U.S. ARMY ENGINEER DIVISION
HUNTSVILLE, ALABAMA

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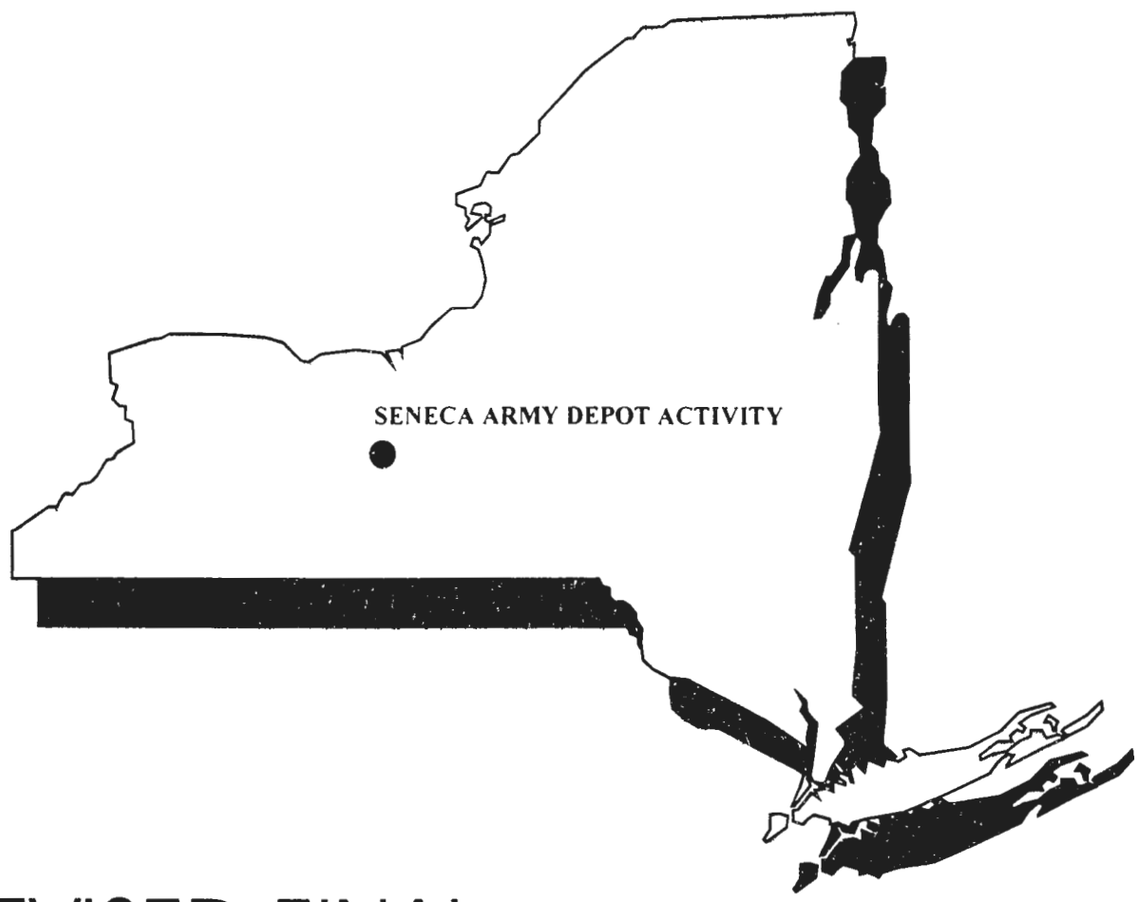

REVISED FINAL

SEAD-59 AND SEAD-71
PHASE I REMEDIAL INVESTIGATION (RI) AT THE FILL AREA WEST OF BUILDING 135 (SEAD-59) AND THE ALLEGED PAINT DISPOSAL AREA (SEAD-71)
SENECA ARMY DEPOT ACTIVITY

CONTRACT NO. DACA87-95-D-0031
DELIVERY ORDER 7

JULY 2002

FINAL
PHASE I REMEDIAL INVESTIGATION
AT SEAD-59 and SEAD-71
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared For:

Seneca Army Depot Activity
Romulus, New York

Prepared By:

Parsons Engineering Science, Inc.
30 Dan Road
Canton, Massachusetts

Contract No. DACA87-95-D-0031
Delivery Order No. 7
731741

November 2001

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LIST OF ACRONYMS

AOC	Areas of Concern
BTEX	Benzene, toluene, ethylbenzene, and xylene
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CRQL	Contract Required Quantitation Limits
EM	Electromagnetic
EM-31	Electromagnetic - 31 geophysical unit
EM-61	Electromagnetic - 61 geophysical unit
EPA	Environmental Protection Agency
ESI	Expanded Site Inspections
ft	Feet
FFA	Federal Facilities Agreement
GPR	Ground penetrating radar
IAG	Interagency Agreement
mg/kg	Milligrams per kilogram
MW	Monitoring Well
NA	Not analyzed or not available
NYSDEC	New York State Department of Environmental Conservation
OB Grounds	Open Burning Grounds
OVM	Organic Vapor Meter
PAH	Polynuclear Aromatic Hydrocarbon
Parsons ES	Parsons Engineering Science, Inc.
PCB	Polychlorinated biphenyls
PID	Photoionization detector
ppm	parts per million
PVC	Polyvinyl chloride
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
SB	Soil boring
SEAD	Seneca Army Depot (old name)
SEDA	Seneca Army Depot Activity
SS	Soil sample
SVO	Semivolatile Organic Compounds
SWMU	Solid Waste Management Unit
TAGM	Technical and Administrative Guidance Memorandum
TAL	Target analyte list
TCL	Target compound list
TPH	Total Petroleum Hydrocarbons
TP	Test Pit

LIST OF ACRONYMS (con't)

µg/kg	Micrograms per kilogram
ug/kg	Micrograms per kilogram
UCL	Upper Confidence Level
USACOE	United States Army Corps of Engineers
USCS	Unified Soil Classification System
VOA	Volatile Organic Analysis
VOC	Volatile Organic Compound

1.0 INTRODUCTION

1.1 PURPOSE OF REPORT

The purpose of this Phase I Remedial Investigation (RI) Report is to present the findings of the initial phase of field investigation conducted for the Remedial Investigation/Feasibility Study (RI/FS) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) at SEAD-59 and SEAD-71 at the Seneca Army Depot Activity (SEDA) in Romulus, New York. The investigation conducted was a portion of the field work outlined in the Project Scoping Plan for Performing a CERCLA Remedial Investigation/Feasibility Study (RI/FS) at the Fill Area West of Building 135 (SEAD-59), and the Alleged Paint Disposal Area (SEAD-71) (Parsons ES, February 1997). This plan was based on the results and recommendations for SEAD-59 presented in the Expanded Site Inspection (ESI) Report for Eight Moderately Low Priority SWMUs (Parsons ES, April 1995) and for SEAD-71 presented in the Expanded Site Inspection (ESI) Report for Seven Low Priority SWMUs (Parsons ES, April 1995). Only the soils investigation portion of the Project Scoping Plan was conducted during Phase I of the RI. This limited investigation was performed in an effort to identify and characterize the extent of impacted soils at each site.

This work was performed as part of the United States Army Corps of Engineers (USACOE) remedial response activities under CERCLA at the SEDA. It follows the requirements of the New York State Department of Environmental Conservation (NYSDEC), the U.S. Environmental Protection Agency, Region II (EPA), and the Interagency Agreement (IAG).

1.2 REPORT ORGANIZATION

The remaining sections of this report are organized to describe site background, the field investigation performed during the Phase I RI, and the results of that investigation. The remainder of this section describes the background of SEAD-59 and SEAD-71 and the site hydrology and hydrogeology. Section 2.0 describes the rationale for and components of the field program of the Phase I RI. Sections 3.0 and 4.0 present the results of the field investigation at SEAD-59 and SEAD-71. Section 5.0 presents the conclusions and recommendations. Appendices A through D provide field logs and data in support of the information presented in this report.

1.3 BACKGROUND

Seneca Army Depot (SEDA) was an active military facility that has occupied approximately 10,600 acres of upstate New York property since 1941. SEDA is located approximately 40 miles south of Lake Ontario between Cayuga Lake to the east and Seneca Lake to the west. The area immediately surrounding SEDA is predominantly sparsely populated farmland with a mean sea level of approximately 600 feet. Population centers in the immediate vicinity of SEDA consist of the Township of Romulus immediately adjacent to the SEDA eastern perimeter and the Township of Varick immediately adjacent to the SEDA western perimeter.

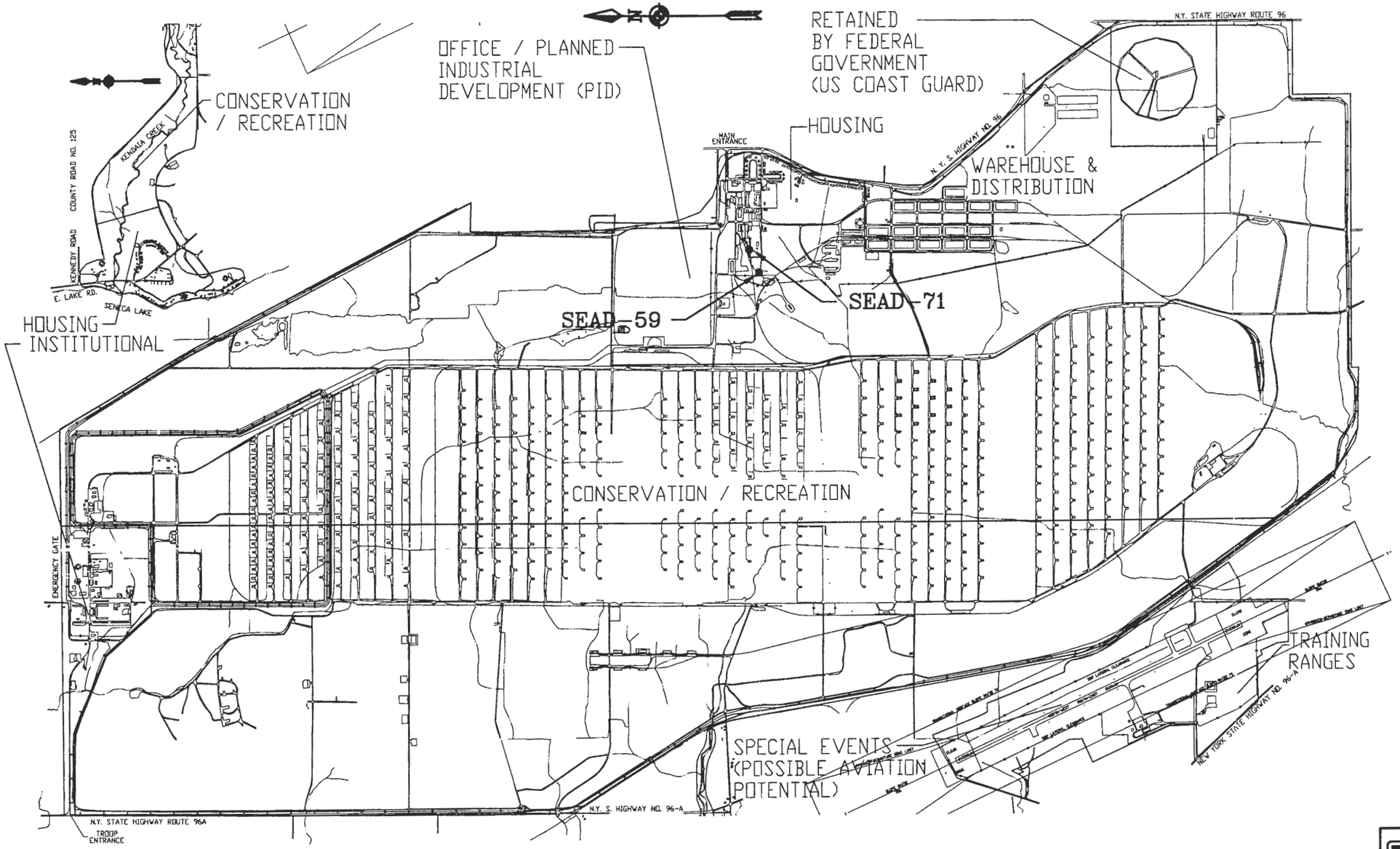
Landuse in the region surrounding SEDA is predominantly agricultural with some minor forestry and public recreational components. Agricultural landuse consists of active use, including cropland and cropland pasture, and inactive use including land devoted to forest regeneration and land presently being developed. Public and semi-public land use includes Sampson State Park, Willard Psychiatric Center, and the Central School in the Town of Romulus.

The future use of the land at Seneca Army Depot Activity is defined in the Reuse Plan and Implementation Strategy for the Seneca Army Depot (December 1996). Chapter 21 of this report describes the preferred land use for the entire Depot and identifies nine land uses. The portion of the Depot that is occupied by SEAD-59 and SEAD-71 is proposed as Planned Office/Industrial Development as shown in Figure 1-1.

SEAD-59

SEAD-59 is a former disposal area at SEDA in Romulus, NY and is referred to as the Fill Area West of Building 135. The site is shown in Figure 1-2. SEAD-59 is located in the eastern portion of SEDA where a variety of industrial operations occurred. The area was used as a staging area for heavy equipment and construction materials. The site encompasses an area between Building 128 and Building 311 which is bordered and crossed by railroad tracks and an unnamed dirt road.

An ESI was performed at SEAD-59 in 1994 to establish an understanding of the conditions at the site. This investigation included sampling of subsurface soils and groundwater to identify hazardous constituents or wastes that may have been released to the environment. The sampling data were compared to state and federal guidelines and standards to determine whether this area of concern (AOC) posed a potential threat or risk to human health and the environment. The draft ESI report (Parsons ES, April 1995) indicated that impacts to soils and groundwater exceeding state and federal standards and guidelines had occurred at SEAD-59. As part of the ESI report, a CERCLA RI/FS was recommended for SEAD-59. This report presents Phase I of the RI.



1400 0 1400 2800

1" = 2800'

PARSONS

PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY
PHASE I REMEDIAL INVESTIGATION
SEAD-59 AND SEAD 71

DEPT. ENVIRONMENTAL ENGINEERING

Dwg. No. 731741-01001

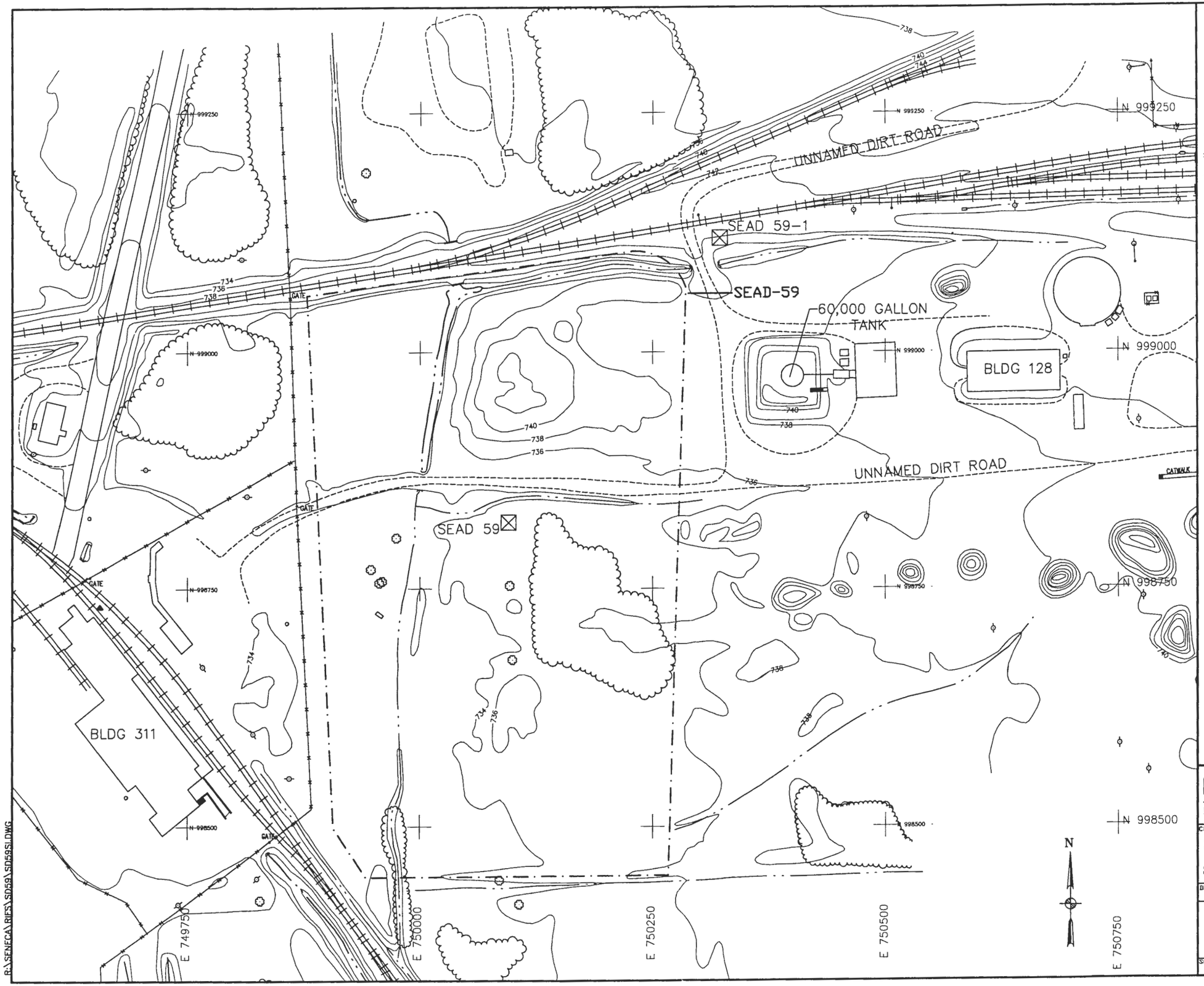
FIGURE 1-1
FINAL LAND USE AND LOCATION MAP

SCALE 1" = 2800'

DATE JULY 1998

REV A

R:\SENECA\RIFS\SD71\LOC59-71.DWG



LEGEND

- MINOR WATERWAY
- MAJOR WATERWAY
- FENCE
- UNPAVED ROAD
- BRUSH LINE
- LANDFILL EXTENTS
- RAILROAD
- 760 — GROUND SURFACE ELEVATION CONTOUR
- ROAD SIGN
- DECIDOUS TREE
- GUIDE POST
- FIRE HYDRANT
- MANHOLE
- CORDINATE GRID (250' GRID)
- POLE
- UTILITY BOX
- SURVEY MONUMENT
- OVERHEAD UTILITY POLE
- MAILBOX/RR SIGNAL
- APPROXIMATE EXTENT OF AOC

50 0 50 100
(Feet)

PARSONS
PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
PHASE I REMEDIAL INVESTIGATION
SEAD-59 FILL AREA WEST OF BLDG. 135

DEPT. ENVIRONMENTAL ENGINEERING
Dwg. No. 731741-01001

FIGURE 1-2
SEAD-59
SITE PLAN

SCALE 1" = 100'
DATE JULY 1998
REV A

R:\SENECA\RIFS\SD59\SD59SI.DWG

SEAD-71

SEAD-71 is a rumored paint and/or solvent disposal area located adjacent to SEAD-59 within the same industrial area. It is designated as the Alleged Paint Disposal Area. The site is shown in Figure 1-3.

SEAD-71 is located in the east-central portion of SEDA approximately 200 feet west of 4th Avenue near Buildings 127 and 114. The site is approximately 350 feet by 100 feet and bounded on the north and south by railroad tracks serving Buildings 114 and 127. A chain-link fence borders the east side and part of the south side of the area.

Originally, the site was thought to be a small, square storage area adjacent to the northwest corner of Building 127. However, prior to the investigation, the area west of, and adjacent to the site was also reported to have been the location of the suspected burial pits. Therefore, the site investigated for this study was extended west approximately 150 feet to include this area as well.

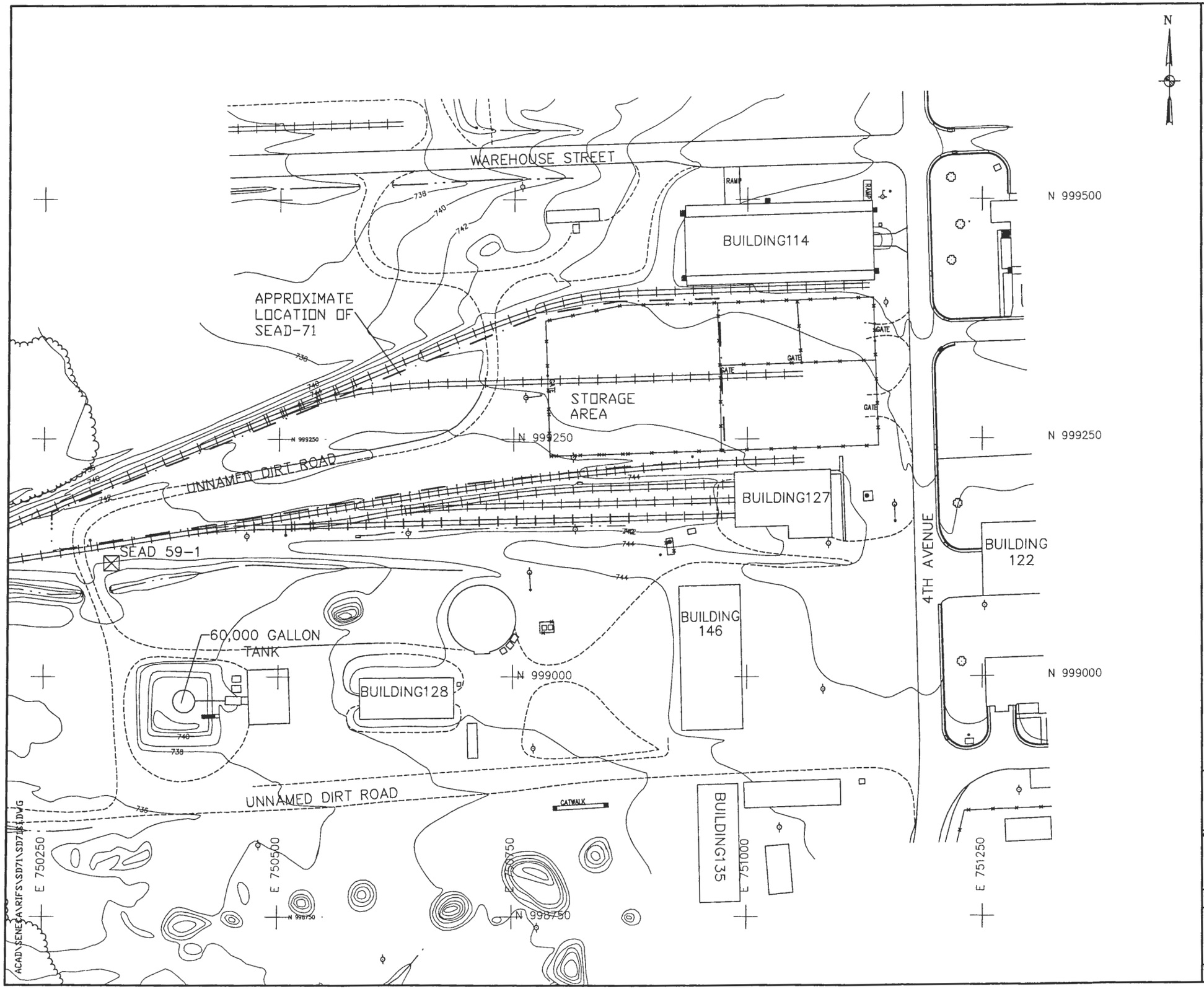
An ESI was performed at SEAD-71 in 1994 to establish an understanding of the conditions at the site. This investigation included sampling of subsurface soils and groundwater to identify hazardous constituents or wastes that may have been released to the environment. The sampling data were compared to state and federal guidelines and standards to determine whether this AOC posed a potential threat or risk to human health and the environment. The draft ESI report (Parsons ES, April 1995) indicated that impacts to soils and groundwater exceeding state and federal standards and guidelines had occurred at SEAD-71. As part of the ESI report, a CERCLA RI/FS was recommended for SEAD-71. This report presents Phase I of the RI.

1.4 SITE HYDROLOGY AND HYDROGEOLOGY

SEAD-59

SEAD-59 is comprised of two areas, one area located north of the access road to Building 311 and one area located to the south of the road. Each area is characterized by different topography with the area to south of the road being relatively flat and sloping gently to the west and the area to the north of the road containing a fill area with approximately 10 feet of relief.

Surface water flow from precipitation events is controlled by local topography. The area to the south of the access road slopes gently to the west. Surface water flow in this area is to the west and it is likely to be captured by the north-south trending drainage swale located in the western portion of the site and by the drainage ditch which parallels the south side of the access road. This ditch also drains SEAD-5, which is located adjacent to SEAD-59 and to the east.



