention Services
- Identify Contact Person for any Additional Concerns

Forms and Reports Initiated

Location of Forms and Reports

Date and Time for Debrief and Critique

Assignments for Follow-up

Investigation for Cause Initiated

Regulatory Criteria (notifications/reports) Complete

SPILL REPORT FORM

This form is to be used to report to regulatory agencies and others in the event of a release or spill. Use this form to assist in the initial report phase of an incident. Have the following information available (to the extent possible) before the call. Do not wait for information that would put you at risk of not reporting in a timely manner and in accordance with applicable regulations.

Name, Address, Telephone Number of Person Reporting.

The identity (chemical name), location and nature of the release, including its source, quantity and duration.

Whether the release is to air, ground, or water.

Whether any injuries or property damage.

What are the weather conditions?

What types of corrective actions are underway (e.g., containment, evacuation, etc.)?

ATTACHMENT 4
SITE-SPECIFIC SPILLS OR RESPONSE ACTIONS

1. Specific procedures are required of the ERC in the event of an emergency situation, these actions include:

- Activate or ensure activation of alarm systems, notify appropriate local or state response agencies.
- Identify the character, exact source, amount and areal extent of any released material.
- Assess possible direct and indirect hazards to human health or the environment that may result from the release, fire or explosion.
- Determine if evacuation of local areas is required, and immediately notify either the government official designated as the on-scene coordinator or the National Response Center.
- Ensure that fires, explosions, and releases do not occur, recur, or spread to other parts of the site or facility.
- Monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment if facility operations cease.
- Provide treatment, storage and disposal of any material that results from a release, fire, or explosion immediately after an emergency.
- Ensure that no waste incompatible with the released material is processed until cleanup procedures are completed and all emergency equipment listed in this plan is cleaned and fit for its intended use.

2. **Evaluate the chemicals or contaminants on your site to determine whether any of the following regulatory spill reports are applicable. Fill out the necessary information in the planning phase to assure prompt and reliable reporting in the event of a spill or release. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**

Determine If Comprehensive Environmental Response, Compensation, and Liability Act Release:

1. Are any chemicals regulated as CERCLA hazardous substance? (See 40 CFR Part 302.4). If so, list.

2. If listed chemicals indicate RQ for each.

3. In the event of a spill of the referenced hazardous substance, has the release equaled of exceeded the RQ within 24 hours?

4. Is the release totally contained within buildings or structures? If no, it must be reported.

5. If Reporting required, notify (in addition to internal/client):

6. National Response Center 800-424-8802

   b. State Emergency Response Commission (enter phone number) ___________

   c. Local Emergency Response Commission (enter phone number)___________

6. Provide information as indicated in Attached Spill Report Form.

7. Ensure written reports prepared and submitted in accordance with regulation and corporate policy.

Determine If Emergency Planning and Community Right-To-Know Act (EPCRA) Release:

1. Are any chemicals listed as extremely hazardous substances? (See 40 CFR Part 350).

2. Are any of the listed chemicals produced, used or stored in excess of the threshold planning quantity (TPQ)? If so, list chemical and quantity above TPQ.

3. Could a release of item 2 chemicals expose people outside of the facility boundaries? If no, is not EPCRA report requirement.

4. If a release of RQ of a listed chemical, notify (in addition to internal and client):

   a. SERC (enter phone number) ____________________

   b. LEPC (enter phone number) ____________________

5. Provide information as indicated in Attached Spill Report Form.

6. Ensure written reports prepared and submitted in accordance with regulation and corporate policy.

Determine If Resource Conservation and Recovery Act Release:

1. Is the chemical regulated as a hazardous waste? If not, is not a RCRA report.

2. Does the release constitute a "release, fire, or explosion that could threaten human health or the environment outside the facility? (Note: there are no particular RQs or concentrations in this case).

3. If the release meets the requirements of item 2, notify (in addition to internal and client):

   a. "Appropriate local authorities" if an evacuation is necessary (list name and phone or all). ____________________

b. State or Federal On-Scene Coordinator (name and phone number).

____

c. National Response Center 800-424-8802

4. Provide information as indicated in Attached Spill Report Form.

5. Ensure written reports prepared and submitted in accordance with regulation and corporate policy.

Determine If Clean Water Act Release:

1. Has the spill/release polluted water by:

   a. Being a hazardous substance (40 CFR Part 117) equaling or exceeding its RQ? If hazardous substance list and indicate RQ. *Or*

   b. Being an oil that creates a sheen or discoloration of the water surface, or violates a water quality standard?

2. If release meets the above criteria you must report to the National Response Center (NRC) (800-424-8802) as soon as knowledge of the spill.

3. Provide information as indicated in Attached Spill Report Form.

4. Ensure written reports prepared and submitted in accordance with regulation and corporate policy.

Determine If Toxic Substance Control Act (TSCA) Release of PCBs (polychlorinated biphenyls) (note determine if other TSCA reporting chemicals (e.g., asbestos) on-site):

1. Does the PCB material concentration equal to or greater than 50 parts per million (ppm) and has contaminated surface and/or drinking water, sewers, grazing lands, or vegetable gardens? *Or*

2. Does the 10 pounds or more of materials that contain 50 ppm or greater concentration of PCBs wherever they are spilled?

3. If so, then notify (in addition to corporate and client requirements)

   a. NRC immediately upon knowledge ________________________

   b. EPA Regional Office of Pesticides and Toxic Substances Branch (list name and phone number) ________________________

4. Provide information as indicated in Attached Spill Report Form.

5. Ensure written reports prepared and submitted in accordance with regulation and corporate policy.

Spill Report Form

This form is to be used in the event of a release or spill. Use this form to assist in the initial report phase of an incident. Have the following information available (to the extent possible) before the call. Do not wait for information that would put you at risk of not reporting in a timely manner and in accordance with applicable regulation(s).

1. Name, Address, Telephone Number of Person Reporting:

2. The identity (chemical name), location and nature of the release, including its source, quantity and duration.

3. Whether the release is to air, ground or water.

4. Whether any injuries or property damage.

5. What are the weather conditions?

6. What types of corrective actions are underway (e.g., containment, evacuation, etc.)?

ATTACHMENT 5
SITE PLAN, EVACUATION ROUTES, AND EQUIPMENT LOCATIONS

A map **depicting the site, evacuation routes, and equipment locations** will be posted in the office and work site. Mobile sites will determine location on daily basis. Hospital locations will be determined from each mobile location prior to work initiation. **All personnel must be made aware of evacuation signals, evacuation routes and procedures prior to site work**. Evacuation and other site emergencies must be discussed and/or practiced to assure employee awareness and ability to respond properly.

Hospital Route and Directions

A map showing the route to the hospital will be posted near the site telephone. A written description of the routes will be attached to the map. The hospital routes will be verified prior to work initiation.

U.S. Army Corps
of Engineers

Omaha District
Offutt AFB, Nebraska

SENECA ARMY DEPOT ACTIVITY
METAL SITES – SEAD's 50/54, 24 & 67
SENECA COUNTY
ROMULUS, NEW YORK

Contract No. DACA45-98-D-0004
Task Order No. 0035

FINAL
CHEMICAL SAMPLING AND ANALYSIS PLAN

NOVEMBER 2002

01M-0007

WESTON SOLUTIONS
Restoring Resource Efficiency

FINAL
CHEMICAL SAMPLING AND ANALYSIS PLAN
SENECA ARMY DEPOT ACTIVITY
METAL SITES – SEAD's 50/54, 24, & 67
SENECA COUNTY
ROMULUS, NEW YORK

Contract No. DACA45-98-D-0004
Task Order No. 0035

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
Castle Hall Building No. 525,
3rd Floor
Offutt AFB, Nebraska 68113

Prepared by:

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

November 2002

W.O. No. 20074.515.035

SENECA ARMY DEPOT ACTIVITY
METAL SITES – SEAD's 50/54, 24, & 67
SENECA COUNTY
ROMULUS, NEW YORK

FINAL CHEMICAL SAMPLING AND ANALYSIS PLAN

TIME CRITICAL REMOVAL ACTION

Contract No. DACA45-98-D-0004
Task Order No. 035

November 2002

COMMITMENT TO IMPLEMENT THE ABOVE
CHEMICAL SAMPLING AND ANALYSIS PLAN

Christopher Kane	11/18/02
Project Manager (print)	Signature Date
WILLIAM W. FREEMAN	William W. Freeman 11/18/02
Contractor's Program Chemist (print)	Signature Date
Other as Appropriate/Affiliation* (print)	Signature Date

*Commitment signature is required for any ancillary sampling, analytical, or data gathering support provided by a contractor or subcontractor. For example, the Contractor's laboratory Quality Assurance manager or director should sign the title page if analytical services are provided.

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(continued)

LIST OF FIGURES

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LIST OF ACRONYMS

CLP	Contract Laboratory Program
COC	chain-of-custody
CSAP	Chemical Sampling and Analysis Plan
yd^3	cubic yards
DQOs	Data Quality Objectives
EPA	U.S. Environmental Protection Agency
ft	foot/feet
ft^2	square feet
MS/MSDs	matrix spike/matrix spike duplicates
NE	New England
NYSDEC	New York State Department of Environmental Conservation
OSR	On-site Representative
PAHs	polynuclear aromatic hydrocarbons
PCB	polychlorinated biphenyl
POTW	publicly owned wastewater treatment
QA	quality assurance
QC	quality control
QL	quantitation limit
RCRA	Resource Conservation and Recovery Act
SEAD	Seneca Army Depot Activity
SOPs	Standard Operating Procedures
SOW	Scope of Work
SSHP	Site Safety and Health Plan
SVOC	semivolatile organic compounds
SWMUs	Solid Waste Management Units
TAGMs	Technical and Administrative Guidance Memorandums
TAL	Target Analyte List
TCL	Target Compound List
TCLP	toxicity characteristic leaching procedures
TRPH	Total Recoverable Petroleum Hydrocarbon
USACE	U.S. Army Corps of Engineers
VOCs	volatile organic compounds
$WESTON_{SM}$	Weston Solutions, Inc.
WP	Work Plan

SECTION 1

INTRODUCTION

1. INTRODUCTION

This Chemical Sampling and Analysis Plan (CSAP) was prepared by Weston Solutions, Inc. ($WESTON_{SM}$) for the Time-Critical Removal Action at the Seneca Army Depot Activity (SEAD), Romulus, New York. The removal action is intended to provide clean closure to four of SEDA's Solid Waste Management Units (SWMUs): the Tank Farm (SEAD 50/54), the Abandoned Powder Burning Pit (SEAD 24), and the debris pile east of the Sewage Treatment Plant #4 (SEAD 67), to facilitate transfer of these properties to public and private beneficial reuse. A summary of the site historical data and contaminants is provided in Subsection 1.2 of the Work Plan (WP) prepared by WESTON for this project.

SECTION 2

SCOPE AND OBJECTIVES

2. SCOPE AND OBJECTIVES

This section outlines the objectives of the sampling effort, Quality Assurance (QA) and Quality Control (QC) measures, and identifies the uses of the data that will be generated during the project.

2.1 PROJECT PURPOSE

The general project requirements as described in the Final Scope of Work (SOW) for Rapid Response Action includes excavation of contaminated soils, sampling and analysis, waste handling, transportation and disposal of all site waste generated or collected, and site restoration. More detailed listings of the work activities and Applicable and/or Relevant and Appropriate Requirements for this removal action is provided in Subsection 1.1 of the WP and in Subsection 1.1 of the Site Safety and Health Plan (SSHP).

2.1.1 Sampling Objectives

The goal of the CSAP is to develop and implement procedures for field sampling, chain-of-custody (COC), laboratory analysis, and reporting that will provide accurate defensible results. The objective of confirmatory sampling is to verify that the identified contamination has been removed from each specified excavation, and that concentrations of contaminants remaining at the site comply with the soil cleanup goals described in the Technical and Administrative Guidance Memorandum (TAGM) #4046 (See the WP for a complete reference). The excavated areas will be considered successfully remediated once the excavated soils are below the Soil Cleanup Goals.

The sampling objectives of the Time-Critical Removal Action are as follows:

- Collect and analyze pre-excavation soil samples at SEAD 50/54 (the former Tank Farm), to delineate the extent of soil containing asbestos.
- Collect and analyze confirmatory soil and sediment samples at SEAD 50/54 excavations to verify that the soil cleanup goals of the removal action are met.

- Collect and analyze confirmatory soil and sediment samples at SEAD 50/54 and SEAD 24, to verify that the soil cleanup goals for the removal action are met.
- Collect and analyze confirmatory soil samples at SEAD 67, the Dump Site East of the Sewage Treatment Plant #4 excavations to verify that the soil cleanup goals for the removal action are met.
- Collect and analyze waste characterization samples to determine if excavated soils and sediments meet Resource Conservation and Recovery Act (RCRA) requirements for landfill disposal prior to shipment to an off-site disposal facility.
- Collect and analyze background soil samples at each of the locations (SEAD 24, 50/54, and 67) to establish a baseline for contaminant concentrations.

2.2 GENERAL QUALITY ASSURANCE /QUALITY CONTROL PROCEDURES

Quality Control samples will be collected, and will include field duplicates and matrix spike/matrix spike duplicates (MS/MSDs). For confirmatory samples, for each matrix and analytical parameter, one (1) field duplicate sample will be collected for every ten (10) field samples. One (1) MS/MSD sample will be collected for every twenty (20) field samples. QC samples will not be collected for any samples used for disposal characterization or waste profiling at an off-site facility. As appropriate, temperature blanks may be prepared and submitted with each cooler of samples. Trip blank samples will also be submitted with each cooler containing VOCs. No QA samples will be collected for the removal action activities.

SECTION 3

FIELD ACTIVITIES

3. FIELD ACTIVITIES

This section identifies specific rationales, equipment, and procedures for conducting required sampling at the three areas; SEAD 24, SEAD 50/54, and SEAD 67 and associated site activities.

3.1 PRE-EXCAVATION SAMPLING

Pre-excavation sampling will be conducted at SEAD 50/54 to further delineate the lateral and vertical extent of soil containing asbestos. The results of the pre-excavation sampling and analysis event will be provided to the On-site Representative (OSR) and regulatory agencies prior to the initiation of excavation in SEAD 50/54. The pre-excavation soil samples will be collected near the former sample location SS50-1 due to the discovery of asbestos at this single location during previous investigation. Soil samples will be collected on a 30-foot (ft) by 30-ft grid around sample SS50-1 prior to the initiation of the proposed removal action for SEAD 50/54. It is anticipated that 28 pre-excavation samples, plus associated QA/QC samples will be collected from this area at the rate specified in Subsection 2.1.1. These soil samples will be analyzed for asbestos using polarized microscopy light.

3.2 EXCAVATION CONFIRMATION SAMPLING

3.2.1 Sampling Rationale

In order to ensure that the remedial action goals of the removal action are met (refer to Table 3-1), confirmation samples will be collected from the base and sidewalls (if applicable) of each identified excavation. Base (or floor) samples will be collected at a rate of one (1) sample per 900 square feet (ft^2), or a fraction thereof, of the surface area. Samples may be collected at a rate of one (1) per 625 ft^2 if particularly high contamination concentrations are noted during excavation or initial confirmatory sampling and analysis. Base samples will be collected in each 900 ft^2 grid (or less) as a five-point composite [four (4) corners and center of grid section].

Table 3-1
Laboratory Analysis Methods And Data Quality Objectives
Seneca Army Depot Activity
Romulus, New York

Analytes of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	STL - Vermont MDL	STL - Vermont PQL	STL - Vermont DQOs Accuracy (% R)	STL - Vermont DQOs Precision (% RPD)	STL - Connecticut MDL	STL - Connecticut PQL	STL - Connecticut DQOs Accuracy (% R)	STL - Connecticut DQOs Precision (% RPD)	DQO Completeness (% valid Data)
COMFIRMATORY SOIL SAMPLES														
TAL Metals						(IDLs)	(IDLs)			(IDLs)	(IDLs)			
Aluminum	SW-846/6010B	33000	SB	bkg	mg/kg	2.0	2.0	80-120	20	29.0	258.0	58-141	20	95
Antimony	SW-846/6010B	NA	SB	bkg	mg/kg	0.4	0.4	80-120	20	1.2	11.7	3-261	20	95
Arsenic	SW-846/6010B	3-12[0]	7.5 or SB	7.5 (or bkg)	mg/kg	0.4	0.4	80-120	20	1.0	8.0	74-126	20	95
Barium	SW-846/6010B	15-600	300 or SB	300 (or bkg)	mg/kg	0.8	0.8	80-120	20	0.3	2.0	77-123	20	95
Beryllium	SW-846/6010B	0-1.75	0.16 or SB	0	mg/kg	0.0	0.0	80-120	20	0.5	2.0	78-122	20	95
Cadmium	SW-846/6010B	0.1-1	1 or SB	1 (or bkg)	mg/kg	0.1	0.1	80-120	20	1.0	3.0	77-123	20	95
Calcium	SW-846/6010B	130-35000[1]	SB	bkg	mg/kg	17.9	17.9	80-120	20	8.6	85.0	75-125	20	95
Chromium	SW-846/6010B	1.5-40[0]	10 or SB	10 or (bkg)	mg/kg	0.1	0.1	80-120	20	0.5	3.0	80-120	20	95
Cobalt	SW-846/6010B	2.5-60[0]	30 or SB	30 (or bkg)	mg/kg	0.4	0.4	80-120	20	0.3	2.0	80-120	20	95
Copper	SW-846/6010B	1-50	25 or SB	25 (or bkg)	mg/kg	0.2	0.2	80-120	20	0.5	5.0	82-118	20	95
Cyanide	SW-846/6010B	NA	*1	N/A	mg/kg	0.060	0.5	75-125	20	0.054	0.50	75-125	20	95
Iron	SW-846/6010B	2000-550000	2000 or SB	bkg	mg/kg	2.3	2.3	80-120	20	22.0	145.0	61-140	20	95
Lead	SW-846/6010B	*2	SB[2]	bkg	mg/kg	0.090	0.090	80-120	20	1.0	9.0	75-125	20	95
Magnesium	SW-846/6010B	100-5000	SB	bkg	mg/kg	26.0	26.0	80-120	20	3.6	35.0	77-123	20	95
Manganese	SW-846/6010B	50-5000	SB	bkg	mg/kg	0.1000	0.1	80-120	20	3.0	2.5	77-122	20	95
Mercury	SW-846/6010B	0.001-0.2	0.1	0	mg/kg	0.044	0.100	75-125	20	0.090	2.0	68-132	20	95
Nickel	SW-846/6010B	0.5-25	13 or SB	13 (or bkg)	mg/kg	0.2	0.2	80-120	20	0.5	5.0	78-122	20	95
Potassium	SW-846/6010B	8500-43000	SB	bkg	mg/kg	24.8	24.8	80-120	20	43.0	200.0	44-117	20	95
Selenium	SW-846/6010B	0.1-3.9	2 or SB	2 (or bkg)	mg/kg	0.3	0.3	80-120	20	1.6	16.0	71-129	20	95
Silver	SW-846/6010B	NA	SB	(bkg)	mg/kg	0.2	0.2	80-120	20	0.3	3.0	52-148	20	95
Sodium	SW-846/6010B	6000-8000	SB	bkg	mg/kg	65.4	65.4	80-120	20	9.4	94.0	19-133	20	95
Thallium	SW-846/6010B	NA	NA	bkg	mg/kg	0.6	0.6	80-120	20	3.0	22.0	57-143	20	95
Vanadium	SW-846/6010B	1-300	150 or SB	150 (or bkg)	mg/kg	0.2	0.2	80-120	20	0.4	4.0	49-150	20	95
Zinc	SW-846/6010B	9-50	20 or SB	20 (or bkg)	mg/kg	0.1	0.1	80-120	20	2.4	20.0	73-127	20	95
TCL PAHs - Soil		**Soil Cleanup Obj. to protect GW quality (ppm)**	**Rec. Soil Cleanup Objective (ppm)**											
Acenaphthene	SW-846/3541/3540B/8270C	90.0	50.0[3]	50,000	mg/kg	36.950	330.0	59-111	40	0.015	0.330	70-108	40	95
Acenaphthylene	SW-846/3541/3540B/8270C	41.0	41.0	41,000	mg/kg	92.320	330.0	59-104	40	0.011	0.330	70-105	40	95
Anthracene	SW-846/3541/3540B/8270C	700.0	50.0[3]	50,000	mg/kg	84.140	330.0	59-120	40	0.012	0.330	71-110	40	95
Benzo(a)anthracene	SW-846/3541/3540B/8270C	3.0	0.224 or MDL	224 (or MDL)	mg/kg	61.580	330.0	62-116	40	0.015	0.330	73-117	40	95
Benzo(a)pyrene	SW-846/3541/3540B/8270C	11.0	0.061 or MDL	61 (or MDL)	mg/kg	94.640	330.0	60-109	40	0.016	0.330	72-116	40	95
Benzo(b)fluoranthene	SW-846/3541/3540B/8270C	1.1	1.1	1,100	mg/kg	31.790	330.0	44-119	40	0.038	0.330	60-126	40	95
Benzo(g,h,i)perylene	SW-846/3541/3540B/8270C	800	50.0[3]	50,000	mg/kg	52.430	330.0	10-167	40	0.017	0.330	62-118	40	95
Benzo(k)fluoranthene	SW-846/3541/3540B/8270C	1.1	1.1	1,100	mg/kg	92.890	330.0	57-128	40	0.039	0.330	72-129	40	95
Chrysene	SW-846/3541/3540B/8270C	0.4	0.4	400	mg/kg	78.180	330.0	49-121	40	0.017	0.330	73-118	40	95
Dibenzo(a,h)anthracene	SW-846/3541/3540B/8270C	165000	0.014 or MDL	14 (or MDL)	mg/kg	41.730	330.0	21-142	40	0.018	0.330	68-117	40	95
Fluoranthene	SW-846/3541/3540B/8270C	1900.0	50.0[3]	50,000	mg/kg	49.750	330.0	49-131	40	0.022	0.330	74-117	40	95