N

LEGEND

- MINOR WATERWAY
- MAJOR WATERWAY
- FENCE
- UNPAVED ROAD
- BRUSH LINE
- LANDFILL EXTENTS
- RAILROAD
- 760 — GROUND SURFACE ELEVATION CONTOUR
- ROAD SIGN
- DECIDUOUS TREE
- GUIDE POST
- FIRE HYDRANT
- MANHOLE
- CORDINATE GRID (250' GRID)
- POLE
- UTILITY BOX
- OVERHEAD UTILITY POLE
- MAILBOX/RR SIGNAL
- APPROXIMATE EXTENT OF AOC

50 0 50 100
(feet)

PARSONS
PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
PHASE I REMEDIAL INVESTIGATION
SEAD-71 ALLEGED PAINT DISPOSAL AREA

DEPT.	Dwg. No.
ENVIRONMENTAL ENGINEERING	731741-01001

FIGURE 1-3
SEAD-71
SITE PLAN

SCALE	DATE	REV
1" = 100'	JULY 1998	A

In the area north of the access road, a hill composed of fill material has approximately 10 feet of vertical relief. To the west, the hill slopes steeply to the north-south trending drainage swale which flows north and eventually flows under the railroad tracks north of the site. To the north, the hill slopes to a sustained drainage ditch approximately two feet deep. This ditch originates east of the site near Building 128 and flows west paralleling the railroad tracks and the northern boundary of SEAD-59. At the northwestern corner of the site, the drainage swale flows north under the railroad tracks. To the east, the hill slopes downward to a graded gravel surface used for storing large equipment. Surface water from this area also drains into the northern drainage swale, flowing along the northern boundary of the site, as described above. To the south, the hill slopes to the access road which runs through the site. Surface water from this southern portion of the hill drains into the drainage ditch which parallels the access road on the north side. This drainage ditch flows west and intersects the north flowing drainage ditch in the western portion of SEAD-59.

As part of the ESI program, three monitoring wells were installed at SEAD-59 and three wells were installed at SEAD-5. SEAD-5 is located adjacent to SEAD-59 just east of the area south of the access road. Based on the data collected during the ESI, the groundwater flow direction is primarily southwest across SEAD-59.

SEAD-71

Surface water flow from precipitation events is controlled by local topography, although there is little topographic relief on the site. There are no sustained surface water bodies on-site. In the fenced storage area located in the eastern half of the site, the area is covered with asphalt, which provides an impermeable surface resulting in an increased amount of surface water runoff from the site. Based on topographic relief, surface water flow is to the southwest toward the SEDA railroad tracks (to the south), which are topographically lower than the site.

As part of the ESI program, three monitoring wells were installed at SEAD-71. Based on the data collected during the ESI, the groundwater flow direction in the till/weathered shale aquifer on the site is to the west-southwest.

2 PHASE I FIELD PROGRAM

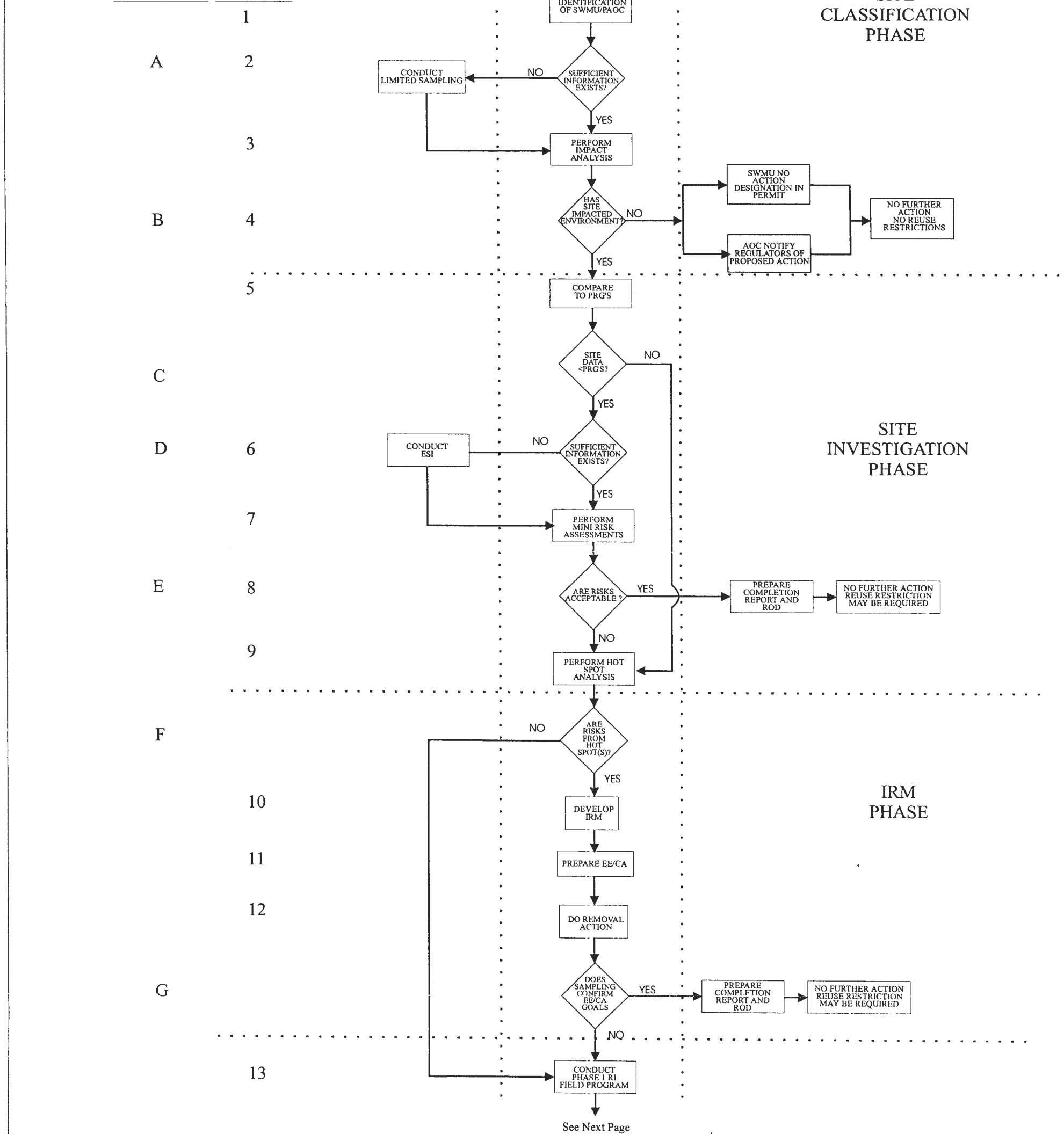
2.1 RATIONALE FOR PHASED RI APPROACH

The overall investigation and remediation decision process that has been used to develop an appropriate strategy for each site within the SEDA is depicted in **Figure 2-1**. The process is based upon the Interagency Agreement (IAG), also known as the Federal Facilities Agreement (FFA). This agreement establishes the policies and procedures between the Army, the EPA and the NYSDEC to be used during the investigation and remediation of sites at the SEDA. The process has been recently updated as a result of the Army Peer Review Process. Recommendations from the peer review process have been included in the decision process and involve adding provisions to streamline the RI/FS process to the greatest extent practicable through the implementation of removal actions and presumptive remedies, where applicable. SEAD-59 and SEAD-71 were identified as potential sites where this streamlined approach is practicable.

Following completion of the ESI, conditions at SEAD-59 and SEAD-71 were such that additional investigations were warranted. Uncertainties regarding the nature and extent of site impacts remained and an RI/FS was planned to address these uncertainties. Action No. 13 of **Figure 2-1**. "Conduct the Phase I RI Field Program" was performed.

The intent of the RI/FS process is to identify and characterize the extent of impacted soils at the SEAD-59 and SEAD-71 sites, evaluate the risks that these sites may pose and evaluate options for final resolution of site conditions. Although the overall goal of the RI/FS process has not changed, it was determined that the investigation should be implemented in phases to consider a source soil remediation. Conditions remaining after implementation of a remedial response may improve substantially and will be reflected in the follow-up analysis of the data. The initial RI phase involved conducting field tasks to define source soil conditions within the fill and disposal areas, as these areas pose the greatest potential for unacceptable risk and will be used to evaluate the potential for a remedial response. The tasks performed have been described previously in the Project Scoping Plan for SEAD-59 and SEAD-71.

During a discussion of SEAD-59 and SEAD-71 at a BCT meeting held on March 21, 2000, the NYSDEC, EPA, and the Army discussed the proposal to proceed with an EE/CA and Removal Action at both sites. Since that time, the portions of the depot have been released to private sectors for reuse under the BRAC process. As a result, increased access to all portions of the depot is now available resulting in an increased potential for exposure to any residual chemicals that are present at sites such as SEAD-59 and SEAD-71. Therefore, a time-critical removal action has been proposed in order to eliminate a potential threat to the surrounding populations.


1
A
2
CONDUCT LIMITED SAMPLING
NO
SUFFICIENT INFORMATION EXISTS?
YES
3
PERFORM IMPACT ANALYSIS
B
4
HAS SITE IMPACTED ENVIRONMENT?
NO
SWMU NO ACTION DESIGNATION IN PERMIT
AOC NOTIFY REGULATORS OF PROPOSED ACTION
NO FURTHER ACTION NO REUSE RESTRICTIONS
YES
5
COMPARE TO PRG'S
C
SITE DATA <PRG'S?
NO
YES
D
6
CONDUCT ESI
NO
SUFFICIENT INFORMATION EXISTS?
YES
7
PERFORM MINI RISK ASSESSMENTS
E
8
ARE RISKS ACCEPTABLE ?
YES
PREPARE COMPLETION REPORT AND ROD
NO FURTHER ACTION REUSE RESTRICTION MAY BE REQUIRED
NO
9
PERFORM HOT SPOT ANALYSIS
F
NO
ARE RISKS FROM HOT SPOT(S)?
YES
10
DEVELOP IRM
11
PREPARE EE/CA
12
DO REMOVAL ACTION
G
DOES SAMPLING CONFIRM EE/CA GOALS
YES
PREPARE COMPLETION REPORT AND ROD
NO FURTHER ACTION REUSE RESTRICTION MAY BE REQUIRED
NO
13
CONDUCT PHASE 1 RI FIELD PROGRAM
See Next Page
CLASSIFICATION PHASE
SITE INVESTIGATION PHASE
IRM PHASE

H

I

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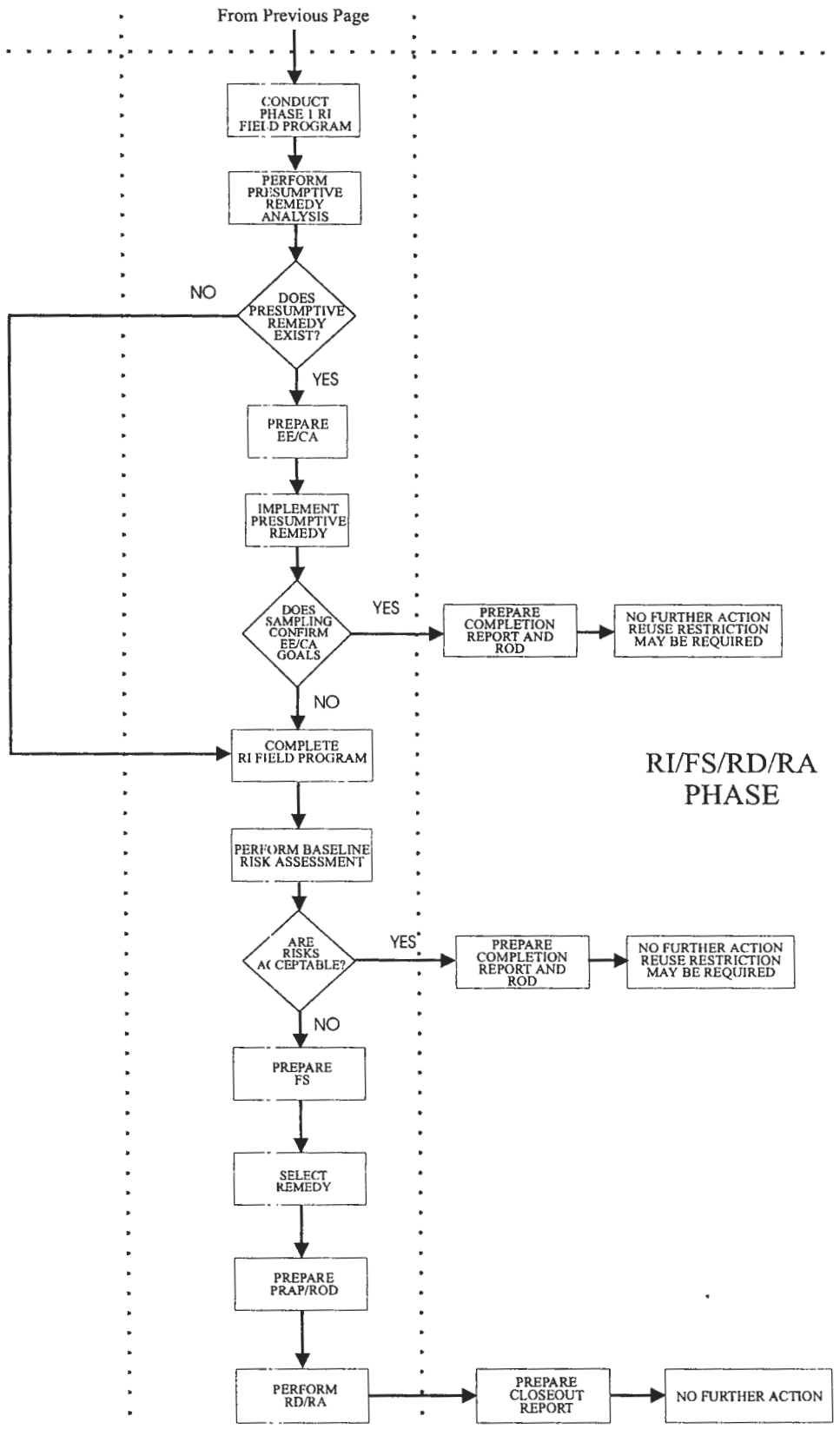


RI/FS/RD/RA PHASE

2.2 SUMMARY OF TASKS PERFORMED

The tasks that have been implemented during the Phase I RI are geophysics and soil gas surveying that delineate the extent of the fill areas, and tasks such as test pitting, soil borings and surface soil sampling that will describe the nature of the materials within the fill areas. The following sections describe, in detail, the work completed as part of the Phase I RI by Parsons ES to further characterize the environmental setting at this site.

The following field investigations were performed during the Phase I RI at SEAD-59:

- Soil Gas Survey
- Geophysical Investigations
- Test Pitting Program
- Soil Boring Investigation
- Site Survey

The following field investigations were performed during the Phase I RI at SEAD-71:

- Geophysical Investigations
- Test Pitting Program
- Surface Soil Investigation
- Site Survey

2.3 SOIL GAS SURVEY

A soil gas survey was performed at SEAD-59 from September 2, 1997 through September 21, 1997. The purpose of this survey was to determine the horizontal extent of volatile organic compounds (VOCs) in soil and to determine locations of soil borings and test pits to be completed as part of this phase of the RI. Soil gas samples were collected on a 50- by 25-foot grid within the extent of the fill area and extended areas to the east and south of the fill area. Soil gas analysis involved extracting a small representative sample of soil gas through a hollow steal probe driven several feet into the ground. The soil gas sample was then analyzed in the field with a Photovac 10S50 portable gas chromatograph. This on-site analysis provided immediate results allowing adjustments to be made to ongoing sampling operations. On-site analysis also reduced costly sample shipment to an off-site laboratory and the added expense of potential sample loss during shipment.

2.4 GEOPHYSICAL INVESTIGATIONS

As part of the geophysical investigation for the RI, Electromagnetic (EM-61) surveys and Ground Penetrating Radar (GPR) surveys were performed at SEAD-59 and in extended areas adjacent to SEAD-59. Due to the number of metallic sources on the surface at SEAD-71, EM-61

surveys were not conducted and only GPR surveys were performed in the western portion of SEAD-71.

2.4.1 ElectroMagnetic (EM-61) Survey

The EM-61 survey was conducted at SEAD-59 from September 23, 1997 through September 30, 1997. EM-61 surveys were performed during the Phase I RI in an effort to further delineate the limits of the landfill in the northern end of SEAD-59, to identify locations where metallic objects were buried, and to direct the placement of test pits and soil borings completed as part of this phase. The EM-61 survey was performed on a 10- by 20-foot grid throughout the area.

2.4.2 Ground Penetrating Radar (GPR) Surveys

Ground penetrating radar (GPR) surveys were performed at SEAD-59 subsequent to the EM-61 survey and at SEAD-71 to better characterize electromagnetic anomalies previously located with the EM-61. GPR surveys were performed on October 1, and 2, 1997 over each distinct EM-61 anomaly from several directions and along profiles spaced at 50-foot intervals at SEAD-59. At SEAD-71, GPR was performed on October 3, and 11, 1997. The GPR survey data aided in the placement of test pits and soil borings completed during this phase of the RI.

2.5 TEST PITTING PROGRAM

Test pits were performed in areas identified by geophysical techniques as fill areas. Test pits allow fill areas to be investigated while minimizing the potential for drilling through buried drums or other areas where liquid containers may be present. Nineteen test pits were excavated with a backhoe within the fill area and adjacent areas to the east and south of SEAD-59, and four test pits were excavated in SEAD-71. Test pits at SEAD-59 were excavated from October 7, 1997 through October 13, 1997 and test pits at SEAD-71 were excavated from October 14, 1997 through October 15, 1997. In general, test pits were excavated to the base of fill. Soil samples were collected where there was evidence of contaminant impacts or, if there was no evidence of impact, from mid-depth. Soil samples collected from test pits were first screened for total polynuclear aromatic hydrocarbon (PAH) compounds and total benzene, toluene, ethylbenzene, and xylene (BTEX) with immunoassay field screening kits. Samples were selected for subsequent lab analysis based upon the results of the screening data and visual observation of the geologist. In all instances, the samples representing the worst case conditions were sent to the laboratory for analysis. The remaining samples were collected and stored for proper disposal depending on the results of the field screening as described below. Upon completion, all excavated materials were returned to the test pits and covered.

2.6 SOIL INVESTIGATIONS

The objectives of the soil investigation program were to determine the nature and extent of contamination within SEAD-59 and SEAD-71. Subsurface and surface soil samples were

collected to investigate surface staining and anomalies detected during the soil gas program and the geophysical surveys. Throughout the course of the soil investigation program immunoassay field screening test kits for PAH compounds and BTEX compounds were employed. The field screening test kits were employed in an effort to guide the selection of the sample that represents worst case conditions, thereby maximizing the effect of the analytical costs, and to expedite the soil investigation program. Confirmatory lab analyses were utilized to assess the validity of the field screening test results. All soil samples collected from test pits, soil borings, or surface soil were submitted to the laboratory for chemical analysis and were analyzed for the following parameters:

- TCL Volatile organic compounds,
- TCL Semivolatile organic compounds,
- TCL Pesticides/PCBs,
- TAL Metals and cyanide,
- Total recoverable petroleum hydrocarbons, and
- Nitrate/nitrite nitrogen (indicator compound for explosives).

2.6.1 Soil Borings

The soil boring investigation was conducted at SEAD-59 from October 20, 1997 through October 24, 1997. A total of sixteen soil borings were drilled within the fill area and the adjacent areas to the east and south of SEAD-59 during the Phase I RI. All borings were advanced to split spoon refusal which represents depth to competent bedrock. Soil samples collected from the soil borings were first screened with the field screening kits and subsequently sent to the lab for analysis or discarded depending on the results of the field screen.

Prior to the initiation of the field activities at SEAD-59, two monitoring wells, MW5-2 and MW59-1, were damaged. These monitoring wells were replaced during the Phase I RI soil boring program at SEAD-59. Monitoring wells MW59-4 and MW59-6 were also installed at soil boring locations SB59-6 and SB59-12, respectively. No groundwater samples were collected during this investigation.

2.6.2 Surface Soil Sampling

The surface soil investigation at SEAD-71 was conducted between November 19, 1997 and November 21, 1997. A total of 20 surface soil samples were collected at SEAD-71. Soil samples were collected in an effort to characterize surface staining and to quantify any contaminant impacts to the surface soils in SEAD-71. Surface soil samples were collected in such a manner to ensure collection of a representative sample beneath paved or gravel covered areas.

2.7 SITE SURVEY

A site survey was conducted at SEAD-59 and SEAD-71 after completion of the Phase I RI soil investigation. The site survey consisted of field reconnaissance, ground control, and a field survey to identify the location and elevation of all soil gas survey points, test pits, soil borings, and monitoring wells (new and existing).

The site and surrounding area was photographed from the air on December 14, 1993 for the purpose of constructing a photogrammetric site plan with 2-foot contour intervals. This photogrammetric map was used as the basis for the site base map. Ground control for the photogrammetric survey was performed during the months of November 1993 through February 1994.

During the field survey all sampling locations and monitoring wells were located and surveyed. At each monitoring well location, the top of the PVC riser pipe, protective steel casing and the ground surface elevation at each well location were surveyed. Each location was referenced to the New York State Plane Coordinate System.

3 NATURE AND EXTENT OF CONTAMINATION FOR SEAD-59

This section presents the results of the field investigation conducted during the Phase I RI for SEAD-59. Chemical data collected and test pit observations made during the ESI have been incorporated into this discussion.

3.1 SOIL GAS RESULTS

A total of 241 soil gas points were sampled and analyzed during the Phase I RI investigation at SEAD-59. This sampling effort revealed one large area and four smaller areas of elevated total volatile organic compounds (VOCs), as shown in **Figure 3-1**. The larger area of elevated soil gas encompasses most of SEAD-59, extending from north of the unnamed dirt road to the west of the 60,000 gallon oil storage tank, including the mounded fill area. The highest soil gas hits were within the boundaries of the fill area. Maximum total VOC hits of greater than 10 ppmv were observed at three separate locations within the fill area. The four smaller areas of elevated soil gas containing VOCs were detected in an area southeast of the fill area, an area directly southwest of the fill area, another area south of the fill area, and an additional area northwest of the fill area.

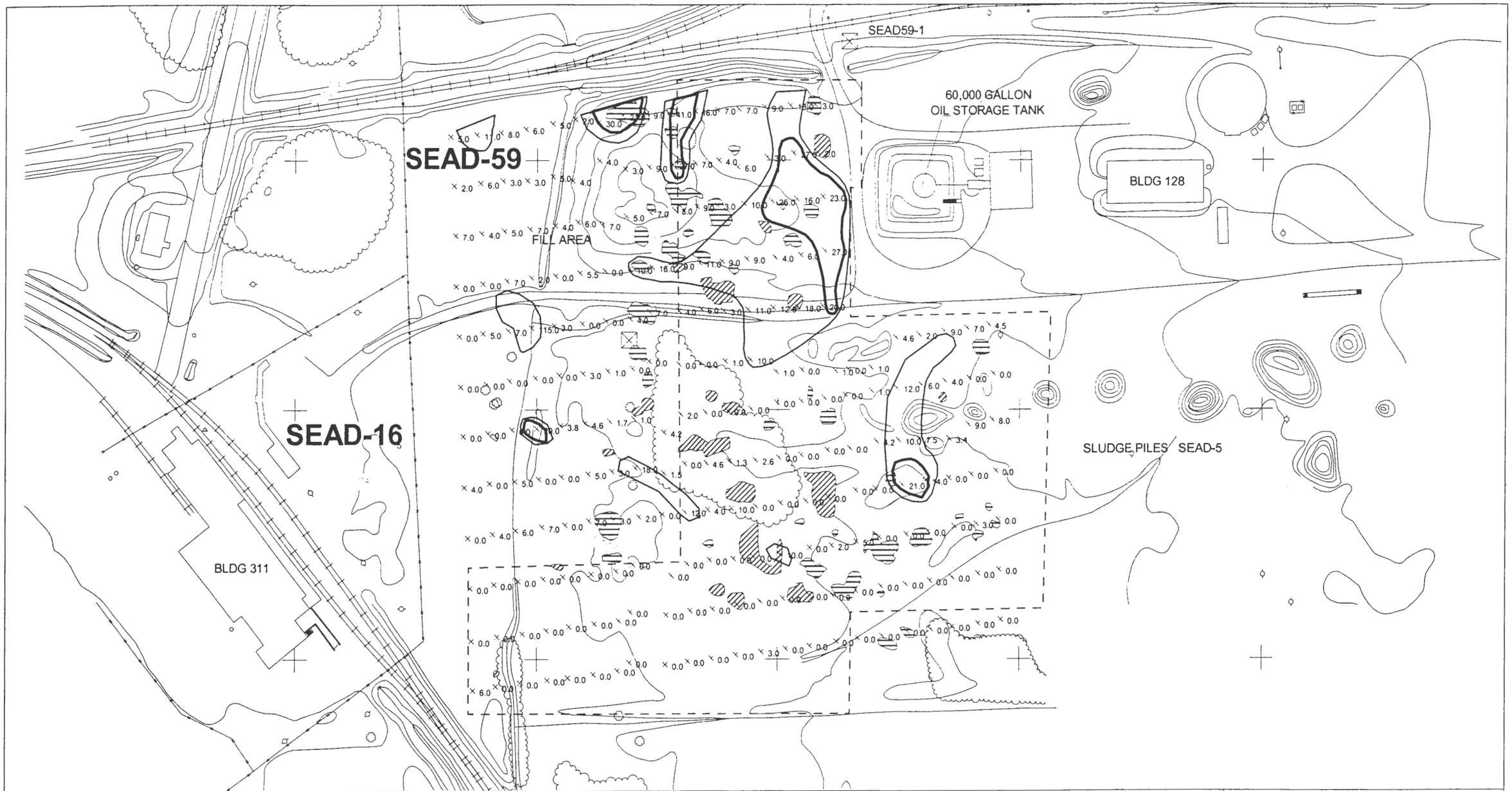
3.2 GEOPHYSICS

Electromagnetic (EM-61) surveys and GPR surveys were performed at SEAD-59 as part of the geophysical investigations for the Phase I RI. The electromagnetic survey is ideal for identifying the presence of buried metallic objects whereas the GPR survey is useful in determining the presence of large buried objects and areas where pits or ground disturbances have occurred. The combination of both techniques provides a conceptual understanding of the extent and nature of the fill activities. The data collected from the geophysical surveys also provides a rationale for test pit and soil boring explorations.

Electromagnetic Survey

An electromagnetic (EM-61) survey was performed for the Phase I RI at SEAD-59 to delineate the limits of the landfill by identifying locations where metallic objects were buried. Fill areas can generally be delineated since these areas contain metallic objects which can be easily detected using electromagnetic techniques. Areas within the fill where magnetic anomalies are prevalent also serve as a basis for performing test pit exploration, especially when these areas coincide with elevated soil gas anomalies.

Fifty-seven localized anomalies were identified as a result of the EM-61 survey completed at SEAD-59 and are shown on **Figure 3-1**. Eighteen of the 57 localized anomalies were correlated to known surface features such as the drainage culvert located under the railroad track along the northern boundary of the EM grid, and the area of surface debris located in the southwestern



Base Map Features

Suspected Source of Geophysical Anomalies

Known Surface Debris

Unknown

Extent of Geophysical Survey

Soil Gas

20 ppm or greater

10 ppm - 20 ppm

100 0 100 200 Feet

N

PARSONS

SENECA ARMY DEPOT ACTIVITY

FIGURE 3-1
SENECA ARMY DEPOT ACTIVITY
SEAD-59 Phase I Remediation Investigation
Results of Soil Gas Survey and Geophysical Investigation

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portion of the EM grid. The sources of the remaining 39 localized anomalies could not be attributed to surface features and are due to unknown buried sources.

GPR Survey

Ground penetrating radar (GPR) data were acquired for the Phase I RI at SEAD-59 over each distinct EM-61 anomaly to provide better characterization of the suspected metallic sources. Test pit locations were selected based on GPR data indicating the strongest presence of disposal pits or debris.

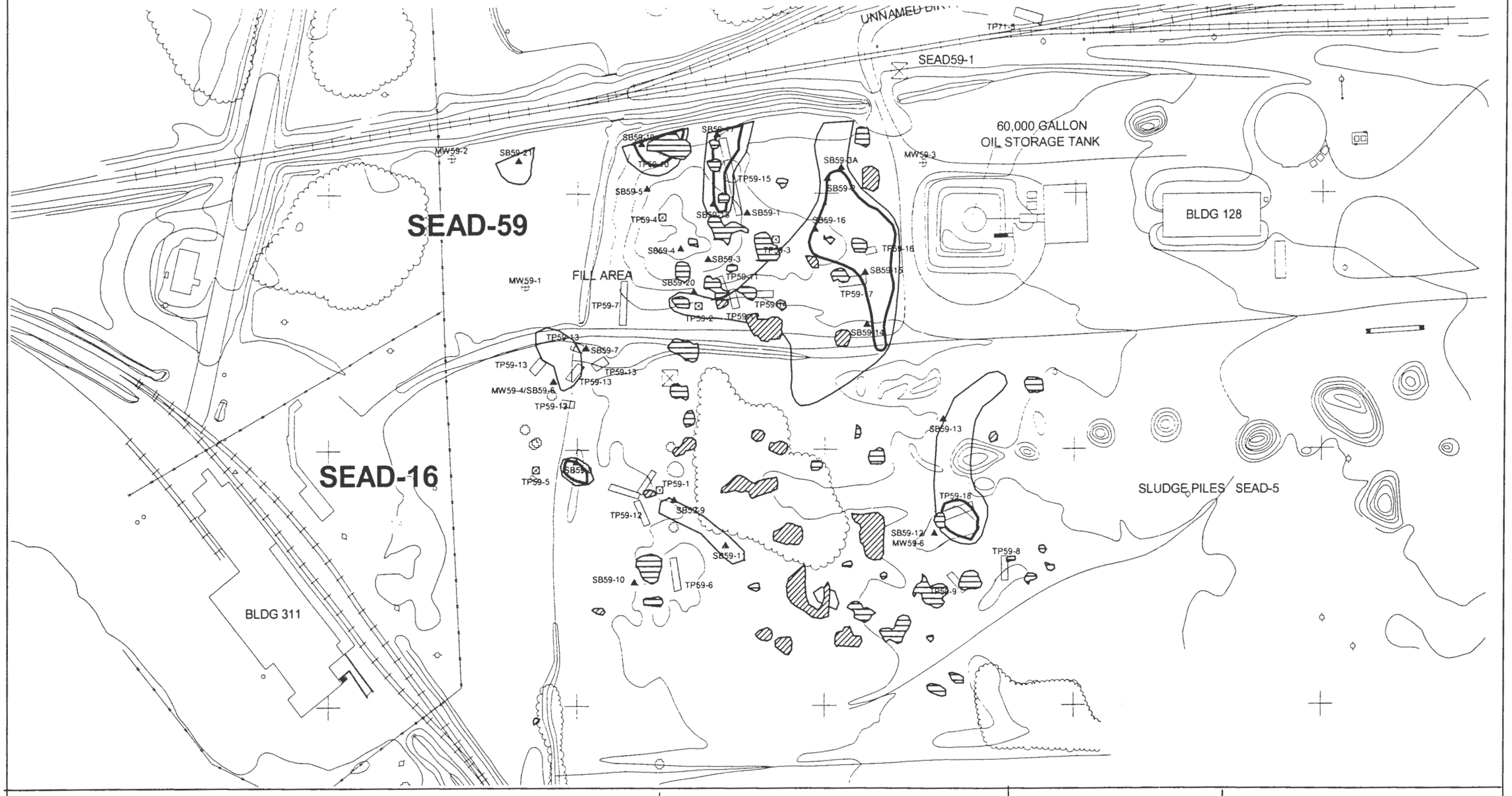
3.3 TEST PITTING PROGRAM

Test pits were excavated during both the ESI and Phase I RI in areas identified by geophysics and soil gas as anomalies. Test pit excavations were performed to investigate the nature of the anomaly and collect chemical data to identify the presence of constituents of concern. The excavated material from all the test pits during the Phase I RI was continuously screened for organic vapors with a Thermo Environmental Organic Vapor Meter (OVM) 580 PID. With the exception of the OVM readings cited below, no other readings above background levels (0 ppm of organic vapors) were observed during the excavations.

Five test pits were excavated during the ESI and nineteen test pits were excavated during the Phase I RI at SEAD-59. Their locations are shown on **Figure 3-2**. Test pit logs are included in Appendix A. Test pit locations were selected based on the results of the EM-61, GPR and soil gas anomalies located throughout the site. Geophysical anomalies that coincided with the presence of soil gas anomalies were considered to represent the greatest potential for contamination.

Test pits (TP59-2, TP59-3, TP59-4, TP59-7, TP59-10, TP59-11, TP59-14, TP59-15, TP59-16 and TP59-17) were excavated within the fill area during the ESI and Phase I RI. Debris consisting of concrete, asphalt, metal and wood were found in this area. A layer of petroleum hydrocarbon stained silt (having a petroleum odor) was observed in the 1.4 to 1.8 feet depth interval of test pit TP59-4. A maximum reading of 132 ppmv of organic vapors was recorded from this depth interval with a hand held Organic vapor meter (OVM). Soil sample TP59-4-1 was collected from this depth interval to confirm the presence of contamination.

Three 55-gallon drums were found at approximately 3 feet below grade at the TP59-3 location. One drum had been buried in an upright position and the two others were found in a horizontal position. The excavation was halted when these drums were unearthed, therefore, the existence of additional drums at greater depths is unknown. Soils from the spaces between the drums were collected and identified as soil sample TP59-3. One end of one of the horizontally positioned drums was separated from the body of the drum, revealing a white, flexible, plastic-like substance. Some areas of this white substance showed a dark-yellow staining. A small amount



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PARSONS

SENECA ARMY DEPOT ACTIVITY

FIGURE 3-2
SENECA ARMY DEPOT ACTIVITY
SEAD-59 Phase I Remediation Investigation
Sample Locations

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of this substance was collected in a VOC vial and submitted for VOC analysis as sample number TP59-3X.

Drums were also found in test pits TP59-15 and TP59-16. A crushed 15-gallon drum containing black oily stains was located six feet below ground surface in TP59-15. An OVM reading of 16 ppmv was recorded at this location. Sample TP59-15-1 was collected from the exterior of the drum. Another drum was found in TP59-16. This drum did not appear to be leaking and no OVM reading was recorded. Sample TP59-16-1 was collected from beneath this drum. Corroded drum fragments having no contents were found in TP59-10.

In the area directly southwest of the fill area, test pits TP59-13A, TP59-13B, and TP59-13C were excavated. Little debris was encountered in these pits. However, a petroleum-type odor was noted between 3.5 and 4 feet in TP59-13A and an OVM reading of 7.4 ppmv was recorded. In addition, a sheen was observed on the water which was encountered at the top of the shale bedrock at four feet below ground surface. A silty sheen having no odor was also observed in water encountered at approximately the same depth in TP59-13C. Samples TP59-13A-1 and TP59-13C-1 were collected from the intervals above the bedrock where the water was encountered (between 3 to 4 feet below ground surface).

In the area south of the fill area, test pits TP59-1, TP59-5, TP59-6, TP59-12A, TP59-12B and TP59-12C were excavated. The excavation at TP59-1 revealed a large quantity of filled 2-gallon paint cans approximately 1 foot below the ground surface. Several zones of paint stained soil were observed and screened with an OVM. Soil and paint residues from the zone with the highest organic vapor reading (560 ppmv) were collected and submitted for chemical analysis as soil sample TP59-1. A 0.6-foot thick layer of construction debris had been disposed of over the paint cans. This debris included a crushed, yellow, 20-gallon waste can and chain-link fencing. A 5-inch thick layer of crushed shale gravel overlaid the construction debris. A 5-gallon paint can was observed one foot below the surface at TP59-12A as well as a paint globule and a crushed 1-gallon paint can. No organic vapors were detected and sample TP59-12A-1 was collected from between 1 and 1.5 feet below ground surface. At test pit TP59-12B, a 5-gallon paint can was also uncovered one foot below the surface leaking a brown grease-like substance. White solidified paint was also observed in this interval. An OVM reading of 274 ppmv was recorded. Construction debris was encountered in TP59-5, the westernmost test pit at SEAD 59, and TP59-6, one of the southernmost test pits at SEAD 59.

Construction debris was encountered in the test pits excavated in the area southeast of the fill area (TP59-8, TP59-9 and TP59-18). Some iron-stained soil was noted between 1.5 and 2 feet below ground surface at TP59-18.

3.4 CHEMICAL ANALYSIS RESULTS

A soil sampling program was conducted during and subsequent to the test pitting program of the Phase I RI in October 1997. Sampling and analyses were based upon : (i) historical usage of the area for the disposal of construction debris and oily sludges, (ii) previous sampling conducted as part of the ESI conducted at SEAD-59 in 1994 and (iii) the results of the geophysical and soil gas surveys. The results of previous soil sampling efforts are detailed in the ESI report (Parsons ES, April 1995).

To evaluate whether soil has been impacted, the results of the chemical analysis data were compared to available New York State and Federal standards, guidelines, and criteria. Only those state standards which are more stringent than federal requirements were used as criteria.

The recommended clean-up concentration for metals and organic compounds in soils are listed in the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) titled "Determination of Soil Cleanup Objectives and Cleanup Levels" (HWR-94-4046), issued in January 1994. This document recommends target clean-up concentrations that are to be used as guidance in addressing both the need for clean-up and the endpoint that clean-up activities should attain. Since the values are not promulgated standards these criteria are useful as guidance criteria.

For the metals, other than mercury, the recommended TAGM soil clean-up guideline values are concentration values that represents either site background, (aluminum, antimony, calcium, cyanide, lead, magnesium, manganese, potassium, silver, sodium and thallium) or a value, that is the higher of either a value determined by NYSDEC as an acceptable target for clean-up or background, (arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, iron, nickel, selenium, vanadium and zinc). Therefore the TAGM value for SEDA is dependent upon what value has been chosen to represent the soil background concentration. For some metals, such as aluminum, the final TAGM value used for comparison to the site data is the site background value, since the background value for aluminum is higher than the NYSDEC proposed value. For other metals, such as vanadium, the final TAGM value used for comparison is the proposed NYSDEC TAGM value. To determine background at the SEDA, a database of SEDA-wide soil background values has been developed from previous sampling efforts. The data for the SEDA background concentrations have been compiled from samples collected at the Ash Landfill site, the OB Grounds site, and the 25 Area of Concern (AOC)s investigated for as part of the ESIs. These data represents the background, pre-release, concentration of metals and anthropogenic organic compounds present in soil at the SEDA. From this database, the concentration representing the 95th percentile was used to represent the site background concentration of metals. The NYSDEC proposed TAGM guideline value were used for the following metals: barium, cobalt, mercury, selenium, and vanadium. The SEDA background soil concentration were used for the following metals: aluminum, antimony, arsenic, beryllium, cadmium, calcium, chromium, copper, cyanide, iron, lead, magnesium, manganese, nickel, potassium, silver, sodium, thallium, and zinc.

In addition to guidelines for specific compounds, the TAGM also lists soil cleanup objectives for groups of compounds and SVOs that do not have a specific guideline:

	Maximum Concentration
Total VOCs	10 ppm
Total SVOs	500 ppm
Individual SVOs	50 ppm
Total Pesticides	10 ppm

SOIL SAMPLING SUMMARY

During the Phase I RI, samples were collected from soil borings and test pits and screened using immunoassay field screening test kits for polynuclear aromatic hydrocarbon (PAH) compounds and benzene, toluene, ethylbenzene, and xylene (BTEX) compounds. The results of these tests and those samples that were sent to the laboratory for confirmatory analysis are tabulated in Appendix B. Of the 105 samples collected for field screening, a total of 34 soil samples from the Phase I RI were sent to the laboratory for confirmatory analysis. A total of 20 soil samples were collected from soil borings and test pits as part of the ESI for SEAD-59. An additional solids sample (sample TP59-3X), which was collected from material found inside a buried drum in test pit TP59-3 during the ESI, was submitted for VOC analysis only. The following sections describe the nature and extent of contamination identified in the soils at SEAD-59.

Test pits were located in zones of disturbed soil determined by the GPR survey, areas of large EM-61 anomalies, and areas with visible surface debris. Soil borings were located throughout the landfill area to determine the thickness of the fill and to provide subsurface samples for chemical analyses. In addition, soil borings were located at the perimeter of test pit locations to determine if the extent of the fill observed in the test pits had been reached. Stratigraphic information for soil borings from this Phase I RI and the previously conducted ESI are presented in **Table 3-1** and soil boring logs are provided in Appendix C. Locations of the soil borings and test pits are shown on **Figure 3-2**. **Table 3-2** summarizes the compounds detected in the soil samples collected during the ESI and Phase I RI. Appendix D contains a table of all the soil data from both investigations.

Sampling conducted in SEAD-59 indicated impacts to soils from volatile organic compounds, semivolatile organic compounds, total petroleum hydrocarbons, and to a lesser extent, metals. In the fill area, polyaromatic hydrocarbon (PAH) compounds were found in surface soil and subsurface soil samples at concentrations exceeding the criteria specified in the Technical and Administrative Guidance Memorandum (TAGM): Determination of Soil Cleanup Objectives and Cleanup Levels (NYSDEC, 1992). Several 55-gallon drums were unearthed at test pit location **Table 3-1**.

Table 3-1

Seneca Army Depot Activity
SEAD-59 Phase I Remedial Investagation
SEAD-59 Stratigraphic Information

Boring Location	Depth to Bottom of Fill (feet)	Depth to Bottom of Till (feet)	Thickness of Weathered Shale (feet)	Depth to Bedrock (feet)
MW59-1	NA	8.9	1.2	10.1
MW59-2	NA	11.4	0.0	11.4
MW59-3	3.5	6.6	1.4	8.0
MW59-4 (SB59-6)	4.0	5.5	ND	ND
MW59-6 (SB59-12)	3.0	9.0	0.6	9.6
SB59-3A	8.0	ND	ND	ND
SB59-1	10.5	NA	NA	NA
SB59-2	4.5	9.1	0.9	10.0
SB59-3	2.0	7.8	1.7	9.5
SB59-4	10.4	17.7	2.8	20.5
SB59-5	7.0	15.6	ND	ND
SB59-6	MW59-4 was installed at this location			
SB59-7	2.0	4.8	1.2	6.0
SB59-8	2.5	6.8	ND	6.8
SB59-9	2.0	5.8	ND	5.8
SB59-10	1.0	5.0	ND	5.0
SB59-11	2.8	4.5	0.5	5.0
SB59-12	MW59-6 was installed at this location			
SB59-13	2.5	6.9	1.1	8.0
SB59-14	4.7	6.8	1.3	8.1
SB59-15	4.0	6.8	1.1	7.9
SB59-16	6.6	8.0	ND	8.0
SB59-17	10.0	13.0	0.9	13.9
SB59-18	10	18	0.3	18.3
SB59-19	8.7	10	1	11
SB59-20	4	6	ND	ND
SB59-21	4.6	10	1	11

Notes:
NA - Not Applicable
ND - Not Detected

Table 3-2
Seneca Army Depot Activity
SEAD-59 Phase I Remedial Investigation
Summary of Compounds Detected in Soil During
SEAD-59 ESI and Phase I RI

COMPOUND	UNIT	MAXIMUM VALUE	FREQUENCY OF DETECTION	TAGM	NUMBER ABOVE TAGM	NUMBER OF DETECTIONS	NUMBER OF ANALYSES
VOLATILE ORGANICS							
1,1,1-Trichloroethane	UG/KG	0	0.0%	800	0	0	56
1,1,2,2-Tetrachloroethane	UG/KG	0	0.0%	600	0	0	56
1,1,2-Trichloroethane	UG/KG	0	0.0%		0	0	56
1,1-Dichloroethane	UG/KG	0	0.0%	200	0	0	56
1,1-Dichloroethene	UG/KG	0	0.0%	400	0	0	56
1,2-Dichloroethane	UG/KG	0	0.0%	100	0	0	56
1,2-Dichloroethene (total)	UG/KG	0	0.0%		0	0	56
1,2-Dichloropropane	UG/KG	0	0.0%		0	0	56
Acetone	UG/KG	150	3.6%	200	0	2	56
Benzene	UG/KG	5900	5.4%	60	2	3	56
Bromodichloromethane	UG/KG	0	0.0%		0	0	56
Bromoform	UG/KG	0	0.0%		0	0	56
Carbon disulfide	UG/KG	4	1.8%	2700	0	1	56
Carbon tetrachloride	UG/KG	0	0.0%	600	0	0	56
Chlorobenzene	UG/KG	0	0.0%	1700	0	0	56
Chlorodibromomethane	UG/KG	0	0.0%		0	0	56
Chloroethane	UG/KG	0	0.0%	1900	0	0	56
Chloroform	UG/KG	0	0.0%	300	0	0	56
Cis-1,3-Dichloropropene	UG/KG	0	0.0%		0	0	56
Ethyl benzene	UG/KG	260000	7.1%	5500	1	4	56
Methyl bromide	UG/KG	0	0.0%		0	0	56
Methyl butyl ketone	UG/KG	0	0.0%		0	0	56
Methyl chloride	UG/KG	3	3.6%		0	2	56
Methyl ethyl ketone	UG/KG	36	7.1%	300	0	4	56
Methyl isobutyl ketone	UG/KG	0	0.0%	1000	0	0	56
Methylene chloride	UG/KG	2	5.4%	100	0	3	56
Styrene	UG/KG	0	0.0%		0	0	56
Tetrachloroethene	UG/KG	0	0.0%	1400	0	0	56
Toluene	UG/KG	830000	16.1%	1500	1	9	56
Total Xylenes	UG/KG	1000000	10.7%	1200	1	6	56
Trans-1,3-Dichloropropene	UG/KG	0	0.0%		0	0	56
Trichloroethene	UG/KG	2	3.6%	700	0	2	56
Vinyl chloride	UG/KG	0	0.0%	200	0	0	56
SEMIVOLATILE ORGANICS							
1,2,4-Trichlorobenzene	UG/KG	28	1.8%	3400	0	1	56
1,2-Dichlorobenzene	UG/KG	0	0.0%	7900	0	0	56
1,3-Dichlorobenzene	UG/KG	0	0.0%	1600	0	0	56
1,4-Dichlorobenzene	UG/KG	0	0.0%	8500	0	0	56
2,2'-oxybis(1-Chloropropane)	UG/KG	0	0.0%		0	0	22
2,4,5-Trichlorophenol	UG/KG	0	0.0%	100	0	0	56
2,4,6-Trichlorophenol	UG/KG	0	0.0%		0	0	56
2,4-Dichlorophenol	UG/KG	0	0.0%	400	0	0	56
2,4-Dimethylphenol	UG/KG	0	0.0%		0	0	56
2,4-Dinitrophenol	UG/KG	0	0.0%	200	0	0	56
2,4-Dinitrotoluene	UG/KG	0	0.0%		0	0	56
2,6-Dinitrotoluene	UG/KG	0	0.0%	1000	0	0	56
2-Chloronaphthalene	UG/KG	0	0.0%		0	0	56
2-Chlorophenol	UG/KG	0	0.0%	800	0	0	56
2-Methylnaphthalene	UG/KG	67000	66.1%	36400	2	37	56
2-Methylphenol	UG/KG	0	0.0%	100	0	0	56
2-Nitroaniline	UG/KG	0	0.0%	430	0	0	56
2-Nitrophenol	UG/KG	0	0.0%	330	0	0	56
3,3'-Dichlorobenzidine	UG/KG	0	0.0%		0	0	56
3-Nitroaniline	UG/KG	0	0.0%	500	0	0	56
4,6-Dinitro-2-methylphenol	UG/KG	0	0.0%		0	0	56

Table 3-2
Seneca Army Depot Activity
SEAD-59 Phase I Remedial Investigation
Summary of Compounds Detected in Soil During
SEAD-59 ESI and Phase I RI