Table 3-1
Laboratory Analysis Methods And Data Quality Objectives
Seneca Army Depot Activity
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Analytes of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	STL - Vermont MDL	STL - Vermont PQL	STL - Vermont DQOs Accuracy (% R)	STL - Vermont DQOs Precision (% RPD)	STL - Connecticut MDL	STL - Connecticut PQL	STL - Connecticut DQOs Accuracy (% R)	STL - Connecticut DQOs Precision (% RPD)	DQO Completeness (% valid Data)
Fluorene	SW-846/3541/3540B/8270C	350.0	50.0[3]	50,000	mg/kg	39.200	330.0	61-120	40	0.020	0.330	71-110	40	95
Indeno(1,2,3-cd)pyrene	SW-846/3541/3540B/8270C	3.2	3.2	3,200	mg/kg	48.180	330.0	10-149	40	0.018	0.330	67-116	40	95
Naphthalene	SW-846/3541/3540B/8270C	13.0	13.0	13,000	mg/kg	54.110	330.0	61-104	40	0.032	0.330	61-106	40	95
Phenanthrene	SW-846/3541/3540B/8270C	220.0	50.0[3]	50,000	mg/kg	50.320	330.0	66-111	40	0.024	0.330	72-114	40	95
Pyrene	SW-846/3541/3540B/8270C	665.0	50.0[3]	50,000	mg/kg	76.570	330.0	46-124	40	0.019	0.330	71-120	40	95
SVOC Surrogates														
Nitrobenzene-d5	SW-846/3541/3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	23-120	NA	NA	NA	32-131	NA	95
2-Fluorobiphenyl	SW-846/3541/3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	30-115	NA	NA	NA	25-120	NA	95
Terphenyl-d14	SW-846/3541/3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	18-137	NA	NA	NA	35-140	NA	95
PERSONAL AIR MONITORING SAMPLING														
Total Lead	NIOSH 7300	NP	NP			See 6010B					See 6010B			95
WASTE CHARATERIZATION														
TCLP - METALS (23)														
Aluminum	SW-846/1311/6010B	33000	SB	bkg	mg/kg	2.0	2.0	25.0	20	29.0	258.0	58-141	20	95
Antimony	SW-846/1311/6010B	NA	SB	bkg	mg/kg	0.4	0.4	25.0	20	1.2	11.7	3-261	20	95
Arsenic	SW-846/1311/6010B	3-12[0]	7.5 or SB	7.5 (or bkg)	mg/kg	0.4	0.4	25.0	20	1.0	8.0	74-126	20	95
Barium	SW-846/1311/6010B	15-600	300 or SB	300 (or bkg)	mg/kg	0.8	0.8	25.0	20	0.3	2.0	77-123	20	95
Beryllium	SW-846/1311/6010B	0-1.75	0.16 or SB	0	mg/kg	0.0	0.0	25.0	20	0.5	2.0	78-122	20	95
Cadmium	SW-846/1311/6010B	0.1-1	1 or SB	1 (or bkg)	mg/kg	0.1	0.1	25.0	20	1.0	3.0	77-123	20	95
Calcium	SW-846/1311/6010B	130-35000[1]	SB	bkg	mg/kg	17.9	17.9	25.0	20	8.6	85.0	75-125	20	95
Chromium	SW-846/1311/6010B	1.5-40[0]	10 or SB	10 or (bkg)	mg/kg	0.1	0.1	25.0	20	0.5	3.0	80-120	20	95
Cobalt	SW-846/1311/6010B	2.5-60[0]	30 or SB	30 (or bkg)	mg/kg	0.4	0.4	25.0	20	0.3	2.0	80-120	20	95
Copper	SW-846/1311/6010B	1-50	25 or SB	25 (or bkg)	mg/kg	0.2	0.2	25.0	20	0.5	5.0	82-118	20	95
Cyanide	SW-846/1311/6010B	NA	*1	N/A	mg/kg	0.060	0.5	75-125	20	0.054	0.50	75-125	20	95
Iron	SW-846/1311/6010B	2000-550000	2000 or SB	bkg	mg/kg	2.3	2.3	25.0	20	22.0	145.0	61-140	20	95
Lead	SW-846/1311/6010B	*2	SB[2]	bkg	mg/kg	0.1	0.1	25.0	20	1.0	9.0	75-125	20	95
Magnesium	SW-846/1311/6010B	100-5000	SB	bkg	mg/kg	26.0	26.0	25.0	20	3.6	35.0	77-123	20	95
Manganese	SW-846/1311/6010B	50-5000	SB	bkg	mg/kg	0.1	0.1	25.0	20	3.0	2.5	77-122	20	95
Mercury	SW-846/1311/6010B	0.001-0.2	0.1	0	mg/kg	0.044	0.100	25.0	20	0.090	2.0	68-132	20	95
Nickel	SW-846/1311/6010B	0.5-25	13 or SB	13 (or bkg)	mg/kg	0.2	0.2	25.0	20	0.5	5.0	78-122	20	95
Potassium	SW-846/1311/6010B	8500-43000	SB	bkg	mg/kg	24.8	24.8	25.0	20	43.0	200.0	44-117	20	95
Selenium	SW-846/1311/6010B	0.1-3.9	2 or SB	2 (or bkg)	mg/kg	0.3	0.3	25.0	20	1.6	16.0	71-129	20	95
Silver	SW-846/1311/6010B	NA	SB	(bkg)	mg/kg	0.2	0.2	25.0	20	0.3	3.0	52-148	20	95
Sodium	SW-846/1311/6010B	6000-8000	SB	bkg	mg/kg	65.4	65.4	25.0	20	9.4	94.0	19-133	20	95
Thallium	SW-846/1311/6010B	NA	NA	bkg	mg/kg	0.6	0.6	25.0	20	3.0	22.0	57-143	20	95
Vanadium	SW-846/1311/6010B	1-300	150 or SB	150 (or bkg)	mg/kg	0.2	0.2	25.0	20	0.4	4.0	49-150	20	95
Zinc	SW-846/1311/6010B	9-50	20 or SB	20 (or bkg)	mg/kg	0.1	0.1	25.0	20	2.4	20.0	73-127	20	95

Table 3-1
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Analytes of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	STL - Vermont MDL	STL - Vermont PQL	STL - Vermont DQOs Accuracy (% R)	STL - Vermont DQOs Precision (% RPD)	STL - Connecticut MDL	STL - Connecticut PQL	STL - Connecticut DQOs Accuracy (% R)	STL - Connecticut DQOs Precision (% RPD)	DQO Completeness (% valid Data)
VOCs - soil		**Soil Cleanup Obj. to protect GW quality (ppm)**	**Rec. Soil Cleanup Objective (ppm)**											
1,1,1,2-Tetrachloroethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	TBD	TBD	95
1,1,1-Trichloroethane	SW-846/5035A /8260B	0.76	0.8	800	mg/kg	NA	NA	NA	NA	0.0005	0.005	57-136	20	95
1,1,2,2-Tetrachloroethane	SW-846/5035A /8260B	0.6	0.6	600	mg/kg	NA	NA	NA	NA	0.9000	0.005	48-130	20	95
1,1,2-Trichloroethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	55-134	20	95
1,1-Dichloroethane	SW-846/5035A /8260B	0.2	0.2	200	mg/kg	NA	NA	NA	NA	0.0005	0.005	65-138	20	95
1,1-Dichloroethene	SW-846/5035A /8260B	0.4	0.4	400	mg/kg	NA	NA	NA	NA	0.0005	0.005	50-169	20	95
1,1-Dichloropropene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
1,2,3-Trichlorobenzene	SW-846/5035A /8260B	NP	NP	3,400	mg/kg	NA	NA	NA	NA	0.0008	0.005	TBD	TBD	95
1,2,3-Trichloropropane	SW-846/5035A /8260B	NP	NP	3,400	mg/kg	NA	NA	NA	NA	0.0011	0.005	TBD	TBD	95
1,2,4-Trichlorobenzene	SW-846/5035A /8260B	3.4	3.4	3,400	mg/kg	NA	NA	NA	NA	0.0007	0.005	TBD	TBD	95
1,2,4-Trimethylbenzene	SW-846/5035A /8260B	NP	NP	3,400	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
1,2-Dibromo-3-chloroporpane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0034	0.005	TBD	TBD	95
1,2-Dibromoethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	TBD	TBD	95
1,2-Dichlorobenzene	SW-846/5035A /8260B	7.9	7.9	N/A	mg/kg	NA	NA	NA	NA	0.0006	0.005	TBD	TBD	95
1,2-Dichloroethane	SW-846/5035A /8260B	0.1	0.1	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	58-141	20	95
1,2-Dichloroethene (total)	SW-846/5035A /8260B	0.3	0.3	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	56-139	20	95
1,2-Dichloropropane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	59-134	20	95
1,3,5-Trimethylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
1,3-Dichlorobenzene	SW-846/5035A /8260B	NP	NP	300	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
1,3-Dichloropropane	SW-846/5035A /8260B	0.3	0.3	300	mg/kg	NA	NA	NA	NA	0.0006	0.005	TBD	TBD	95
1,4-Dichlorobenzene	SW-846/5035A /8260B	8.5	8.5	300	mg/kg	NA	NA	NA	NA	0.0006	0.005	TBD	TBD	95
2,2-Dichloropropane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0006	0.005	TBD	TBD	95
2-Butanone	SW-846/5035A /8260B	0.3	0.3	300	mg/kg	NA	NA	NA	NA	0.0029	0.010	10-242	20	95
2-Chlorotoluene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
2-Hexanone	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0035	0.010	20-210	20	95
4-Chlorotoluene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
4-Isopropyltoluene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	TBD	TBD	95

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4-Methyl-2-pentanone	SW-846/5035A /8260B	1.0	1.0	1,000	mg/kg	NA	NA	NA	NA	0.0028	0.010	47-149	20	95
Acetone	SW-846/5035A /8260B	0.11	0.2	200	mg/kg	NA	NA	NA	NA	0.0052	0.010	10-327	20	95
Allyl Chloride	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0002	0.010	TBD	TBD	95
Benzene	SW-846/5035A /8260B	0.06	0.06	60	mg/kg	NA	NA	NA	NA	0.0005	0.005	62-134	20	95
Bromobenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0006	0.005	TBD	TBD	95
Bromochloromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0007	0.005	TBD	TBD	95
Bromodichloromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	54-133	20	95
Bromoform	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0006	0.005	53-119	20	95
Bromomethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0025	0.005	25-166	20	95
Carbon Disulfide	SW-846/5035A /8260B	2.7	2.7	N/A	mg/kg	NA	NA	NA	NA	0.0002	0.005	41-147	20	95
Carbon Tetrachloride	SW-846/5035A /8260B	0.6	0.6	600	mg/kg	NA	NA	NA	NA	0.0004	0.005	58-138	20	95
Chlorobenzene	SW-846/5035A /8260B	1.7	1.7	1,700	mg/kg	NA	NA	NA	NA	0.0005	0.005	54-121	20	95
Chloroethane	SW-846/5035A /8260B	1.9	1.9	1,900	mg/kg	NA	NA	NA	NA	0.0007	0.005	51-154	20	95
Chloroform	SW-846/5035A /8260B	0.30	0.3	300	mg/kg	NA	NA	NA	NA	0.0006	0.005	61-133	20	95
Chloromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0008	0.005	18-168	20	95
Chloroprene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
cis-1,2-Dichloroethene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	57-132	20	95
cis-1,3-Dichloropropene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	56-134	20	95
Dibromochloromethane	SW-846/5035A /8260B	NA	NA	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	55-126	20	95
Dibromomethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	TBD	TBD	95
Dichlorodifluoromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
Ethyl Methacrylate	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.010	TBD	TBD	95
Ethylbenzene	SW-846/5035A /8260B	5.5	5.5	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	65-124	20	95
Freon TF	SW-846/5035A /8260B	6.0	6.0	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
Hexachlorobutadiene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0006	0.005	TBD	TBD	95
Isopropylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0006	0.005	TBD	TBD	95
Methyl Methacrylate	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0006	0.010	TBD	TBD	95
Methylene Chloride	SW-846/5035A /8260B	0.1	0.1	100	mg/kg	NA	NA	NA	NA	0.0012	0.005	59-132	20	95
MTBE	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0003	0.005	TBD	TBD	95
Napthalene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0007	0.005	TBD	TBD	95

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n-Butylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
n-Propylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0006	0.005	TBD	TBD	95
sec-Butylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
Styrene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	63-119	20	95
tert-Butylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
Tetrachloroethene	SW-846/5035A /8260B	1.4	1.4	1,400	mg/kg	NA	NA	NA	NA	0.0004	0.005	63-128	20	95
Tetrahydrofuran	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0018	0.005	TBD	TBD	95
Toluene	SW-846/5035A /8260B	1.5	1.5	1,500	mg/kg	NA	NA	NA	NA	0.0004	0.005	62-124	20	95
trans-1,2-Dichloroethene	SW-846/5035A /8260B	NP	NP	300	mg/kg	NA	NA	NA	NA	0.0005	0.005	56-139	20	95
trans-1,3-Dichloropropene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	45-134	20	95
trans-1,4-Dichloro-2-butene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0011	0.010	TBD	TBD	95
Trichloroethene	SW-846/5035A /8260B	0.70	0.7	700	mg/kg	NA	NA	NA	NA	0.0005	0.005	60-136	20	95
Trichlorofluoromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
Vinyl Acetate	SW-846/5035A /8260B	NP	NP	200	mg/kg	NA	NA	NA	NA	0.0030	0.005	10-205	20	95
Vinyl Chloride	SW-846/5035A /8260B	0.12	0.2	200	mg/kg	NA	NA	NA	NA	0.0004	0.005	27-172	20	95
m,p-Xylenes	SW-846/5035A /8260B	NP	NP	1,200 (total)	mg/kg	NA	NA	NA	NA	0.0005	0.005	40-146	20	95
o-Xylene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	40-146	20	95
total Xylenes	SW-846/5035A /8260B	1.2	1.2	1,200 (total)	mg/kg	NA	NA	NA	NA	0.0011	0.005	10-146	20	95
VOC Surrogates														
1,2-Dichloroethane-d4	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	NA	NA	49-134	TBD	95
4-Bromofluorobenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	NA	NA	36-133	TBD	95
Dibromofluoromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	NA	NA	60-130	TBD	95
Toluene-d8	SW-846/5035A /8260B	NP	NP	1,500	mg/kg	NA	NA	NA	NA	NA	NA	51-137	TBD	95
TOTAL SVOCs - soil		**Soil Cleanup Obj. to protect GW quality (ppm)**	**Rec. Soil Cleanup Objective (ppm)**											
1,2,4-Trichlorobenzene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	64.850	330.0	63-111	40	0.025	0.330	58-107	40	95
1,2-dichlorobenzene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	41.660	330.0	65-101	40	0.018	0.330	55-104	40	95
1,3-Dichlorobenzene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	47.940	330.0	60-103	40	0.016	0.330	49-102	40	95
1,4-Dichlorobenzene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	35.410	330.0	65- 99	40	0.019	0.330	55-103	40	95

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Seneca Army Depot Activity
Romulus, New York

Analytes of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	STL - Vermont MDL	STL - Vermont PQL	STL - Vermont DQOs Accuracy (% R)	STL - Vermont DQOs Precision (% RPD)	STL - Connecticut MDL	STL - Connecticut PQL	STL - Connecticut DQOs Accuracy (% R)	STL - Connecticut DQOs Precision (% RPD)	DQO Completeness (% valid Data)
2,2'-oxybis(1-Chloropropane)	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	50.800	330.0	64-111	40	0.018	0.330	59-109	40	95
2,4,5-trichlorophenol	SW-846/3541/ 3540B/8270C	NP	NP	100	mg/kg	110.020	800.0	34-122	40	0.010	1.600	74-114	40	95
2,4,6-trichlorophenol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	90.890	330.0	10-140	40	0.018	0.330	72-108	40	95
2,4-Dichlorophenol	SW-846/3541/ 3540B/8270C	0.4	0.4	400	mg/kg	65.330	330.0	56-115	40	0.030	0.330	66-109	40	95
2,4-Dimethylphenol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	75.720	330.0	33-120	40	0.032	0.330	46-109	40	95
2,4-Dinitrophenol	SW-846/3541/ 3540B/8270C	0.2	0.200 or MDL	200 (or MDL)	mg/kg	40.430	800.0	10-208	40	0.051	0.330	12-155	40	95
2,4-Dinitrotoluene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	46.780	330.0	60-121	40	0.019	0.330	73-122	40	95
2,6-Dinitroluene	SW-846/3541/ 3540B/8270C	1.0	1.0	1,000	mg/kg	52.050	330.0	71-108	40	0.014	0.330	74-119	40	95
2-Chloronaphthalene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	38.230	330.0	72-110	40	0.019	0.330	66-107	40	95
2-Chlorophenol	SW-846/3541/ 3540B/8270C	0.8	0.8	800	mg/kg	48.340	330.0	61-102	40	0.024	0.330	60-113	40	95
2-Methylnaphthalene	SW-846/3541/ 3540B/8270C	36.4	36.4	36,400	mg/kg	48.360	330.0	64-110	40	0.028	0.330	63-108	40	95
2-Methylphenol	SW-846/3541/ 3540B/8270C	0.1	0.100 or MDL	100 (or MDL)	mg/kg	35.260	330.0	66- 98	40	0.016	0.330	62-116	40	95
2-Nitroaniline	SW-846/3541/ 3540B/8270C	0.43	0.430 or MDL	430 (or MDL)	mg/kg	76.400	800.0	60-126	40	0.022	1.600	70-119	40	95
2-Nitrophenol	SW-846/3541/ 3540B/8270C	0.33	0.33 or MDL	330 (or MDL)	mg/kg	91.990	330.0	62-115	40	0.028	0.330	69-104	40	95
3,3'-Dichlorobenzidine	SW-846/3541/ 3540B/8270C	NA	NA	N/A	mg/kg	213.420	330.0	29- 99	40	0.034	0.660	12-86	40	95
3-Nitroaniline	SW-846/3541/ 3540B/8270C	0.5	0.500 or MDL	500 (or MDL)	mg/kg	154.870	800.0	44- 79	40	0.018	1.600	36-90	40	95
4,6-Dinitro-2-methylphenol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	127.600	800.0	30-166	40	0.028	1.600	36-146	40	95
4-Bromophenylphenylether	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	64.870	330.0	67-101	40	0.013	0.330	66-115	40	95
4-Chloro-3-methylphenol	SW-846/3541/ 3540B/8270C	0.24	0.240 or MDL	240 (or MDL)	mg/kg	65.660	330.0	61-116	40	0.031	0.330	73-113	40	95
4-Chloroaniline	SW-846/3541/ 3540B/8270C	0.22	0.220 or MDL	220 (or MDL)	mg/kg	214.730	330.0	10- 81	40	0.025	0.330	18-65	40	95
4-Chlorophenylphenylether	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	39.200	330.0	67-110	40	0.016	0.330	70-110	40	95
4-Methylphenol	SW-846/3541/ 3540B/8270C	0.9	0.9	900	mg/kg	78.630	330.0	56-112	40	0.018	0.330	64-113	40	95
4-Nitroaniline	SW-846/3541/ 3540B/8270C	0.1	0.100 or MDL	N/A	mg/kg	168.410	800.0	44-105	40	0.024	0.660	58-106	40	95
4-Nitrophenol	SW-846/3541/ 3540B/8270C	NP	NP	100 (or MDL)	mg/kg	60.720	800.0	42-147	40	0.085	1.600	60-123	40	95
Acenaphthene	SW-846/3541/ 3540B/8270C	90.0	50.0***	50,000	mg/kg	36.950	330.0	59-111	40	0.015	0.330	70-108	40	95
Acenaphthylene	SW-846/3541/ 3540B/8270C	41.0	41.0	41,000	mg/kg	34.770	330.0	59-104	40	0.011	0.330	70-105	40	95
Aniline*	SW-846/3541/ 3540B/8270C	0.1	0.1	100	mg/kg	221.610	330.0	10- 73	40	0.042	0.330	11-76	40	95
Anthracene	SW-846/3541/ 3540B/8270C	700.0	50.0***	50,000	mg/kg	84.140	330.0	59-120	40	0.012	0.330	71-110	40	95
Benzo(a)anthracene	SW-846/3541/ 3540B/8270C	3.0	0.2242 ot MDL	224 (or MDL)	mg/kg	61.580	330.0	62-116	40	0.015	0.330	73-117	40	95
Benzo(a)pyrene	SW-846/3541/ 3540B/8270C	11.0	0.061 or MDL	61 (or MDL)	mg/kg	94.640	330.0	60-109	40	0.016	0.330	72-116	40	95

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Benzo(b)fluoranthene	SW-846/3541/ 3540B/8270C	1.1	1.1	1,100	mg/kg	31.790	330.0	44-119	40	0.038	0.330	60-126	40	95
Benzo(g,h,i)perylene	SW-846/3541/ 3540B/8270C	800	50.0***	50,000	mg/kg	52.430	330.0	10-167	40	0.017	0.330	62-118	40	95
Benzo(k)fluoranthene	SW-846/3541/ 3540B/8270C	1.1	1.1	1,100	mg/kg	92.890	330.0	57-128	40	0.039	0.330	72-129	40	95
Benzoic acid	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	197.570	330.0	10-146	40	0.662	1.600	1-185	40	95
Benzyl alcohol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	53.490	330.0	68-117	40	0.023	0.330	51-123	40	95
Bis(2-Chloroethoxy)methane	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	66.370	330.0	39-103	40	0.014	0.330	59-109	40	95
Bis(2-Chloroethyl)ether	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	50.360	330.0	57-116	40	0.103	0.330	55-109	40	95
Bis(2-ethylhexyl)phthalate	SW-846/3541/ 3540B/8270C	435.0	50.0***	50,000	mg/kg	55.140	330.0	46-106	40	0.036	0.330	71-128	40	95
Butylbenzylphthalate	SW-846/3541/ 3540B/8270C	122.0	50.0***	50,000	mg/kg	51.370	330.0	56-129	40	0.013	0.330	72-122	40	95
Chrysene	SW-846/3541/ 3540B/8270C	0.4	0.4	400	mg/kg	78.180	330.0	49-121	40	0.017	0.330	73-118	40	95
Dibenzo(a,h)anthracene	SW-846/3541/ 3540B/8270C	165000	0.014 or MDL	14 (or MDL)	mg/kg	41.730	330.0	21-142	40	0.018	0.330	68-117	40	95
Dibenzofuran	SW-846/3541/ 3540B/8270C	6.2	6.2	6,200	mg/kg	33.390	330.0	67-121	40	0.015	0.330	70-112	40	95
Diethylphthalate	SW-846/3541/ 3540B/8270C	7.1	7.1	7,100	mg/kg	32.060	330.0	62-118	40	0.017	0.330	74-116	40	95
Dimethylphthalate	SW-846/3541/ 3540B/8270C	2.0	2.0	2,000	mg/kg	34.770	330.0	62-119	40	0.015	0.330	75-112	40	95
Di-n-butylphthalate	SW-846/3541/ 3540B/8270C	8.1	8	8,100	mg/kg	43.850	330.0	62-118	40	0.014	0.330	74-118	40	95
Di-n-octylphthalate	SW-846/3541/ 3540B/8270C	120.0	50.0***	50,000	mg/kg	53.920	330.0	65-120	40	0.012	0.330	64-131	40	95
Fluoranthene	SW-846/3541/ 3540B/8270C	1900.0	50.0***	50,000	mg/kg	49.750	330.0	49-131	40	0.022	0.330	74-117	40	95
Fluorene	SW-846/3541/ 3540B/8270C	350.0	50.0***	50,000	mg/kg	39.200	330.0	61-120	40	0.020	0.330	71-110	40	95
hexachlorobenzene	SW-846/3541/ 3540B/8270C	1.4	0.41	4,100	mg/kg	51.130	330.0	52-122	40	0.019	0.330	71-114	40	95
Hexachlorobutadiene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	50.770	330.0	52-121	40	0.033	0.330	57-105	40	95
Hexachlorocyclopentadiene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	110.350	330.0	10-146	40	0.045	0.330	49-103	40	95
Hexachloroethane	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	35.970	330.0	52-117	40	0.021	0.330	53-101	40	95
Indeno(1,2,3-cd)pyrene	SW-846/3541/ 3540B/8270C	3.2	3.2	3,200	mg/kg	48.180	330.0	10-149	40	0.018	0.330	67-116	40	95
Isophorone	SW-846/3541/ 3540B/8270C	4.40	4.40	4,400	mg/kg	45.630	330.0	52-119	40	0.023	0.330	64-105	40	95
Naphthalene	SW-846/3541/ 3540B/8270C	13.0	13.0	13,000	mg/kg	54.110	330.0	61-104	40	0.032	0.330	61-106	40	95
nitrobenzene	SW-846/3541/ 3540B/8270C	0.2	0.200 or MDL	200 (or MDL)	mg/kg	59.390	330.0	58-111	40	0.025	0.330	64-105	40	95
N-Nitroso-di-n-propylamine	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	35.100	330.0	50-116	40	0.014	0.330	64-107	40	95
N-Nitrosodiphenylamine	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	86.120	330.0	57-116	40	0.016	0.330	67-116	40	95
pentachlorophenol	SW-846/3541/ 3540B/8270C	1.0	1.0 or MDL	1000 (or MDL)	mg/kg	167.610	800.0	19- 94	40	0.043	1.600	13-118	40	95
Phenanthre	SW-846/3541/ 3540B/8270C	220.0	50.0***	50,000	kg	50.320	330.0	66-111	40	0.024	0.330	72-114	40	95

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phenol	SW-846/3541/ 3540B/8270C	0.03	0.03 or MDL	300 (or MDL)	mg/kg	56.290	330.0	59-117	40	0.024	0.330	60-114	40	95
Pyrene	SW-846/3541/ 3540B/8270C	665.0	50.0***	50,000	mg/kg	76.570	330.0	46-124	40	0.019	0.330	71-120	40	95
SVOC Surrogates														
1,2-Dichlorobenzene-d4	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	20-130	NA	NA	NA	32-131	NA	95
2,4,6-Tribromophenol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	19-122	NA	NA	NA	25-120	NA	95
2-Chlorophenol-d4	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	20-130	NA	NA	NA	35-140	NA	95
2-Fluorobiphenyl	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	30-115	NA	NA	NA	24-150	NA	95
2-Fluorophenol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	25-121	NA	NA	NA	25-113	NA	95
Nitrobenzene-d5	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	23-120	NA	NA	NA	27-122	NA	95
Phenol-d5	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	24-113	NA	NA	NA	25-113	NA	95
Terphenyl-d14	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	18-137	NA	NA	NA	27-122	NA	95
TOTAL PCBs - soil														
Aroclor-1260	3540/8082	10.0	1.0 surface 10 subsurf.	1000 (total)	mg/kg	0.5820	17.0	51-137	40	0.0014	0.017	34-128	50	95
Aroclor-1016	3540/8082	10.0	1.0 surface 10 subsurf.		mg/kg	0.6670	17.0	51-137	40	0.0014	0.017	TBD	50	95
Aroclor 1221	3540/8082	10.0	1.0 surface 10 subsurf.	1001 (total)	mg/kg	NA	17.0	NA	NA	0.0013	0.033	TBD	50	95
Aroclor 1232	3540/8082	10.0	1.0 surface 10 subsurf.		mg/kg	NA	17.0	NA	NA	0.0014	0.017	TBD	50	95
Aroclor 1242	3540/8082	10.0	1.0 surface 10 subsurf.	1002 (total)	mg/kg	NA	17.0	NA	NA	0.0015	0.017	27-136	50	95
Aroclor 1248	3540/8082	10.0	1.0 surface 10 subsurf.		mg/kg	NA	17.0	NA	NA	0.0010	0.017	TBD	50	95
Aroclor 1254	3540/8082	10.0	1.0 surface 10 subsurf.	1003 (total)	mg/kg	NA	17.0	NA	NA	0.0016	0.017	TBD	50	95
PCB SURROGATES														
Decachlorobiphenyl	3540C/8082	NP	NP	110	mg/kg	NA	NA	52-133	NA	NA	NA	52-133	NA	95
Tetrachloro-m-xylene	3540C/8082	NP	NP	110	mg/kg	NA	NA	61-115	NA	NA	NA	61-115	NA	95
TOTAL PESTICIDES														
alpha-BHC	SW-846/3541/ 3540B/8081	0.2	0.11	110	mg/kg	0.407	1.7	35-125	30	0.00028	0.0017	46-133	40	95
beta-BHC	SW-846/3541/ 3540B/8081	0.2	0.2	110	mg/kg	0.758	1.7	42-137	30	0.00027	0.0017	76-150	40	95
delta-BHC	SW-846/3541/ 3540B/8081	0.3	0.3	110	mg/kg	0.376	1.7	1-167	30	0.00010	0.0017	12-132	40	95
gamma-BHC (lindane)	SW-846/3541/ 3540B/8081	0.06	0.06	110	mg/kg	0.435	1.7	35-130	30	0.00015	0.0017	64-119	40	95
Heptachlor	SW-846/3541/ 3540B/8081	0.10	0.10	110	mg/kg	0.531	1.7	1-248	30	0.00015	0.0017	63-134	40	95
Aldrin	SW-846/3541/ 3540B/8081	0.5	0.041	110	mg/kg	0.469	1.7	40-137	30	0.00036	0.0020	57-143	40	95
Heptachlor epoxide	SW-846/3541/ 3540B/8081	0.02	0.02	110	mg/kg	0.523	1.7	44-146	30	0.00011	0.0017	76-129	40	95
Endosulfan I	SW-846/3541/ 3540B/8081	0.9	0.9	110	mg/kg	0.491	1.7	48-137	30	0.00015	0.0017	59-138	40	95
Dieldrin	SW-846/3541/ 3540B/8081	0.1	0.044	110	mg/kg	1.09	3.3	36-146	30	0.00032	0.0033	68-136	40	95

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4,4'-DDE	SW-846/3541/ 3540B/8081	4.4	2.1	110	mg/kg	1.16	3.3	45-157	30	0.00043	0.0033	68-132	40	95
Endrin	SW-846/3541/ 3540B/8081	0.1	0.1	110	mg/kg	1.25	3.3	37-152	30	0.00089	0.0050	72-140	40	95
Endosulfan II	SW-846/3541/ 3540B/8081	0.9	0.9	110	mg/kg	1.16	3.3	42-160	30	0.00017	0.0033	69-152	40	95
4,4'-DDD	SW-846/3541/ 3540B/8081	7.7	2.9	110	mg/kg	0.908	3.3	47-159	30	0.00038	0.0033	48-128	40	95
Endosulfan sulfate	SW-846/3541/ 3540B/8081	1.0	1.0	110	mg/kg	0.993	3.3	25-162	30	0.00017	0.0033	60-132	40	95
4,4'-DDT	SW-846/3541/ 3540B/8081	2.5	2.1	110	mg/kg	2.28	3.3	43-157	30	0.00031	0.0033	51-147	40	95
Methoxychlor	SW-846/3541/ 3540B/8081	900	***	110	mg/kg	7.39	17	54-159	30	0.0021	0.017	76-159	40	95
Endrin ketone	SW-846/3541/ 3540B/8081	NA	NA	110	mg/kg	1.10	3.3	31-166	30	0.00014	0.0033	80-148	40	95
alpha-Chlordane	SW-846/3541/ 3540B/8081	NP	NP	110	mg/kg	0.582	1.7	31-150	30	0.00011	0.0017	50-141	40	95
gamma-Chlordane	SW-846/3541/ 3540B/8081	NP	NP	110	mg/kg	0.610	1.7	33-149	30	0.00009	0.0017	70-140	40	95
Endrin aldehyde	SW-846/3541/ 3540B/8081	NP	NP	110	mg/kg	2.03	3.3	50-145	30	0.00032	0.0033	23-158	40	95
PESTICIDE SURROGATES														
Decachlorobiphenyl	3540C/8081A	NP	NP	110	mg/kg	NA	NA	30-140	NA	NA	NA	41-150	NA	95
Tetrachloro-m-xylene	3540C/8081A	NP	NP	110	mg/kg	NA	NA	36-132	NA	NA	NA	56-159	NA	95
BACKFILL CONFIRMATION - Soil														
TAL METALS -Soil														
Aluminum	SW-846/1311/6010B	33000	33000	bkg	mg/kg	2.0	2.0	25.0	20	29.0	258.0	58-141	20	95
Antimony	SW-846/1311/6010B	NA	NA	bkg	mg/kg	0.4	0.4	25.0	20	1.2	11.7	3-261	20	95
Arsenic	SW-846/1311/6010B	3-12**	7.5 or SB	7.5 (or bkg)	mg/kg	0.4	0.4	25.0	20	1.0	8.0	74-126	20	95
Barium	SW-846/1311/6010B	15-600	300 or SB	300 (or bkg)	mg/kg	0.8	0.8	25.0	20	0.3	2.0	77-123	20	95
Beryllium	SW-846/1311/6010B	0-1.75	0.16 or SB	0	mg/kg	0.0	0.0	25.0	20	0.5	2.0	78-122	20	95
Cadmium	SW-846/1311/6010B	0.1-1	1 or SB	1 (or bkg)	mg/kg	0.1	0.1	25.0	20	1.0	3.0	77-123	20	95
Calcium	SW-846/1311/6010B	130-35000***	130-35000***	bkg	mg/kg	17.9	17.9	25.0	20	8.6	85.0	75-125	20	95
Chromium	SW-846/1311/6010B	1.5-40**	10 or SB	10 or (bkg)	mg/kg	0.1	0.1	25.0	20	0.5	3.0	80-120	20	95
Cobalt	SW-846/1311/6010B	2.5-60**	30 or SB	30 (or bkg)	mg/kg	0.4	0.4	25.0	20	0.3	2.0	80-120	20	95
Copper	SW-846/1311/6010B	1-50	25 or SB	25 (or bkg)	mg/kg	0.2	0.2	25.0	20	0.5	5.0	82-118	20	95
Cyanide	SW-846/1311/6010B	NA	***	N/A	mg/kg	0.060	0.5	75-125	20	0.054	0.50	75-125	20	95
Iron	SW-846/1311/6010B	2000-550000	2000 or SB	bkg	mg/kg	2.3	2.3	25.0	20	22.0	145.0	61-140	20	95
Lead	SW-846/1311/6010B	****	SB ****	bkg	mg/kg	0.1	0.1	25.0	20	1.0	9.0	75-125	20	95
Magnesium	SW-846/1311/6010B	100-5000	100-5000	bkg	mg/kg	26.0	26.0	25.0	20	3.6	35.0	77-123	20	95
Manganese	SW-846/1311/6010B	50-5000	50-5000	bkg	mg/kg	0.1	0.1	25.0	20	3.0	2.5	77-122	20	95
Mercury	SW-846/1311/6010B	0.001-0.2	0.1	0	mg/kg	0.044	0.100	25.0	20	0.090	2.0	68-132	20	95
Nickel	SW-846/1311/6010B	0.5-25	13 or SB	13 (or bkg)	mg/kg	0.2	0.2	25.0	20	0.5	5.0	78-122	20	95
Potassium	SW-846/1311/6010B	8500-43000	8500-43000	bkg	mg/kg	24.8	24.8	25.0	20	43.0	200.0	44-117	20	95
Selenium	SW-846/1311/6010B	0.1-3.9	2 or SB	2 (or bkg)	mg/kg	0.3	0.3	25.0	20	1.6	16.0	71-129	20	95
Silver	SW-846/1311/6010B	NA	NA	(bkg)	mg/kg	0.2	0.2	25.0	20	0.3	3.0	52-148	20	95
Sodium	SW-846/1311/6010B	6000-8000	6000-8000	bkg	mg/kg	65.4	65.4	25.0	20	9.4	94.0	19-133	20	95
Thallium	SW-846/1311/6010B	NA	NA	bkg	mg/kg	0.6	0.6	25.0	20	3.0	22.0	57-143	20	95
Vanadium	SW-846/1311/6010B	1-300	150 or SB	150 (or bkg)	mg/kg	0.2	0.2	25.0	20	0.4	4.0	49-150	20	95
Zinc	SW-846/1311/6010B	9-50	20 or SB	20 (or bkg)	mg/kg	0.1	0.1	25.0	20	2.4	20.0	73-127	20	95
EXPLOSIVES - Soil														

Table 3-1
Laboratory Analysis Methods And Data Quality Objectives
Seneca Army Depot Activity
Romulus, New York

Analytes of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	STL - Vermont MDL	STL - Vermont PQL	STL - Vermont DQOs Accuracy (% R)	STL - Vermont DQOs Precision (% RPD)	STL - Connecticut MDL	STL - Connecticut PQL	STL - Connecticut DQOs Accuracy (% R)	STL - Connecticut DQOs Precision (% RPD)	DQO Completeness (% valid Data)
HMX	8330	NP	NP		mg/kg	11.3	120	50.0	30	NA	NA	NA	NA	95
RDX	8330	NP	NP		mg/kg	8.07	120	50.0	30	NA	NA	NA	NA	95
1,3,5-Trinitrobenzene	8330	NP	NP		mg/kg	21.0	120	50.0	30	NA	NA	NA	NA	95
1,3-Dinitrobenzene	8330	NP	NP		mg/kg	9.02	120	50.0	30	NA	NA	NA	NA	95
Nitrobenzene	8330	NP	NP		mg/kg	9.43	120	50.0	30	NA	NA	NA	NA	95
Tetryl	8330	NP	NP		mg/kg	44.5	120	50.0	30	NA	NA	NA	NA	95
2,4,6-Trinitrotoluene	8330	NP	NP		mg/kg	8.20	120	50.0	30	NA	NA	NA	NA	95
4-Amino-2,6-dinitrotoluene	8330	NP	NP		mg/kg	8.53	120	50.0	30	NA	NA	NA	NA	95
2-Amino-4,6-dinitrotoluene	8330	NP	NP		mg/kg	9.03	120	50.0	30	NA	NA	NA	NA	95
2,6-Dinitrotoluene	8330	NP	NP		mg/kg	27.2	120	50.0	30	NA	NA	NA	NA	95
2,4-Dinitrotoluene	8330	NP	NP		mg/kg	14.4	120	50.0	30	NA	NA	NA	NA	95
2-Nitrotoluene	8330	NP	NP		mg/kg	13.7	120	50.0	30	NA	NA	NA	NA	95
4-Nitrotoluene	8330	NP	NP		mg/kg	17.3	120	50.0	30	NA	NA	NA	NA	95
3-Nitrotoluene	8330	NP	NP		mg/kg	13.9	120	50.0	30	NA	NA	NA	NA	95
VOCs - soil		**Soil Cleanup Obj. to protect GW quality (ppm)**	**Rec. Soil Cleanup Objective (ppm)**											
1,1,1,2-Tetrachloroethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	TBD	TBD	95
1,1,1-Trichloroethane	SW-846/5035A /8260B	0.76	0.8	800	mg/kg	NA	NA	NA	NA	0.0005	0.005	57-136	20	95
1,1,2,2-Tetrachloroethane	SW-846/5035A /8260B	0.6	0.6	600	mg/kg	NA	NA	NA	NA	0.9000	0.005	48-130	20	95
1,1,2-Trichloroethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	55-134	20	95
1,1-Dichloroethane	SW-846/5035A /8260B	0.2	0.2	200	mg/kg	NA	NA	NA	NA	0.0005	0.005	65-138	20	95
1,1-Dichloroethene	SW-846/5035A /8260B	0.4	0.4	400	mg/kg	NA	NA	NA	NA	0.0005	0.005	50-169	20	95
1,1-Dichloropropene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
1,2,3-Trichlorobenzene	SW-846/5035A /8260B	NP	NP	3,400	mg/kg	NA	NA	NA	NA	0.0008	0.005	TBD	TBD	95
1,2,3-Trichloropropane	SW-846/5035A /8260B	NP	NP	3,400	mg/kg	NA	NA	NA	NA	0.0011	0.005	TBD	TBD	95
1,2,4-Trichlorobenzene	SW-846/5035A /8260B	3.4	3.4	3,400	mg/kg	NA	NA	NA	NA	0.0007	0.005	TBD	TBD	95
1,2,4-Trimethylbenzene	SW-846/5035A /8260B	NP	NP	3,400	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
1,2-Dibromo-3-chloroporpane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0034	0.005	TBD	TBD	95
1,2-Dibromoethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	TBD	TBD	95
1,2-Dichlorobenzene	SW-846/5035A /8260B	7.9	7.9	N/A	mg/kg	NA	NA	NA	NA	0.0006	0.005	TBD	TBD	95
1,2-Dichloroethane	SW-846/5035A /8260B	0.1	0.1	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	58-141	20	95
1,2-Dichloroethene (total)	SW-846/5035A /8260B	0.3.	0.3	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	56-139	20	95
1,2-Dichloropropane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	59-134	20	95
1,3,5-Trimethylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
1,3-Dichlorobenzene	SW-846/5035A /8260B	NP	NP	300	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95

Table 3-1
Laboratory Analysis Methods And Data Quality Objectives
Seneca Army Depot Activity
Romulus, New York

Analytes of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	STL - Vermont				STL - Connecticut				DQO
								DQOs				DQOs		
						MDL	PQL	Accuracy (% R)	Precision (% RPD)	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completeness (% valid Data)
1,3-Dichloropropane	SW-846/5035A /8260B	0.3	0.3	300	mg/kg	NA	NA	NA	NA	0.0006	0.005	TBD	TBD	95
1,4-Dichlorobenzene	SW-846/5035A /8260B	8.5	8.5	300	mg/kg	NA	NA	NA	NA	0.0006	0.005	TBD	TBD	95
2,2-Dichloropropane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0006	0.005	TBD	TBD	95
2-Butanone	SW-846/5035A /8260B	0.3	0.3	300	mg/kg	NA	NA	NA	NA	0.0029	0.010	10-242	20	95
2-Chlorotoluene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
2-Hexanone	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0035	0.010	20-210	20	95
4-Chlorotoluene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
4-Isopropyltoluene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	TBD	TBD	95
4-Methyl-2-pentanone	SW-846/5035A /8260B	1.0	1.0	1,000	mg/kg	NA	NA	NA	NA	0.0028	0.010	47-149	20	95
Acetone	SW-846/5035A /8260B	0.11	0.2	200	mg/kg	NA	NA	NA	NA	0.0052	0.010	10-327	20	95
Allyl Chloride	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0002	0.010	TBD	TBD	95
Benzene	SW-846/5035A /8260B	0.06	0.06	60	mg/kg	NA	NA	NA	NA	0.0005	0.005	62-134	20	95
Bromobenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0006	0.005	TBD	TBD	95
Bromochloromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0007	0.005	TBD	TBD	95
Bromodichloromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	54-133	20	95
Bromoform	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0006	0.005	53-119	20	95
Bromomethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0025	0.005	25-166	20	95
Carbon Disulfide	SW-846/5035A /8260B	2.7	2.7	N/A	mg/kg	NA	NA	NA	NA	0.0002	0.005	41-147	20	95
Carbon Tetrachloride	SW-846/5035A /8260B	0.6	0.6	600	mg/kg	NA	NA	NA	NA	0.0004	0.005	58-138	20	95
Chlorobenzene	SW-846/5035A /8260B	1.7	1.7	1,700	mg/kg	NA	NA	NA	NA	0.0005	0.005	54-121	20	95
Chloroethane	SW-846/5035A /8260B	1.9	1.9	1,900	mg/kg	NA	NA	NA	NA	0.0007	0.005	51-154	20	95
Chloroform	SW-846/5035A /8260B	0.30	0.3	300	mg/kg	NA	NA	NA	NA	0.0006	0.005	61-133	20	95
Chloromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0008	0.005	18-168	20	95
Chloroprene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
cis-1,2-Dichloroethene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	57-132	20	95
cis-1,3-Dichloropropene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	56-134	20	95
Dibromochloromethane	SW-846/5035A /8260B	NA	NA	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	55-126	20	95
Dibromomethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	TBD	TBD	95
Dichlorodifluoromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
Ethyl Meth[illegible]ate	SW-846/5035A /8260B	NP	NP	N/A	[illegible]kg	NA	NA	NA	NA	0.0005	0.010	TBD	TBD	95

Table 3-1
Laboratory Analysis Methods And Data Quality Objectives
Seneca Army Depot Activity
Romulus, New York

						STL - Vermont				STL - Connecticut				
								DQOs				DQOs		DQO
Analytes of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	MDL	PQL	Accuracy (% R)	Precision (% RPD)	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completeness (% valid Data)
Ethylbenzene	SW-846/5035A /8260B	5.5	5.5	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	65-124	20	95
Freon TF	SW-846/5035A /8260B	6.0	6.0	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
Hexachlorobutadiene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0006	0.005	TBD	TBD	95
Isopropylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0006	0.005	TBD	TBD	95
Methyl Methacrylate	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0006	0.010	TBD	TBD	95
Methylene Chloride	SW-846/5035A /8260B	0.1	0.1	100	mg/kg	NA	NA	NA	NA	0.0012	0.005	59-132	20	95
MTBE	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0003	0.005	TBD	TBD	95
Napthalene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0007	0.005	TBD	TBD	95
n-Butylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
n-Propylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0006	0.005	TBD	TBD	95
sec-Butylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
Styrene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	63-119	20	95
tert-Butylbenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
Tetrachloroethene	SW-846/5035A /8260B	1.4	1.4	1,400	mg/kg	NA	NA	NA	NA	0.0004	0.005	63-128	20	95
Tetrahydrofuran	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0018	0.005	TBD	TBD	95
Toluene	SW-846/5035A /8260B	1.5	1.5	1,500	mg/kg	NA	NA	NA	NA	0.0004	0.005	62-124	20	95
traNP-1,2-Dichloroethene	SW-846/5035A /8260B	NP	NP	300	mg/kg	NA	NA	NA	NA	0.0005	0.005	56-139	20	95
traNP-1,3-Dichloropropene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	45-134	20	95
traNP-1,4-Dichloro-2-butene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0011	0.010	TBD	TBD	95
Trichloroethene	SW-846/5035A /8260B	0.70	0.7	700	mg/kg	NA	NA	NA	NA	0.0005	0.005	60-136	20	95
Trichlorofluoromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0005	0.005	TBD	TBD	95
Vinyl Acetate	SW-846/5035A /8260B	NP	NP	200	mg/kg	NA	NA	NA	NA	0.0030	0.005	10-205	20	95
Vinyl Chloride	SW-846/5035A /8260B	0.12	0.2	200	mg/kg	NA	NA	NA	NA	0.0004	0.005	27-172	20	95
m,p-Xylene	SW-846/5035A /8260B	NP	NP	1,200 (total)	mg/kg	NA	NA	NA	NA	0.0005	0.005	40-146	20	95
o-Xylene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	0.0004	0.005	40-146	20	95
total Xylene	SW-846/5035A /8260B	1.2	1.2	1,200 (total)	mg/kg	NA	NA	NA	NA	0.0011	0.005	10-146	20	95
VOC Surrogates														
1,2-Dichloroethane-d4	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	NA	NA	49-134	NA	95
4-Bromofluorobenzene	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	NA	NA	36-133	NA	95
Dibromofluoromethane	SW-846/5035A /8260B	NP	NP	N/A	mg/kg	NA	NA	NA	NA	NA	NA	60-130	NA	95

Table 3-1
Laboratory Analysis Methods And Data Quality Objectives
Seneca Army Depot Activity
Romulus, New York

Analytes of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	STL - Vermont MDL	STL - Vermont PQL	STL - Vermont DQOs Accuracy (% R)	STL - Vermont DQOs Precision (% RPD)	STL - Connecticut MDL	STL - Connecticut PQL	STL - Connecticut DQOs Accuracy (% R)	STL - Connecticut DQOs Precision (% RPD)	DQO Completeness (% valid Data)
Toluene-d8	SW-846/5035A /8260B	NP	NP	1,500	mg/kg	NA	NA	NA	NA	NA	NA	51-137	NA	95
TOTAL SVOCs - soil		**Soil Cleanup Obj. to protect GW quality (ppm)**	**Rec. Soil Cleanup Objective (ppm)**											
1,2,4-Trichlorobenzene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	64.850	330.0	63-111	40	0.025	0.330	58-107	40	95
1,2-dichlorobenzene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	41.660	330.0	65-101	40	0.018	0.330	55-104	40	95
1,3-Dichlorobenzene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	47.940	330.0	60-103	40	0.016	0.330	49-102	40	95
1,4-Dichlorobenzene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	35.410	330.0	65- 99	40	0.019	0.330	55-103	40	95
2,2'-oxybis(1-Chloropropane)	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	50.800	330.0	64-111	40	0.018	0.330	59-109	40	95
2,4,5-trichlorophenol	SW-846/3541/ 3540B/8270C	NP	NP	100	mg/kg	110.020	800.0	34-122	40	0.010	1.600	74-114	40	95
2,4,6-trichlorophenol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	90.890	330.0	10-140	40	0.018	0.330	72-108	40	95
2,4-Dichlorophenol	SW-846/3541/ 3540B/8270C	0.4	0.4	400	mg/kg	65.330	330.0	56-115	40	0.030	0.330	66-109	40	95
2,4-Dimethylphenol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	75.720	330.0	33-120	40	0.032	0.330	46-109	40	95
2,4-Dinitrophenol	SW-846/3541/ 3540B/8270C	0.2	0.200 or MDL	200 (or MDL)	mg/kg	40.430	800.0	10-208	40	0.051	0.330	12-155	40	95
2,4-Dinitrotoluene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	46.780	330.0	60-121	40	0.019	0.330	73-122	40	95
2,6-Dinitroluene	SW-846/3541/ 3540B/8270C	1.0	1.0	1,000	mg/kg	52.050	330.0	71-108	40	0.014	0.330	74-119	40	95
2-Chloronaphthalene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	38.230	330.0	72-110	40	0.019	0.330	66-107	40	95
2-Chlorophenol	SW-846/3541/ 3540B/8270C	0.8	0.8	800	mg/kg	48.340	330.0	61-102	40	0.024	0.330	60-113	40	95
2-Methylnaphthalene	SW-846/3541/ 3540B/8270C	36.4	36.4	36,400	mg/kg	48.360	330.0	64-110	40	0.028	0.330	63-108	40	95
2-Methylphenol	SW-846/3541/ 3540B/8270C	0.1	0.100 or MDL	100 (or MDL)	mg/kg	35.260	330.0	66- 98	40	0.016	0.330	62-116	40	95
2-Nitroaniline	SW-846/3541/ 3540B/8270C	0.43	0.430 or MDL	430 (or MDL)	mg/kg	76.400	800.0	60-126	40	0.022	1.600	70-119	40	95
2-Nitrophenol	SW-846/3541/ 3540B/8270C	0.33	0.33 or MDL	330 (or MDL)	mg/kg	91.990	330.0	62-115	40	0.028	0.330	69-104	40	95
3,3'-Dichlorobenzidine	SW-846/3541/ 3540B/8270C	NA	NA	N/A	mg/kg	213.420	330.0	29- 99	40	0.034	0.660	12-86	40	95
3-Nitroaniline	SW-846/3541/ 3540B/8270C	0.5	0.500 or MDL	500 (or MDL)	mg/kg	154.870	800.0	44- 79	40	0.018	1.600	36-90	40	95
4,6-Dinitro-2-methylphenol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	127.600	800.0	30-166	40	0.028	1.600	36-146	40	95
4-Bromophenylphenylether	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	64.870	330.0	67-101	40	0.013	0.330	66-115	40	95
4-Chloro-3-methylphenol	SW-846/3541/ 3540B/8270C	0.24	0.240 or MDL	240 (or MDL)	mg/kg	65.660	330.0	61-116	40	0.031	0.330	73-113	40	95
4-Chloroaniline	SW-846/3541/ 3540B/8270C	0.22	0.220 or MDL	220 (or MDL)	mg/kg	214.730	330.0	10- 81	40	0.025	0.330	18-65	40	95
4-Chlorophenylphenylether	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	39.200	330.0	67-110	40	0.016	0.330	70-110	40	95
4-Methylphenol	SW-846/3541/ 3540B/8270C	0.9	0.9	900	mg/kg	78.630	330.0	56-112	40	0.018	0.330	64-113	40	95