COMPOUND	UNIT	MAXIMUM VALUE	FREQUENCY OF DETECTION	TAGM	NUMBER ABOVE TAGM	NUMBER OF DETECTIONS	NUMBER OF ANALYSES
4-Bromophenyl phenyl ether	UG/KG	0	0.0%		0	0	56
4-Chloro-3-methylphenol	UG/KG	0	0.0%	240	0	0	56
4-Chloroaniline	UG/KG	0	0.0%	220	0	0	56
4-Chlorophenyl phenyl ether	UG/KG	0	0.0%		0	0	56
4-Methylphenol	UG/KG	83	3.6%	900	0	2	56
4-Nitroaniline	UG/KG	0	0.0%		0	0	56
4-Nitrophenol	UG/KG	0	0.0%	100	0	0	56
Acenaphthene	UG/KG	20000	69.6%	50000	0	39	56
Acenaphthylene	UG/KG	5700	51.8%	41000	0	29	56
Anthracene	UG/KG	38000	64.3%	50000	0	36	56
Benzo(a)anthracene	UG/KG	67000	78.6%	224	31	44	56
Benzo(a)pyrene	UG/KG	70000	76.8%	61	33	43	56
Benzo(b)fluoranthene	UG/KG	58000	82.1%	1100	13	46	56
Benzo(ghi)perylene	UG/KG	35000	69.6%	50000	0	39	56
Benzo(k)fluoranthene	UG/KG	48000	73.2%	1100	12	41	56
Bis(2-Chloroethoxy)methane	UG/KG	0	0.0%		0	0	56
Bis(2-Chloroethyl)ether	UG/KG	0	0.0%		0	0	56
Bis(2-Chloroisopropyl)ether	UG/KG	0	0.0%		0	0	34
Bis(2-Ethylhexyl)phthalate	UG/KG	15000	60.7%	50000	0	34	56
Butylbenzylphthalate	UG/KG	1000	7.1%	50000	0	4	56
Carbazole	UG/KG	33000	64.3%		0	36	56
Chrysene	UG/KG	63000	80.4%	400	26	45	56
Di-n-butylphthalate	UG/KG	250	39.3%	8100	0	22	56
Di-n-octylphthalate	UG/KG	11	8.9%	50000	0	5	56
Dibenz(a,h)anthracene	UG/KG	17000	60.7%	14	29	34	56
Dibenzofuran	UG/KG	18000	60.7%	6200	1	34	56
Diethyl phthalate	UG/KG	12	26.8%	7100	0	15	56
Dimethylphthalate	UG/KG	0	0.0%	2000	0	0	56
Fluoranthene	UG/KG	160000	82.1%	50000	1	46	56
Fluorene	UG/KG	38000	67.9%	50000	0	38	56
Hexachlorobenzene	UG/KG	0	0.0%	410	0	0	56
Hexachlorobutadiene	UG/KG	0	0.0%		0	0	56
Hexachlorocyclopentadiene	UG/KG	0	0.0%		0	0	56
Hexachloroethane	UG/KG	0	0.0%		0	0	56
Indeno(1,2,3-cd)pyrene	UG/KG	34000	75.0%	3200	4	42	56
Isophorone	UG/KG	0	0.0%	4400	0	0	56
N-Nitrosodiphenylamine	UG/KG	0	0.0%		0	0	56
N-Nitrosodipropylamine	UG/KG	0	0.0%		0	0	56
Naphthalene	UG/KG	29000	62.5%	13000	2	35	56
Nitrobenzene	UG/KG	0	0.0%	200	0	0	56
Pentachlorophenol	UG/KG	0	0.0%	1000	0	0	56
Phenanthrene	UG/KG	140000	82.1%	50000	2	46	56
Phenol	UG/KG	17	3.6%	30	0	2	56
Pyrene	UG/KG	120000	85.5%	50000	1	47	55
PESTICIDES/PCBs							
4,4'-DDD	UG/KG	450	54.5%	2900	0	30	55
4,4'-DDE	UG/KG	150	60.0%	2100	0	33	55
4,4'-DDT	UG/KG	350	52.7%	2100	0	29	55
Aldrin	UG/KG	1.2	3.6%	41	0	2	55
Alpha-BHC	UG/KG	14	7.3%	110	0	4	55
Alpha-Chlordane	UG/KG	81	23.6%		0	13	55
Aroclor-1016	UG/KG	0	0.0%	1000/10,000 (a)	0	0	55
Aroclor-1221	UG/KG	0	0.0%	1000/10,000 (a)	0	0	55
Aroclor-1232	UG/KG	0	0.0%	1000/10,000 (a)	0	0	55
Aroclor-1242	UG/KG	0	0.0%	1000/10,000 (a)	0	0	54
Aroclor-1248	UG/KG	0	0.0%	1000/10,000 (a)	0	0	55

Table 3-2
Seneca Army Depot Activity
SEAD-59 Phase I Remedial Investigation
Summary of Compounds Detected in Soil During
SEAD-59 ESI and Phase I RI

COMPOUND	UNIT	MAXIMUM VALUE	FREQUENCY OF DETECTION	TAGM	NUMBER ABOVE TAGM	NUMBER OF DETECTIONS	NUMBER OF ANALYSES
Aroclor-1254	UG/KG	63	3.6%	1000/10,000 (a)	0	2	55
Aroclor-1260	UG/KG	0	0.0%	1000/10,000 (a)	0	0	55
Beta-BHC	UG/KG	4.7	12.7%	200	0	7	55
Delta-BHC	UG/KG	8.5	12.7%	300	0	7	55
Dieldrin	UG/KG	4.9	7.3%	44	0	4	55
Endosulfan I	UG/KG	26	14.5%	900	0	8	55
Endosulfan II	UG/KG	7.1	9.1%	900	0	5	55
Endosulfan sulfate	UG/KG	20	7.3%	1000	0	4	55
Endrin	UG/KG	32	14.5%	100	0	8	55
Endrin aldehyde	UG/KG	15	20.0%		0	11	55
Endrin ketone	UG/KG	77	14.5%		0	8	55
Gamma-BHC/Lindane	UG/KG	0	0.0%	60	0	0	55
Gamma-Chlordane	UG/KG	100	20.0%	540	0	11	55
Heptachlor	UG/KG	0	0.0%	100	0	0	55
Heptachlor epoxide	UG/KG	10	25.5%	20	0	14	55
Methoxychlor	UG/KG	110	3.6%		0	2	55
Toxaphene	UG/KG	0	0.0%		0	0	55
METALS							
Aluminum	MG/KG	20600	100.0%	19300	1	55	55
Antimony	MG/KG	424	21.8%	5.9	1	12	55
Arsenic	MG/KG	6.1	100.0%	8.2	0	55	55
Barium	MG/KG	304	100.0%	300	1	55	55
Beryllium	MG/KG	0.91	100.0%	1.1	0	55	55
Cadmium	MG/KG	3.2	38.2%	2.3	1	21	55
Calcium	MG/KG	214000	100.0%	121000	5	55	55
Chromium	MG/KG	25.5	100.0%	29.6	0	55	55
Cobalt	MG/KG	14.7	100.0%	30	0	55	55
Copper	MG/KG	36.1	100.0%	33	1	55	55
Cyanide	MG/KG	0	0.0%	0.35	0	0	55
Iron	MG/KG	33300	100.0%	36500	0	55	55
Lead	MG/KG	139	100.0%	24.8	29	55	55
Magnesium	MG/KG	34400	100.0%	21500	1	55	55
Manganese	MG/KG	1150	100.0%	1060	1	55	55
Mercury	MG/KG	1.6	61.8%	0.1	11	34	55
Nickel	MG/KG	41.4	100.0%	49	0	55	55
Potassium	MG/KG	2520	100.0%	2380	1	55	55
Selenium	MG/KG	2.2	32.7%	2	1	18	55
Silver	MG/KG	4.1	7.3%	0.75	1	4	55
Sodium	MG/KG	2310	80.0%	172	18	44	55
Thallium	MG/KG	0	0.0%	0.7	0	0	55
Vanadium	MG/KG	41.9	100.0%	150	0	55	55
Zinc	MG/KG	1550	100.0%	110	8	55	55
Total Petroleum Hydrocarbons	MG/KG	19700	70.9%	none	0	39	55
Nitrate/Nitrite/Nitrogen	MG/KG	9.9	100.0%	none	0	34	34

Note: (a) The TAGM values for PCBs are 1000 ug/kg for surface soils and 10,000 ug/kg for subsurface soils

TP59-3, and an area of stained soil was identified at the pit location TP59-4. In addition, drums or drum fragments were also found in test pits TP59-10, TP59-15 and TP59-16. All of these test pits were located within the fill area north of the access road. Total petroleum hydrocarbons were detected in all but five of the soil samples collected from the fill area. In the area directly southwest of the fill area, there is both physical and chemical evidence of the presence of hydrocarbons. In the area south of the fill area, several paint cans containing paint were found. BTEX constituents were detected in the sample from this location at concentrations exceeding the associated TAGM criteria.

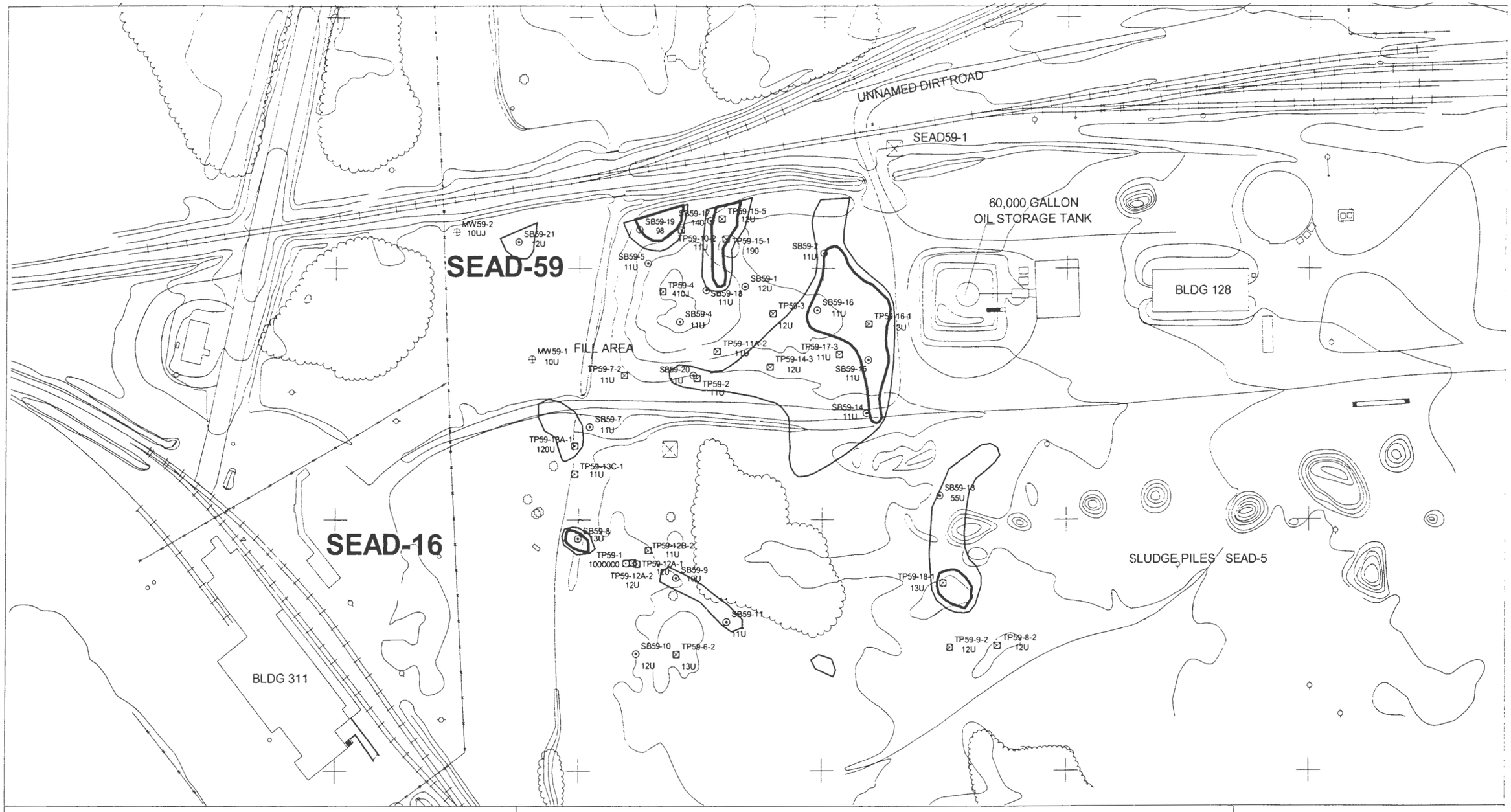
Volatile Organic Compounds

A total of 10 volatile organic compounds (VOCs) were detected in the soil samples collected at SEAD-59 during the ESI and Phase I RI. BTEX compounds were detected in 9 of the samples. Benzene (5,900 µg/kg), toluene (830,000 µg/kg), ethylbenzene (260,000 µg/kg), and xylene-total (1,000,000 µg/kg) were found at concentrations which exceeded the associated criteria in the soil sample collected from test pit TP59-1. These elevated concentrations were attributed to the paint staining of the soils at this location. A reported concentration of 2,000 µg/kg of benzene in the solids sample TP59-3X (collected from drum contents at TP59-3 within the fill area) was also above its associated criteria of 60 µg/kg. Xylene (total) was also detected in this sample at the associated criteria of 1,200 µg/kg. **Figure 3-3** shows the total reported xylene concentrations found in the soil samples collected at SEAD-59. Xylene was selected as an indicator chemical for BTEX compounds since it was found at all locations where BTEX compounds were detected with the exception of TP59-13A where only ethylbenzene was detected, and TP59-15-5 and TP59-17-3 where only toluene was detected.

Five VOCs, acetone, methylene chloride, methyl ethyl ketone, carbon disulfide, and trichloroethene, were detected in soil samples at concentrations which were below the associated criteria.

Semivolatile Organic Compounds

A total of 27 semivolatile organic compounds (SVOs) were detected at varying concentrations in 54 of the 56 soil samples collected at SEAD-59 during the ESI and Phase I RI. Twelve PAH compounds were found in concentrations exceeding the associated criteria and at least one PAH exceedance was noted in all samples which had detectable concentrations of SVOs. PAHs were detected above their associated criteria throughout the fill area, the area directly southwest of the fill area, the area south of the fill area, and the southern part of the area to the southeast of the fill area. Maximum concentrations of benzo(a)anthracene (67,000 µg/kg), benzo(a)pyrene (70,000 µg/kg), benzo(b)fluoranthene (58,000 µg/kg), benzo(k)fluoranthene (48,000 µg/kg), chrysene (63,000 µg/kg), dibenz(a,h)anthracene (17,000 µg/kg), fluoranthene (160,000 µg/kg), indeno(1,2,3-cd)pyrene (34,000 µg/kg), naphthalene (29,000 µg/kg), phenanthrene (140,000 µg/kg), and pyrene (120,000 µg/kg) were found in soil sample SB59-19, which was collected from 2 to 2.7 feet below the ground surface in the northwest corner of the fill area. The



Base Map Features

Soil Gas

- 20 ppm or greater
- 10 ppm - 20 ppm

- ESI Test Pit Locations
- Monitoring Well Location
- Soil Boring Location

100 0 100 200 Feet

Concentration of Xylene in Soil (ug/kg)

N

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SENECA ARMY DEPOT ACTIVITY

FIGURE 3-3
SENECA ARMY DEPOT ACTIVITY
SEAD-59 Phase I Remedial Investigation
Total Xylene Concentrations in Soil

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maximum concentration of dibenzofuran (18,000 µg/kg) was also detected in this sample. The maximum concentration of 2-methylnaphthalene (67,000 µg/kg) was found in soil sample TP59-4, (within the fill area) which was collected from a stained soil layer 2 feet below the ground surface. **Figure 3-4** shows the concentrations of benzo(a)pyrene as an indicator chemical of PAHs found in the soil samples collected at SEAD-59. Benzo(a)pyrene was over its associated criteria in every sample where another PAH was over its associated criteria except for SB59-3. Benzo(a)anthracene, chrysene, and dibenz(a,h)anthracene were detected over their associated criteria at this location although benzo(a)pyrene was not over its associated criteria. It should be noted that the detection limits for SVOs were greatly increased in samples TP59-1, TP59-3, TP59-4 and TP59-13A-1 due to interference effects in the chemical analyses. The presence of paint in sample TP59-1 and a petroleum product in sample TP59-4 are considered to be the cause of the elevated detection limits in these two samples. TP59-13A had elevated levels of TPH which is considered the cause of the elevated detection limit in this sample.

Pesticides/PCBs

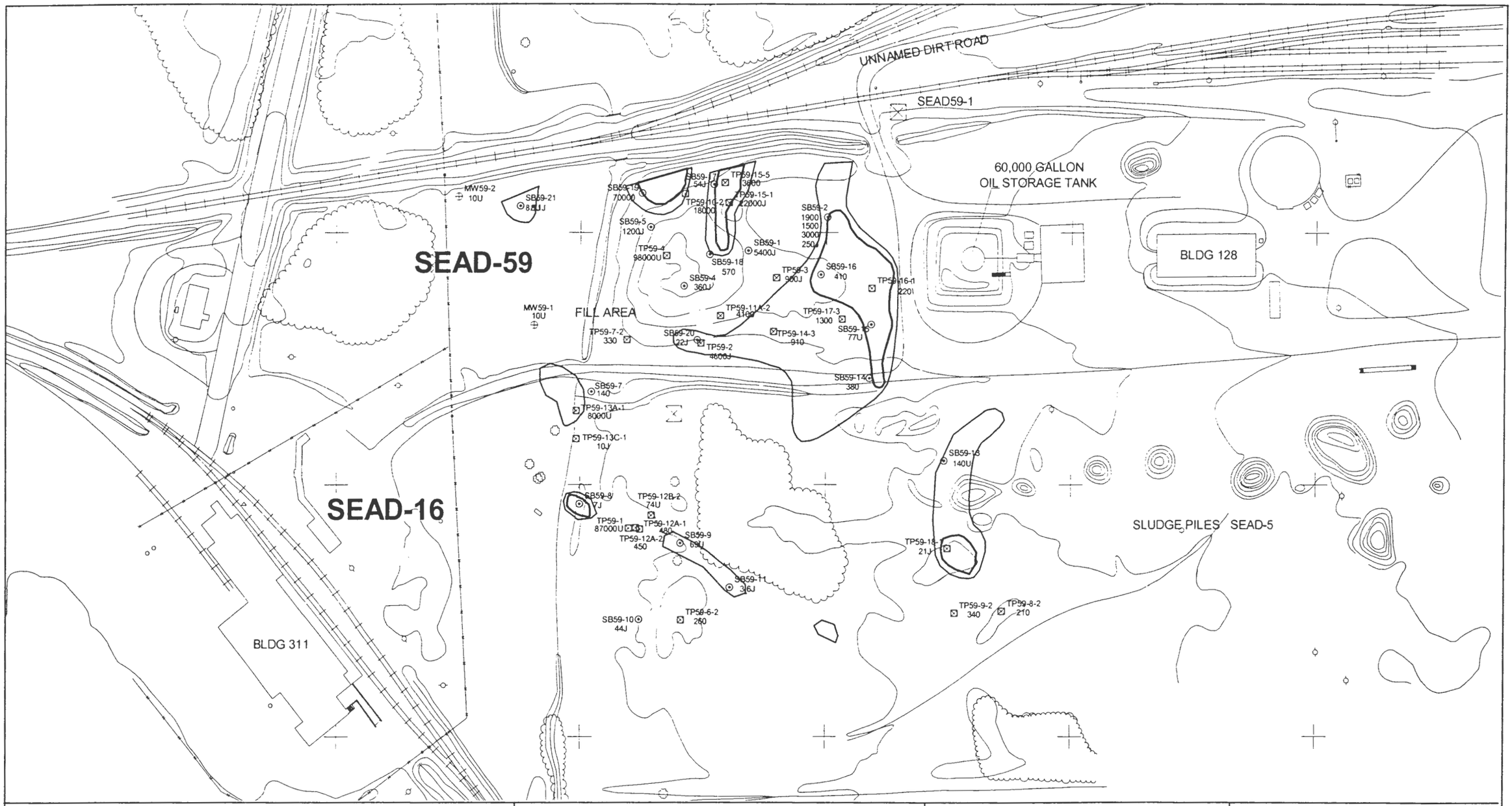
A total of 18 pesticides and 1 PCB compound (Aroclor-1254) were detected at varying concentrations in 37 of the 55 soil samples collected at SEAD-59 during both the ESI and Phase I RI. Aroclor-1254 and all of the pesticides, except endrin aldehyde, endrin ketone, and methoxychlor were found at concentrations which were less than associated criteria. Currently, no criteria value exists for endrin aldehyde, endrin ketone and methoxychlor in soil.

Metals

A total of 22 metals were detected in the 55 soil samples collected at SEAD-59. Fifteen metals were detected in one or more samples at concentrations which exceeded the associated TAGM criteria. Exceedances were reported in all but 10 of the soil samples collected. A variety of the metals were found at concentrations just slightly above the criteria, and approximately half of these exceedances appear to reflect natural variations in site soils. The exceptions to this are the metals antimony, calcium, lead, mercury, silver, sodium, and zinc which were reported at concentrations at least 2 times the criteria in the soil samples.

Total Petroleum Hydrocarbons

Total petroleum hydrocarbons (TPH) were detected in 39 of the 55 soil samples collected at SEAD-59 during the ESI and Phase I RI throughout the site. The reported concentrations of TPH ranged from 24.8 mg/kg in soil sample SB59-20 (depth of 4 to 4.5 feet) to 19,700 mg/kg in soil sample TP59-15-1 (depth of 6 feet). Currently, no TAGM criteria exists for detected concentrations of TPH in soils.



Base Map Features

ESI Test Pit Locations with
Loc Id and Benzo[a]pyrene conc (ug/Kg)

Monitoring Well Location with
Loc Id and Benzo[a]pyrene conc (ug/Kg)

Soil Boring Location with
Loc Id and Benzo[a]pyrene conc (ug/Kg)

Soil Gas

20 ppm or greater

10 ppm - 20 ppm

100 0 100 Feet

N

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SENECA ARMY DEPOT ACTIVITY

FIGURE 3-4
SENECA ARMY DEPOT ACTIVITY
SEAD-59 Phase I Remedial Investigation
Total Benzo(A)Pyrene Concentrations in Soil
TOTAL BENZO[A]PYRENE CONCENTRATIONS IN SOIL

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Indicator Compounds

Indicator compounds were found in the 34 soil samples collected during the Phase I RI. Concentrations of nitrate/nitrite-nitrogen ranged from 0.02 mg/kg in sample SB59-17 to 9.9 mg/kg in sample TP59-18-1.

4.0 NATURE AND EXTENT OF CONTAMINATION FOR SEAD-71

This section presents the results of the field investigation conducted during the Phase I RI for SEAD-71. Chemical data collected and test pit observations made during the ESI and have been incorporated into this discussion.

4.1 GEOPHYSICS

Ground Penetrating Radar (GPR) surveys were performed at SEAD-71 as part of the geophysical investigations for the Phase I RI in the area shown in Figure 4-1. Although an EM-61 survey was outlined in the Project Scoping Plan, numerous interferences due to metallic surface debris prevented a meaningful survey from being conducted. Therefore, only a GPR survey was conducted. GPR anomalies were identified and are shown in Figure 4-1. Test pits were located to investigate major anomalies.

4.2 TEST PITTING PROGRAM

Four test pits were excavated during the Phase I RI at SEAD-71 to characterize the source of the geophysical anomalies. Two test pits were excavated during the ESI as well. The locations of the test pits are shown on Figure 4-1. The test pit logs are presented in Appendix A.

The source of the EM-31 and the GPR anomalies identified during the ESI at the TP71-1 location was identified as construction debris composed of chain link fencing, sheet metal, asphalt, and a crushed, yellow, twenty gallon drum. This debris was situated 0.75 to 1.3 feet below the ground surface. A 0.75 foot thick layer of fine angular black debris (resembling creosote or soot) was observed immediately below the construction debris layer. A weathered shale layer, encountered at a depth of 5.5 feet, limited any further advancement of the excavation.

Test pit TP71-2 was centered over a GPR anomaly located in the storage area. This location was situated along the southern boundary of compacted roadstone. A dark gray to black, possibly stained, fine shale gravel layer was encountered from 0.25 to 1.0 foot below ground surface. The source of the GPR anomaly was not identified at this test pit location. Changes in the electrical properties of the soils within a layer may give rise to spurious radar wave reflections resembling GPR signatures observed over metallic objects.

Test pit TP71-3 was located over a GPR anomaly located north of the road and near the steel garage. Sand and stone slabs were encountered between 0.5 and 2 feet. At 8 feet below ground surface, a slight hydrocarbon odor was noticed and an OVM reading of 4 to 6 ppm was recorded. Sample TP71-3-1 was collected from between 8.5 and 9 feet below the ground surface. The soil at this depth was stained with a gray-brown color. A trace of an oily sheen was noted on the clay

SEAD-71

WAREHOUSE STREET

BUILDING 114

BUILDING 127

4TH AVENUE

SS71-19
SS71-20
SS71-16
SS71-17
SS71-15
SS71-18
SS71-14
MW71-1
MW71-2
TP71-3-1
SS71-8
SS71-9
SS71-12
SS71-13
SS71-10
SS71-11
SS71-7
TP71-3-2
TP71-2
SS71-3
TP71-4-2
SS71-5
SS71-2
SS71-4
SS71-6
TP71-1
MW71-3
SS71-1
TP71-5-1
TP71-5-1

Base Map Features

Suspected Locations of GPR Anomalies

Approximate Extent of 1997 GPR Survey

Test Pit Locations

Monitoring Well Location (installed during ESI)

Soil Boring/Soil Sample Location

100 0 100 Feet

N

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SENECA ARMY DEPOT ACTIVITY

FIGURE 4-1
SENECA ARMY DEPOT ACTIVITY
SEAD-71 Phase I Remediation Investigation
Sampling Locations and GPR Survey Results

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soil at ten feet and stones at 10.5 to 11 feet were covered with a brown oily liquid. Sample TP71-3-2 was collected from between 10.5 and 11 feet below ground surface.