Table 3-1
Laboratory Analysis Methods And Data Quality Objectives
Seneca Army Depot Activity
Romulus, New York

Analytes of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	STL - Vermont MDL	STL - Vermont PQL	STL - Vermont DQOs Accuracy (% R)	STL - Vermont DQOs Precision (% RPD)	STL - Connecticut MDL	STL - Connecticut PQL	STL - Connecticut DQOs Accuracy (% R)	STL - Connecticut DQOs Precision (% RPD)	DQO Completeness (% valid Data)
4-Nitroaniline	SW-846/3541/ 3540B/8270C	0.1	0.100 or MDL	N/A	mg/kg	168.410	800.0	44-105	40	0.024	0.660	58-106	40	95
4-Nitrophenol	SW-846/3541/ 3540B/8270C	NP	NP	100 (or MDL)	mg/kg	60.720	800.0	42-147	40	0.085	1.600	60-123	40	95
Acenaphthene	SW-846/3541/ 3540B/8270C	90.0	50.0***	50,000	mg/kg	36.950	330.0	59-111	40	0.015	0.330	70-108	40	95
Acenaphthylene	SW-846/3541/ 3540B/8270C	41.0	41.0	41,000	mg/kg	34.770	330.0	59-104	40	0.011	0.330	70-105	40	95
Aniline*	SW-846/3541/ 3540B/8270C	0.1	0.1	100	mg/kg	221.610	330.0	10- 73	40	0.042	0.330	11-76	40	95
Anthracene	SW-846/3541/ 3540B/8270C	700.0	50.0***	50,000	mg/kg	84.140	330.0	59-120	40	0.012	0.330	71-110	40	95
Benzo(a)anthracene	SW-846/3541/ 3540B/8270C	3.0	0.2242 ot MDL	224 (or MDL)	mg/kg	61.580	330.0	62-116	40	0.015	0.330	73-117	40	95
Benzo(a)pyrene	SW-846/3541/ 3540B/8270C	11.0	0.061 or MDL	61 (or MDL)	mg/kg	94.640	330.0	60-109	40	0.016	0.330	72-116	40	95
Benzo(b)fluoranthene	SW-846/3541/ 3540B/8270C	1.1	1.1	1,100	mg/kg	31.790	330.0	44-119	40	0.038	0.330	60-126	40	95
Benzo(g,h,i)perylene	SW-846/3541/ 3540B/8270C	800	50.0***	50,000	mg/kg	52.430	330.0	10-167	40	0.017	0.330	62-118	40	95
Benzo(k)fluoranthene	SW-846/3541/ 3540B/8270C	1.1	1.1	1,100	mg/kg	92.890	330.0	57-128	40	0.039	0.330	72-129	40	95
Benzoic acid	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	197.570	330.0	10-146	40	0.662	1.600	1-185	40	95
Benzyl alcohol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	53.490	330.0	68-117	40	0.023	0.330	51-123	40	95
Bis(2-Chloroethoxy)methane	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	66.370	330.0	39-103	40	0.014	0.330	59-109	40	95
Bis(2-Chloroethyl)ether	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	50.360	330.0	57-116	40	0.103	0.330	55-109	40	95
Bis(2-ethylhexyl)phthalate	SW-846/3541/ 3540B/8270C	435.0	50.0***	50,000	mg/kg	55.140	330.0	46-106	40	0.036	0.330	71-128	40	95
Butylbenzylphthalate	SW-846/3541/ 3540B/8270C	122.0	50.0***	50,000	mg/kg	51.370	330.0	56-129	40	0.013	0.330	72-122	40	95
Chrysene	SW-846/3541/ 3540B/8270C	0.4	0.4	400	mg/kg	78.180	330.0	49-121	40	0.017	0.330	73-118	40	95
Dibenzo(a,h)anthracene	SW-846/3541/ 3540B/8270C	165000	0.014 or MDL	14 (or MDL)	mg/kg	41.730	330.0	21-142	40	0.018	0.330	68-117	40	95
Dibenzofuran	SW-846/3541/ 3540B/8270C	6.2	6.2	6,200	mg/kg	33.390	330.0	67-121	40	0.015	0.330	70-112	40	95
Diethylphthalate	SW-846/3541/ 3540B/8270C	7.1	7.1	7,100	mg/kg	32.060	330.0	62-118	40	0.017	0.330	74-116	40	95
Dimethylphthalate	SW-846/3541/ 3540B/8270C	2.0	2.0	2,000	mg/kg	34.770	330.0	62-119	40	0.015	0.330	75-112	40	95
Di-n-butylphthalate	SW-846/3541/ 3540B/8270C	8.1	8	8,100	mg/kg	43.850	330.0	62-118	40	0.014	0.330	74-118	40	95
Di-n-octylphthalate	SW-846/3541/ 3540B/8270C	120.0	50.0***	50,000	mg/kg	53.920	330.0	65-120	40	0.012	0.330	64-131	40	95
Fluoranthene	SW-846/3541/ 3540B/8270C	1900.0	50.0***	50,000	mg/kg	49.750	330.0	49-131	40	0.022	0.330	74-117	40	95
Fluorene	SW-846/3541/ 3540B/8270C	350.0	50.0***	50,000	mg/kg	39.200	330.0	61-120	40	0.020	0.330	71-110	40	95
hexachlorobenzene	SW-846/3541/ 3540B/8270C	1.4	0.41	4,100	mg/kg	51.130	330.0	52-122	40	0.019	0.330	71-114	40	95
Hexachlorobutadiene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	50.770	330.0	52-121	40	0.033	0.330	57-105	40	95
Hexachlorocyclopentadiene	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	110.350	330.0	10-146	40	0.045	0.330	49-103	40	95
Hexachloroethane	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	35.970	330.0	52-117	40	0.021	0.330	53-101	40	95

Table 3-1
Laboratory Analysis Methods And Data Quality Objectives
Seneca Army Depot Activity
Romulus, New York

Analytes of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	STL - Vermont MDL	STL - Vermont PQL	STL - Vermont DQOs Accuracy (% R)	STL - Vermont DQOs Precision (% RPD)	STL - Connecticut MDL	STL - Connecticut PQL	STL - Connecticut DQOs Accuracy (% R)	STL - Connecticut DQOs Precision (% RPD)	DQO Completeness (% valid Data)
Indeno(1,2,3-cd)pyrene	SW-846/3541/ 3540B/8270C	3.2	3.2	3,200	mg/kg	48.180	330.0	10-149	40	0.018	0.330	67-116	40	95
Isophorone	SW-846/3541/ 3540B/8270C	4.40	4.40	4,400	mg/kg	45.630	330.0	52-119	40	0.023	0.330	64-105	40	95
Naphthalene	SW-846/3541/ 3540B/8270C	13.0	13.0	13,000	mg/kg	54.110	330.0	61-104	40	0.032	0.330	61-106	40	95
nitrobenzene	SW-846/3541/ 3540B/8270C	0.2	0.200 or MDL	200 (or MDL)	mg/kg	59.390	330.0	58-111	40	0.025	0.330	64-105	40	95
N-Nitroso-di-n-propylamine	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	35.100	330.0	50-116	40	0.014	0.330	64-107	40	95
N-Nitrosodiphenylamine	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	86.120	330.0	57-116	40	0.016	0.330	67-116	40	95
pentachlorophenol	SW-846/3541/ 3540B/8270C	1.0	1.0 or MDL	1000 (or MDL)	mg/kg	167.610	800.0	19- 94	40	0.043	1.600	13-118	40	95
Phenanthrene	SW-846/3541/ 3540B/8270C	220.0	50.0***	50,000	mg/kg	50.320	330.0	66-111	40	0.024	0.330	72-114	40	95
phenol	SW-846/3541/ 3540B/8270C	0.03	0.03 or MDL	300 (or MDL)	mg/kg	56.290	330.0	59-117	40	0.024	0.330	60-114	40	95
Pyrene	SW-846/3541/ 3540B/8270C	665.0	50.0***	50,000	mg/kg	76.570	330.0	46-124	40	0.019	0.330	71-120	40	95
SVOC Surrogates														
1,2-Dichlorobenzene-d4	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	20-130	NA	NA	NA	32-131	NA	95
2,4,6-Tribromophenol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	19-122	NA	NA	NA	25-120	NA	95
2-Chlorophenol-d4	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	20-130	NA	NA	NA	35-140	NA	95
2-Fluorobiphenyl	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	30-115	NA	NA	NA	24-150	NA	95
2-Fluorophenol	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	25-121	NA	NA	NA	25-113	NA	95
Nitrobenzene-d5	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	23-120	NA	NA	NA	27-122	NA	95
Phenol-d5	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	24-113	NA	NA	NA	25-113	NA	95
Terphenyl-d14	SW-846/3541/ 3540B/8270C	NP	NP	N/A	mg/kg	NA	NA	18-137	NA	NA	NA	27-122	NA	95
TOTAL PCBs - soil														
Aroclor-1260	3540/8082	10.0	1.0 surface 10 subsurf.	1000 (total)	mg/kg	0.5820	17.0	51-137	40	0.0014	0.017	34-128	50	95
Aroclor-1016	3540/8082	10.0	1.0 surface 10 subsurf.		mg/kg	0.6670	17.0	51-137	40	0.0014	0.017	TBD	50	95
Aroclor 1221	3540/8082	10.0	1.0 surface 10 subsurf.	1001 (total)	mg/kg	NA	17.0	NA	NA	0.0013	0.033	TBD	50	95
Aroclor 1232	3540/8082	10.0	1.0 surface 10 subsurf.		mg/kg	NA	17.0	NA	NA	0.0014	0.017	TBD	50	95
Aroclor 1242	3540/8082	10.0	1.0 surface 10 subsurf.	1002 (total)	mg/kg	NA	17.0	NA	NA	0.0015	0.017	27-136	50	95
Aroclor 1248	3540/8082	10.0	1.0 surface 10 subsurf.		mg/kg	NA	17.0	NA	NA	0.0010	0.017	TBD	50	95
Aroclor 1254	3540/8082	10.0	1.0 surface 10 subsurf.	1003 (total)	mg/kg	NA	17.0	NA	NA	0.0016	0.017	TBD	50	95
PCB SURROGATES														
Decachlorobiphenyl	3540C/8082	NP	NP	110	mg/kg	NA	NA		NA					95
Tetrachloro-m-xylene	3540C/8082	NP	NP	110	mg/kg	NA	NA		NA					95
TOTAL PESTICIDES														
alpha-BHC	SW-846/3541/ 3540B/8081	0.2	0.11	110	mg/kg	0.407	1.7	35-125	30	0.00028	0.0017	46-133	40	95

Table 3-1
Laboratory Analysis Methods And Data Quality Objectives
Seneca Army Depot Activity
Romulus, New York

						STL - Vermont				STL - Connecticut				
		Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria				DQOs				DQOs		DQO
Analytes of Concern	Method				Units	MDL	PQL	Accuracy (% R)	Precision (% RPD)	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completeness (% valid Data)
beta-BHC	SW-846/3541/ 3540B/8081	0.2	0.2	110	mg/kg	0.758	1.7	42-137	30	0.00027	0.0017	76-150	40	95
delta-BHC	SW-846/3541/ 3540B/8081	0.3	0.3	110	mg/kg	0.376	1.7	1-167	30	0.00010	0.0017	12-132	40	95
gamma-BHC (lindane)	SW-846/3541/ 3540B/8081	0.06	0.06	110	mg/kg	0.435	1.7	35-130	30	0.00015	0.0017	64-119	40	95
Heptachlor	SW-846/3541/ 3540B/8081	0.10	0.10	110	mg/kg	0.531	1.7	1-248	30	0.00015	0.0017	63-134	40	95
Aldrin	SW-846/3541/ 3540B/8081	0.5	0.041	110	mg/kg	0.469	1.7	40-137	30	0.00036	0.0020	57-143	40	95
Heptachlor epoxide	SW-846/3541/ 3540B/8081	0.02	0.02	110	mg/kg	0.523	1.7	44-146	30	0.00011	0.0017	76-129	40	95
Endosulfan I	SW-846/3541/ 3540B/8081	0.9	0.9	110	mg/kg	0.491	1.7	48-137	30	0.00015	0.0017	59-138	40	95
Dieldrin	SW-846/3541/ 3540B/8081	0.1	0.044	110	mg/kg	1.09	3.3	36-146	30	0.00032	0.0033	68-136	40	95
4,4'-DDE	SW-846/3541/ 3540B/8081	4.4	2.1	110	mg/kg	1.16	3.3	45-157	30	0.00043	0.0033	68-132	40	95
Endrin	SW-846/3541/ 3540B/8081	0.1	0.1	110	mg/kg	1.25	3.3	37-152	30	0.00089	0.0050	72-140	40	95
Endosulfan II	SW-846/3541/ 3540B/8081	0.9	0.9	110	mg/kg	1.16	3.3	42-160	30	0.00017	0.0033	69-152	40	95
4,4'-DDD	SW-846/3541/ 3540B/8081	7.7	2.9	110	mg/kg	0.908	3.3	47-159	30	0.00038	0.0033	48-128	40	95
Endosulfan sulfate	SW-846/3541/ 3540B/8081	1.0	1.0	110	mg/kg	0.993	3.3	25-162	30	0.00017	0.0033	60-132	40	95
4,4'-DDT	SW-846/3541/ 3540B/8081	2.5	2.1	110	mg/kg	2.28	3.3	43-157	30	0.00031	0.0033	51-147	40	95
Methoxychlor	SW-846/3541/ 3540B/8081	900	***	110	mg/kg	7.39	17	54-159	30	0.0021	0.017	76-159	40	95
Endrin ketone	SW-846/3541/ 3540B/8081	NA	NA	110	mg/kg	1.10	3.3	31-166	30	0.00014	0.0033	80-148	40	95
alpha-Chlordane	SW-846/3541/ 3540B/8081	NP	NP	110	mg/kg	0.582	1.7	31-150	30	0.00011	0.0017	50-141	40	95
gamma-Chlordane	SW-846/3541/ 3540B/8081	NP	NP	110	mg/kg	0.610	1.7	33-149	30	0.00009	0.0017	70-140	40	95
Endrin aldehyde	SW-846/3541/ 3540B/8081	NP	NP	110	mg/kg	2.03	3.3	50-145	30	0.00032	0.0033	23-158	40	95
PESTICIDE SURROGATES														
Decachlorobiphenyl	3540C/8081A	NP	NP	110	mg/kg	NA	NA	30-140	NA	NA	NA	41-150	NA	95
Tetrachloro-m-xylene	3540C/8081A	NP	NP	110	mg/kg	NA	NA	36-132	NA	NA	NA	56-159	NA	95
MONITORING WELLS - Water														
TAL METALS -Water			**Protect GW Quality (ppm)**			IDLs	IDLs							
Aluminum	3010A/6010B	NA	NA	bkg	µg/L	19.7	19.7	80-120	20	83.3	500.0	75-125	20	95
Antimony	3010A/6010B	NA	NA	bkg	µg/L	4.2	4.2	80-120	20	5.9	20.0	75-125	20	95
Arsenic	3010A/6010B	NA	NA	7.5 (or bkg)	µg/L	3.6	3.6	80-120	20	7.0	40.0	75-125	20	95
Barium	3010A/6010B	NA	NA	300 (or bkg)	µg/L	8.4	8.4	80-120	20	1.1	5.0	75-125	20	95
Beryllium	3010A/6010B	NA	NA	0	µg/L	0.2	0.2	80-120	20	1.0	5.0	75-125	20	95
Cadmium	3010A/6010B	NA	NA	1 (or bkg)	µg/L	0.6	0.6	80-120	20	1.3	10.0	75-125	20	95
Calcium	3010A/6010B	NA	NA	bkg	µg/L	178.8	178.8	80-120	20	52.8	300.0	75-125	20	95
Chromium	3010A/6010B	NA	NA	10 or (bkg)	µg/L	0.9	0.9	80-120	20	1.5	10.0	75-125	20	95
Cobalt	3010A/6010B	NA	NA	30 (or bkg)	µg/L	3.5	3.5	80-120	20	1.5	10.0	75-125	20	95
Copper	3010A/6010B	NA	NA	25 (or bkg)	µg/L	2.1	2.1	80-120	20	1.4	10.0	75-125	20	95
Cyanide	3010A/6010B	NA	NA	N/A	µg/L	2.87	10.0	80-120	20	1.0	10.0	75-125	20	95

Table 3-1
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Seneca Army Depot Activity
Romulus, New York

Analytes of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	STL - Vermont MDL	STL - Vermont PQL	STL - Vermont DQOs Accuracy (% R)	STL - Vermont DQOs Precision (% RPD)	STL - Connecticut MDL	STL - Connecticut PQL	STL - Connecticut DQOs Accuracy (% R)	STL - Connecticut DQOs Precision (% RPD)	DQO Completeness (% valid Data)
Iron	3010A/6010B	NA	NA	bkg	µg/L	23.4	23.4	80-120	20	85.3	200.0	75-125	20	95
Lead	3010A/6010B	NA	NA	bkg	µg/L	0.9	0.9	80-120	20	3.4	10.0	75-125	20	95
Magnesium	3010A/6010B	NA	NA	bkg	µg/L	259.6	259.6	80-120	20	11.6	100.0	75-125	20	95
Manganese	3010A/6010B	NA	NA	bkg	µg/L	1.0	1.0	80-120	20	1.2	15.0	75-125	20	95
Mercury	3010A/6010B	NA	NA	0	µg/L	0.025	0.2	85-115	20	0.100	0.2	75-125	20	95
Nickel	3010A/6010B	NA	NA	13 (or bkg)	µg/L	2.4	2.4	80-120	20	1.9	10.0	75-125	20	95
Potassium	3010A/6010B	NA	NA	bkg	µg/L	247.7	247.7	80-120	20	123.0	400.0	75-125	20	95
Selenium	3010A/6010B	NA	NA	2 (or bkg)	µg/L	2.6	2.6	80-120	20	6.9	30.0	75-125	20	95
Silver	3010A/6010B	NA	NA	(bkg)	µg/L	1.5	1.5	80-120	20	1.4	6.0	75-125	20	95
Sodium	3010A/6010B	NA	NA	bkg	µg/L	653.5	653.5	80-120	20	72.6	400.0	75-125	20	95
Thallium	3010A/6010B	NA	NA	bkg	µg/L	6.0	6.0	80-120	20	16.1	40.0	75-125	20	95
Vanadium	3010A/6010B	NA	NA	150 (or bkg)	µg/L	2.3	2.3	80-120	20	1.3	6.0	75-125	20	95
Zinc	3010A/6010B	NA	NA	20 (or bkg)	µg/L	1.1	1.1	80-120	20	16.2	50.0	75-125	20	95
EXPLOSIVES - Water														
HMX	8330	NP	NP		µg/L	0.044	0.250	83-122	30	NA	NA	NA	NA	95
RDX	8330	NP	NP		µg/L	0.040	0.250	81-116	30	NA	NA	NA	NA	95
1,3,5-Trinitrobenzene	8330	NP	NP		µg/L	0.061	0.250	81-120	30	NA	NA	NA	NA	95
1,3-Dinitrobenzene	8330	NP	NP		µg/L	0.028	0.250	82-116	30	NA	NA	NA	NA	95
Nitrobenzene	8330	NP	NP		µg/L	0.022	0.250	76-114	30	NA	NA	NA	NA	95
Tetryl	8330	NP	NP		µg/L	0.043	0.250	72-102	30	NA	NA	NA	NA	95
2,4,6-Trinitrotoluene	8330	NP	NP		µg/L	0.028	0.250	75-106	30	NA	NA	NA	NA	95
4-Amino-2,6-dinitrotoluene	8330	NP	NP		µg/L	0.041	0.250	80-119	30	NA	NA	NA	NA	95
2-Amino-4,6-dinitrotoluene	8330	NP	NP		µg/L	0.019	0.250	79-117	30	NA	NA	NA	NA	95
2,6-Dinitrotoluene	8330	NP	NP		µg/L	0.071	0.250	77-115	30	NA	NA	NA	NA	95
2,4-Dinitrotoluene	8330	NP	NP		µg/L	0.034	0.250	82-116	30	NA	NA	NA	NA	95
2-Nitrotoluene	8330	NP	NP		µg/L	0.045	0.250	70-103	30	NA	NA	NA	NA	95
4-Nitrotoluene	8330	NP	NP		µg/L	0.056	0.250	74-114	30	NA	NA	NA	NA	95
3-Nitrotoluene	8330	NP	NP		µg/L	0.065	0.250	75-115	30	NA	NA	NA	NA	95
EXPLOSIVES SURROGATES														95
1,2-Dinitrobenzene	8330	NP	NP	110		NA	NA	85-116	NA	NA	NA	NA	NA	95
VOCs - Water		**Soil Cleanup Obj. to protect GW quality (ppm)**	**GW Standards/ Criteria**											
1,1,1,2-Tetrachloroethane	5030/8260B	NP	NP	N/A	µg/L	0.172	5.0	72-108	40	0.30	5.0	TBD	TBD	95
1,1,1-Trichloroethane	5030/8260B	0.76	5	800	µg/L	0.213	5.0	74-122	40	0.20	5.0	66-131	20	95
1,1,2,2-Tetrachloroethane	5030/8260B	0.6	5	600	µg/L	0.874	5.0	74-108	40	0.30	5.0	63-134	20	95
1,1,2-Trichloroethane	5030/8260B	NP	NP	N/A	µg/L	0.331	5.0	81-126	40	0.20	5.0	74-122	20	95
1,1-Dichloroethane	5030/8260B	0.2	5	200	µg/L	0.186	5.0	81-111	40	0.30	5.0	73-134	20	95
1,1-Dichloroethene	5030/8260B	0.4	5	400	µg/L	0.201	5.0	75-113	40	0.60	5.0	77-131	20	95
1,1-Dichloropropene	5030/8260B	NP	NP	N/A	µg/L	0.197	5.0	72-124	40	0.30	5.0	TBD	TBD	95
1,2,3-Trichlorobenzene	5030/8260B	NP	NP	3,400	µg/L	0.246	5.0	81-137	40	0.20	5.0	TBD	TBD	95
1,2,3-Trichloropropane	5030/8260B	NP	NP	3,400	µg/L	0.490	5.0	81-137	40	0.30	5.0	TBD	TBD	95
1,2,4-Trichlorobenzene	5030/8260B	3.4	5	3,400	µg/L	0.211	5.0	81-135	40	0.30	5.0	TBD	TBD	95
1,2,4-Trimethylbenzene	5030/8260B	NP	NP	3,400	µg/L	0.106	5.0	75-123	40	0.20	5.0	TBD	TBD	95
1,2-Dibromo-3-chloroporpane	5030/8260B	NP	NP	N/A	µg/L	0.507	5.0	33-132	40	0.40	5.0	TBD	TBD	95
1,2-Dibromoethane	5030/8260B	NP	NP	N/A	µg/L	0.255	5.0	90-114	40	0.30	5.0	TBD	TBD	95
1,2-Dichlorobenzene	5030/8260B	7.9	4.7	N/A	µg/L	0.265	5.0	76-110	40	0.20	5.0	75-120	20	95

Table 3-1
Laboratory Analysis Methods And Data Quality Objectives
Seneca Army Depot Activity
Romulus, New York

Analytes of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	STL - Vermont MDL	STL - Vermont PQL	STL - Vermont DQOs Accuracy (% R)	STL - Vermont DQOs Precision (% RPD)	STL - Connecticut MDL	STL - Connecticut PQL	STL - Connecticut DQOs Accuracy (% R)	STL - Connecticut DQOs Precision (% RPD)	DQO Completeness (% valid Data)
1,2-Dichloroethane	5030/8260B	0.1	5	N/A	µg/L	0.260	5.0	80-110	40	0.30	5.0	72-133	20	95
1,2-Dichloroethene (total)	5030/8260B	0.3	5	N/A	µg/L	0.502	5.0	60-140	40	0.30	5.0	85-114	20	95
1,2-Dichloropropane	5030/8260B	NP	NP	N/A	µg/L	0.186	5.0	79-115	40	0.30	5.0	75-128	20	95
1,3,5-Trimethylbenzene	5030/8260B	NP	NP	N/A	µg/L	0.176	5.0	72-112	40	0.30	5.0	TBD	TBD	95
1,3-Dichlorobenzene	5030/8260B	NP	NP	300	µg/L	0.200	5.0	79-119	40	0.20	5.0	70-115	20	95
1,3-Dichloropropane	5030/8260B	0.3	5	300	µg/L	0.226	5.0	79-113	40	0.30	5.0	TBD	TBD	95
1,4-Dichlorobenzene	5030/8260B	8.5	5	300	µg/L	0.460	5.0	83-123	40	0.20	5.0	75-119	20	95
1,4-Dioxane	5030/8260B	NP	NP		µg/L	75.200	250.0	60-140	40	TBD	TBD	TBD	TBD	95
2,2-Dichloropropane	5030/8260B	NP	NP	N/A	µg/L	0.338	5.0	42-130	40	0.40	5.0	TBD	TBD	95
2-Butanone	5030/8260B	0.3	50	300	µg/L	3.490	5.0	60-140	40	0.40	10.0	13-220	20	95
2-Chloroethyl Vinyl Ether	5030/8260B	NP	NP	N/A	µg/L	0.401	5.0	60-140	40	TBD	TBD	TBD	TBD	95
2-Chlorotoluene	5030/8260B	NP	NP	N/A	µg/L	0.270	5.0	73-107	40	0.20	5.0	TBD	TBD	95
2-Hexanone	5030/8260B	NP	NP	N/A	µg/L	4.130	5.0	60-140	40	0.80	10.0	27-216	20	95
4-Chlorotoluene	5030/8260B	NP	NP	N/A	µg/L	0.177	5.0	74-124	40	0.30	5.0	TBD	TBD	95
4-Isopropyltoluene	5030/8260B	NP	NP	N/A	µg/L	0.161	5.0	79-119	40	0.20	5.0	TBD	TBD	95
4-Methyl-2-pentanone	5030/8260B	1.0	50	1,000	µg/L	1.080	5.0	60-140	40	0.40	10.0	47-158	20	95
Acetone	5030/8260B	0.11	50	200	µg/L	3.230	5.0	60-140	40	0.90	10.0	20-282	20	95
Acrolein	5030/8260B	NP	NP	N/A	µg/L	2.740	5.0	60-140	40	TBD	TBD	TBD	TBD	95
Acrylonitrite	5030/8260B	NP	NP	N/A	µg/L	1.170	5.0	60-140	40	TBD	TBD	TBD	TBD	95
Allyl Chloride	5030/8260B	NP	NP	N/A	µg/L	0.932	5.0	60-140	40	0.20	10.0	TBD	TBD	95
Benzene	5030/8260B	0.06	0.7	60	µg/L	0.307	5.0	78-116	40	0.30	5.0	81-121	20	95
Bromobenzene	5030/8260B	NP	NP	N/A	µg/L	0.107	5.0	84-116	40	0.20	5.0	TBD	TBD	95
Bromochloromethane	5030/8260B	NP	NP	N/A	µg/L	0.276	5.0	73-107	40	0.20	5.0	TBD	TBD	95
Bromodichloromethane	5030/8260B	NP	NP	N/A	µg/L	0.162	5.0	78-112	40	0.20	5.0	74-121	20	95
Bromoform	5030/8260B	NP	NP	N/A	µg/L	0.212	5.0	82-120	40	0.20	5.0	63-116	20	95
Bromomethane	5030/8260B	NP	NP	N/A	µg/L	0.307	5.0	72-118	40	1.7	5.0	27-153	20	95
Carbon Disulfide	5030/8260B	2.7	50	N/A	µg/L	0.150	5.0	60-140	40	0.30	5.0	53-148	20	95
Carbon Tetrachloride	5030/8260B	0.6	5	600	µg/L	0.131	5.0	62-106	40	0.20	5.0	68-135	20	95
Chlorobenzene	5030/8260B	1.7	5	1,700	µg/L	0.173	5.0	81-115	40	0.20	5.0	78-115	20	95
Chloroethane	5030/8260B	1.9	50	1,900	µg/L	0.387	5.0	65-113	40	4.0	5.0	56-170	20	95
Chloroform	5030/8260B	0.30	7	300	µg/L	2.820	5.0	74-106	40	0.20	5.0	77-126	20	95
Chloromethane	5030/8260B	NP	NP	N/A	µg/L	0.680	5.0	68-118	40	0.90	5.0	36-145	20	95
Chloroprene	5030/8260B	NP	NP	N/A	µg/L	0.132	5.0	60-140	40	0.20	5.0	TBD	TBD	95
cis-1,2-Dichloroethene	5030/8260B	NP	NP	N/A	µg/L	0.285	5.0	81-121	40	0.30	5.0	73-116	20	95
cis-1,3-Dichloropropene	5030/8260B	NP	NP	N/A	µg/L	0.228	5.0	60-140	40	0.30	5.0	64-127	20	95
cis-1,4-Dichloro-2-butene	5030/8260B	NP	NP	N/A	µg/L	0.392	5.0	60-140	40	TBD	TBD	TBD	TBD	95
Dibromochloromethane	5030/8260B	NA	NA	N/A	µg/L	0.144	5.0	72-112	40	0.20	5.0	72-116	20	95
Dibromomethane	5030/8260B	NP	NP	N/A	µg/L	0.206	5.0	83-117	40	0.30	5.0	TBD	TBD	95
Dichlorodifluoromethane	5030/8260B	NP	NP	N/A	µg/L	0.244	5.0	78-116	40	0.30	5.0	TBD	TBD	95
Ethyl Methacrylate	5030/8260B	NP	NP	N/A	µg/L	0.425	5.0	60-140	40	0.30	10.0	TBD	TBD	95
Ethylbenzene	5030/8260B	5.5	5	N/A	µg/L	0.114	5.0	74-124	40	0.30	5.0	76-114	20	95
Freon TF	5030/8260B	6.0	5	N/A	µg/L	0.181	5.0	60-140	40	0.30	5.0	TBD	TBD	95
Hexachlorobutadiene	5030/8260B	NP	NP	N/A	µg/L	0.155	5.0	80-120	40	0.20	5.0	TBD	TBD	95
Isobutyl alcohol	5030/8260B	NP	NP	N/A	µg/L	56.5	250.0	60-140	40	TBD	TBD	TBD	TBD	95
Isopropylbenzene	5030/8260B	NP	NP	N/A	µg/L	0.186	5.0	78-124	40	0.30	5.0	TBD	TBD	95
Methacrylonitrile	5030/8260B	NP	NP	N/A	µg/L	1.110	5.0	60-140	40	TBD	TBD	TBD	TBD	95
Methyl Iodide	5030/8260B	NP	NP	N/A	µg/L	0.949	5.0	60-140	40	TBD	TBD	TBD	TBD	95

Table 3-1
Laboratory Analysis Methods And Data Quality Objectives
Seneca Army Depot Activity
Romulus, New York

						STL - Vermont				STL - Connecticut				
								DQOs				DQOs		DQO
Analytes of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	MDL	PQL	Accuracy (% R)	Precision (% RPD)	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completeness (% valid Data)
Methyl Methacrylate	5030/8260B	NP	NP	N/A	µg/L	0.404	5.0	60-140	40	0.40	10.0	TBD	TBD	95
Methylene Chloride	5030/8260B	0.1	5	100	µg/L	0.392	5.0	80-110	40	0.20	5.0	75-130	20	95
MTBE	5030/8260B	NP	NP	N/A	µg/L	0.178	5.0	60-140	40	0.20	5.0	TBD	TBD	95
Napthalene	5030/8260B	NP	NP	N/A	µg/L	0.232	5.0	78-130	40	0.20	5.0	TBD	TBD	95
n-Butylbenzene	5030/8260B	NP	NP	N/A	µg/L	0.133	5.0	77-123	40	0.30	5.0	TBD	TBD	95
n-Propylbenzene	5030/8260B	NP	NP	N/A	µg/L	0.211	5.0	83-117	40	0.20	5.0	TBD	TBD	95
Propionitrile	5030/8260B	NP	NP	N/A	µg/L	2.41	20.0	60-140	40	TBD	TBD	TBD	TBD	95
sec-Butylbenzene	5030/8260B	NP	NP	N/A	µg/L	0.070	5.0	77-123	40	0.30	5.0	TBD	TBD	95
Styrene	5030/8260B	NP	NP	N/A	µg/L	0.218	5.0	80-124	40	0.20	5.0	75-112	20	95
tert-Butylbenzene	5030/8260B	NP	NP	N/A	µg/L	1.010	5.0	80-124	40	0.30	5.0	TBD	TBD	95
Tetrachloroethene	5030/8260B	1.4	5	1,400	µg/L	2.520	5.0	71-107	40	0.30	5.0	72-120	20	95
Tetrahydrofuran	5030/8260B	NP	NP	N/A	µg/L	8.040	50.0	60-140	40	1.8	5.0	TBD	TBD	95
Toluene	5030/8260B	1.5	5	1,500	µg/L	0.144	5.0	78-126	40	0.30	5.0	75-117	20	95
trans-1,2-Dichloroethene	5030/8260B	NP	NP	300	µg/L	0.358	5.0	77-109	40	0.30	5.0	85-114	20	95
trans-1,3-Dichloropropene	5030/8260B	NP	NP	N/A	µg/L	0.165	5.0	60-140	40	0.20	5.0	68-124	20	95
trans-1,4-Dichloro-2-butene	5030/8260B	NP	NP	N/A	µg/L	0.463	5.0	60-140	40	0.60	10.0	TBD	TBD	95
Trichloroethene	5030/8260B	0.70	5	700	µg/L	0.423	5.0	70-109	40	0.80	5.0	78-124	20	95
Trichlorofluoromethane	5030/8260B	NP	NP	N/A	µg/L	0.185	5.0	67-111	40	0.30	5.0	TBD	TBD	95
Vinyl Acetate	5030/8260B	NP	NP	200	µg/L	3.080	5.0	60-140	40	0.70	5.0	44-135	20	95
Vinyl Chloride	5030/8260B	0.12	2	200	µg/L	0.346	5.0	78-118	40	0.30	5.0	51-139	20	95
Vinyl Acetate	5030/8260B	NP	NP		µg/L				40	TBD	TBD	TBD	TBD	95
m,p-Xylene	5030/8260B	NP	NP	1,200 (total)	µg/L	0.262	5.0	78-116	40	0.50	5.0	83-122	20	95
o-Xylene	5030/8260B	NP	NP	N/A	µg/L	0.119	5.0	81-125	40	0.20	5.0	83-122	20	95
total Xylene	5030/8260B	1.2	5	1,200 (total)	µg/L	0.277	5.0	60-140	40	0.50	5.0	83-122	20	95
VOC Surrogates														
4-Bromofluorobenzene	5030/8260B	NP	NP	N/A	µg/L	NA	NA	72-122	NA	TBD	TBD	71-129	TBD	95
1,2-Dichlorobenzene-d4	5030/8260B	NP	NP	N/A	µg/L	NA	NA	69-124	NA	TBD	TBD	78-120	TBD	95
1,2-Dichloroethane-d4	5030/8260B	NP	NP	N/A	µg/L	NA	NA	72-141	NA	TBD	TBD	70-130	TBD	95
Toluene-d8	5030/8260B	NP	NP	1,500	µg/L	NA	NA	88-110	NA	TBD	TBD	85-116	TBD	95
TOTAL SVOCs - Water		**Soil Cleanup Obj. to protect GW quality (ppm)**	**GW Standards/ Criteria (ppb)**											
1,2,4-Trichlorobenzene	3510/8270C	NP	NP	N/A	µg/L	1.13	10.00000	33- 95	40	0.30	10.0	44-115	40	95
1,2-dichlorobenzene	3510/8270C	NP	NP	N/A	µg/L	0.994	10.00000	26- 99	40	0.30	10.0	45-117	40	95
1,3-Dichlorobenzene	3510/8270C	NP	NP	N/A	µg/L	0.851	10.00000	32- 98	40	0.30	10.0	38-113	40	95
1,4-Dichlorobenzene	3510/8270C	NP	NP	N/A	µg/L	1.06	10.00000	26- 95	40	0.20	10.0	40-112	40	95
2,2'-oxybis(1-Chloropropane)	3510/8270C	NP	NP	N/A	µg/L	2.10	10.00000	27-106	40	0.50	10.0	51-113	40	95
2,4,5-trichlorophenol	3510/8270C	NP	NP	100	µg/L	5.40	25.00000	43-114	40	0.30	50.0	24-132	40	95
2,4,6-trichlorophenol	3510/8270C	NP	NP	N/A	µg/L	5.57	10.00000	44-110	40	0.40	10.0	52-133	40	95
2,4-Dichlorophenol	3510/8270C	0.4	1	400	µg/L	2.80	10.00000	30-112	40	0.50	10.0	55-135	40	95
2,4-Dimethylphenol	3510/8270C	NP	NP	N/A	µg/L	3.14	10.00000	25-107	40	0.60	10.0	17-131	40	95
2,4-Dinitrophenol	3510/8270C	0.2	5	200 (or MDL)	µg/L	4.87	25.00000	10-112	40	1.30	50.0	18-193	40	95
2,4-Dinitrotoluene	3510/8270C	NP	NP	N/A	µg/L	2.08	10.00000	47-114	40	0.40	10.0	52-128	40	95
2,6-Dinitroluene	3510/8270C	1.0	5	1,000	µg/L	2.32	10.00000	44-113	40	0.90	40.0	56-126	40	95
2-Chloronaphthalene	3510/8270C	NP	NP	N/A	µg/L	1.35	10.00000	48-101	40	0.50	10.0	69-139	40	95
2-Chlorophenol	3510/8270C	0.8	50	800	µg/L	2.53	10.00000	47- 99	40	0.60	10.0	50-128	40	95
2-Methylnaphthalene	3510/8270C	36.4	50	36,400	µg/L	1.41	10.00000	42-118	40	0.30	10.0	59-113	40	95
2-Methylphenol	3510/8270C	0.1	5	100 (or MDL)	µg/L	2.45	10.00000	29- 99	40	0.30	10.0	24-109	40	95

Table 3-1
Laboratory Analysis Methods And Data Quality Objectives
Seneca Army Depot Activity
Romulus, New York

						STL - Vermont				STL - Connecticut				
		Eastern USA Background (SB)	Rec. Soil Cleanup Objective	Risk Assessment				DQOs				DQOs		DQO
Analytes of Concern	Method	(ppm)	(ppm)	Criteria	Units	MDL	PQL	Accuracy (% R)	Precision (% RPD)	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completeness (% valid Data)
2-Nitroaniline	3510/8270C	0.43	5	430 (or MDL)	µg/L	5.04	25.00000	47-120	40	0.40	50.0	57-126	40	95
2-Nitrophenol	3510/8270C	0.33	5	330 (or MDL)	µg/L	2.86	10.00000	18-119	40	0.40	10.0	43-139	40	95
3,3'-Dichlorobenzidine	3510/8270C	NA	NA	N/A	µg/L	5.40	10.00000	14-105	40	0.40	20.0	41-150	40	95
3-Nitroaniline	3510/8270C	0.5	5	500 (or MDL)	µg/L	3.75	25.00000	26- 93	40	0.40	50.0	49-138	40	95
4,6-Dinitro-2-methylphenol	3510/8270C	NP	NP	N/A	µg/L	6.99	25.00000	17-135	40	0.90	50.0	35-191	40	95
4-Bromophenylphenylether	3510/8270C	NP	NP	N/A	µg/L	2.04	10.00000	37-109	40	0.30	10.0	42-157	40	95
4-Chloro-3-methylphenol	3510/8270C	0.24	5	240 (or MDL)	µg/L	2.39	10.00000	39-116	40	0.60	10.0	56-130	40	95
4-Chloroaniline	3510/8270C	0.22	5	220 (or MDL)	µg/L	4.80	10.00000	15- 77	40	0.60	10.0	46-127	40	95
4-Chlorophenylphenylether	3510/8270C	NP	NP	N/A	µg/L	1.51	10.00000	47-108	40	0.40	10.0	52-118	40	95
4-Methylphenol	3510/8270C	0.9	50	900	µg/L	4.23	10.00000	34- 93	40	0.50	10.0	18-111	40	95
4-Nitroaniline	3510/8270C	0.1	NP	N/A	µg/L	5.04	25.00000	55-108	40	0.60	20.0	46-145	40	95
4-Nitrophenol	3510/8270C	NP	NP	100 (or MDL)	µg/L	4.04	25.00000	10- 94	40	0.40	50.0	3-100	40	95
Acenaphthene	3510/8270C	90.0	20	50,000	µg/L	1.83	10.00000	47- 99	40	0.30	10.0	63-111	40	95
Acenaphthylene	3510/8270C	41.0	20	41,000	µg/L	2.35	10.00000	43- 98	40	0.40	10.0	60-104	40	95
Aniline*	3510/8270C	0.1	5	100	µg/L	1.88	25.00000	10- 73	40	1.1	10.0	25-129	40	95
Anthracene	3510/8270C	700.0	50	50,000	µg/L	2.62	10.00000	52-104	40	0.50	10.0	68-126	40	95
Benzo(a)anthracene	3510/8270C	3.0	0.002	224 (or MDL)	µg/L	2.55	10.00000	52-107	40	0.50	10.0	66-129	40	95
Benzo(a)pyrene	3510/8270C	11.0	0.002 (ND)	61 (or MDL)	µg/L	2.62	10.00000	43-106	40	0.40	10.0	68-120	40	95
Benzo(b)fluoranthene	3510/8270C	1.1	0.002	1,100	µg/L	3.13	10.00000	25-121	40	1.0	10.0	64-127	40	95
Benzo(g,h,i)perylene	3510/8270C	800	5	50,000	µg/L	3.95	10.00000	28-100	40	0.40	10.0	22-204	40	95
Benzo(k)fluoranthene	3510/8270C	1.1	0.002	1,100	µg/L	2.84	10.00000	35-141	40	0.30	10.0	55-126	40	95
Benzoic acid	3510/8270C	NP	NP	N/A	µg/L	12.2	25.00000	10- 82	40	21.9	50.0	1-37	40	95
Benzyl alcohol	3510/8270C	NP	NP	N/A	µg/L	2.72	10.00000	27-110	40	0.50	10.0	40-117	40	95
Bis(2-Chloroethoxy)methane	3510/8270C	NP	NP	N/A	µg/L	3.14	10.00000	39-103	40	0.20	10.0	39-135	40	95
Bis(2-Chloroethyl)ether	3510/8270C	NP	NP	N/A	µg/L	2.14	10.00000	24-113	40	0.40	10.0	45-116	40	95
Bis(2-ethylhexyl)phthalate	3510/8270C	435.0	50	50,000	µg/L	3.29	10.00000	46-106	40	0.50	10.0	51-134	40	95
Butylbenzylphthalate	3510/8270C	122.0	50	50,000	µg/L	2.50	10.00000	51-117	40	0.30	10.0	53-150	40	95
Chrysene	3510/8270C	0.4	0.002	400	µg/L	2.91	10.00000	47-112	40	0.60	10.0	61-126	40	95
Dibenzo(a,h)anthracene	3510/8270C	165000	50	14 (or MDL)	µg/L	3.00	10.00000	22-126	40	0.50	10.0	40-167	40	95
Dibenzofuran	3510/8270C	6.2	5	6,200	µg/L	1.79	10.00000	49-109	40	0.40	10.0	61-119	40	95
Diethylphthalate	3510/8270C	7.1	50	7,100	µg/L	1.94	10.00000	48-108	40	0.30	10.0	53-119	40	95
Dimethylphthalate	3510/8270C	2.0	50	2,000	µg/L	2.41	10.00000	32-104	40	0.30	10.0	49-129	40	95
Di-n-butylphthalate	3510/8270C	8.1	50	8,100	µg/L	2.66	10.00000	55-104	40	0.50	10.0	60-131	40	95
Di-n-octylphthalate	3510/8270C	120.0	50	50,000	µg/L	3.50	10.00000	61-108	40	0.50	10.0	47-128	40	95
Fluoranthene	3510/8270C	1900.0	50	50,000	µg/L	2.95	10.00000	52-116	40	0.40	10.0	67-132	40	95
Fluorene	3510/8270C	350.0	50	50,000	µg/L	1.81	10.00000	49-109	40	0.40	10.0	65-114	40	95
hexachlorobenzene	3510/8270C	1.4	0.35	4,100	µg/L	2.22	10.00000	27-126	40	0.50	10.0	69-133	40	95
Hexachlorobutadiene	3510/8270C	NP	NP	N/A	µg/L	0.504	10.00000	35- 99	40	0.50	10.0	47-122	40	95
Hexachlorocyclopentadiene	3510/8270C	NP	NP	N/A	µg/L	1.31	10.00000	10- 89	40	0.60	10.0	4-90	40	95
Hexachloroethane	3510/8270C	NP	NP	N/A	µg/L	0.736	10.00000	28-100	40	0.40	10.0	35-113	40	95
Indeno(1,2,3-cd)pyrene	3510/8270C	3.2	0.002	3,200	µg/L	3.66	10.00000	20-127	40	0.40	10.0	39-173	40	95
Isophorone	3510/8270C	4.40	50	4,400	µg/L	2.47	10.00000	29-108	40	0.40	10.0	57-123	40	95
Naphthalene	3510/8270C	13.0	10	13,000	µg/L	1.77	10.00000	31-105	40	0.40	10.0	63-108	40	95
nitrobenzene	3510/8270C	0.2	5	200 (or MDL)	µg/L	2.36	10.00000	23-110	40	0.30	10.0	55-116	40	95
N-Nitroso-di-n-propylamine	3510/8270C	NP	NP	N/A	µg/L	2.21	10.00000	30-110	40	0.40	10.0	45-117	40	95
N-Nitrosodiphenylamine	3510/8270C	NP	NP	N/A	µg/L	2.40	10.00000	39-103	40	0.50	10.0	62-134	40	95
pentachlorophenol	3510/8270C	1.0	1	1000 (or MDL)	µg/L	3.81	25.00000	17-114	40	2.6	50.0	22-200	40	95
Phenanthrene	3510/8270C	220.0	50	50,000	µg/L	2.22	10.00000	51-103	40	0.40	10.0	70-127	40	95
phenol	3510/8270C	0.03	1	300 (or MDL)	µg/L	1.88	10.00000	10- 80	40	0.40	10.0	11-75	40	95
Pyrene	3510/8270C	665.0	50	50,000	µg/L	2.96	10.00000	41-119	40	0.40	10.0	53-153	40	95
SVOC Surrogates														
1,2-Dichlorobenzene-d4	3510/8270C	NP	NP	N/A	µg/L	NA	NA	16-110	NA	NA	NA	43-116	NA	95

Table 3-1
Laboratory Analysis Methods And Data Quality Objectives
Seneca Army Depot Activity
Romulus, New York