Test pit TP71-4 was located over a GPR anomaly located north of the road. A stone slab layer was encountered at 1 foot below the surface and other slabs mixed with lumber sand and stone were located between 3 and 7 feet below the surface. At ten feet below ground surface, some iron staining was noted on the soil and an OVM reading of 6 ppm was recorded.

Test pit TP71-5 was located over a GPR anomaly located between the south edge of the road and the southern railroad tracks. Railroad ties were encountered at 3 to 7 feet below ground surface which matched the GPR anomaly. Sample TP71-5-1 was collected from between 7 and 7.5 feet below ground surface. At 12.5 feet below ground surface, an OVM reading of 8 ppm was recorded and sample TP71-5-2 was collected from between 12.5 and 13 feet below ground surface for on-site screening.

Test pit TP71-6 was located south of the road and north of the railroad and salt shed. Fill within this test pit consisted of black cinders, wood, asphalt bricks, fencing, piping and railroad ties. Sample TP71-6-3 was collected from beneath the black cinders between 3 and 3.5 feet below ground surface. Two other samples (TP71-6-1 and TP71-6-2) were collected from the native soils beneath this test pit.

The excavated material from the test pits was continuously screened for organic vapors during the Phase I RI with a Thermo OVM 580 PID. Except for the OVM readings cited above, no readings above background levels (0 ppm of organic vapors).

4.3 CHEMICAL ANALYSIS RESULTS

Surface soil and test pit soils were sampled as part of the Phase I RI conducted at SEAD-71. Sampling and analyses were based upon historical usage of the area for the disposal of paint and solvents and the results of the ESI report (Parsons ES, April 1995).

To evaluate whether each media (soil) is being impacted, the chemical analysis data were compared to available New York State and Federal standards, guidelines, and criteria. Only those state standards which are more stringent than federal requirements were used as criteria.

The criteria for soils are listed in the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) titled "Determination of Soil Cleanup Objectives and Cleanup Levels" (HWR-94-4046) issued in January 1994. This document, which contains the criteria for soil clean-up levels, has not been promulgated and the criteria are guidelines only. The TAGM for soil is a TBC (To Be Considered). NYSDEC took into account the Contract Required Quantitation Limits (CRQLs) when they developed the guideline concentrations for the TAGM.

For the metals, the criteria used in this report were the greater of two values: the listed TAGM guideline or the SEDA background concentration. Site background values were calculated as the 95th UCL (Upper Confidence Level) of the mean for background concentrations of metals in the soil located at SEDA. The data for the site background concentrations were compiled from the background samples collected at the Ash Landfill site, the OB Grounds site, and the 25 AOCs investigated for ESIs. The 95th UCL of the mean for the metals analyzed in this investigation are presented in the ESI reports. The TAGM guidelines were used for the following metals: arsenic, barium, beryllium, cadmium, cobalt, copper, lead, mercury, selenium, and vanadium. The SEDA background soil concentrations were used for the following metals: aluminum, antimony, calcium, chromium, iron, magnesium, manganese, nickel, potassium, silver, sodium, thallium, and zinc.

In addition to guidelines for specific compounds, the TAGM also lists soil cleanup objectives for groups of compounds and SVOs that do not have a specific guideline:

	Maximum Concentration
Total VOCs	10 ppm
Total SVOs	500 ppm
Individual SVOs	50 ppm
Total Pesticides	10 ppm

SOIL SAMPLING SUMMARY

A total of 21 surface soil samples were obtained for chemical analysis as part of the Phase I RI for SEAD-71. Nine soil samples were collected from 4 test pits and screened for BTEX compounds using immunoassay field screening tests. Five test pit soil samples from the 4 test pits were sent to the laboratory for chemical analysis. The chemical data for these surface soil and test pit soil samples in addition to the eight soil samples collected from two test pits during the ESI are summarized in Table 4-1. A table showing all validated data from the two investigations is provided in Appendix D. The following sections describe the nature and extent of contamination identified at SEAD-71.

The Phase I RI confirmed the findings of the ESI conducted at SEAD-71. No burial pit for paint and solvents was uncovered during either investigation, although the investigations did indicate the soils at SEAD-71 have been impacted by the waste materials which have been disposed of in at least one disposal pit on site. At three test pit locations, polynuclear aromatic hydrocarbons (PAHs) were present at concentrations exceeding the criteria specified in the Technical and Administrative Guidance Memorandum (TAGM): Determination of Soil Cleanup Objectives and Cleanup Levels (NYSDEC 1992). Heavy metals concentrations above the associated criteria values were also present in these three test pits. There is clear evidence that surface soils at SEAD-71 have been impacted by waste materials disposed in the area. Both PAHs and heavy

Table 4-1
Seneca Army Depot
SEAD-71 Phase I Remedial Investigation
Summary of Compounds Detected in Soil During
SEAD-71 ESI and Phase I RI

COMPOUND	UNIT	NUMBER OF ANALYSES	NUMBER OF DETECTIONS	FREQUENCY OF DETECTION	MAXIMUM VALUE	NUMBER ABOVE TAGM	TAGM
VOLATILE ORGANICS							
1,1,1-Trichloroethane	UG/KG	34	6	17.65%	23	0	800.
1,1,2,2-Tetrachloroethane	UG/KG	34	0	0.00%	0	0	600.
1,1,2-Trichloroethane	UG/KG	34	0	0.00%	0	0	
1,1-Dichloroethane	UG/KG	34	0	0.00%	0	0	200.
1,1-Dichloroethene	UG/KG	34	0	0.00%	0	0	400.
1,2-Dichloroethane	UG/KG	34	0	0.00%	0	0	100.
1,2-Dichloroethene (total)	UG/KG	34	0	0.00%	0	0	
1,2-Dichloropropane	UG/KG	34	0	0.00%	0	0	
Acetone	UG/KG	34	2	5.88%	74	0	200.
Benzene	UG/KG	34	1	2.94%	2	0	60.
Bromodichloromethane	UG/KG	34	0	0.00%	0	0	
Bromoform	UG/KG	34	0	0.00%	0	0	
Carbon disulfide	UG/KG	34	0	0.00%	0	0	2,700.
Carbon tetrachloride	UG/KG	34	0	0.00%	0	0	600.
Chlorobenzene	UG/KG	34	0	0.00%	0	0	1,700.
Chlorodibromomethane	UG/KG	34	0	0.00%	0	0	
Chloroethane	UG/KG	34	0	0.00%	0	0	1,900.
Chloroform	UG/KG	34	0	0.00%	0	0	300.
Cis-1,3-Dichloropropene	UG/KG	34	0	0.00%	0	0	
Ethyl benzene	UG/KG	34	2	5.88%	4	0	5,500.
Methyl bromide	UG/KG	34	0	0.00%	0	0	
Methyl butyl ketone	UG/KG	34	0	0.00%	0	0	
Methyl chloride	UG/KG	34	0	0.00%	0	0	
Methyl ethyl ketone	UG/KG	34	0	0.00%	0	0	300.
Methyl isobutyl ketone	UG/KG	34	0	0.00%	0	0	1,000.
Methylene chloride	UG/KG	34	9	26.47%	11	0	100.
Styrene	UG/KG	34	1	2.94%	1	0	
Tetrachloroethene	UG/KG	34	4	11.76%	33	0	1,400.
Toluene	UG/KG	34	8	23.53%	16	0	1,500.
Total Xylenes	UG/KG	34	4	11.76%	96	0	1,200.
Trans-1,3-Dichloropropene	UG/KG	34	0	0.00%	0	0	
Trichloroethene	UG/KG	34	0	0.00%	0	0	700.
Vinyl chloride	UG/KG	34	0	0.00%	0	0	200.
SEMIVOLATILE ORGANICS							
1,2,4-Trichlorobenzene	UG/KG	34	0	0.00%	0	0	3,400.
1,2-Dichlorobenzene	UG/KG	34	0	0.00%	0	0	7,900.
1,3-Dichlorobenzene	UG/KG	34	0	0.00%	0	0	1,600.
1,4-Dichlorobenzene	UG/KG	34	0	0.00%	0	0	8,500.
2,2'-oxybis(1-Chloropropane)	UG/KG	8	0	0.00%	0	0	
2,4,5-Trichlorophenol	UG/KG	34	0	0.00%	0	0	100.
2,4,6-Trichlorophenol	UG/KG	34	0	0.00%	0	0	
2,4-Dichlorophenol	UG/KG	34	0	0.00%	0	0	400.
2,4-Dimethylphenol	UG/KG	34	0	0.00%	0	0	
2,4-Dinitrophenol	UG/KG	34	0	0.00%	0	0	200.
2,4-Dinitrotoluene	UG/KG	34	0	0.00%	0	0	
2,6-Dinitrotoluene	UG/KG	34	0	0.00%	0	0	1,000.
2-Chloronaphthalene	UG/KG	34	0	0.00%	0	0	
2-Chlorophenol	UG/KG	34	0	0.00%	0	0	800.
2-Methylnaphthalene	UG/KG	34	14	41.18%	31000	0	36,400.
2-Methylphenol	UG/KG	34	0	0.00%	0	0	100.
2-Nitroaniline	UG/KG	34	0	0.00%	0	0	430.
2-Nitrophenol	UG/KG	34	0	0.00%	0	0	330.
3,3`-Dichlorobenzidine	UG/KG	34	0	0.00%	0	0	

Table 4-1
Seneca Army Depot
SEAD-71 Phase I Remedial Investigation
Summary of Compounds Detected in Soil During
SEAD-71 ESI and Phase I RI

COMPOUND	UNIT	NUMBER OF ANALYSES	NUMBER OF DETECTIONS	FREQUENCY OF DETECTION	MAXIMUM VALUE	NUMBER ABOVE TAGM	TAGM
3-Nitroaniline	UG/KG	34	0	0.00%	0	0	500.
4,6-Dinitro-2-methylphenol	UG/KG	34	0	0.00%	0	0	
4-Bromophenyl phenyl ether	UG/KG	34	0	0.00%	0	0	
4-Chloro-3-methylphenol	UG/KG	34	0	0.00%	0	0	240.
4-Chloroaniline	UG/KG	34	0	0.00%	0	0	220.
4-Chlorophenyl phenyl ether	UG/KG	34	0	0.00%	0	0	
4-Methylphenol	UG/KG	34	0	0.00%	0	0	900.
4-Nitroaniline	UG/KG	34	0	0.00%	0	0	
4-Nitrophenol	UG/KG	34	0	0.00%	0	0	100.
Acenaphthene	UG/KG	34	24	70.59%	42000	0	50,000.
Acenaphthylene	UG/KG	34	5	14.71%	340	0	41,000.
Anthracene	UG/KG	34	27	79.41%	100000	3	50,000.
Benzo[a]anthracene	UG/KG	34	32	94.12%	150000	25	224.
Benzo[a]pyrene	UG/KG	34	31	91.18%	120000	29	61.
Benzo[b]fluoranthene	UG/KG	34	31	91.18%	88000	16	1,100.
Benzo[ghi]perylene	UG/KG	34	30	88.24%	62000	1	50,000.
Benzo[k]fluoranthene	UG/KG	34	24	70.59%	130000	13	1,100.
Bis(2-Chloroethoxy)methane	UG/KG	34	0	0.00%	0	0	
Bis(2-Chloroethyl)ether	UG/KG	34	0	0.00%	0	0	
Bis(2-Chloroisopropyl)ether	UG/KG	34	0	0.00%	0	0	
Bis(2-Ethylhexyl)phthalate	UG/KG	34	3	8.82%	15	0	50,000.
Butylbenzylphthalate	UG/KG	34	0	0.00%	0	0	50,000.
Carbazole	UG/KG	34	28	82.35%	77000	0	
Chrysene	UG/KG	34	32	94.12%	150000	23	400.
Di-n-butylphthalate	UG/KG	34	2	5.88%	140	0	8,100.
Di-n-octylphthalate	UG/KG	34	0	0.00%	0	0	50,000.
Dibenz[a,h]anthracene	UG/KG	34	28	82.35%	25000	27	14.
Dibenzofuran	UG/KG	34	22	64.71%	38000	5	6,200.
Diethyl phthalate	UG/KG	34	0	0.00%	0	0	7,100.
Dimethylphthalate	UG/KG	34	0	0.00%	0	0	2,000.
Fluoranthene	UG/KG	34	33	97.06%	440000	7	50,000.
Fluorene	UG/KG	34	25	73.53%	62000	1	50,000.
Hexachlorobenzene	UG/KG	34	0	0.00%	0	0	410.
Hexachlorobutadiene	UG/KG	34	0	0.00%	0	0	
Hexachlorocyclopentadiene	UG/KG	34	0	0.00%	0	0	
Hexachloroethane	UG/KG	34	0	0.00%	0	0	
Indeno[1,2,3-cd]pyrene	UG/KG	34	30	88.24%	65000	9	3,200.
Isophorone	UG/KG	34	0	0.00%	0	0	4,400.
N-Nitrosodiphenylamine	UG/KG	34	0	0.00%	0	0	
N-Nitrosodipropylamine	UG/KG	34	0	0.00%	0	0	
Naphthalene	UG/KG	34	15	44.12%	46000	2	13,000.
Nitrobenzene	UG/KG	34	0	0.00%	0	0	200.
Pentachlorophenol	UG/KG	34	0	0.00%	0	0	1,000.
Phenanthrene	UG/KG	34	32	94.12%	290000	6	50,000.
Phenol	UG/KG	34	1	2.94%	4.5	0	30.
Pyrene	UG/KG	34	33	97.06%	280000	7	50,000.
PESTICIDES/PCBS							
4,4`-DDD	UG/KG	34	11	32.35%	240	0	2,900.
4,4`-DDE	UG/KG	34	21	61.76%	810	0	2,100.
4,4`-DDT	UG/KG	34	22	64.71%	1300	0	2,100.
Aldrin	UG/KG	34	0	0.00%	0	0	41.
Alpha-BHC	UG/KG	34	8	23.53%	18	0	110.
Alpha-Chlordane	UG/KG	34	2	5.88%	74	0	
Aroclor-1016	UG/KG	34	0	0.00%	0	0	

Table 4-1
Seneca Army Depot
SEAD-71 Phase I Remedial Investigation
Summary of Compounds Detected in Soil During
SEAD-71 ESI and Phase I RI

COMPOUND	UNIT	NUMBER OF ANALYSES	NUMBER OF DETECTIONS	FREQUENCY OF DETECTION	MAXIMUM VALUE	NUMBER ABOVE TAGM	TAGM
Aroclor-1221	UG/KG	34	0	0.00%	0	0	
Aroclor-1232	UG/KG	34	0	0.00%	0	0	
Aroclor-1242	UG/KG	34	0	0.00%	0	0	
Aroclor-1248	UG/KG	34	0	0.00%	0	0	
Aroclor-1254	UG/KG	34	0	0.00%	0	0	10,000.
Aroclor-1260	UG/KG	34	0	0.00%	0	0	10,000.
Beta-BHC	UG/KG	34	7	20.59%	32	0	200.
Delta-BHC	UG/KG	34	1	2.94%	1.8	0	300.
Dieldrin	UG/KG	34	3	8.82%	3.5	0	44.
Endosulfan I	UG/KG	34	11	32.35%	200	0	900.
Endosulfan II	UG/KG	34	6	17.65%	52	0	900.
Endosulfan sulfate	UG/KG	34	12	35.29%	110	0	1,000.
Endrin	UG/KG	34	11	32.35%	120	1	100.
Endrin aldehyde	UG/KG	34	19	55.88%	120	0	
Endrin ketone	UG/KG	34	18	52.94%	160	0	
Gamma-BHC/Lindane	UG/KG	34	1	2.94%	4	0	60.
Gamma-Chlordane	UG/KG	34	4	11.76%	22	0	540.
Heptachlor	UG/KG	34	1	2.94%	1.2	0	100.
Heptachlor epoxide	UG/KG	34	14	41.18%	180	4	20.
Methoxychlor	UG/KG	34	12	35.29%	520	0	
Toxaphene	UG/KG	34	0	0.00%	0	0	
METALS							
Aluminum	MG/KG	34	34	100.00%	18000	0	19,520.
Antimony	MG/KG	34	12	35.29%	19.3	1	6.
Arsenic	MG/KG	34	34	100.00%	14.6	4	8.9
Barium	MG/KG	34	34	100.00%	179	0	300.
Beryllium	MG/KG	34	33	97.06%	0.88	0	1.13
Cadmium	MG/KG	34	15	44.12%	12.1	4	2.46
Calcium	MG/KG	34	34	100.00%	295000	11	125,300.
Chromium	MG/KG	34	34	100.00%	60.3	4	30.
Cobalt	MG/KG	34	34	100.00%	14.6	0	30.
Copper	MG/KG	34	34	100.00%	134	12	33.
Cyanide	MG/KG	34	0	0.00%	0	0	.35
Iron	MG/KG	34	34	100.00%	65100	2	37,410.
Lead	MG/KG	34	34	100.00%	3470	22	24.4
Magnesium	MG/KG	34	34	100.00%	59300	6	21,700.
Manganese	MG/KG	34	34	100.00%	853	0	1,100.
Mercury	MG/KG	34	16	47.06%	2.7	4	.1
Nickel	MG/KG	34	34	100.00%	110	2	50.
Potassium	MG/KG	34	34	100.00%	2940	1	2,623.
Selenium	MG/KG	34	15	44.12%	1.8	0	2.
Silver	MG/KG	34	5	14.71%	0.69	0	.8
Sodium	MG/KG	34	30	88.24%	1040	19	188.
Thallium	MG/KG	34	1	2.94%	2.3	1	.855
Vanadium	MG/KG	34	34	100.00%	29.2	0	150.
Zinc	MG/KG	34	33	97.06%	3660	13	115.
		34	34	100.00%	0	0	
OTHER ANALYSES	MG/KG						
Total Petroleum Hydrocarbons	MG/KG	26	22	84.62%	9060		
Nitrate/Nitrite Nitrogen		26	26	100.00%	30.2		

metals were detected above their associated criteria in every surface soil sample collected during the Phase I RI.

Volatile Organic Compounds

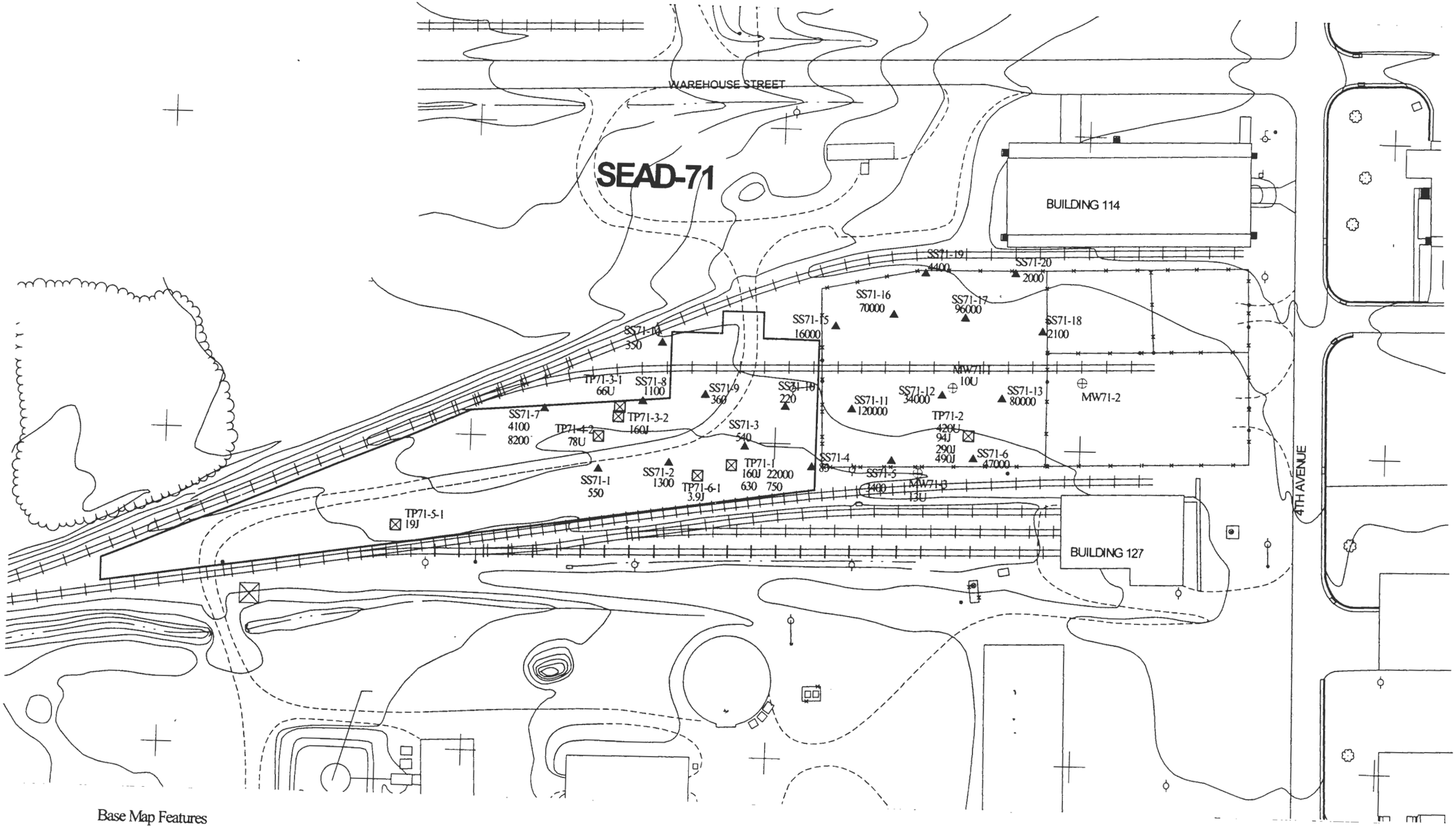
Methylene chloride, 1,1,1-trichloroethane, acetone, benzene, ethyl benzene, styrene, tetrachloroethene, toluene, and xylene, were detected in the 34 surface soil and test pit soil samples collected from SEAD-71 during the Phase I RI and ESI. All compounds were found at concentrations well below the associated TAGM criteria. BTEX compounds were found in a total of 8 samples. Methylene chloride and acetone are common laboratory contaminants. These compounds can be potentially attributed to the laboratory and not site conditions.

Semivolatile Organic Compounds

A total of 22 semivolatile organic compounds, all PAHs, were found at varying concentrations in the surface soil and test pit soil samples collected at SEAD-71 during both the Phase I RI and ESI. Fifteen PAH compounds were found at concentrations exceeding the associated TAGM criteria and at least one PAH exceedance was noted in each of the 21 surface soil samples and in 8 of the 13 soil samples collected from test pits in the Phase I RI and ESI. Figure 4-2 shows the concentration of benzo(a)pyrene found in the soils at SEAD-71. Benzo(a)pyrene was selected as an indicator chemical for PAHs and was found in each sample where other PAHs were detected. In general, where the concentration of benzo(a)pyrene was higher, the concentrations of other PAHs were proportionally higher. Overall, PAH concentrations were higher within the storage area at SEAD-71 than in the area east of the storage area, although PAH criteria were exceeded in this area as well. The maximum value of benzo(a)pyrene was found in surface soil sample SS71-11 (120,000 µg/kg) within the storage area at SEAD-71. All surface soil samples collected within the storage area and the area east of the storage area contained at least one PAH above its associated criteria. The highest concentration of benzo(a)pyrene detected in a test pit sample was in TP71-1 (22,000 µg/kg). All four soil samples from test pit TP71-1 contained PAH compounds at concentrations exceeding the associated criteria. Test pit TP71-1 was located in the western half of the site near empty heating oil storage tanks and oil stained road stone. In test pit TP71-2, maximum concentrations of PAHs were detected in the soil sample collected at a depth of 1 foot below ground surface. The samples below the 1 foot depth had PAHs at lower concentrations. In TP71-3, four PAH compounds were found in two samples at lower concentrations above TAGMs. These two samples were collected at deeper intervals (between 8.5 and 9 feet and between 10.5 and 11 feet below ground surface). A slight hydrocarbon odor was recorded in the test pit logs for TP71-3 at these depths. No PAH compounds were detected above their associated criteria in TP71-4 or TP71-5.