						STL - Vermont				STL - Connecticut				
								DQOs				DQOs		DQO
Analytes of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	MDL	PQL	Accuracy (% R)	Precision (% RPD)	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completeness (% valid Data)
2,4,6-Tribromophenol	3510/8270C	NP	NP	N/A	µg/L	NA	NA	10-123	NA	NA	NA	38-113	NA	95
2-Chlorophenol-d4	3510/8270C	NP	NP	N/A	µg/L	NA	NA	33-110	NA	NA	NA	10-119	NA	95
2-Fluorobiphenyl	3510/8270C	NP	NP	N/A	µg/L	NA	NA	43-116	NA	NA	NA	29-126	NA	95
2-Fluorophenol	3510/8270C	NP	NP	N/A	µg/L	NA	NA	21-110	NA	NA	NA	21-97	NA	95
Nitrobenzene-d5	3510/8270C	NP	NP	N/A	µg/L	NA	NA	35-114	NA	NA	NA	18-97	NA	95
Phenol-d5	3510/8270C	NP	NP	N/A	µg/L	NA	NA	10-110	NA	NA	NA	21-97	NA	95
Terphenyl-d14	3510/8270C	NP	NP	N/A	µg/L	NA	NA	33-141	NA	NA	NA	18-97	NA	95
TOTAL PCBs - Water		**Soil Cleanup Obj. to protect GW quality (ppm)**	**GW Standards/ Criteria (ppb)**											
Aroclor-1260	3510/8082	10.0	0.1	1000 (total)	µg/L	0.9280	0.5	39-135	30	0.037	0.5	32-119	30	95
Aroclor-1016	3510/8082	10.0	0.1		µg/L	0.9710	0.5	39-135	30	0.045	0.5	TBD	30	95
Aroclor 1221	3510/8082	10.0	0.1	1001 (total)	µg/L	NA	0.5	NA	NA	0.092	1.0	TBD	30	95
Aroclor 1232	3510/8082	10.0	0.1		µg/L	NA	0.5	NA	NA	0.163	0.5	TBD	30	95
Aroclor 1242	3510/8082	10.0	0.1	1002 (total)	µg/L	NA	0.5	NA	NA	0.076	0.5	21-121	30	95
Aroclor 1248	3510/8082	10.0	0.1		µg/L	NA	0.5	NA	NA	0.075	0.5	TBD	30	95
Aroclor 1254	3510/8082	10.0	0.1	1003 (total)	µg/L	NA	0.5	NA	NA	0.074	0.5	TBD	30	95
PCB SURROGARES														
Decachlorobiphenyl	3510/8082	NP	NP	110	µg/L	NA	NA	28-161	NA	TBD	TBD	TBD	TBD	95
Tetrachloro-m-xylene	3510/8082	NP	NP	110	µg/L	NA	NA	16-166	NA	TBD	TBD	TBD	TBD	95
PESTICIDES - Water		**Soil Cleanup Obj. to protect GW quality (ppm)**	**GW Standards/ Criteria (ppb)**											
alpha-BHC	3510/8081A	0.2	ND (0.05)	110	µg/L	0.0035	0.05	46-117	40	0.0068	0.050	51-132	40	95
beta-BHC	3510/8081A	0.2	ND (0.05)	110	µg/L	0.0053	0.05	60-118	40	0.0072	0.050	59-165	40	95
delta-BHC	3510/8081A	0.3	ND (0.05)	110	µg/L	0.0050	0.05	59-113	40	0.0046	0.050	1-135	40	95
gamma-BHC (lindane)	3510/8081A	0.06	ND (0.05)	110	µg/L	0.0034	0.05	58-115	40	0.0033	0.050	50-144	40	95
Heptachlor	3510/8081A	0.10	ND (0.01)	110	µg/L	0.0170	0.05	66-113	40	0.0054	0.050	43-144	40	95
Aldrin	3510/8081A	0.5	ND (0.01)	110	µg/L	0.0164	0.05	48-107	40	0.0041	0.050	45-145	40	95
Heptachlor epoxide	3510/8081A	0.02	ND (0.01)	110	µg/L	0.0062	0.05	70-115	40	0.0056	0.050	57-153	40	95
Endosulfan I	3510/8081A	0.9	0.1	110	µg/L	0.0040	0.05	70-118	40	0.0041	0.050	46-140	40	95
Dieldrin	3510/8081A	0.1	ND (0.01)	110	µg/L	0.0104	0.10	66-113	40	0.0079	0.10	54-157	40	95
4,4'-DDE	3510/8081A	4.4	ND (0.01)	110	µg/L	0.0248	0.10	55-128	40	0.012	0.10	50-150	40	95
Endrin	3510/8081A	0.1	ND (0.01)	110	µg/L	0.0090	0.10	56-131	40	0.0085	0.10	42-163	40	95
Endosulfan II	3510/8081A	0.9	0.1	110	µg/L	0.0072	0.10	73-120	40	0.011	0.10	70-167	40	95
4,4'-DDD	3510/8081A	7.7	ND (0.01)	110	µg/L	0.0094	0.10	67-126	40	0.026	0.15	38-135	40	95
Endosulfan sulfate	3510/8081A	1.0	0.1	110	µg/L	0.0122	0.10	56-124	40	0.012	0.10	47-153	40	95
4,4'-DDT	3510/8081A	2.5	ND (0.01)	110	µg/L	0.0155	0.10	65-125	40	0.013	0.10	42-144	40	95
Methoxychlor	3510/8081A	900	35	110	µg/L	0.0628	0.50	70-140	40	0.062	0.50	71-174	40	95
Endrin ketone	3510/8081A	NA	NA	110	µg/L	0.0077	0.10	62-124	40	0.012	0.10	65-174	40	95
alpha-Chlordane	3510/8081A	NP	NP	110	µg/L	0.0096	0.05	70-111	40	0.0057	0.050	60-140	40	95
gamma-Chlordane	3510/8081A	NP	NP	110	µg/L	0.0337	0.05	71-109	40	0.0060	0.050	60-140	40	95
Endrin aldehyde	3510/8081A	NP	NP	110	µg/L	0.0177	0.10	50-119	40	0.011	0.10	73-155	40	95
PESTICIDE SURROGATES														
	3510/8081A	NP	NP	110	µg/L	NA	NA	40-140	NA	NA	NA	45-129	NA	95
	3510/8081A	NP	NP	110	µg/L	NA	NA	40-140	NA	NA	NA	28-139	NA	95
HERBICIDES - Water														
Dicamba	8151	NP	NP	110	µg/L	0.043	0.094	10-153	30	NA	NA	NA	NA	95
Chloramben	8151	NP	NP	110	µg/L	0.091	0.094	10-120	30	NA	NA	NA	NA	95
Silvex	8151	0.7	35	110	µg/L	0.047	0.095	27-134	30	NA	NA	NA	NA	95

Table 3-1
Laboratory Analysis Methods And Data Quality Objectives
Seneca Army Depot Activity
Romulus, New York

						STL - Vermont				STL - Connecticut				
								DQOs				DQOs		DQO
Analytes of Concern	Method	Eastern USA Background (SB) (ppm)	Rec. Soil Cleanup Objective (ppm)	Risk Assessment Criteria	Units	MDL	PQL	Accuracy (% R)	Precision (% RPD)	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completeness (% valid Data)
Pentachlorophenol	8151	NP	NP	110	µg/L	0.020	0.095	10-90	30	NA	NA	NA	NA	95
2,4,5-T	8151	1.9	35	110	µg/L	0.203	0.095	16-128	30	NA	NA	NA	NA	95
Acifluorfen	8151	NP	NP	110	µg/L	0.068	0.096	10-116	30	NA	NA	NA	NA	95
DCPA	8151	NP	NP	110	µg/L	0.032	0.096	10-124	30	NA	NA	NA	NA	95
Picloram	8151	NP	NP	110	µg/L	0.140	0.097	10-111	30	NA	NA	NA	NA	95
Dinoseb	8151	NP	NP	110	µg/L	0.288	0.470	10-91	30	NA	NA	NA	NA	95
3,5-Dichlorobenaoic Acid	8151	NP	NP	110	µg/L	0.568	0.930	71-168	30	NA	NA	NA	NA	95
2,4-D	8151	2.0	0.1	110	µg/L	0.651	0.940	10-146	30	NA	NA	NA	NA	95
Dichlorprop	8151	NP	NP	110	µg/L	0.837	0.940	10-168	30	NA	NA	NA	NA	95
Bentazon	8151	NP	NP	110	µg/L	0.468	0.940	10-142	30	NA	NA	NA	NA	95
2,4-DB	8151	NP	NP	110	µg/L	0.696	0.950	10-176	30	NA	NA	NA	NA	95
4-Nitrophenol	8151	NP	NP	110	µg/L	0.778	1.800	10-133	30	NA	NA	NA	NA	95
Dalapon	8151	NP	NP	110	µg/L	1.080	2.300	10-97	30	NA	NA	NA	NA	95
MCPA	8151	NP	NP	110	µg/L	58.200	93.000	10-150	30	NA	NA	NA	NA	95
MCPP	8151	NP	NP	110	µg/L	56.700	94.000	10-174	30	NA	NA	NA	NA	95
HERBICIDE SURROGATES														
DCAA	3510/8151	NP	NP	110	µg/L	NA	NA	10-161	NA	NA	NA	NA	NA	95
TRPH - Water														
Total Petroleum Hydrocarbons	418.1	NP	NP		µg/L	158	500	75-125	20	158	500	75-125	20	95
BACKGROUND PERIMETER														
TAL Metals														
Aluminum	SW-846/6010B	33000	33000	bkg	mg/kg	2.0	2.0	80-120	20	29.0	258.0	58-141	20	95
Antimony	SW-846/6010B	NA	NA	bkg	mg/kg	0.4	0.4	80-120	20	1.2	11.7	3-261	20	95
Arsenic	SW-846/6010B	3-12**	7.5 or SB	7.5 (or bkg)	mg/kg	0.4	0.4	80-120	20	1.0	8.0	74-126	20	95
Barium	SW-846/6010B	15-600	300 or SB	300 (or bkg)	mg/kg	0.8	0.8	80-120	20	0.3	2.0	77-123	20	95
Beryllium	SW-846/6010B	0-1.75	0.16 or SB	0	mg/kg	0.0	0.0	80-120	20	0.5	2.0	78-122	20	95
Cadmium	SW-846/6010B	0.1-1	1 or SB	1 (or bkg)	mg/kg	0.1	0.1	80-120	20	1.0	3.0	77-123	20	95
Calcium	SW-846/6010B	130-35000***	130-35000***	bkg	mg/kg	17.9	17.9	80-120	20	8.6	85.0	75-125	20	95
Chromium	SW-846/6010B	1.5-40**	10 or SB	10 or (bkg)	mg/kg	0.1	0.1	80-120	20	0.5	3.0	80-120	20	95
Cobalt	SW-846/6010B	2.5-60**	30 or SB	30 (or bkg)	mg/kg	0.4	0.4	80-120	20	0.3	2.0	80-120	20	95
Copper	SW-846/6010B	1-50	25 or SB	25 (or bkg)	mg/kg	0.2	0.2	80-120	20	0.5	5.0	82-118	20	95
Cyanide	SW-846/6010B	NA	***	N/A	mg/kg	0.060	0.5	75-125	20	0.054	0.50	75-125	20	95
Iron	SW-846/6010B	2000-550000	2000 or SB	bkg	mg/kg	2.3	2.3	80-120	20	22.0	145.0	61-140	20	95
Lead	SW-846/6010B	****	SB ****	bkg	mg/kg	0.1	0.1	80-120	20	1.0	9.0	75-125	20	95
Magnesium	SW-846/6010B	100-5000	100-5000	bkg	mg/kg	26.0	26.0	80-120	20	3.6	35.0	77-123	20	95
Manganese	SW-846/6010B	50-5000	50-5000	bkg	mg/kg	0.100	0.100	80-120	20	3.0	2.5	77-122	20	95
Mercury	SW-846/6010B	0.001-0.2	0.1	0	mg/kg	0.044	0.1	75-125	20	0.090	2.0	68-132	20	95
Nickel	SW-846/6010B	0.5-25	13 or SB	13 (or bkg)	mg/kg	0.2	0.2	80-120	20	0.5	5.0	78-122	20	95
Potassium	SW-846/6010B	8500-43000	8500-43000	bkg	mg/kg	24.8	24.8	80-120	20	43.0	200.0	44-117	20	95
Selenium	SW-846/6010B	0.1-3.9	2 or SB	2 (or bkg)	mg/kg	0.3	0.3	80-120	20	1.6	16.0	71-129	20	95
Silver	SW-846/6010B	NA	NA	(bkg)	mg/kg	0.2	0.2	80-120	20	0.3	3.0	52-148	20	95
Sodium	SW-846/6010B	6000-8000	6000-8000	bkg	mg/kg	65.4	65.4	80-120	20	9.4	94.0	19-133	20	95
Thallium	SW-846/6010B	NA	NA	bkg	mg/kg	0.6	0.6	80-120	20	3.0	22.0	57-143	20	95
Vanadium	SW-846/6010B	1-300	150 or SB	150 (or bkg)	mg/kg	0.2	0.2	80-120	20	0.4	4.0	49-150	20	95
Zinc	SW-846/6010B	9-50	20 or SB	20 (or bkg)	mg/kg	0.1	0.1	80-120	20	2.4	20.0	73-127	20	95
TCL PAHs - Soil		**Soil Cleanup Obj. to protect GW quality (ppm)**	**Rec. Soil Cleanup Objective (ppm)**											

Table 3-1
Laboratory Analysis Methods And Data Quality Objectives
Seneca Army Depot Activity
Romulus, New York

						STL - Vermont				STL - Connecticut				
		Eastern USA	Rec. Soil Cleanup	Risk				DQOs				DQOs		DQO
Analytes of Concern	Method	Background (SB) (ppm)	Objective (ppm)	Assessment Criteria	Units	MDL	PQL	Accuracy (% R)	Precision (% RPD)	MDL	PQL	Accuracy (% R)	Precision (% RPD)	Completeness (% valid Data)
Acenaphthene	SW-846/3541/3 540B/8270C	90.0	50.0***	50,000	mg/kg	36.950	330.0	59-111	40	0.015	0.330	70-108	40	95
Acenaphthylene	SW-846/3541/3 540B/8270C	41.0	41.0	41,000	mg/kg	92.320	330.0	59-104	40	0.011	0.330	70-105	40	95
Anthracene	SW-846/3541/3 540B/8270C	700.0	50.0***	50,000	mg/kg	84.140	330.0	59-120	40	0.012	0.330	71-110	40	95
Benzo(a)anthracene	SW-846/3541/3 540B/8270C	3.0	0.224 or MDL	224 (or MDL)	mg/kg	61.580	330.0	62-116	40	0.015	0.330	73-117	40	95
Benzo(a)pyrene	SW-846/3541/3 540B/8270C	11.0	0.061 or MDL	61 (or MDL)	mg/kg	94.640	330.0	60-109	40	0.016	0.330	72-116	40	95
Benzo(b)fluoranthene	SW-846/3541/3 540B/8270C	1.1	1.1	1,100	mg/kg	31.790	330.0	44-119	40	0.038	0.330	60-126	40	95
Benzo(g,h,i)perylene	SW-846/3541/3 540B/8270C	800	50.0***	50,000	mg/kg	52.430	330.0	10-167	40	0.017	0.330	62-118	40	95
Benzo(k)fluoranthene	SW-846/3541/3 540B/8270C	1.1	1.1	1,100	mg/kg	92.890	330.0	57-128	40	0.039	0.330	72-129	40	95
Chrysene	SW-846/3541/3 540B/8270C	0.4	0.4	400	mg/kg	78.180	330.0	49-121	40	0.017	0.330	73-118	40	95
Dibenzo(a,h)anthracene	SW-846/3541/3 540B/8270C	165000	0.014 or MDL	14 (or MDL)	mg/kg	41.730	330.0	21-142	40	0.018	0.330	68-117	40	95
Fluoranthene	SW-846/3541/3 540B/8270C	1900.0	50.0***	50,000	mg/kg	49.750	330.0	49-131	40	0.022	0.330	74-117	40	95
Fluorene	SW-846/3541/3 540B/8270C	350.0	50.0***	50,000	mg/kg	39.200	330.0	61-120	40	0.020	0.330	71-110	40	95
Indeno(1,2,3-cd)pyrene	SW-846/3541/3 540B/8270C	3.2	3.2	3,200	mg/kg	48.180	330.0	10-149	40	0.018	0.330	67-116	40	95
Naphthalene	SW-846/3541/3 540B/8270C	13.0	13.0	13,000	mg/kg	54.110	330.0	61-104	40	0.032	0.330	61-106	40	95
Phenanthrene	SW-846/3541/3 540B/8270C	220.0	50.0***	50,000	mg/kg	50.320	330.0	66-111	40	0.024	0.330	72-114	40	95
Pyrene	SW-846/3541/3 540B/8270C	665.0	50.0***	50,000	mg/kg	76.570	330.0	46-124	40	0.019	0.330	71-120	40	95
SVOC Surrogates														
Nitrobenzene-d5	SW-846/3541/3 540B/8270C	NP	NP	N/A	mg/kg	NA	NA	23-120	NA	NA	NA	32-131	NA	95
2-Fluorobiphenyl	SW-846/3541/3 540B/8270C	NP	NP	N/A	mg/kg	NA	NA	30-115	NA	NA	NA	25-120	NA	95
Terphenyl-d14	SW-846/3541/3 540B/8270C	NP	NP	N/A	mg/kg	NA	NA	18-137	NA	NA	NA	35-140	NA	95

Note:

NP: Not Provided in Technical and Administrative Guidance Memorandums (TAGM) Recommended Soil/Groundwater Cleanup Objectives
NA: Not Applicable
PAM = pulse amplitude modulation
RPD = Regulatory Policy Division
MDL = Minimum Detectable Level
PQL = Practical Quantitation Limits
0 = New York State background
1 = Some forms of cyanide are complex and very stable while other forms are pH dependent and hence are very unstable. Site-specific form(s) of cyanide should be taken into consideration when establishing soil cleanup objectives.
2 = Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.
3 = As per TAGM #4046, Total VOCs<10ppm. Total semivolatile organic compounds (SVOCs) < 500ppm and Individual SVOCs < 50 ppm.

At least one (1) discrete sample will be collected from each sidewall of an open excavation that is 12-inches in depth or greater. Sidewall samples will be collected at the midpoint, at a rate of one (1) sample every 30 linear feet of excavation wall length. Sidewall samples will not be collected where the depth of the excavation measures less than 12-inches. However, in lieu of collecting samples from the sidewalls, a minimum of 1 sample will be collected from the perimeter limits each excavation. Each perimeter sample will be collected a distance of 1 ft. in from the top of slope on the ground surface.

For excavations of limited base area but extended length (e.g., drainage ditch excavations), at least one (1) additional soil sample will be collected from the base of excavations for each 30-foot length (or fraction thereof).

Confirmation soil samples will be collected from beneath each waste pile or berm structure. Following excavation, at least one (1) soil sample will be collected from the point directly beneath each pile or berm structure, and from at least four other locations (e.g., major compass point locations) that are located around the perimeter of the pile or berm structure. Samples will be collected beneath the removed waste pile or berm structure at a rate of one (1) sample per 900 ft^2 or less, and at a rate of at least one (1) sample every 30 linear feet along the removed pile or berm structure perimeter.

Confirmation sample quantities may increase in the field to address site-specific field observations and findings. If initial excavation confirmation samples do not meet required clean-up levels, soils in the area of failure will be excavated an additional 6-inches. Confirmation samples will be collected and analyzed in the area of additional excavation.

3.2.2 SEAD 50/54 Sampling

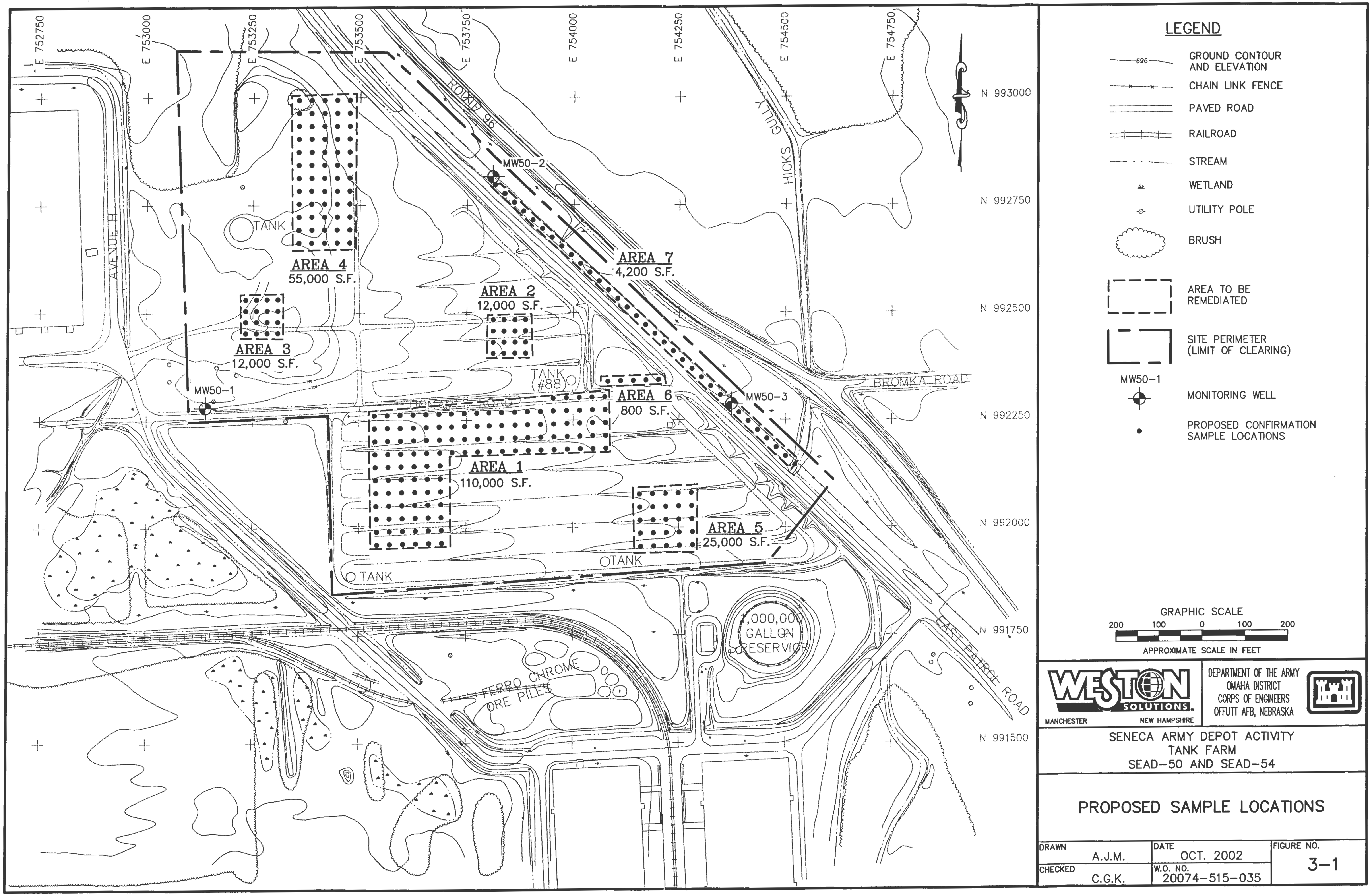
Pre-excavation soil samples analyzed for asbestos will be reviewed prior to excavation activities to determine the limits of the asbestos excavation. It is anticipated that 5,000 cubic yards (yd^3) of metals and asbestos soils will be excavated from SEADs 50/54. An additional 150 yd^3 of polynuclear aromatic hydrocarbons (PAHs) contaminated sediment will be excavated in the roadside drainage ditches that run next to East Patrol Road and the unnamed east-west road that transects the site.

Based on the rates specified in Subsection 3.2.1, it is anticipated that a total of 488 samples (423 primary field samples and 65 QC samples) will be collected from the confirmation excavation limits at SEAD 50/54. These samples will be analyzed for metals arsenic, mercury, and zinc using United States Environmental Protection Agency (EPA) Methods SW-846/6010B and 7471A. Approximately 25% of the confirmation field samples (106 primary field samples and 17 QC samples) will be analyzed for the full suite of Target Analyte List (TAL) metals (23 metals) using EPA Method SW-846/6010B and for Target Compound List (TCL) PAHs using EPA Method SW-846/3541/3540B/8270C. Approximately half of the sample locations being analyzed for TCL PAHs will be biased towards locations where PAHs were previously detected. The sample locations of the remaining confirmation samples will be randomly distributed throughout the proposed excavation area. Figure 3-1 shows the confirmation sample locations for the seven identified areas in SEAD 50/54.

The following table summarizes the approximate number of soil confirmation samples to be collected in each identified excavation area located in SEAD 50/54.

Area – SEAD 50/54	Approximate No. of Floor Samples – Soil	Approximate No. of Sidewall Samples – Soil	Total
1	122	60	182
2	16	16	32
3	16	16	32
4	60	34	94
5	25	20	45
6	5	NA	5
7	33	NA	33
Total	**277**	**146**	**423**

It is estimated that a total of seven (7) sediment samples [five (5) primary and two (2) QC samples] will be collected from the sediment excavation area. These samples will be analyzed for metals arsenic, mercury, and zinc using EPA Method SW-846/6010B. Approximately 25% of



WESTON SOLUTIONS
MANCHESTER NEW HAMPSHIRE

DEPARTMENT OF THE ARMY
OMAHA DISTRICT
CORPS OF ENGINEERS
OFFUTT AFB, NEBRASKA

SENECA ARMY DEPOT ACTIVITY
TANK FARM
SEAD-50 AND SEAD-54

PROPOSED SAMPLE LOCATIONS

DRAWN	DATE	FIGURE NO.
A.J.M.	OCT. 2002	3-1
CHECKED C.G.K.	W.O. NO. 20074-515-035	

M:\De VG\ACOE\SENECA\seads 50-54 24 67\TANK FARM.dwg, Sample, 11/11/2002 09: AM, girardeb, 1:1

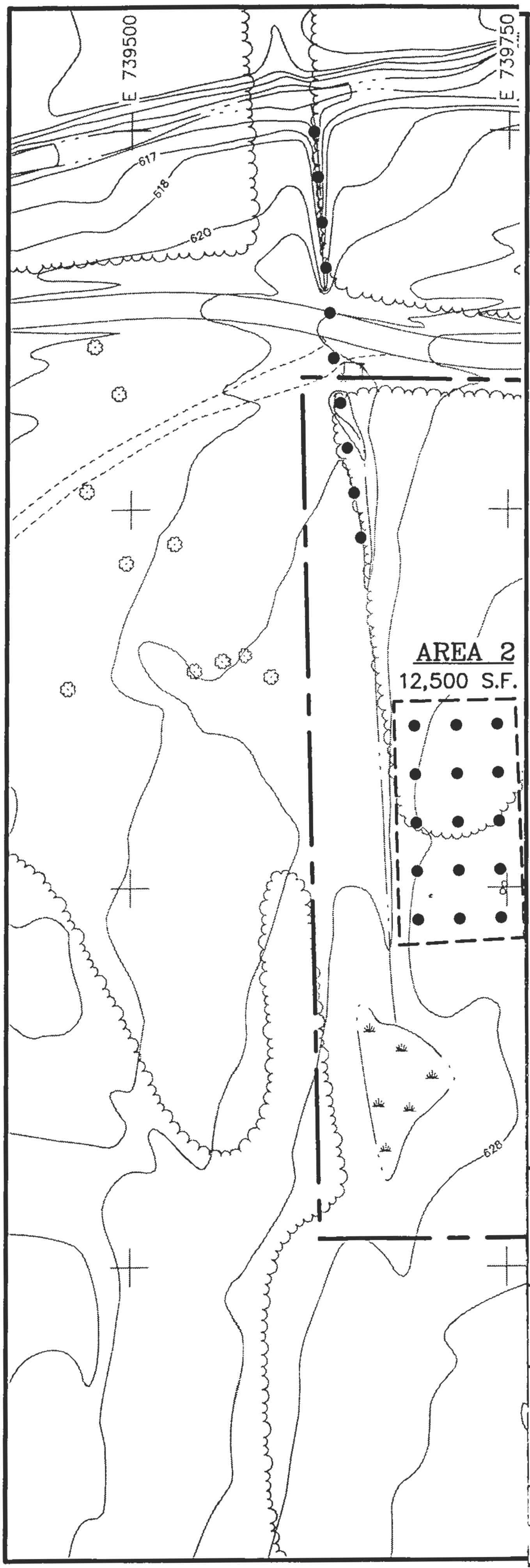
the confirmation field samples (four (4) samples including QC) will be analyzed for the full suite of TAL metals (23 metals) using EPA Method SW-846/6010B and for TCL PAHs using EPA Method SW-846/3541/3540B/8270C. There are three (3) aboveground storage tanks [two (2) 9,000-gallon tanks and one (1) 570,000-gallon tank] located in Area 50/54. If these tanks are removed from the site, a minimum of one (1) soil sample will be collected from underneath each tank. The soil samples will be analyzed for TAL metals using EPA Method SW-846/6010B. These samples are not included in the total for confirmation samples for this area.

3.2.3 SEAD 24 Sampling

It is anticipated that a total of 2,500 yd^3 of soil will be excavated from previously identified areas within SEAD 24, the Abandoned Powder Burning Pit. The shallow soil contamination identified is predominated by arsenic and zinc. Therefore, arsenic and zinc will be used as indicator compounds that define the extent of contamination at SEAD 24.

Based on the rates specified in Subsection 3.2.1, a total of 199 primary field samples and 30 QC samples will be collected for confirmation of excavation limits from SEAD 24. The majority of samples will be collected from the excavation floor, as it is assumed the excavation will be a total of 6-inches in depth. Additional samples will be collected along the perimeter of the excavation limits at a rate of one every 30 linear foot. Figure 3-2 shows the proposed sampling locations for the three identified excavation areas in SEAD 24. The following table summarizes the approximate number of confirmation samples to be collected in each identified excavation area located in SEAD 24.

Area – SEAD 24	Approximate No. of Floor Samples – Soil	Approximate No. of Sidewall Samples – Soil	Total
1	85	57	142
2	15	16	31
3	11	15	26
Total	**111**	**88**	**199**



LEGEND

- GROUND CONTOUR AND ELEVATION (696)
- PAVED ROAD
- RAILROAD
- STREAM
- WETLAND
- BRUSH
- AREA TO BE REMEDIATED
- SITE PERIMETER (LIMIT OF CLEARING)
- PROPOSED CONFIRMATION SAMPLE LOCATIONS

GRAPHIC SCALE

100 50 0 50 100

APPROXIMATE SCALE IN FEET

WESTON SOLUTIONS

MANCHESTER NEW HAMPSHIRE

DEPARTMENT OF THE ARMY
OMAHA DISTRICT
CORPS OF ENGINEERS
OFFUTT AFB, NEBRASKA

SENECA ARMY DEPOT ACTIVITY
ABANDONED POWDER BURNING PIT
SEAD-24

PROPOSED SAMPLE LOCATIONS

DRAWN	DATE	FIGURE NO.
A.J.M.	OCT. 2002	3-2
CHECKED	W.O. NO.	
C.G.K.	20074-515-035	

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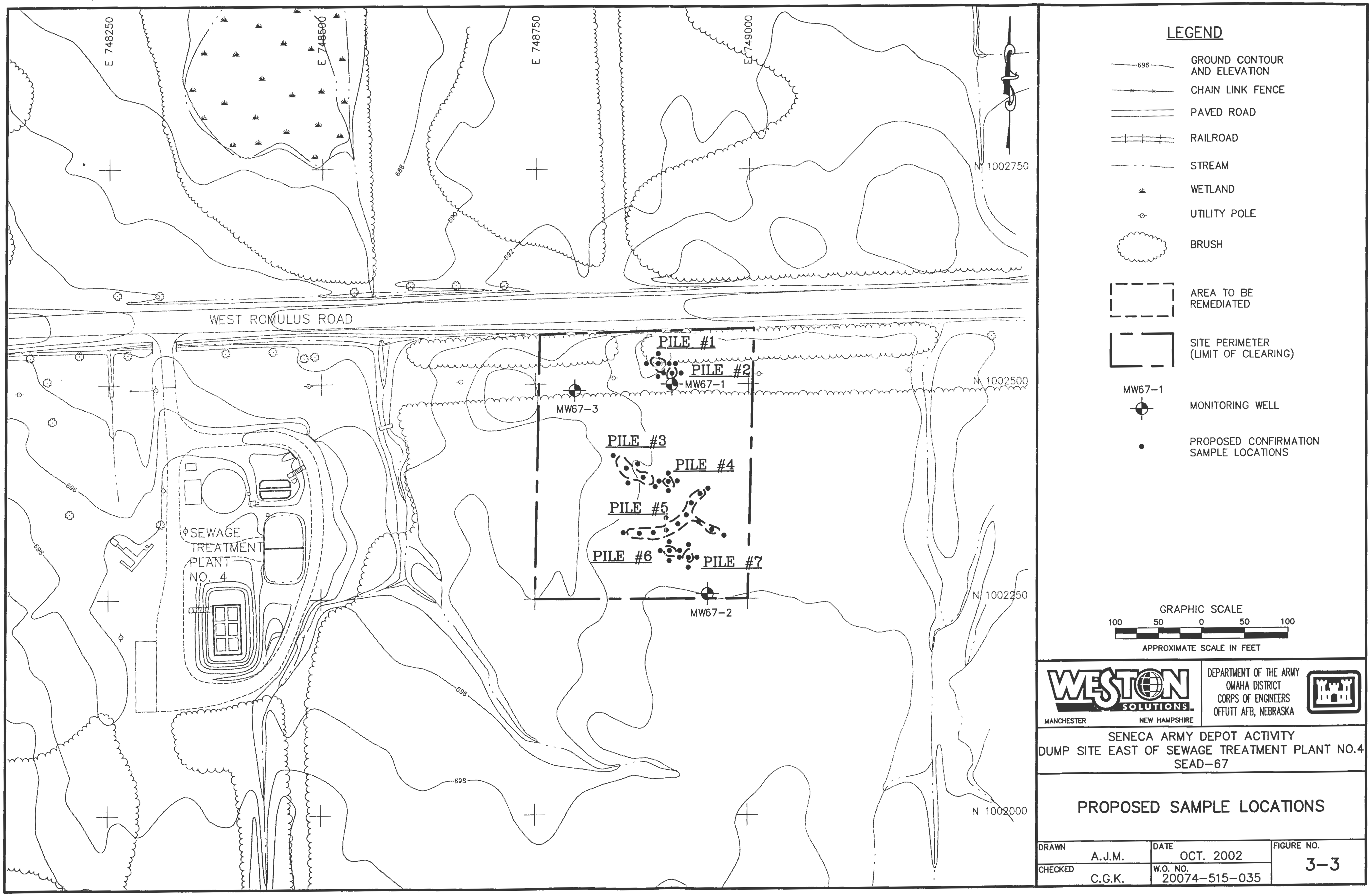
These soil samples will be analyzed for metals arsenic, lead, and zinc using EPA Method SW-846/6010B. Approximately 25% of the confirmation field samples [fifty (50) primary field samples and eight (8) QC samples] will be analyzed for the full suite of TAL metals (23 metals) using EPA Method SW-846/6010B and for TCL PAHs using EPA Method SW-846/3541/3540B/8270C. Approximately half of the samples being analyzed for TCL PAHs will be collected near the site of former sample SS24-1, where PAHs were previously detected at levels above New York State Department of Environmental Conservation (NYSDEC) recommended cleanup goals. The sample locations of the remaining confirmation samples will be randomly distributed throughout the proposed excavation area. Table 3-2 summarizes the total number of proposed samples and QC samples for this area.

Sediment confirmation samples will also be collected in the drainage swales that lead from the Area-24 toward Kendaia Creek. One (1) sediment sample will be collected every 30 linear feet of the length of the drainage ditch after excavation activities are complete. It is estimated that the drainage ditch is 300-ft in length. Approximately ten (10) sediment samples will be collected from this drainage ditch. These samples will be analyzed for TAL metals (arsenic, lead, and zinc), the full suite of TAL metals, and TCL PAHs as specified in Table 3-2.

3.2.4 SEAD 67 Sampling

Five waste piles and two berms consisting of approximately 240 yd^3 will be excavated from SEAD 67. Additionally, six inches of PAH impacted sediment located in a small stream (drainage ditch) will be dredged adjacent to SEAD 67 and 20-ft to the north of West Romulus Road. The drainage ditch is located to the west of SEAD 67.

A minimum of one (1) confirmation sample will be collected from beneath each removed waste pile or berm structure, and one (1) sample will be collected every 30 linear feet or major compass points around the perimeter of the of the identified pile or berm structure. Based on the sample rates for waste piles or berm structures specified in Subsection 3.2.1, it is anticipated that a total



WESTON SOLUTIONS
MANCHESTER NEW HAMPSHIRE

DEPARTMENT OF THE ARMY
OMAHA DISTRICT
CORPS OF ENGINEERS
OFFUTT AFB, NEBRASKA

SENECA ARMY DEPOT ACTIVITY
DUMP SITE EAST OF SEWAGE TREATMENT PLANT NO.4
SEAD-67

PROPOSED SAMPLE LOCATIONS

DRAWN	DATE	FIGURE NO.
A.J.M.	OCT. 2002	3-3
CHECKED C.G.K.	W.O. NO. 20074-515-035	

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TABLE 3-2
Quality Control Sampling Summary
Soil Remedial Action
Seneca Army Depot Site

Analysis	Method	Matrix	QC Samples				
			Field Samples	Field Duplicate Samples	MS/MSD	Total No. Samples	QA Split Field Samples
Confirmation Soil Samples - SEAD 24							
Target TAL Metals (As, Hg, Zn)	SW-846/6010B	Soil	199	20	10	229	0
TAL Metals - Full Suite	SW-846/6010B	Soil	50	5	3	58	0
TCL PAHs	SW-846/3541-3540B/8270C	Soil	50	5	3	58	0
Target TAL Metals (As, Hg, Zn)	SW-846/6010B	Sediment	10	1	1	12	0
TAL Metals - Full Suite	SW-846/6010B	Sediment	3	1	1	5	0
TCL PAHs	SW-846/3541-3540B/8270C	Sediment	3	1	1	5	0
Confirmation Soil Samples - SEAD 50/54							
Target TAL Metals (As, Hg, Zn)	SW-846/6010B	Soil	423	43	22	488	0
TAL Metals - Full Suite	SW-846/6010B	Soil	106	11	6	123	0
TCL PAHs	SW-846/3541-3540B/8270C	Soil	106	11	6	123	0
Target TAL Metals (As, Hg, Zn)	SW-846/6010B	Sediment	5	1	1	7	0
TAL Metals - Full Suite	SW-846/6010B	Sediment	2	1	1	4	0
TCL PAHs	SW-846/3541-3540B/8270C	Sediment	2	1	1	4	0
Confirmation Soil Samples - SEAD 67							
Target TAL Metals (As, Hg, Zn)	SW-846/6010B	Soil	44	5	3	52	0
TAL Metals - Full Suite	SW-846/6010B	Soil	11	2	1	14	0
TCL PAHs	SW-846/3541-3540B/8270C	Soil	11	2	1	14	0
Target TAL Metals (As, Hg, Zn)	SW-846/6010B	Sediment	2	1	1	4	0
TAL Metals - Full Suite	SW-846/6010B	Sediment	1	1	1	3	0
TCL PAHs	SW-846/3541-3540B/8270C	Sediment	1	1	1	3	0
Personal Air Monitoring Samples							
SEAD 24							
Total Lead	NIOSH 7300	Air	10	0	0	10	0
SEAD 50/54							
Total Lead	NIOSH 7300	Air	20	0	0	20	0
SEAD 67							
Total Lead	NIOSH 7300	Air	5	0	0	5	0

TABLE 3-2
Quality Control Sampling Summary
Soil Remedial Action
Seneca Army Depot Site

Analysis	Method	Matrix	QC Samples: Field Samples	Field Duplicate Samples	MS/MSD	Total No. Samples	QA Split Field Samples
Waste Characterization Samples - SEAD 24							
TCLP Metals	SW-846/3050B/ 6010A	Soil	21	0	0	21	0
Total VOCs	SW-846/5035A/ 8260B	Soil	21	0	0	21	0
Total SVOCs	SW-846/3541/ 3540C/8270C	Soil	21	0	0	21	0
Total PCBs	SW-846/3541/ 3540B/8082	Soil	21	0	0	21	0
Pesticides	SW-846/3541/ 3540B/8081	Soil	21	0	0	21	0
Waste Characterization Samples - SEAD 50/54							
TCLP Metals	SW-846/3050B/ 6010A	Soil	34	0	0	34	0
Total VOCs	SW-846/5035A/ 8260B	Soil	34	0	0	34	0
Total SVOCs	SW-846/3541/ 3540C/8270C	Soil	34	0	0	34	0
Total PCBs	SW-846/3541/ 3540B/8082	Soil	34	0	0	34	0
Pesticides	SW-846/3541/ 3540B/8081	Soil	34	0	0	34	0
Waste Characterization Samples - SEAD 24							
TCLP Metals	SW-846/3050B/ 6010A	Soil	1	0	0	1	0
Total VOCs	SW-846/5035A/ 8260B	Soil	1	0	0	1	0
Total SVOCs	SW-846/3541/ 3540C/8270C	Soil	1	0	0	1	0
Total PCBs	SW-846/3541/ 3540B/8082	Soil	1	0	0	1	0
Pesticides	SW-846/3541/ 3540B/8081	Soil	1	0	0	1	0
Wastewater Samples							
TAL Metals	3010A/6010B	Water	3	0	0	3	0
Cyanide		Water	3	0	0	3	0
Explosives	8330	Water	3	0	0	3	0
VOCs	5030/8260B	Water	3	0	0	3	0
SVOCs	3510/8270C	Water	3	0	0	3	0
PCBs	3510/8082	Water	3	0	0	3	0
Pesticides	3510/8081A	Water	3	0	0	3	0
Herbicides	8151	Water	3	0	0	3	0
TRPH	418.1	Water	3	0	0	3	0
pH		Water	3	0	0	3	0
TSS/TDS		Water	3	0	0	3	0
BOD		Water	3	0	0	3	0
Ammonia as Nitrogen		Water	3	0	0	3	0
Radioactivity		Water	3	0	0	3	0

TABLE 3-2
Quality Control Sampling Summary
Soil Remedial Action
Seneca Army Depot Site

Analysis	Method	Matrix	QC Samples: Field Samples	Field Duplicate Samples	MS/MSD	Total No. Samples	QA Split Field Samples
Backfill Confirmation Samples - if applicable							
TAL Metals	SW-846/6010B	Soil	15	0	0	15	
Explosives	SW-846/8330	Soil	15	0	0	15	0
VOCs	SW-846/5035A/ 8260B	Soil	15	0	0	15	0
SVOCs	SW-846/3541/ 3540C/8270C	Soil	15	0	0	15	0
PCBs	SW-846/3541/ 3540B/8082	Soil	15	0	0	15	0
Pesticides	3541/3540B/ 8081	Soil	15	0	0	15	0
Monitoring Wells Samples - SEAD 24							
TAL Metals	3010A/6010B	Water	5	1	1	7	
Explosives	8330	Water	5	1	1	7	0
VOCs	5030/8260B	Water	5	1	1	7	0
SVOCs	3510/8270C	Water	5	1	1	7	0
PCBs	3510/8082	Water	5	1	1	7	0
Pesticides	3510/8081A	Water	5	1	1	7	0
Herbicides	8151	Water	5	1	1	7	0
TRPH	418.1	Water	5	1	1	7	0
Monitoring Wells Samples - SEAD 50/54							
TAL Metals	3010A/6010B	Water	3	1	1	5	
Explosives	8330	Water	3	1	1	5	0
VOCs	5030/8260B	Water	3	1	1	5	0
SVOCs	3510/8270C	Water	3	1	1	5	0
PCBs	3510/8082	Water	3	1	1	5	0
Pesticides	3510/8081A	Water	3	1	1	5	0
Herbicides	8151	Water	3	1	1	5	0
TRPH	418.1	Water	3	1	1	5	0
Monitoring Wells Samples - SEAD 67							
TAL Metals	3010A/6010B	Water	3	1	1	5	
Explosives	8330	Water	3	1	1	5	0
VOCs	5030/8260B	Water	3	1	1	5	0
SVOCs	3510/8270C	Water	3	1	1	5	0
PCBs	3510/8082	Water	3	1	1	5	0
Pesticides	3510/8081A	Water	3	1	1	5	0
Herbicides	8151	Water	3	1	1	5	0
TRPH	418.1	Water	3	1	1	5	0
Background Perimeter - SEAD 24							
TAL Metals - Full Suite	SW-846/6010B	Soil	5	0	0	5	0
TCL PAHs	SW-846/3541-3540B/8270C	Soil	5	0	0	5	0
Background Perimeter - SEAD 50/54							
TAL Metals - Full Suite	SW-846/6010B	Soil	5	0	0	5	0
TCL PAHs	SW-846/3541-3540B/8270C	Soil	5	0	0	5	0
Background Perimeter - SEAD 67							
TAL Metals - Full Suite	SW-846/6010B	Soil	5	0	0	5	0
TCL PAHs	SW-846/3541-3540B/8270C	Soil	5	0	0	5	0

[1] Delineation Samples and Excavation Confirmation sample results expected electronically within 2 days.
Full hard copy package within 7 days.
[2] Waste Characterization results electonic and hard copy package expected within 7 days.
[*] No QC or QA samples will be collected for waste characterization samples.

of 52 samples [forty four (44) primary confirmation soil samples and eight (8) QC samples] will be collected from SEAD 67. A Figure 3-3 shows the confirmation sample locations for the seven (7) identified waste piles in SEAD 67. The following table summarizes the approximate number of confirmation samples to be collected in each identified waste pile located in SEAD 67.

Waste Pile – SEAD 67	Approximate No. of Floor Samples – Soil	Approximate No. of Perimeter Samples – Soil	Total
1	1	4	5
2	1	4	5
3	2	4	6
4	1	4	5
5	9	4	13
6	1	4	5
7	1	4	5
Total	**16**	**28**	**44**

All the samples will be analyzed for mercury using EPA Method SW-846/7471A and for TCL PAHs using EPA Method SW-846/3541/3540B/8270C. Approximately 25% of the confirmation samples (14 soil samples including QC) will be analyzed for the full suite of TAL metals using EPA Method SW-846/6010B.

It is assumed that a total of four (4) [two (2) primary samples and two (2) QC samples] confirmation sediment samples will be collected in the sediment excavation area. Three (3) confirmation sediment samples (including QC) will be analyzed for the full suite of TAL metals using EPA Method SW-846/6010B.

3.3 AIR MONITORING SAMPLES

Emissions produced during excavations and within soil staging areas will be monitored to assure compliance with applicable federal, state, and local regulations. Air monitoring will be conducted in accordance with the New York State Department of Health "Community Air Monitoring Plan"; NYSDEC TAGM, "*Fugitive Dust Supression and Particulate Monitoring at Inactive Hazardous Waste Sites*," 27 October 1989 (or most recent version);

with New York State Department of Health "*Community Air Monitoring Plan*"; and with NYSDEC's requirements as stated in Industrial Code Part 56. If air monitoring action levels are exceeded, site activities will cease until appropriate air emissions control measures are instituted. The Air Monitoring Plan issued for this site by WESTON describes the air-monitoring program in further detail.

It is anticipated that the following number of personal air monitoring samples will be collected during excavation activities at each location:

- SEAD 24 — 10 Samples
- SEAD 50/54 — 20 Samples
- SEAD 67 — 5 Samples

The personal air monitoring samples will be analyzed using National Institute of Occupational Safety and Health 7300.

3.4 WASTEWATER SAMPLING

Wastewater potentially generated from dewatering excavations will be stored onsite prior to disposal at a publicly owned wastewater treatment (POTW) facility. A water sample will be collected from each storage tank before the water is transported offsite. The water sample will be analyzed for the following compounds (or as specified by the POTW):

- TAL Metals - EPA Method 3010A/6010B/7471A
- Cyanide - EPA Method SW-846 9010B or 9012A
- Explosives - EPA Method 8330
- Volatile organic compounds (VOCs) - EPA Method 5030/8260b
- Semivolatile organic compounds (SVOC) - EPA Method 3510/8270C
- Polychlorinated biphenyl (PCB) - EPA Method 3510/8082
- Pesticides - EPA Method 3510/8081A
- Herbicides - EPA Method 8151
- Total Recoverable Petroleum Hydrocarbon (TRPH) - EPA Method 418.1

- Hydrogen ion concentration - EPA Method 9040/9041
- Total dissolved solids – Standard Methods - Method 160.1
- Total suspended solids - Standard Methods - Method 160.2
- Biological Oxygen Demand - Standard Methods – Method 405.1
- Ammonia as nitrogen - Standard Methods - Method 350.1
- Radioactivity (total alpha and beta) - EPA Method 0900 – Gross Alpha/Gross Beta and 0901.1 – Gamma Emitting Radioactivity

The water results will be compared to POTW acceptance standards prior to discharge.

3.5 SAMPLING FOR DISPOSAL CHARACTERIZATION

Waste Disposal Characterization samples will be used as the basis for determining if excavation soils, sediments, groundwater, and used personal protective equipment meet RCRA requirements for landfill disposal (for solids) or pretreatment standards (for wastewater) prior to shipment and disposal off-site. Sampling results will be forwarded to the designated disposal facility for review and confirmation of acceptance.

All excavated material will be stockpiled prior to transportation and disposal off-site. It is anticipated that stockpiled excavated soil will require analysis at a frequency of one (1) representative sample per 150 yd^3 of material. The number of waste characterization samples anticipated for each location is as follows:

- SEAD 50/54 — 34 Samples
- SEAD 24 — 21 Samples
- SEAD 67 — 1 Sample

Each sample will be analyzed for toxicity characteristic leaching procedures (TCLP) analyses, if indicated based on mass results compared to the 20 times rule for individual constituents, and various other analytes specific to the disposal facility requirements. These samples will be specifically analyzed for TCLP metals using EPA Method SW-846/1311/6010A, VOCs using EPA Method SW-846/5035A/8260B, SVOCs using EPA Method SW-846-3541/3540B/8270C, PCBs using EPA Method SW-846-3541/3540B/8082, and Pesticides using

EPA Method SW-846-3541/3540B/8081. No QC sampling will be collected from the waste characterizations samples.

3.6 BACKFILL SAMPLING

Backfill activities will not begin until the confirmation samples results are reviewed and the final limits of the excavations are defined for each excavated area. Backfill activities were not proposed at the time of issuance of this CSAP report. However, should backfill activities be required by the OSR, at least one (1) sample will be collected from each borrow pit location and analyzed for TAL metals using EPA Method SW-846/6010B; for explosives using EPA Method SW-846/8330; TCL VOCs using EPA Method 5035A/8260B; TCL SVOCs using EPA Method 3541/3540B/8270C; for PCBs using EPA Method SW-846/3541/3540B/8082; and for pesticides using EPA Method 3541/3540B/8081.