Pesticides/PCBs

Nineteen pesticides were detected in the soil samples collected from SEAD-71. Two pesticides were detected above their associated criteria in surface soil samples collected from within the storage area. Endrin was detected in one sample (SS71-16, 120 µg/kg) slightly above its associated criteria. Heptachlor epoxide was detected in four samples (SS71-6, SS71-15, SS71-16



Base Map Features

Approximate Extent of 1997 GPR Survey

ESI Test Pit Locations with Loc Id and Benzo[a]pyrene conc (ug/Kg)

Monitoring Well Location with Loc Id and Benzo[a]pyrene conc (ug/Kg)

Soil Boring/ Soil Sample Location with Loc Id and Benzo[a]pyrene conc (ug/Kg)

100 0 100 Feet

N

PARSONS

PARSONS ENGINEERING SCIENCE, INC.

SENECA ARMY DEPOT ACTIVITY

FIGURE 4-2
SENECA ARMY DEPOT ACTIVITY
SEAD-71 Phase I Remedial Investigation
Benzo(A)Pyrene Concentrations in Soil

JOB NUMBER 734516-01001 | DATE OCTOBER 2001 | SHEET No. 1 OF 1

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and SS71-17) above its associated criteria in concentrations between 24 µg/kg and 180 µg/kg. Alpha-chlordane, endrin aldehyde, endrin ketone, and methoxychlor, were detected in up to 19 samples. Currently, no criteria value exists for these compounds in soil.

TPH

Total petroleum hydrocarbons (TPH) were detected in 22 of the 26 surface soil and test pit soil samples collected at SEAD-71 during the Phase I RI. Samples collected during the ESI were not analyzed for TPH. The reported concentrations of TPH ranged from 29 mg/kg in surface soil sample SS71-5 to 9,060 mg/kg in soil sample TP71-3-2 collected between 10.5 and 11 feet below ground surface. Currently, no TAGM criteria exists for detected concentrations of TPH in soils.

Metals

A total of 23 metals analyzed were detected in the 21 surface soil samples and 13 soil samples collected from test pits during the Phase I RI and ESI at SEAD-71. Fifteen metals were detected in one or more samples at concentrations above the associated TAGM criteria.

All metals, except for arsenic, calcium, chromium, iron, nickel, potassium and thallium were found at concentrations greater than two times the associated criteria. Lead was detected in all samples and exceeded its associated criteria in 22 of the samples. Concentrations of lead ranged from 7,100 µg/kg at TP71-6-1 to 3,470,000 µg/kg at SS71-16. Mercury was detected in 16 samples and exceeded its associated criteria four times in samples SS71-1, SS71-11, SS71-16, and TP71-2. Concentrations of mercury ranged from 20 µg/kg in sample TP71-2-4 to 2,700 µg/kg in sample SS71-16. Zinc was detected in all soil samples and exceeded the criteria 14 times. Concentrations of zinc ranged from 43,400 µg/kg in sample SS71-17 to 3,660,000 µg/kg in sample SS71-5. Maximum concentrations of antimony, cadmium, copper, magnesium, and silver were found between three and five times their associated criteria.

Indicator Compounds

Indicator compounds were detected in 26 of the soil samples collected during the Phase I RI. Concentrations of nitrate/nitrite-nitrogen ranged from 0.02 mg/kg in samples SS71-12, SS71-13, TP71-3-1, TP71-4-2, and TP-71-6-1 to 30.2 mg/kg in sample SS71-7.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 SEAD-59

The results of the Phase I RI soil investigation along with the soil sampling results from the ESI have identified significant releases of PAH compounds in the materials comprising the fill area, the area directly southwest of the fill area, the area south of the fill area, and the area southeast of the fill area at SEAD-59. Twelve PAH compounds exceeded their associated criteria. SVOCs, and metals were detected in quantities above their associated TAGMs in each of these areas. Antimony, lead, mercury, silver, sodium, and zinc were reported at concentrations at least 2 times the associated criteria in soils. In addition, BTEX compounds were detected above their associated TAGMs in one area south of the fill area where paint cans were found during the test pit investigation. TPH was detected between 34.8 mg/kg and 19,700 mg/kg in 35 of the 55 soil samples collected during the ESI and Phase I RI.

At the BCT meeting held on March 21, 2000, NYSDEC, EPA, and the Army discussed the Army's proposal of preparing an EE/CA and conducting a Removal Action at both sites. Since that time, the portions of the depot have been released to private sectors for reuse under the BRAC process. As a result, increased access to all portions of the depot is now available resulting in an increased potential for exposure to any residual chemicals that are present at sites such as SEAD-59. Therefore, a time-critical removal action has been proposed in order to eliminate a potential threat to the surrounding populations.

Following implementation of the removal action, the data collected during the removal action will be used to evaluate if unacceptable risk remains and if migration of pollutants requires further action.

5.2 SEAD-71

The data collected from the Phase I RI and the ESI conducted at SEAD-71 did not uncover a burial pit for paint and solvents, though it did indicate the soils at SEAD-71 have been impacted by former activities on site. Surface soils both within the storage area and in the western portion of the site have PAHs and metals present above criteria. Test pit sampling also indicated that subsurface soils have been impacted. One test pit in the western area of the site (TP71-3) revealed that soils as deep as 11 feet below ground surface have been impacted. Elevated TPH concentrations were detected in the sample collected from this depth interval and test pit logs recorded a slight hydrocarbon odor. None of the other test pits revealed impacts at this depth, however. Metals concentrations above the criteria were also present in all of the surface soil samples and eight of the test pit soil samples. Only lead, mercury, and zinc were detected at concentrations at least 5 times the associated criterium. Surface soils within the storage area appear to be impacted by the presence of pesticides and TPH concentrations are also elevated in surface soils throughout the site.

These results suggest that the surface soils within the investigation area have been impacted by the presence of PAHs, TPH, metals, and to a lesser extent, pesticides. Subsurface impacts due to the presence of TPH and PAHs were observed at one test pit location, TP71-3, in the western portion of the site.

As described above, the NYSDEC and EPA agreed to allow the Army to proceed with an EE/CA and Removal Action at SEAD-71. A time-critical removal action has been proposed in order to eliminate a potential threat to the surrounding populations. Following implementation of the removal action, the data collected during the removal action at SEAD-71 will be used to evaluate if unacceptable risk remains and if migration of pollutants requires further action.

APPENDIX A

TEST PIT LOGS FOR SEAD-59 AND SEAD-71

TEST PIT REPORT

ENGINEERING-SCIENCE, INC.	CLIENT: USACOE	TEST PIT #: TP59-1

PROJECT: 15 SWMU ESI
LOCATION: ROMULUS, NY

JOB NUMBER: 720519
EST. GROUND ELEV.
INSPECTOR: JWC/ABS
CONTRACTOR: ES/ESI
START DATE: 6/8/94
COMPLETION DATE: 6/8/94
CHECKED BY:
DATE CHECKED:

TEST PIT DATA

LENGTH	WIDTH	DEPTH	EXCAVATION/SHORING METHOD
10'	5'	2'6"	BACKHOE

MONITORING DATA

INSTRUMENT	DETECTOR	BACKGROUND	TIME/DATE
OVM-580B	10.0 eV	0 PPM	0930 am / 6/8/94
VICTOREEN-190	pancake	10-15 µR/Hr	0930 am / 6/8/94

QA/QC DUPLICATE SAMPLE: YES or (NO)
Duplicate Sample Number:
MRD Sample Number:
QA/QC Rinsate Sample Number:
COMMENTS:

SCALE (FT)	VOC/ RAD.	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA SCHEMATIC	DESCRIPTION OF MATERIALS (BURMEISTER METHODOLOGY)	REMARKS
	0 ppm BKGD				Fine Shale Gravel	
1	590 ppm / BKGD	TP59-1-1	2'		5" Industrial waste with some silt fill.	Anomalies: Yellow trash cans, fencing, sign, multiple paint cans (2 gal) -- 3 removed during excavation.
2						Sampled @ 1030 am
					2' 0" Excavation halted at 2' due to paint cans.	
3						
4						
5						

SEE MASTER ACRONYM LIST FOR COMPLETE LISTING OF ABBREVIATIONS

TEST PIT #: TP59-1

TEST PIT REPORT

ENGINEERING–SCIENCE, INC. | CLIENT: USACOE | TEST PIT #: TP59-2

PROJECT: 15 SWMU ESI
LOCATION: ROMULUS, NY

JOB NUMBER: 720519
EST. GROUND ELEV.
INSPECTOR: BH/MB
CONTRACTOR: ES/UKB
START DATE: 2/20/94
COMPLETION DATE: 2/20/94
CHECKED BY:
DATE CHECKED:

TEST PIT DATA

LENGTH	WIDTH	DEPTH	EXCAVATION/SHORING METHOD
	2'	7'	BACKHOE

MONITORING DATA

INSTRUMENT	DETECTOR	BACKGROUND	TIME/DATE
OVM-580B	10.0 eV	0 PPM	2/20/94
VICTOREEN-190	pancake	μR/Hr	2/20/94
LEL		0 %	2/20/94

QA/QC DUPLICATE SAMPLE: YES or (NO)
Duplicate Sample Number:
MRD Sample Number:
QA/QC Rinsate Sample Number:
COMMENTS:

SCALE (FT)	VOC/ RAD.	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA SCHEMATIC	DESCRIPTION OF MATERIALS (BURMEISTER METHODOLOGY)	REMARKS
1	0 ppm BKGD 0 %				ASPHALT on Shale	
2	0 ppm BKGD 0 %				1.0' GRAVEL with pieces of Brick, Concrete and Shale	
3						
4	0 ppm BKGD 0 %				3.0' SILT and GRAVEL	
5						

SEE MASTER ACRONYM LIST FOR COMPLETE LISTING OF ABBREVIATIONS TEST PIT #: TP59-2

TEST PIT REPORT

ENGINEERING–SCIENCE, INC. | CLIENT:

TEST PIT #: TP59-2

MONITORING DATA

INSTRUMENT	DETECTOR	BACKGROUND	TIME/DATE	
OVM	10.0 eV PID	0 ppm	1700 h	2/20/94
Wilcoxon 190	Ambient	0 ppm	1700 h	2/20/94
LEL		0 %	1700 h	2/20/94

DATE START: 02/20/94
DATE FINISH:
INSPECTOR: BH/MB
CONTRACTOR: ES/UKB

SCALE (FT)	VOC/ RAD.	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA SCHEMATIC	DESCRIPTION OF MATERIALS (BURMEISTER METHODOLOGY)	REMARKS
6	0 ppm BKGD 0 %				5.5' GRAVEL with wood chips, steel, large cinders, plastic water pipe	Slight petroleum odor from pile
7					7.0' BASE of PIT	

SEE MASTER ACRONYM LIST FOR COMPLETE LISTING OF ABBREVIATIONS

TEST PIT #: TP59-2

TEST PIT REPORT

ENGINEERING–SCIENCE, INC.	CLIENT: USACOE	TEST PIT #: TP 59-3

PROJECT: 15 SWMU ESI
LOCATION: ROMULUS, NY

JOB NUMBER: 720519
EST. GROUND ELEV.
INSPECTOR: JWC/AGS
CONTRACTOR: ES/ESI
START DATE: 6/8/94
COMPLETION DATE: 6/8/94
CHECKED BY:
DATE CHECKED:

TEST PIT DATA

LENGTH	WIDTH	DEPTH	EXCAVATION/SHORING METHOD
8'	5'	3'	BACKHOE

MONITORING DATA

INSTRUMENT	DETECTOR	BACKGROUND	TIME/DATE
OVM-580B	10.0 eV	0 PPM	1115 Am / 6/8/94
VICTOREEN-190	pancake	10-15 µR/Hr	1115 Am / 6/8/94

QA/QC DUPLICATE SAMPLE: YES or (NO)
Duplicate Sample Number:
MRD Sample Number:
QA/QC Rinsate Sample Number:
COMMENTS:

SCALE (FT)	VOC/ RAD.	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA SCHEMATIC	DESCRIPTION OF MATERIALS (BURMEISTER METHODOLOGY)	REMARKS
	0ppm BKGD				Top Soil	
1	0ppm BKGD				4" Olive Gray Silt	Anomalies: Fencing, Crushed Bucket, (2) 55 gal Drums (Full) Uncovered at 3'
2						
3		TP59-3-1	3'			Sampled at 1205 pm
4					3' Excavation Halted due to presence of 3 55gal Drums.	
5						

SEE MASTER ACRONYM LIST FOR COMPLETE LISTING OF ABBREVIATIONS

TEST PIT #: TP59-3

TEST PIT REPORT

ENGINEERING–SCIENCE, INC.	CLIENT: USACOE	TEST PIT #: TP59-4

PROJECT: 15 SWMU ESI
LOCATION: ROMULUS, NY

JOB NUMBER: 72051
EST. GROUND ELEV.:
INSPECTOR: JWC/ABS
CONTRACTOR: ES/ESI
START DATE: 6/8/94
COMPLETION DATE: 6/8/94
CHECKED BY:
DATE CHECKED:

TEST PIT DATA

LENGTH	WIDTH	DEPTH	EXCAVATION/SHORING METHOD
16'	4' 7"	5' 10"	BACKHOE

MONITORING DATA

INSTRUMENT	DETECTOR	BACKGROUND	TIME/DATE
OVM-580B	10.0 eV	0 PPM	1310 pm / 6/8/94
VICTOREEN-190	pancake	10-15 μR/H	1310 pm / 6/8/94

QA/QC DUPLICATE SAMPLE: YES or (NO)
Duplicate Sample Number:
MRD Sample Number:

QA/QC Rinsate Sample Number:

COMMENTS:

SCALE (FT)	VOC/ RAD.	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA SCHEMATIC	DESCRIPTION OF MATERIALS (BURMEISTER METHODOLOGY)	REMARKS
	0 ppm BKGD				Top Soil	
1	0 ppm BKGD				Light Gray Silt with Fine Shale Gravel	Anomalies: 3 RCP Sections (Filled w/ Dirt)
	132 ppm BKGD	TP59-4-1	2'		1' 5" Stained Black Silt Layer (Diesel)	Sampled @ 1330 pm
2	0 ppm BKGD				1' 9" Light Gray Silt	
3					2' 8" Olive Gray Silt	
4						
5						

SEE MASTER ACRONYM LIST FOR COMPLETE LISTING OF ABBREVIATIONS

TEST PIT #: TP59-4

TEST PIT REPORT

ENGINEERING–SCIENCE, INC.	CLIENT:	TEST PIT #: TP59-4

MONITORING DATA

INSTRUMENT	DETECTOR	BACKGROUND	TIME/DATE

DATE START: _____
DATE FINISH: _____
INSPECTOR: JWC/ABS
CONTRACTOR: _____

SCALE (FT)	VOC/ RAD.	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA SCHEMATIC	DESCRIPTION OF MATERIALS (BURMEISTER METHODOLOGY)	REMARKS
					5' 10" BASE of PIT WEATHERED BEDROCK	

SEE MASTER ACRONYM LIST FOR COMPLETE LISTING OF ABBREVIATIONS

TEST PIT REPORT

ENGINEERING–SCIENCE, INC.	CLIENT: USACOE	TEST PIT #: TP59-5

PROJECT: 15 SWMU ESI
LOCATION: ROMULUS, NY

JOB NUMBER: 720519
EST. GROUND ELEV.:
INSPECTOR: JWC/ABS
CONTRACTOR: ES/ESI
START DATE: 6/8/94
COMPLETION DATE: 6/8/94
CHECKED BY:
DATE CHECKED:

TEST PIT DATA

LENGTH	WIDTH	DEPTH	EXCAVATION/SHORING METHOD
10'	2'6"	5'	BACKHOE

MONITORING DATA

INSTRUMENT	DETECTOR	BACKGROUND	TIME/DATE
OVM-580B	10.0 eV	0 PPM	0815 am / 6/8/94
VICTOREEN-190	pancake	10-15 μR/Hr	0815 am / 6/8/94

QA/QC DUPLICATE SAMPLE: YES or (NO)
Duplicate Sample Number:
MRD Sample Number:

QA/QC Rinsate Sample Number:

COMMENTS:

SCALE (FT)	VOC/ RAD.	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA SCHEMATIC	DESCRIPTION OF MATERIALS (BURMEISTER METHODOLOGY)	REMARKS
	0 ppm BKGD				Top Soil	Surface Anomaly Fence Debris
1	0 ppm BKGD				8" Yellow Orange and Light Gray Silt with Shale Clasts	
2		TP59-5-1	2.5'			Sampled @ 0825
3						
4	0 ppm BKGD				3' 0" Light Gray Silt with Shale Clasts ▽	
5					Weathered Shale @ 4' 8" Base of Pit @ 5'	

SEE MASTER ACRONYM LIST FOR COMPLETE LISTING OF ABBREVIATIONS

TEST PIT #: TP59-5

PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/7/97 @ 1000
Date / Time Finish:	10/7/97 @ 1130
Weather:	SUNNY, 70s
Contractor:	American Auger and Ditching
Inspector(s):	N.A. SMITH

TEST PIT NO. TP59-6

Location: ACROSS MOUND SOUTHWEST OF WOODS

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			SILT, some rock fragments, dark brown	TOPSOIL, SURFACE IS GRASS & BRUSH
0.5			SILT, some stone, little debris, trace fine sand, gray-brown. Debris includes	
			Metal guard rail segment	3 ft from north end of trench
1.0			Metal fence posts	9 ft from north end
2.0			Steel I-beam & cables	15 ft from north end
3.0			Wood stumps, fence posts with concrete bases	9 ft from north end
6.0			5" diameter root	17 ft from north end
			SILT, little clay, brown, damp	NATIVE SOIL
8.0			EXCAVATION ~~Bottom~~ TERMINATED	

EXCAVATION DIMENSIONS: (Length X Width X Depth) 30 ft x 3 ft x 8 ft

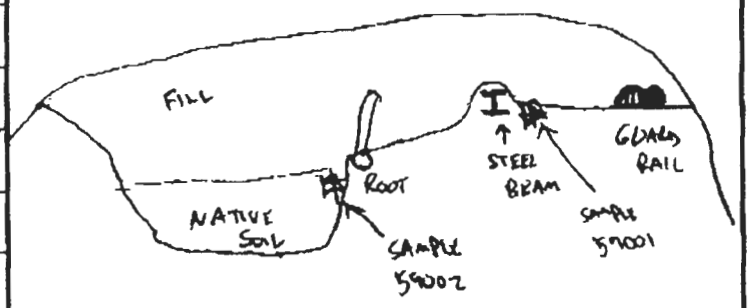
AIR MONITORING DATA: Background OVM Reading: 0.0 ppm

Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1120	59001	14 ft from N. End 3-3.5 ft bgs
1130	59002 *	18 ft from N. End 6-6.5 ft bgs
	* LAB SAMPLE	

CROSS SECTION

(Include approximate dimensions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/8/97 @ 0945
Date / Time Finish:	10/8/97 @ 1030
Weather:	SUNNY, 70s
Contractor:	American Auger and Ditching
Inspector(s):	N.A. SMITH

TEST PIT NO. TP59-7

Location: NORTHWEST PORTION OF SEAD 59, NORTH OF ROAD, 180 FEET EAST OF FENCELINE

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			SILT, little stone, trace sand, dry, brown-gray. Misc debris in soil including:	SURFACE IS GRASS
0.5			Barbed wire spool, 3ft diameter, at north end of trench	
			Trash can lid at south end of trench	
2.0			Channel iron fragment, 3"x1", 10 ft from north end. ~~Steel rod 1" x 5'~~ Copper	
			Copper grounding rod, 1" x 5', 26 ft from north end	
			Stone and concrete rubble, 30 ft from north end.	
2.5			SILT, little stone, trace fine sand and gravel, brown-dark gray, dry	NATIVE SOIL, DEPTH OF FILL RANGES FROM 2.5 - 3 Ft BGS, DEEPENING SOUTH
3.0			Steel cable, 16 ft from north end.	
			Curved brick/tile fragments, 22 ft from north end.	
4.0			Top of weathered bedrock.	
			EXCAVATION TERMINATED	

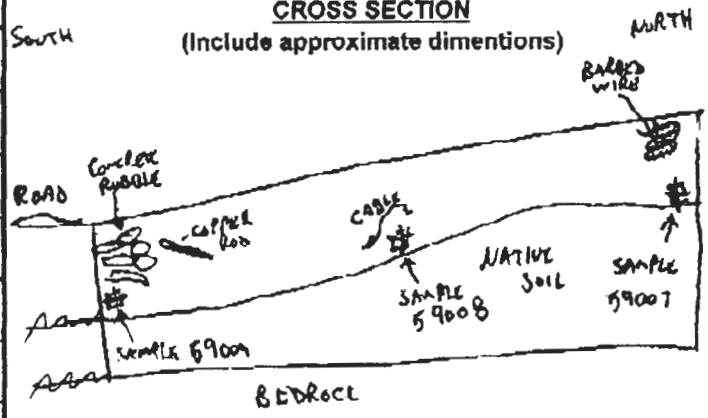
EXCAVATION DIMENSIONS: (Length X Width X Depth) 35 ft x 5 ft x 4 ft

AIR MONITORING DATA: Background OVM Reading: 0.0 ppm

Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1040	59007	NORTH END OF TRENCH 2-2.5 ft bgs
1050	59008*	17 ft FROM NORTH END 3-3.5 ft bgs
1100	59009	SOUTH END OF TRENCH 2-2.5 ft bgs
	* LAB SAMPLE	

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/13/97 1340
Date / Time Finish:	10/13/97 1405
Weather:	Sunny 70°F
Contractor:	American Auger and Ditching
Inspector(s):	WAS ABS

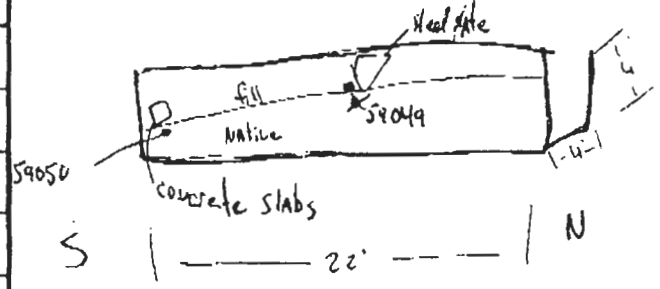
TEST PIT NO. TP 59-8
Location: ~~[illegible]~~ EM Grid: 500 E x 180 N

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			0'-1.5' Brown Silt, sand, stone, brick	0.5'-metal plate 4'x5', brick, concrete
1				
2			1.5'-2' Dark brown SILT, little f-m sand, and stone, dry	1.5' Base of fill
3			2'-4' Brown SILT, little-some Clay, dry	
4				
5			Terminated boring at 4'	

EXCAVATION DIMENSIONS: (Length X Width X Depth) 22' x 4' x 4'
AIR MONITORING DATA: Background OVM Reading: 0.0 ppm
Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1350	59049	1-1.5', 10 ft from north end of trench
1400	59050	1.5-2', 20 ft from north end of trench

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name: Seneca Army Depot - SEAD 59 RI
Project Number: 731747.01001
Date / Time Start: 10/13/97 1430
Date / Time Finish: 10/13/97 1505
Weather: Sunny - 70° F
Contractor: American Auger and Ditching
Inspector(s): NAS | ABS

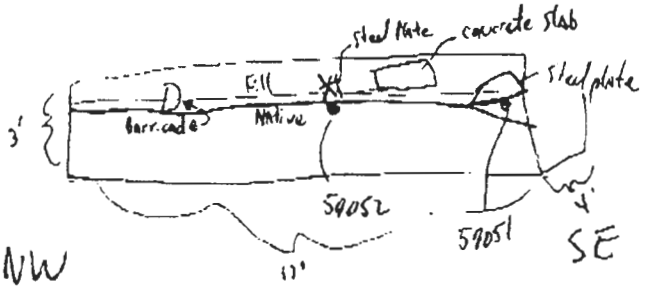
TEST PIT NO. TP59-9
Location: Em Grid 460E + 153N

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			0'-1.5' Dark brn SILT, little stone and Sand, dry.	.5'- metal sheet (wash tub)
.5				1' - Concrete slab 6'x3'x1', parking barricade, steel plate
1				
1.5				1.5' Base of fill
2			1.5'-2.5' Brown SILT, little Clay, and Stone,	
2.5				
3			Terminated boring at 3.0'	

EXCAVATION DIMENSIONS: (Length X Width X Depth) 17'x3'x4'
AIR MONITORING DATA: Background OVM Reading: 0.0 ppm
Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1450	59051	0.5-1.0 at SE end of trench
1455	59052	2-2.5, 8 ft From SE end of trench
	Also a field dup - 59053	

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/7/97 @ 1320
Date / Time Finish:	10/7/97 @ 1500
Weather:	SUNNY, 70S
Contractor:	American Auger and Ditching
Inspector(s):	N. A-SMITH