The backfill analytical results will be compared to NYSDEC TAGMs to determine whether the backfill material is clean, and suitable for use as backfill.

During backfill activities, grab samples will be collected from three (3) trucks of fill each day to check the headspace of the samples for VOCs. The material from the truck will not be placed in the excavation until the headspace analysis is complete.

3.7 SAMPLING PROCEDURES

The sampling strategy and procedures were developed to collect quality data to support the objectives described in Subsection 2.1.1 of this CSAP. The following subsections outline specific sampling procedures that will be used when collecting samples during site activities.

3.7.1 Sampling Methods

3.7.1.1 Confirmation Sampling

A figure of the actual excavation limits and sampling locations will be prepared in the field. Specific measurements will be collected including the length, width, and depth (if subsurface excavation) of each removal action. The depth of the excavation will be reported at each corner, and at intermediate locations that are no further than 30-ft apart (based on sampling grid). These measurements will be used to verify sufficient samples were collected from the excavation to reasonably assess whether residual contamination remains in a particular area of excavation. Each sample location will be uniquely identified and placed on the figure.

Confirmation samples will be collected from a depth not less than 1-inch below the excavation's surface and not more than six inches below the base of the excavation. The 1-inch minimum is recommended to ensure that soils exposed directly to the atmosphere, which could result in the off-gassing of VOCs or inorganics (e.g., sulfide or cyanide) compounds, do not volatilized over time prior to analysis.

Samples will be manually collected using either decontaminated stainless steel or disposable scoops or spades. A decontaminated stainless steel bowl (or equivalent) will be used for sample homogenization. Samples collected for volatile compound analyses (e.g., VOCs or cyanide) will be collected first and will be transferred directly from the ground to the appropriate sample container. Samples for volatile compound analyses will not be homogenized. Samples collected for non-volatile analyses (e.g., SVOCs, pesticides, metals, and TRPH) will be collected and transferred to an inert mixing bowl and homogenized prior to being placed in the appropriate sample container. At the time of sample collection, the following soil properties will be documented by the sample technician:

- Soil type
- Color
- Moisture content
- Texture
- Grain Size and Shape (Qualitative)
- Visible evidence of staining or discoloration
- Any other observations

All other analyses will be performed at an off-site laboratory. No field measurements are anticipated for site sampling activities.

3.7.1.2 Air Monitoring

The Air Monitoring Plan issued for this site by WESTON provides the sampling protocol for the air-monitoring program.

3.7.1.3 Wastewater Sampling

A grab sample will be collected from a sample port located on each fractional tank used to store water. If the sampling port is not available WESTON will use a bailer and/or sample bomb to collect a representative sample. The sample will be collected directly into the appropriate sample container.

3.7.1.4 Sampling for Waste Characterization

All disposal characterization samples from stockpiled soils will be taken as 5-point composite samples. Samples will be collected at a frequency of one (1) representative sample per 150 yd^3 of material.

Samples for non-volatile analysis will be manually collected using either decontaminated stainless steel or disposable scoops or spades. A decontaminated stainless steel bowl (or equivalent) will be used for sample homogenization. Soil samples for VOC analysis will be placed directly into appropriate sample containers to minimize contaminant volatilization. Samples will be collected following excavation activities. The sample technician shall make every effort to collect a sample that is representative of the excavation stockpiles.

3.7.1.5 Backfill Sampling

Backfill samples are not anticipated as part of the site activities. However, should the OSR require backfill sampling the following procedures will be followed.

Backfill samples will be taken as 5-point composite samples. Samples will be collected at a frequency of one (1) representative sample per borrow pit location.

Samples will be manually collected using either decontaminated stainless steel or disposable scoops or spades. A decontaminated stainless steel bowl (or equivalent) will be used for sample homogenization. Samples collected for volatile compound analyses (e.g., VOCs) will be collected first and will be transferred directly from the ground to the appropriate sample container. Samples for volatile compound analyses will not be homogenized. Samples collected for non-volatile analyses (e.g., SVOCs, pesticides, metals, and TRPH) will be collected and transferred to an inert mixing bowl and homogenized prior to being placed in the appropriate sample container.

3.7.2 Sampling for Chemical Analysis

In general, all environmental samples will be collected in accordance with WESTON Standard Operating Procedures (SOPs) and with U.S. Army Corps of Engineers (USACE) Omaha District Rapid Response Contract Management Procedures, USACE protocols, EPA, and NYSDEC standards. For confirmation samples, since the excavations are not expected to extend greater than 6-inches below ground surface, sampling personnel will be able to stand in the excavation in order to collect the samples to avoid cross contamination. All confirmation samples will be placed in appropriate sample containers (refer to Table 3-3) for shipment to a certified off-site laboratory. The laboratory SOPs for each analytical method proposed are on file in the Manchester, New Hampshire WESTON office and will be available upon request.

Samples will be collected from each marked excavation square at least two (2) days in advance of disposal activities for proper turnaround of lab analyses. All excavation confirmation samples will be analyzed within 24-hour turn around time once received at the laboratory. A decontaminated spade or disposal-sampling tool will be used to remove any slough from the sample location so that a representative sample can be collected. Once the material has been cleared, the material will be collected and placed into clean and labeled sample containers. Photographs of, or measurements to, the sample locations will be taken as necessary. Samples will be taken from the field and chilled at 4°C, if necessary, in an on-site refrigerator or placed directly into the coolers for shipment.

Table 3-3

Sample Containers, Preservation Methods, and Holding Times

Matrix	Parameter	Container	Preservation/ Solvents	Maximum Holding Times	
				Extraction	Analysis
CONFIRMATION SAMPLES					
Soil	TCL PAH	(1) 4 oz clear glass	Ice to 4°C	28 days	180 days
Soil	TAL Metals	(1) 8 oz clear glass	Ice to 4°C	Digest and analyze within 6 months	
Soil	Metals (Pb, As, Zn)	(1) 500-mL clear glass	Ice to 4°C	Digest and analyze within 6 months	
WASTE CHARACTERIZATION SAMPLES					
Soil	TCLP Metals	(1) 8 oz clear glass jar	Ice to 4°C	28 days	180 days
Soil	Total VOC	Two 30-mL glass vials with septum top	Methanol – 10 grams soil to 25 ml methanol; ice to 4°C	---	14 days
Soil	Total SVOC	(1) 8 oz clear glass	Ice to 4°C	---	180 days
Soil	PCB	(1) 4 oz clear glass	Ice to 4°C	14 days	40 days
Soil	Pesticides	(1) 4 oz clear glass	Ice to 4°C	14 days	40 days
BACKFILL CONFIRMATION SAMPLES					
Soil	TAL Metals	(1) 8 oz clear glass jar	Ice to 4°C	28 days	180 days
Soil	Explosives	(1) 4 oz clear glass	Ice to 4°C	14 days	40 days
Soil	VOC	(2) 40 mL VOA vials w/ methanol & Teflon lid	Ice to 4°C	---	14 days
Soil	SVOC	(1) 4 oz clear glass	Ice to 4°C	---	180 days
Soil	PCB	(1) 4 oz clear glass	Ice to 4°C	14 days	40 days
Soil	Pesticides	(1) 4 oz clear glass	Ice to 4°C	14 days	40 days

Table 3-3

Sample Containers, Preservation Methods, and Holding Times (continued)

Matrix	Parameter	Container	Preservation/ Solvents	Maximum Holding Times Extraction	Maximum Holding Times Analysis
MONITORING WELL SAMPLES					
Water	TAL Metals	(1) 1 liter poly bottle	HNO3 to pH<2	---	6 days
Water	Explosives	(2) 1 liter amber glass	Ice to 4°C	7 days	40 days
Water	VOC	(3) 40 mL VOA vials	HCl to pH<2 Ice to 4°C	---	14 days
Water	SVOC	(2) 1 liter amber glass	Ice to 4°C	---	180 days
Water	PCB	(2) 1 liter amber glass	Ice to 4°C	7 days	40 days
Water	Pesticides	(2) 1 liter amber glass	Ice to 4°C	7 days	40 days
Water	Herbicides	TBD	Ice to 4°C	TBD	TBD
Water	TRPH	(2) 1 liter amber glass	HCl to pH<2 Ice to 4°C	---	28 days
BACKGROUND PERIMETER					
Soil	TCL PAH	(1) 4 oz clear glass	Ice to 4°C	28 days	180 days
Soil	TAL Metals	(1) 8 oz clear glass	Ice to 4°C	Digest and analyze within six (6) months	

* mL = milliliter
* oz = ounce

3.7.3 Sample Containers and Preservation Techniques

Specific sample containers and preservations will be performed according to Appendix I of USACE Guidance Document EM-200-1-3 and analytical method requirements. Table 3-3 details the required sample containers and preservation techniques for all analyses to be performed during this project.

3.7.4 Decontamination Procedures

Equipment to be used during this sampling event should be disposable. Any non-disposable equipment (e.g., stainless steel bowls) will be decontaminated between sampling locations using the following procedures:

- Alconox and potable water scrub
- Thorough potable water rinse
- Deionized water rinse
- 10% nitric acid rinse
- Deionized water rinse
- Acetone (pesticide grade) rinse
- Total air dry
- Deionized water rinse

Disposable sampling equipment will be double-bagged and disposed as dry industrial waste. Decontamination fluids containing nitric acid will be neutralized with baking soda prior to disposal.

SECTION 4

DATA QUALITY OBJECTIVES

4. DATA QUALITY OBJECTIVES

The overall QA objective for this project is to develop and implement procedures for field sampling, COC, laboratory analysis, and reporting that will provide accurate defensible results. Specific procedures for sampling, COC, laboratory analysis, reporting data, internal QC, and corrective actions are described in this CSAP. The Data Quality Objectives (DQOs) for this project are defined by the project action limits as summarized in Table 3-1.

SECTION 5

QUALITY CONTROL PROCEDURES

5. QUALITY CONTROL PROCEDURES

A QC program is a systematic process that controls the validity of analytical results by measuring the accuracy and precision of each method and matrix, developing expected control limits, using these limits to detect errors or out-of-control events, and requiring corrective action techniques to prevent or minimize the recurrence of these events. Details for QC procedures can be found in the following Subsections. Quality control samples will be collected and will include field samples, field duplicates, MS/MSD, equipment and trip blanks (as necessary).

5.1 SAMPLING QUALITY CONTROL

5.1.1 Trip Blank

The trip blank is an artificial sample designed to monitor volatile artifacts that may be introduced into the sample during sample transportation. Reagent water is generally used as the trip blank matrix. The trip blank is treated as a field sample and is carried through the analytical scheme. At a minimum, one (1) trip blank should accompany every cooler containing field samples for volatile organic analysis. However, one (1) trip blank will accompany every cooler shipped offsite.

5.1.2 Equipment/Rinsate Blank

The equipment blank is an artificial sample designed to monitor artifacts that may be introduced into the sample during sample collection. Reagent water is generally used as the equipment blank matrix and the equipment blank can be analyzed for all required parameters. The equipment blank is treated as field sample and is carried through the analytical scheme.

Equipment blanks will be collected from the stainless steel bowls that may be used to collect confirmation samples and background perimeter samples. No equipment blanks will be collected for the waste characterization sampling or groundwater sampling.

One (1) equipment blank will be collected during each day of sampling activities.

5.1.3 Bottle Blank

No bottle blanks will be collected for this SOW.

5.1.4 Cooler Temperature Blank

The cooler temperature blank is similar to a trip blank except that it is only used to determine whether the appropriate temperature has been maintained. A temperature blank will be included in each cooler being shipped to the laboratory.

5.1.5 Field Duplicates

A duplicate sample is a sample taken under the exact same conditions (same sampling equipment, location, time) as another sample. One (1) duplicate will be taken for every ten (10) samples for a specific parameter, matrix, sampling procedure, and sampling team.

5.1.6 Matrix Spike/Matrix Spike Duplicates

Quality Control samples collected will include MS/MSDs. One (1) MS/MSD sample will be collected for every 20 field samples.

5.1.7 Quality Assurance Samples

No quality assurance samples will be collected on behalf of the USACE.

5.1.8 Data Verification and Validation Requirements

Method performance relative to accepted laboratory performance will be determined by evaluation of verification samples sent to the off-site laboratory.

- Verification results will be reported with associated field screening results.
- Confirmation results will be evaluated in one or more of the following ways:
  - Relative to the action level. For example, if both results are below the action level, confirmation is positive. If both results are above the action level, confirmation is positive. If both results are at the action level (within a determined acceptance window), confirmation is positive.

- Relative to the laboratory results. For the COCs (primarily VOCs), calculate the percent difference (%D) between the laboratory result and the field screening result.

$$\%D = \frac{(Result_{lab} - Result_{field})}{Result_{lab}} \times 100$$

For VOC analyses, the %D between on-site VOC laboratory screening and off-site laboratory VOC results must be less than or equal to %50.

Data from this investigation will be evaluated by hand in accordance with the following guidance documents:

- USEPA National Functional Guidelines for Organic Data Review.
- USEPA National Functional Guidelines for Inorganic Data Review.
- HW-6, Contract Laboratory Program (CLP) Organics Data Review and Preliminary Review,
  Revision 12 March 2001.
- HW-22, Validating Semivolatile Organic Compounds by SW-846 Method 8270, Revision 2, June 2001.
- H-2, Evaluation of Metals Data for CLP Program, Revision 11 January 1992.
- USACE. *Shell for Analytical Chemistry Requirements*, Version 1.0,
  2 November 1998.
- NYSDEC's Analytical Services Protocol – Category B Submittals.

The data package requested from the laboratory for the analytical determination in soil will contain all data generated during the analysis, including mass spectral identification charts, mass spectral tuning data, spike recoveries, laboratory duplicate results, method blank results, instrument calibration, and holding time documentation. All sample data and laboratory quality control results will be requested for soil analyses completed for asbestos and for analyses requested for VOCs via Method 8260B.

Commensurate levels of data validation will be performed on the results and the data packages reported for the proposed analyses. A *qualitative* review will be completed for the asbestos data. A qualitative review includes an analysis of data completeness, custody documentation, holding times, laboratory and field QC (as needed), instrument calibrations, and laboratory control sample results, laboratory duplicates, and instrument run logs.

Other analyses will be subjected to *full* data validation. This includes both *qualitative* and *quantitative* review of the items listed in the paragraph above, and an evaluation of laboratory results with instrument raw data. In order to facilitate this type of evaluation, the laboratory will submit sample analytical results, all QC results, and raw data.

No formal data validation report will be prepared, however, the final report will include a *Microsoft® Excel* spreadsheet with qualified analytical results. Qualifiers to be used are presented in the table below.

Data Qualifier	Definition
J	Laboratory qualifier. Estimated. Detected below the quantitation limit (QL).
E	Laboratory qualifier. Estimated due to significant matrix interferences.
B	Laboratory qualifier. Analyte detected at > QL in the Method Blank and the concentrations in associated samples are <10x the blank concentration.
U	Laboratory qualifier. Not detected.
J^N	Validation qualifier. Estimated due to QC criteria not met according to USEPA-New England (NE) Region I Data Validation Functional Guidelines. N is a chronological superscript.
R^N	Reject data due to QC criteria not met according to USEPA-NE Region I Data Validation Functional Guidelines. N is a chronological superscript.

5.2 ANALTICAL QUALITY CONTROL

5.2.1 Fixed Laboratory Quality Control

Fixed laboratory QC is identified for each analytical parameter in the Laboratory SOPs are on file in the Manchester, New Hampshire WESTON office (available upon request) and the DQOs are summarized in Table 3-1.

5.2.2 Field Analytical Quality Control

No field measurements are anticipated for site sampling activities. All analyses will be performed at an off-site laboratory.

5.2.3 Corrective Action Procedures

5.2.3.1 Field Corrective Action

Field personnel have initial responsibility for monitoring the quality of field measurements and observations. The Site Manager will notify the Site QC Manager and QC Management of any problems that occur that may jeopardize the integrity of the project or cause any project objective to no be met. An appropriate corrective action will be developed and implemented. The Project Engineer will document the problem, including the cause, the corrective action, and results in the field logbook. Copies of the logbook will be provided to the Project Manager, Site QC Officer, and QC Management.

5.2.3.2 Laboratory Corrective Action

The analyst has initial responsibility to monitor the quality of an analytical system. The analyst will verify that all laboratory-specific QC procedures are followed and results of an analysis of QC samples are within acceptance criteria. This requires that the analyst assess the corrections of all of the following items as appropriate:

- Sample preparation procedures
- Initial calibration
- Calibration verification
- Method blank result
- Laboratory control standard
- Duplicate analysis
- Fortified sample result
- MS/MSD and surrogate recoveries

If the assessment reveals that any of the laboratory-specific QC acceptance criteria are not met, the analysts must immediately assess the analytical system to correct the problem. The analyst will notify the appropriate supervisor and laboratory QA coordinator of the problem and, if possible, identify potential causes and corrective action.

The nature of the correction action depends on the nature of the problem. For example, if continuing calibration verification is determined to be "out of control," the corrective action may require recalibration of the analytical system and reanalysis of all samples since the last acceptable continuing calibration standard.

When the appropriate corrective action measures have been defined and the analytical system is determined to be "in control", the analyst documents the problem and the corrective action. Data generated concurrently with an "out of control" system will be evaluated for usability in light of the nature of the deficiency. If the deficiency does not impair the usability of the results, data will be reported and the deficiency noted in the case narrative. Where sample results are impaired, the laboratory QA coordinator is notified and appropriate corrective action (e.g., reanalysis, etc) is taken. If reanalysis cannot be conducted, re-sampling may be required. Other laboratory corrective actions are discussed in the laboratory SOPs included in Appendix A.

SECTION 6

SAMPLE CHAIN-OF-CUSTODY/DOCUMENTATION

6. SAMPLE CHAIN-OF-CUSTODY/DOCUMENTATION

6.1 FIELD LOGBOOK

The field logbook should enable the sampling activity to be reconstructed without relying on the collector's memory. Logbooks will be kept in the field member's possession or in a weather-proof location during fieldwork. The following items should be recorded in the field logbook:

- Name and title of author, date and time of entry.
- Site location and address.
- Names and responsibilities of field crew members.
- Names and titles of any site visitors.
- Sample collection method.
- Number and volume of sample(s) taken.
- Information concerning sampling changes, scheduling modifications, and change orders.
- Details of sampling location.
- Date and time of collection.
- Field observations.
- Any field measurements made.
- Sample identification number(s).
- Information from containers, labels of reagents used, deionized water used for blanks, etc.
- Sample distribution and transportation.
- Sample documentation (e.g., COC record numbers).
- Decontamination procedures.

Additionally, information on the following parameters will be collected for each confirmation soil sample:

- Soil type
- Color
- Moisture content
- Texture
- Grain size and shape
- Consistency
- Visible evidence of staining or discoloration, and
- Any other observations (e.g., odors)

6.2 PHOTOGRAPHS

Digital photographs may be taken at the job site as necessary upon approval by USACE and NYSDEC. Photographs will be stored on disk and furnished with the Final Report or to USACE upon request.

6.3 SAMPLE NUMBERING SYSTEM

Each sample collected will be given a unique sample designation. The sample designation will use the scheme outlined in USACE EM 200-1-3. Samples collected during this project will be uniquely identified using the following scheme:

SEAD-AAAA-BB-CC-DDD-EE

The Project Code (SEAD) will remain constant for each sample ID.

The codes A through E are defined as follows:

AA: Work Area

0024: SEAD 24

5054: SEADs 50/54

0067: SEAD 67

For Confirmation Samples:

BB: **Location type**

FX: Floor of Excavation

WX: Wall of Excavation

DD: Drainage Ditch

WP: Waste pile/Berm Structure

For Other Samples:

BB: Location type

SP: Stockpile

BF: Backfill

BK: Background

PM: Personal Air Monitoring

WW: Wastewater

EB: Equipment Blank

CD: Construction Debris

CC: **Type of Sample**

SD: Sediment

SS: Soil

WA: Water

DDD: **Sample Number** (001, 002, 003)

EE: **Subsample Number**

FS: Field Sample

DP: Field Duplicate

MS: MS/MSD

EB: Equipment Blank

TB: Trip Blank

Examples:

SEAD 50/54-FX-SS-002-FS

SEADs 50/54, confirmation excavation floor soil sample, Number 1, Field Sample.

Additional sample type/location codes may be added at the direction of OSR. The system for identifying and tracking the samples, associated field data, and the method of relating the data to the proper samples will be recorded in permanently bound and weather-proof notebooks and also in computer spreadsheet format maintained by the field team. Team members will record all information related to sampling procedures, time, field and weather conditions, unusual events, sample descriptions (including sample depth), Global Positioning System reading, instrument readings, and COC data. Field documentation will be done in indelible ink.

6.4 SAMPLE DOCUMENTATION

6.4.1 Sample Labels and/or Tags

Sample labels will be consistent with the requirements of EM 200-1-3. Sample tags will not be used. Field personnel will be responsible for identifying, labeling, providing proper preservation, and packaging samples to preclude breakage during shipment.

Every sample will be labeled and labels will include:

- Place of collection (site name)
- Unique sample number
- Sampling date and time
- Initials of sampling technician
- Analysis required
- Method of sample preservation/conditioning
- Designation between grab and composite samples

6.4.2 Sample Field Sheets and/or Logbook

The system for identifying and tracking the samples and associated field data will be recorded in a permanently bound and weatherproof notebook maintained by the field team. Team members will record all information related to sampling procedures as specified in Subsection 6.1. Field documentation will be completed in indelible ink.

6.4.3 Chain-of-Custody Records

Chain-of-custody records provide documentation of the handling of each sample from the time of its collection to its destruction. Weston Solutions, Inc. will initiate sample custody upon collection of samples. Chain-of-custody forms will be completed and placed in resealable waterproof plastic bags and taped to the inside lid of the cooler. The cooler will be sealed with chain-of-custody seals (a minimum of two signed custody seals on the outside with one on the front and one on the rear of the cooler covered with clear tape). Chain-of-custody forms will be used for recording pertinent information about the types and numbers of samples collected and shipped for analysis. Sample identification numbers will be included on the COC form to ensure that no error in identification is made during shipment. Chain-of-custody procedures shall be carried out in accordance with EPA and USACE Sample Handling Protocol (Appendix F of EM 200-1-3).

6.5 DOCUMENTATION PROCEDURES

Prior to sample collection, labels will be affixed to sample containers using transparent tape. Indelible waterproof ink will be used for all logbook, COC, and sample label entries. Documentation will conform to Appendix F of EM 200-1-3.

6.6 CORRECTIONS TO DOCUMENTATION

All original data recorded in field logbooks, sample labels, COC records, and receipt for sample forms will be written in waterproof ink. If an error is made, a single line will be drawn through the entry and the entry initialed and dated. The erroneous information should not be obliterated. Any errors found in documentation should be corrected by the person who made the entry or by a designated responsible person.

SECTION 7

SAMPLE PACKAGING AND SHIPMENT

7. SAMPLE PACKAGING AND SHIPMENT

Samples will be placed in correctly labeled containers compatible with the intended analysis and properly preserved prior to shipment to the laboratory. Samples will be shipped via overnight delivery to the receiving laboratory.

Each sealed container will be placed in a leak proof plastic bag. As much air as possible will be removed from the bags. Strong thermal ice chests will be filled approximately 3-inches with inert material, such as vermiculite. The Material Safety Data Sheet for vermiculite will be reviewed to verify it does not contain asbestos. Bubble wrap may be used as an alternate packing material. The bagged sample will be placed upright in the ice chests and vermiculite will be added to nearly fill the ice chest. Bagged ice/gel packs or equivalent will be placed on top of the vermiculite to ensure samples are cooled to at least 4°C.

A COC form will be placed in a waterproof plastic bag and taped to the inside lid of the cooler. Ice chests will be taped shut with strapping tape, wrapped around the cooler in at least two places. Ice chests will be sealed with numbered and signed chain-of-custody seals. This packaging and shipment will be in accordance with EPA and USACE protocols (EM 200-1-3). Prior to shipment, a QC check will be performed by the Site QC Engineer to ensure samples have been properly identified and packaged, and that appropriate documentation (COC) is included with the shipment.

Container sizes and types, preservatives, and holding times required for each media are summarized in Table 3-3. All sample containers will be pre-cleaned and accompanied with a certificate of analysis, which certifies that these containers meet EPA criteria. All certificates of analyses will be kept in the site file for future reference. Containers are received in sealed cartons according to their lot numbers.

SECTION 8

REFERENCES

8. REFERENCES

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