TEST PIT NO. TP59-10

Location: NORTHWEST PORTION OF NORTHERN MOUND, NEAR SOIL GAS SURVEY POINT S611-8

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			SILT, little stone slabs, trace brick, gray-brown	SURFACE IS GRASS
0.25			Misc debris in soil includes: Corroded drum fragments - shredded, rusted top or bottom of drum - no contents	6 feet northwest of start of trench
1.0			Asphalt and concrete debris	
1.5			Red-brown fill, carpet, metal beam	11 ft NW of start of trench
2.0			Metal sign post	
3.0			CLAY, little stone & metal debris, trace silt and fine sand, gray	
5.0			SILT, trace clay, stone, & wood, black	
7.5			SILT, little clay, damp	NATIVE SOIL
9.0			EXCAVATION TERMINATED	

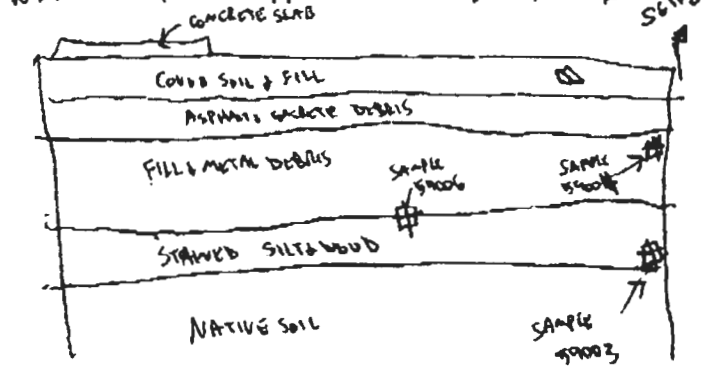
EXCAVATION DIMENSIONS: (Length X Width X Depth) 30 ft x 7 ft x 9 ft

AIR MONITORING DATA: Background OVM Reading: 0.0 ppm

Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1505	59006	14 ft WEST OF S611-8 3-3.5 ft bgs
1510	59003	NE CORNER OF TRENCH 7-7.5 ft bgs
1520	59004 *	EAST END OF TRENCH 3-3.5 ft bgs
	* LAB SAMPLE	

CROSS SECTION
(Include approximate dimensions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/9/97 1400
Date / Time Finish:	10/9/97 1500
Weather:	Sunny - 80°F
Contractor:	American Auger and Ditching
Inspector(s):	NAS / ABS

TEST PIT NO. TP59-11

Location: Mound North of Woods and road EM GRID COORD: 270E +470N (Start) END AT- 230E 445N

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			0'-4.5' Dark brown-gray SILT, sandstone	At 0.5' BGS observed small metal bracket + pipe (2' long). Also at ~3' BGS observed asphalt debris and brick.
1				
2				At 2' observed 4" long PVC pipe
3				
4				Observed Concrete slab (1'x1') at 4' BGS
			Base of Fill	
5			4.5'-6' (Till) Light brown SILT some~ Clay, little rock fragments	Base of Fill 4.5'
6			Terminated boring at 6' (Weathered Shale)	

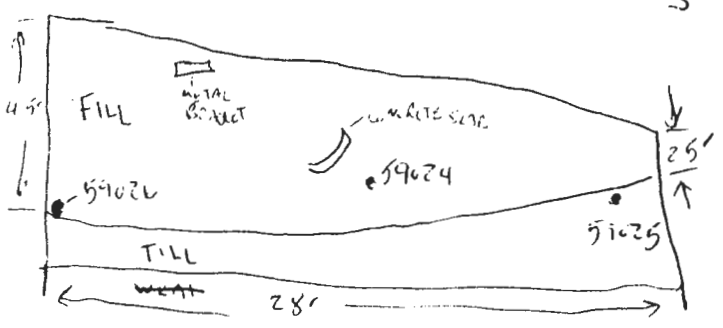
EXCAVATION DIMENSIONS: (Length X Width X Depth) 28' x 3' x 6'

AIR MONITORING DATA: Background OVM Reading: 0.0 ppm

Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1440	59024	~~3' BGS~~ 3' BGS
1510	59025	3'-3.5' BGS
1515	59026	4'-4.5' BGS

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/9/97 / 0920
Date / Time Finish:	10/9/97 / 1020
Weather:	Partly Sunny - 70°F
Contractor:	American Auger and Ditching
Inspector(s):	NAS / ABS

TEST PIT NO. TP59-12A

Location: Depot cav location West of woods Between Soil Gas points SG4-4 and SG5-4

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			0'-.5' Topsoil - Dark brn SAND + SILT	
1			.5'-2' Lt brn SILT, some Clay, little trace Sand, damp (TILL)	5-gallon can
2				At 1' encounted lid to ~~55 gallon drum~~ F.O. and a 2" x 3" x 1" paint Globule
3			2'-4.5' Weathered SHALE, trace silt lenses	Also chain link fencing, wood, lumber, concrete, steel mesh, crushed 1 gallon paint CANS, rake and shovel pieces.
4				▼-water at ~4'
4.4				
5			4.5 - Top of competent SHALE - Bedrock	
6			Terminated during at 4.7'	

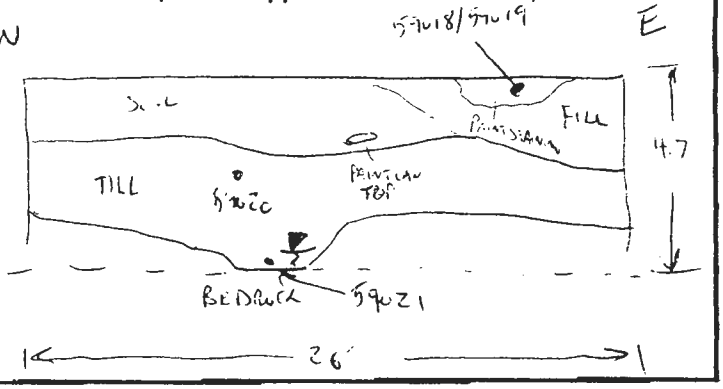
EXCAVATION DIMENSIONS: (Length X Width X Depth) 26' X 3' X 4.7'

AIR MONITORING DATA: Background OVM Reading: 0.0 ppm

Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1000	59018 ←	1-1.5' Deep Near point can
1005	59019 Dupe	" " "
1010	59020	2'-2.5'
1015	GC - Headspace 59021	4.7' BGS Groundwater sample

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/9/97 / 1045
Date / Time Finish:	10/9/97 / 1130
Weather:	Sunny ~70's
Contractor:	American Auger and Ditching
Inspector(s):	NAS / ABS

TEST PIT NO. TP 59-12B

Location: Excavated SE of TP 59-12A

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			0'-.5' Top soil - dark brown SAND + SILT	Uncovered 5 gallon paint can 1' BGS which was leaking brown grease, also observed white solidified paint in the area. PID reading 274 ppm.
1			.5'-2' Lt. brn SILT, some Clay, little trace Sand, damp.	
2			2'-4.5' Weathered SHALE, trace silt lenses.	
3				
4				▼ - Water at 4'
5			Top of Bedrock - 4.5' Terminated boring	

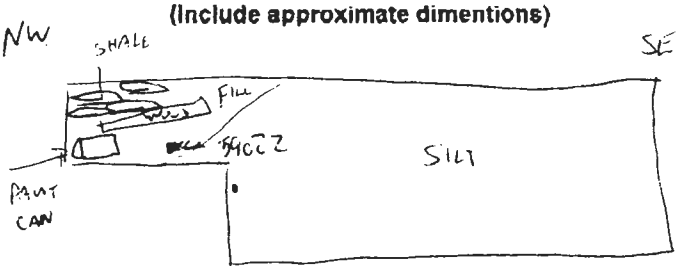
EXCAVATION DIMENSIONS: (Length X Width X Depth) 19 X 3 X 4.5

AIR MONITORING DATA: Background OVM Reading: 0.0 ppm

Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1111	59022	2.5' - 3' BGS 5' ~~SW~~ of paint cans ↑ SE

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/9/97 1250
Date / Time Finish:	10/9/97 1340
Weather:	Sunny ~80°
Contractor:	American Auger and Ditching
Inspector(s):	NAS / ABS

TEST PIT NO. TP59-12C

Location: Excavated N.E. of TP59-12A

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			0'-1.5' Dark brown SILT, trace fine Sand, little black shale	At 1' B.G.S. - deer carcus
1				
2			1.5'-3' Lt brown SILT, little Clay + Cobbles	
3				
4			Terminated boring at 3'	

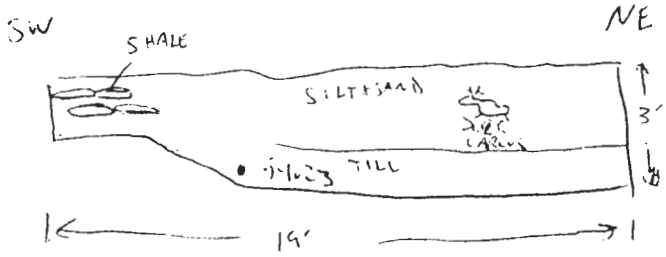
EXCAVATION DIMENSIONS: (Length X Width X Depth) 19 x 3 x 3

AIR MONITORING DATA: Background OVM Reading: 0.0 ppm

Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1330	59073	2.5-3' B.G.S.

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name: Seneca Army Depot - SEAD 59 RI
Project Number: 731747.01001
Date / Time Start: 10/8/97 / 1300
Date / Time Finish: 10/8/97 / 1330
Weather: Sunny - 70's
Contractor: American Auger and Ditching
Inspector(s): ABS/NAS

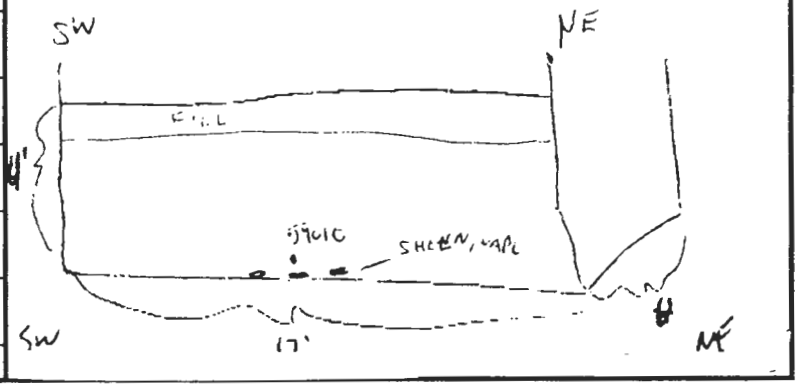
TEST PIT NO. TP59-13A
Location: At Soil Gas Survey point SG7-3, in the western portion of the site near culvert/drainage ditch

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0'			0'-1.5' Dark gray SILT and crushed stone, little gass moist.	
1'				
2'			1.5'-4' Brown r Gray f-m SAND, SILT, CLAY, AND SHALE, wet at 1.5'	Fuel oil type oder in soil at 3.5' - ovm - 7.4 ppm
3'				
4'			SHALE bedrock at 4' (water observed top of the Shale - water contained sheen) Terminated Excavation at 4'	

EXCAVATION DIMENSIONS: (Length X Width X Depth) 17' x 4' x 6'
AIR MONITORING DATA: Background OVM Reading: 0.0 ppm
Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1320	59010	3.5-4' BGS

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/8/97 / 1400
Date / Time Finish:	10/8/97 / 1430
Weather:	Sunny 70's
Contractor:	American Auger and Ditching
Inspector(s):	WAS / RBS

TEST PIT NO. TP-59-13A

Location: 25' east of TP59-13A

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			0'-1' Dark brn-gray SAND, SILT, + CLAY	
1			1'-4.5' Brown + Gray SAND, SILT, CLAY, SHALE.	
2				
3				
4				
5			4.5'-6' Weathered SHALE -	wet at 4.5'. ~~slight sheen observed~~ F.C. No odors or sheens observed
6			Terminated Excavation at 6'	

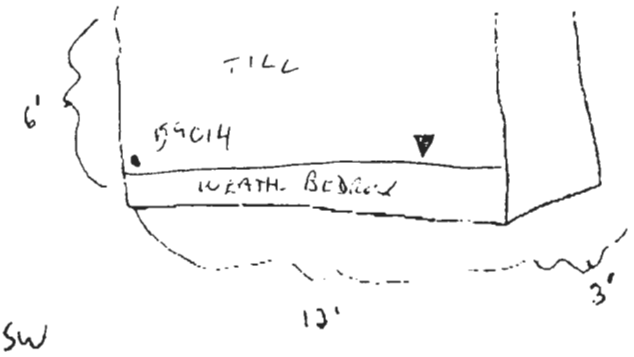
EXCAVATION DIMENSIONS: (Length X Width X Depth) 12' x 3' x 6'

AIR MONITORING DATA: Background OVM Reading: 0.0 ppm

Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1540	59014	4'-4.5' SW corner

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name: Seneca Army Depot - SEAD 59 RI
Project Number: 731747.01001
Date / Time Start: 1430 10/8/97
Date / Time Finish: 1450 10/8/97
Weather: Sunny 70's
Contractor: American Auger and Ditching
Inspector(s): NAS, ABS

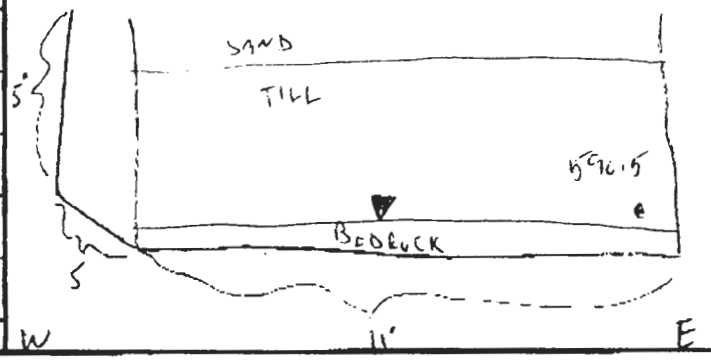
TEST PIT NO. TP59-13C
Location: 15' southeast TP59-13A in the ditch

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			0'-1' Dark gray SAND, little Silt + Shale	
1'			1'-2.5' Brown-gray SILT, CLAY, + SAND	
2'				
3'			2.5'-3.5' Same as 1'-2.5', with Shale fragments/slabs	
4'			Bedrock at 3.5' - Terminated Excavation	water on top of bedrock, Cuttings a silty sheen, no odor

EXCAVATION DIMENSIONS: (Length X Width X Depth) 11' x 5' x 3.5'
AIR MONITORING DATA: Background OVM Reading: 0.0 ppm
Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1550	59015	3'-3.5' NE Corner

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/8/97 1455
Date / Time Finish:	10/8/97 1505
Weather:	Sunny 70's
Contractor:	American Auger and Ditching
Inspector(s):	NAS / ABS

TEST PIT NO. TP59-13D

Location: 25' west of TP59-13B Between SG1 GAS pts SG7-2 and SG7-1

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0'			0'-5' Brown & Gray SILT, some fine Sand, Clay, and rock fragments.	
1'				
2'				
3'				
4'				
5'			~~Water~~ Bedrock at 5' Terminated EXCAVATION	Water on top of bedrock at 5' - No odors or sheens observed

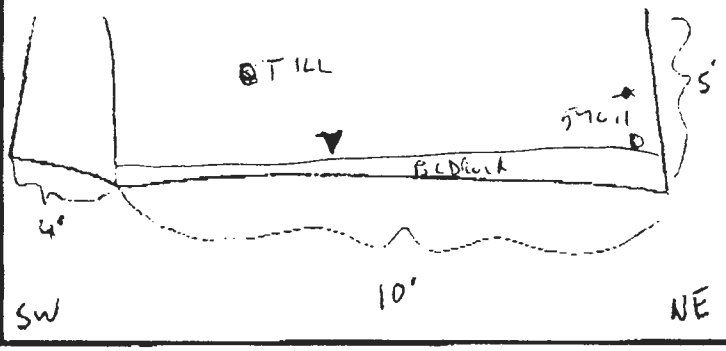
EXCAVATION DIMENSIONS: (Length X Width X Depth) 10' x 4' x 5'

AIR MONITORING DATA: Background OVM Reading: 0.0 ppm

Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1500	59011	4.5'-5' EAST END

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/8/97 1505
Date / Time Finish:	10/8/97 1520
Weather:	Sunny 70's
Contractor:	American Auger and Ditching
Inspector(s):	NAS / ABS

TEST PIT NO. TP59-13E

Location: North of TP59-13A, at end of culvert

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			0'-2' Dark gray f-m SAND, little Silt and crushed Shale	
1				
2			2'-5.5 Brown & Gray SILT, CLAY, SAND, Stone,	
3				
4				
5				
5.5				
6			Bedrock at 5.5' - Terminated excavation	Water on top of bedrock - no sheen or oder observed.

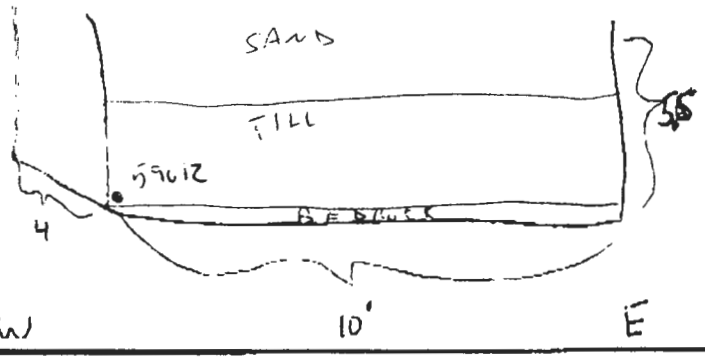
EXCAVATION DIMENSIONS: (Length X Width X Depth) 10' X 4' X 5.5'

AIR MONITORING DATA: Background OVM Reading: 0.0 ppm

Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1515	59012	5'-5.5' westend

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/10/97 @ 0910
Date / Time Finish:	10/10/97 @ 1010
Weather:	SUNNY, 60S
Contractor:	American Auger and Ditching
Inspector(s):	N.A. SMITH

TEST PIT NO. TP59-14

Location: NORTH OF WOODS END ROAD, EAST of TEST PIT TP59-11

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			FILL - Brown silt, sand, and stone + misc. debris including:	
1.0			Brick and asphalt debris, roots, water main cover.	
2.0			Metal wire, 6 ft from east end of trench	
			~~Black shale fragments, 20 ft from east end~~	
			Increase in percentage of bricks, 12 ft from east end.	
			SILT, little-some clay, little embedded black shale fragments, 20 ft from east end.	
3.0			SILT, little clay and stone, trace sand, brown	NATIVE SOIL (TILL)
5.5			Top of weathered bedrock (SHALE)	
			EXCAVATION TERMINATED	

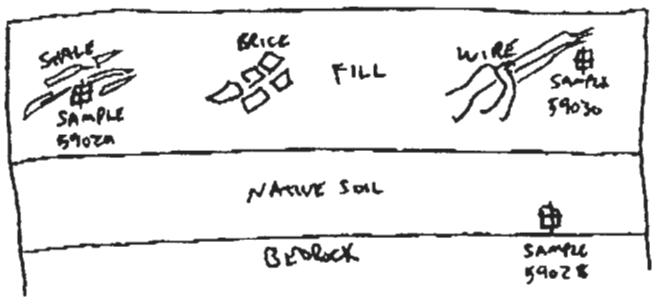
EXCAVATION DIMENSIONS: (Length X Width X Depth) 29 ft x 6 ft x 5.5 ft

AIR MONITORING DATA: Background OVM Reading: 0.0

Maximum Breathing Zone OVM Reading: 6.0

TIME	SAMPLE I.D.	LOCATION
~~59028~~		
~~NW 59029~~		
~~NW 59030~~		
0955	59028	7 ft FROM EAST END 5-5.5 ft bgs
1000	59029	20 ft FROM EAST END 2-2.5 ft bgs
1010	59030*	6 ft FROM EAST END 1.5-2 ft
	* LAB SAMPLE	

CROSS SECTION (Include approximate dimensions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/10/97 1045
Date / Time Finish:	10/10/97 1300
Weather:	Sunny - 60's
Contractor:	American Auger and Ditching
Inspector(s):	UAS | ABS

TEST PIT NO. TP59-15

Location: TOP of North mound adjacent to SGI gas pt SG10-9

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			0'-6.5' Brown to dark brown SILT and SANDSTONE, traces of asphalt + brick, fill	Encountered 6" steel pipe running E-W.
1				
2				
3				
4				At 4' observed Lumber and painted aluminum moldings (Bldg materials)
5				P.I.D of up to 0.6ppm on clump of soil - Black stained - at 5' BGS
6				observed & crushed 15 gallon drum - P.I.D - 16 ppm. (contains a black oily stains. - located at 6' BGS
7			6.5'-7' Light brown SILT, little Clay + stone damp, ~~much asphalt debris~~	Also observed Railroad ties, paving particle board, asphalt debris
			Terminated Boring at 7'	

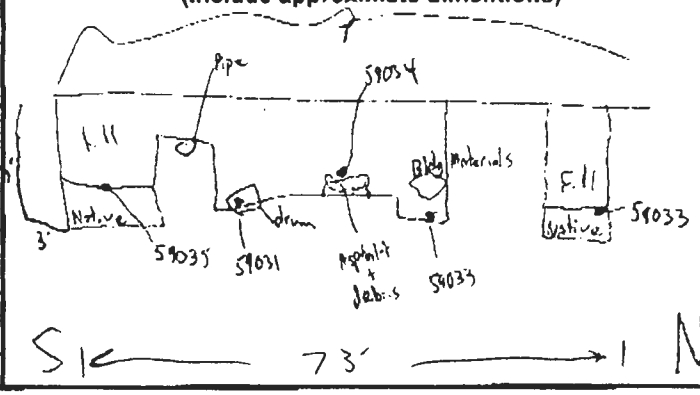
EXCAVATION DIMENSIONS: (Length X Width X Depth) 73' x 3' x 7'

AIR MONITORING DATA: Background OVM Reading: 0.0 ppm

Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1130	59031	6' collected from extracted drum
1210	59032	6-6.5
1240	59033 (screening only)	6.5'-7'
1255	59034	5'
1315	59035	6-6.5'

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/10/97 1500
Date / Time Finish:	10/10/97 1620
Weather:	SUNNY - 60°F
Contractor:	American Auger and Ditching
Inspector(s):	NAS / ABS

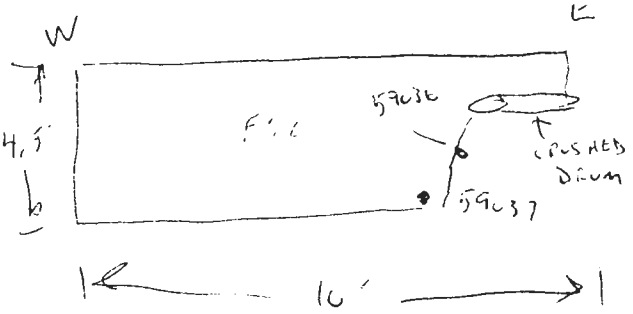
TEST PIT NO. TP59-16
Location: Approx Em-61
Grid Coord: 380E + 400N

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			0'-1' Dark grey SILT, SAND, + STONE	
1			1'-4' Brown SILT, Some Clay, tr Stone + wood Damp.	Uncovered a drum, It is possible that there is ~~possibly~~ a 2nd drum beneath the first at 4'. Drums not observed to be leaking.
2				
3				
4			4'-4.5' N/A (1'-4') little Stone, no wood.	
5			Terminated boring at 4.5'	

EXCAVATION DIMENSIONS: (Length X Width X Depth) 10' x 6' x 4.5'
AIR MONITORING DATA: Background OVM Reading: 0.0 ppm
Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1600	59036	3.5'-4' collected breathing zone
1610	59037	4-4.5' southwall, 3' South of drum

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/13/97 0800
Date / Time Finish:	10/13/97 1110
Weather:	Sunny, 60° F
Contractor:	American Auger and Ditching
Inspector(s):	NAS | KKS

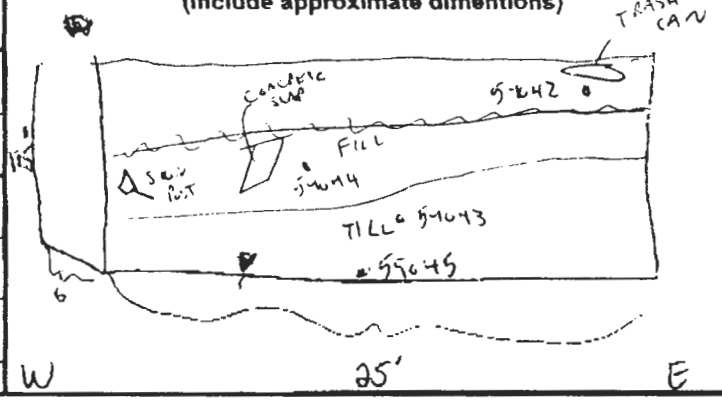
TEST PIT NO. TP59-17
Location: Em Grid 360E + 480N

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			0'-1' Brown SILT, little f-m Sand and Stone	0.5' - Sheet metal
1				1' - Trace bricks
1-2			1'-2' Dark brown-grey SILT, little f-m Sand, and Stone, dry	2' - metal Garbage can, wire, ceramic pipe fragment, concrete, lumber, steel bolt, metal post sign
2			2' - A/A (1'-2'), Black shale fragments and discolored soil.	3' - Stumps
3				
4			3'- Dark brown-grey SILT, little f-m Sand, and Debris, dry.	
5				
6			6'-8' Brown SILT and CLAY, little Shale, damp.	Base of Fill - 6'
7				
8			8'-11.5' Brown SILT, little Clay + f-m Sand trace rock fragments, wet.	
				▼ Water at 11'
11.5			Terminated Boring at 11.5'	

EXCAVATION DIMENSIONS: (Length X Width X Depth) ~~35' x 15' x 6' FD~~ ~~25' x 15' x 6'~~ 25'x6'x 11.5'
AIR MONITORING DATA: Background OVM Reading: 0.0 ppm
Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
0930	59042	1-1.5'
1020	59043	6-6.5
1030	59044	3-3.5
1055	59045	11-11.5'
1100	GC-only 59046	11.8' Groundwater Sample-GC

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name: Seneca Army Depot - SEAD 59 RI
Project Number: 731747.01001
Date / Time Start: 10/13/97 1220
Date / Time Finish: 10/13/97 1330
Weather: Sunny 70°F
Contractor: American Auger and Ditching
Inspector(s): NAS/ABS

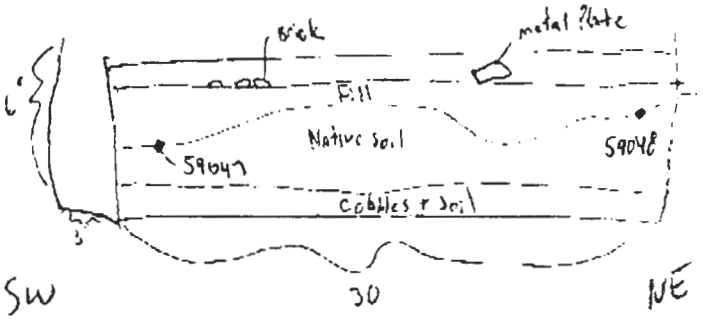
TEST PIT NO. TP59-18
Location: From Grid location 475E + 233N South of marked Road

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			0'-1' Brown SILT, little F-Sand	
1			1'-1.5' Black SHALE fragments mixed w/ soil. Base of Fill - 1'	
2			1.5'-2' Brown-grey SILT, some clay, tr iron staining, dry ~~SILT, Some Clay, trace rock, cobbles etc~~	1'-2'x3' Steel plate
3			2'-5' Dk gray-brown SILT, little Clay + Shale, dry, trace rock and cobbles	
4				
5			5'-6' A/A (2'-5') and Cobbles	
6				6' Brick + masonry debris
			Terminated boring at 6'	

EXCAVATION DIMENSIONS: (Length X Width X Depth) 30'X 3'X 6'
AIR MONITORING DATA: Background OVM Reading: 0.0 ppm
Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1250	59047	2'-2.5'
1255	59048	1.5'-2'

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name: Seneca Army Depot - SEAD 59 RI
Project Number: 731747.01001
Date / Time Start: 10/13/97 0900
Date / Time Finish: 10/15/97 1615
Weather: Sunny 60°F
Contractor: American Auger and Ditching
Inspector(s): WAS/DSS

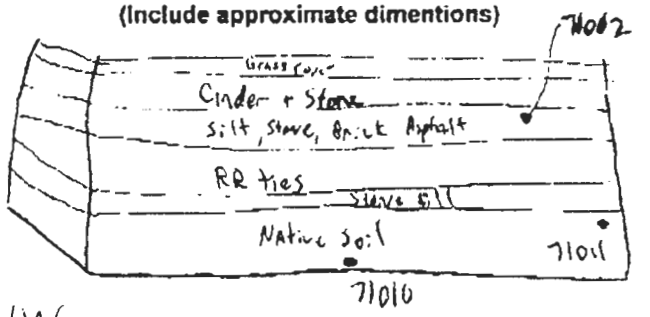
TEST PIT NO. TP71-6
Location: Em Grid COORD: 440E, 10N

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			0'-1.5' Brn SILT, little f-Sand + Stone	
1.5				1' - ~~Steel pipe~~ chain link fence GATE
3			1.5'-3' Black cinders with SILT + STONE	1.5' Encountered cinders
			3'-7' Brown f-SAND + SILT, Some stone little wood, dry asphalt, bricks, cinder blocks R.R ties	3.5' - Piece of lead ~3" DM
7				7' - Base of fill (Top of till)
9			7'-11' Gr-Brn CLAY, Some silt, little stone, damp.	
10				
11				
12			11'-13' Gray SILT + f. SAND, little fine Gravel (shale), wet	12' - water
~~13~~			Terminated boring AT 13'	

EXCAVATION DIMENSIONS: (Length X Width X Depth) 23 X 4 X 13
AIR MONITORING DATA: Background OVM Reading: 0.0 ppm
Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1040	71010	12.5-13
1050	71011	7-7.5
1100	71012	3-3.5 Below cinders

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

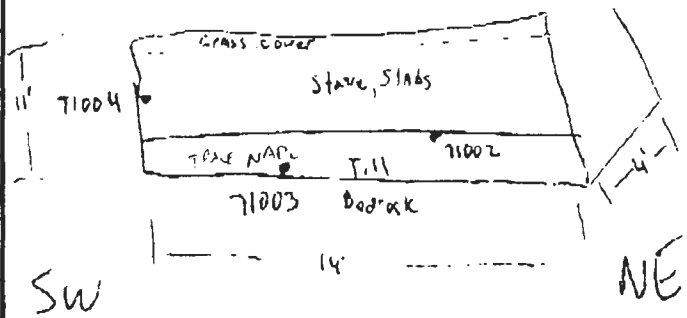
Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/14/97 0845
Date / Time Finish:	10/14/97 1030
Weather:	cloudy 60's
Contractor:	American Auger and Ditching
Inspector(s):	NAS / ABS
TEST PIT NO.	TP71-3
Location:	Em Grid Coord: 375E ; 82N

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0'			0'-8' Brown SILT, little f-Sand and Stone Slabs (.5'-2')	
1'				
2'				2'- wire
4'				
7'				
8'			8'-10.5' Gray SILT & CLAY, damp	8'- Slight hydrocarbon odor, PID - 4 to 6 ppm. Soil has gry-brn staining 8.5'-9'
10			10.5'-11' GRAY CLAY, little f-Sand, SILT & Stone moist, Some stones are covered with Brown WAXY	10'- Trace oily sheen on clay soils
11				10.5' - Till
			Terminated Boring at 11'	

EXCAVATION DIMENSIONS: (Length X Width X Depth) 14' x 4' x 11'
AIR MONITORING DATA: Background OVM Reading: 0.0 ppm
Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
0950	71007	8.5'-9'
1020	71003	10.5-11
1030	71004	3.5-4

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/14/97 1240
Date / Time Finish:	10/14/97 1320
Weather:	Cloudy 50's
Contractor:	American Auger and Ditching
Inspector(s):	NAS / ABS

TEST PIT NO. TP 71-4

Location: Em Grid Coord: 355E + 53N

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			0'-3' Dark brown SILT, little f. Sand + stone	
3			3'-7' Brown SILT, little f-Sand and Stone some slabs, dry	1' - Stone Slab layer at 1'
4				3' occassional lumber
5				
6				
7			7'-10.0' Gray CLAY, little Sand and Silt, stone	
8				
9				
10			10'-10.5' Gray CLAY, little Stone, tr f-Sand and Silt, tr iron staining, moist	10' - Till (PID on 10'-10.5' - 6ppm)
11			Terminated Boring - 10.5' (Bedrock)	

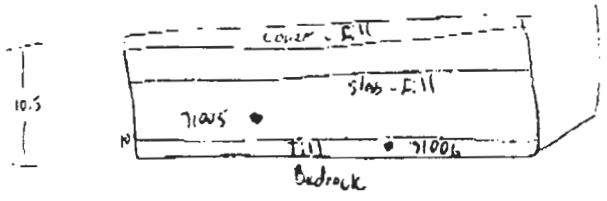
EXCAVATION DIMENSIONS: (Length X Width X Depth) 15 X ~~3~~ 5 X 10.5

AIR MONITORING DATA: Background OVM Reading: 0.0 ppm

Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1240	71005	3.5-4
1250	71006	10-10.5

CROSS SECTION
(Include approximate dimentions)



PARSONS ENGINEERING SCIENCE, INC.
TEST PIT RECORD

Project Name:	Seneca Army Depot - SEAD 59 RI
Project Number:	731747.01001
Date / Time Start:	10/14/97 1330
Date / Time Finish:	10/14/97 1450
Weather:	Cloudy 50°F
Contractor:	American Auger and Ditching
Inspector(s):	NAS/ ABS
TEST PIT NO.	TP 71-5
Location:	Fm GRID Coord: 180 E, 10 N

DEPTH (ft bgs)	Stratigraphy	Macro	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0			0'-7' Dark brn SILT and roadstone, little ~~and~~ stone slabs	
1				1' - more stone slabs + lumber
3				3'-7' Railroad ties (matches anomaly)
4				
5				
6				
7			7'-12' Brn-Gray CLAY, little Silt, Sand, and Stone, tr organic staining, moist	7'-Base of fill / Top of till
8				
12			12'-13' Gray CLAY, little f-Sand, Silt, stone, moist	12.5' Soil Headspace - 8ppm
13			Terminated boring at 13' - Bedrock	

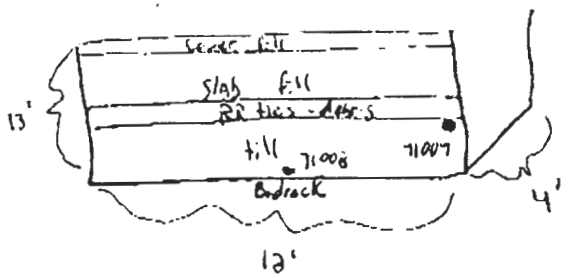
EXCAVATION DIMENSIONS: (Length X Width X Depth) 12' x 4' x 13'

AIR MONITORING DATA: Background OVM Reading: 0.0 ppm

Maximum Breathing Zone OVM Reading: 0.0 ppm

TIME	SAMPLE I.D.	LOCATION
1430	71007	7-7.5' Below RR ties
1440	71008	12.5-13' ~~Above~~ top of Weathered rock

CROSS SECTION
(Include approximate dimentions)



APPENDIX B

IMMUNOASSAY TESTING RESULTS FOR SEAD-59 AND SEAD-71

TABLE B-1
SENECA ARMY DEPOT ACTIVITY
SEAD-59 PHASE I REMEDIAL INVESTIGATION
IMMUNOASSAY FIELD SCREENING RESULTS- TEST PITS

MPLE I D	SAMPLE LOCATION	TEST TYPE	DATE ANALYZED	ESTIMATED CONCENTRATION (PPM)	REPORT SAMPLE ID SENT TO LABORATORY	LAB RESULTS (PPM)
59001	TP59-6	PAH	10/7/1997	1		
59001	TP59-6	BTEX	10/8/1997	<2.5		
59002	TP59-6	PAH	10/8/1997	<0.6	TP59-6-2	3.367
59002	TP59-6	BTEX	10/8/1997	8	TP59-6-2	0.026
59003	TP59-10	PAH	10/9/1997	0.7		
59003	TP59-10	BTEX	10/8/1997	4.5		
59004	TP59-10	PAH	10/9/1997	>25	TP59-10-2	270.2
59004	TP59-10	BTEX	10/9/1997	5.7	TP59-10-2	0.022
59006	TP59-10	PAH	10/9/1997	0.9		
59006	TP59-10	BTEX	10/9/1997	5.2		
59007	TP59-7	PAH	10/9/1997	0.7		
	TP59-7	BTEX	10/9/1997	6.2		
59008	TP59-7	PAH	10/9/1997	1.5	TP59-7-2	3.575
59008	TP59-7	BTEX	10/9/1997	4.5	TP59-7-2	0.022
59009	TP59-7	PAH	10/9/1997	<0.6		
59009	TP59-7	BTEX	10/9/1997	3.2		
59011	TP59-13	PAH	10/9/1997	<0.6		
59011	TP59-13	BTEX	10/9/1997	5		
59012	TP59-13	PAH	10/9/1997	0.7		
59012	TP59-13	BTEX	10/9/1997	<2.5		
59014	TP59-13	PAH	10/9/1997	1		
59014	TP59-13	BTEX	10/9/1997	<2.5		
59015	TP59-13	PAH	10/9/1997	<0.6	TP59-13C-1	0.3313
59015	TP59-13	BTEX	10/9/1997	9.5	TP59-13C-1	0.022
59018	TP59-12	PAH	10/10/1997	4.9	TP59-12A-1	6.197
59018	TP59-12	BTEX	10/10/1997	5.2	TP59-12A-1	0.024
59019	TP59-12	PAH	10/10/1997	1	TP59-12A-2	5.801
59019	TP59-12	BTEX	10/10/1997	5	TP59-12A-2	0.024
59020	TP59-12	PAH	10/10/1997	<0.6		
59020	TP59-12	BTEX	10/10/1997	4		
59022	TP59-12	PAH	10/10/1997	<0.6		
59022	TP59-12	BTEX	10/10/1997	4.4		
59023	TP59-12	PAH	10/10/1997	<0.6	TP59-12B-2	0.592
59023	TP59-12	BTEX	10/10/1997	6	TP59-12B-2	0.022
59024	TP59-11	PAH	10/10/1997	0.8		
59024	TP59-11	BTEX	10/10/1997	11		
59025	TP59-11	PAH	10/10/1997	<0.6		
59025	TP59-11	BTEX	10/10/1997	8		
59026	TP59-11	PAH	10/10/1997	>25	TP59-11A-2	45.27

SAMPLE I D	SAMPLE LOCATION	TEST TYPE	DATE ANALYZED	ESTIMATED CONCENTRATION (PPM)	REPORT SAMPLE ID SENT TO LABORATORY	LA RESU (PP
59026	TP59-11	BTEX	10/10/1997	2.5	TP59-11A-2	0.0
59028	TP59-14	PAH	10/11/1997	0.7		
59028	TP59-14	BTEX	10/11/1997	7		
59029	TP59-14	PAH	10/11/1997	0.8		
59029	TP59-14	BTEX	10/11/1997	5.7		
59030	TP59-14	PAH	10/11/1997	12	TP59-14-3	11
59030	TP59-14	BTEX	10/11/1997	3.9	TP59-14-3	0.0
59032	TP59-15	PAH	10/11/1997	2.1		
59032	TP59-15	BTEX	10/11/1997	6.7		
59033	TP59-15	PAH	10/11/1997	3.5		
59033	TP59-15	BTEX	10/11/1997	6.2		
59034	TP59-15	PAH	10/11/1997	16.5		
59034	TP59-15	BTEX	10/11/1997	5.5		
59035	TP59-15	PAH	10/11/1997	>25	TP59-15-5	47
59035	TP59-15	BTEX	10/11/1997	6	TP59-15-5	0
59036	TP59-16	PAH	10/11/1997	<0.6	TP59-16-1	2.5
59036	TP59-16	BTEX	10/11/1997	<2.5	TP59-16-1	0.0
59037	TP59-16	PAH	10/11/1997	<0.6		
59037	TP59-16	BTEX	10/11/1997	<2.5		
59042	TP59-17	PAH	10/13/1997	2.8		
59042	TP59-17	BTEX	10/14/1997	<2.5		
59043	TP59-17	PAH	10/13/1997	<0.6		
59043	TP59-17	BTEX	10/14/1997	2.9		
59044	TP59-17	PAH	10/13/1997	>25	TP59-17-3	1
59044	TP59-17	BTEX	10/14-15/97	2.8	TP59-17-3	0.0
59045	TP59-17	PAH	10/13/1997	<0.6		
59045	TP59-17	BTEX	10/14/1997	6.6		
59047	TP59-18	PAH	10/14/1997	<0.6	TP59-18-1	0
59047	TP59-18	BTEX	10/14/1997	5.9	TP59-18-1	0.0
59048	TP59-18	PAH	10/14/1997	<0.6		
59048	TP59-18	BTEX	10/14/1997	<2.5		
59049	TP59-8	BTEX	10/14/1997	<2.5		
59050	TP59-8	BTEX	10/14/1997	3.5	TP59-8-2	0.0
59051	TP59-9	BTEX	10/13/1997	<2.5		
59051	TP59-9	PAH	10/14/1997	7.1		
59052	TP59-9	BTEX	10/13/1997	<2.5	TP59-9-2	4.1
59052	TP59-9	PAH	10/14/1997	22	TP59-9-2	0
59053	TP59-9	BTEX	10/14/1997	<2.5		
59053	TP59-9	PAH	10/14/1997	4.8		

ote:
TEX minimum detection limit- 2.5 ppm. PAH minimum detection limit- 0.6 ppm; maximum detection limit- 25 ppm.
amples TP59-13A-1 (59010) and TP59-15-1 (59031) were also sent to the laboratory for analysis, but were not screened in the field.
ab results are the sum of the detections for benzene, ethylbenzene, toluene, and total xylenes with values with U or UJ qualifiers being summed as 1/2 the detection limit.

TABLE B-2
SENECA ARMY DEPOT ACTIVITY
SEAD-59 PHASE I REMEDIAL INVESTIGATION
IMMUNOASSAY FIELD SCREENING RESULTS- SOIL BORINGS

PLE I.D.	SAMPLE LOCATION	TEST TYPE	DATE ANALYZED	ESTIMATED CONCENTRATION (PPM)	REPORT SAMPLE ID SENT TO LABORATORY	LAB RESULTS (PPM)
9077	SB59-6-01	BTEX	10/20/97	<2.5		
9077	SB59-6-01	PAH	10/20/97	0.7		
9078	SB59-6-02	BTEX	10/21/97	<2.5		
9078	SB59-6-02	PAH	10/20/97	<0.6		
9055	SB59-6-03	BTEX	10/21/97	4.0	MW59-4	0.024
9055	SB59-6-03	PAH	10/20/97	<0.6	MW59-4	0.624
9056	SB59-7-01	BTEX	10/21/97	<2.5	SB59-7	0.022
9056	SB59-7-01	PAH	10/20/97	1.7	SB59-7	1.8771
9079	SB59-7-02	BTEX	10/21/97	<2.5		
9079	SB59-7-02	PAH	10/21/97	1.0		
9080	SB59-7-03	BTEX	10/21/97	<2.5		
9080	SB59-7-03	PAH	10/21/97	0.6		
9057	SB59-8-01	BTEX	10/21/97	6.3	SB59-8	0.026
9057	SB59-8-01	PAH	10/21/97	<0.6	SB59-8	0.3228
9081	SB59-8-02	BTEX	10/21/97	4.3		
9081	SB59-8-02	PAH	10/21/97	<0.6		
9082	SB59-8-03	BTEX	10/21/97	2.6		
9082	SB59-8-03	PAH	10/21/97	<0.6		
9083	SB59-8-04	BTEX	10/21/97	<2.5		
9083	SB59-8-04	PAH	10/21/97	0.7		
9084	SB59-9-01	BTEX	10/21/97	<2.5		
9084	SB59-9-01	PAH	10/21/97	6.6		
9059	SB59-9-02	BTEX	10/21/97	4.6	SB59-9	0.02
9059	SB59-9-02	PAH	10/21/97	0.8	SB59-9	0.5223
9085	SB59-9-03	BTEX	10/21/97	<2.5		
9085	SB59-9-03	PAH	10/21/97	<0.6		
9086	SB59-11-01	BTEX	10/21/97	<2.5		
9086	SB59-11-01	PAH	10/21/97	<0.6		
9087	SB59-11-02	BTEX	10/21/97	<2.5	*	
9087	SB59-11-02	PAH	10/21/97	<0.6	*	
9088	SB59-11-03	BTEX	10/21/97	5.8		
9088	SB59-11-03	PAH	10/21/97	<0.6		
9089	SB59-9-02D	BTEX	10/21/97	4.1		
9089	SB59-9-02D	PAH	10/21/97	<0.6		
9090	SB59-9-01D	BTEX	10/22/97	<2.5		
9090	SB59-9-01D	PAH	10/22/97	5.0		
9091	SB59-13-01	BTEX	10/22/97	<2.5		
9091	SB59-13-01	PAH	10/22/97	<0.6		
9092	SB59-13-02	BTEX	10/22/97	<2.5		
9092	SB59-13-02	PAH	10/22/97	<0.6		
9093	SB59-13-03	BTEX	10/22/97	4.4		
9093	SB59-13-03	PAH	10/22/97	3.9		
9060	SB59-13-04	BTEX	10/22/97	6.0	SB59-13	0.11
9060	SB59-13-04	PAH	10/22/97	>25	SB59-13	1.514

SAMPLE I.D.	SAMPLE LOCATION	TEST TYPE	DATE ANALYZED	ESTIMATED CONCENTRATION (PPM)	REPORT SAMPLE ID SENT TO LABORATORY	LA RES (PP
59066	SB59-20-03	PAH	10/22/1997	0.7	SB59-20	0.3
59101	SB59-19-01	BTEX	10/23/1997	<2.5		
59101	SB59-19-01	PAH	10/23/1997	>25		
59065	SB59-19-02	BTEX	10/23/1997	15	SB59-19	0.1
59065	SB59-19-02	PAH	10/23/1997	>25	SB59-19	94
59102	SB59-19-03	BTEX	10/23/1997	5.8		
59102	SB59-19-03	PAH	10/23/1997	>25		
59103	SB59-19-04	BTEX	10/23/1997	9.5		
59103	SB59-19-04	PAH	10/23/1997	>25		
59104	SB59-19-05	BTEX	10/23/1997	<2.5		
59104	SB59-19-05	PAH	10/23/1997	>25		
59105	SB59-20-01	BTEX	10/23/97	2.8		
59105	SB59-20-01	PAH	10/23/1997	>25		
59106	SB59-20-02	BTEX	10/23/1997	3.5		
59106	SB59-20-02	PAH	10/23/1997			
59107	SB59-20-03	BTEX	10/23/1997	<2.5		
59107	SB59-20-03	PAH	10/23/1997	3		
59067	SB59-21-01	BTEX	10/23/1997	6.5	SB59-21	0.0
59067	SB59-21-01	PAH	10/23/1997	<0.6	SB59-21	0.3
59109	SB59-21-02	BTEX	10/23/1997	<2.5		
59109	SB59-21-02	PAH	10/23/1997	<0.6		
59110	SB59-21-03	BTEX	10/23/1997	<2.5		
59110	SB59-21-03	PAH	10/23/1997	1.2		
59111	SB59-21-04	BTEX	10/23/1997	3.5		
59111	SB59-21-04	PAH	10/23/1997	0.9		
59112	SB59-21-05	BTEX	10/23/1997	<2.5		
59112	SB59-21-05	PAH	10/23/1997	<0.6		
59064	SB59-16-01	BTEX	10/23/1997	3	SB59-16	0.0
59064	SB59-16-01	PAH	10/23/1997	>25	SB59-16	5.2
59114	SB59-16-03	BTEX	10/23/1997	<2.5		
59114	SB59-16-03	PAH	10/23/1997	12		
59115	SB59-16-04	BTEX	10/23/1997	<2.5		
59115	SB59-16-04	PAH	10/23/1997	<0.6		
59116	SB59-17-01	BTEX	10/23/1997	<2.5		
59116	SB59-17-01	PAH	10/23/1997	>25		
59117	SB59-17-02	BTEX	10/23/1997	3		
59117	SB59-17-02	PAH	10/23/1997	>25		
59118	SB59-17-03	BTEX	10/23/1997	4		
59118	SB59-17-03	PAH	10/23/1997	>25		
59119	SB59-17-04	BTEX	10/23/1997	<2.5		
59119	SB59-17-04	PAH	10/23/1997	<0.6		
59068	SB59-17-05	BTEX	10/23/1997	5.2	SB59-17	0.0
59068	SB59-17-05	PAH	10/23/1997	<0.6	SB59-17	1.0
59120	SB59-17-06	BTEX	10/23/1997	3.8		

TABLE B-2
SENECA ARMY DEPOT ACTIVITY
SEAD-59 PHASE I REMEDIAL INVESTIGATION
IMMUNOASSAY FIELD SCREENING RESULTS- SOIL BORINGS

MPLE I.D.	SAMPLE LOCATION	TEST TYPE	DATE ANALYZED	ESTIMATED CONCENTRATION (PPM)	REPORT SAMPLE ID SENT TO LABORATORY	LAB RESULTS (PPM)
59094	SB59-15-01	BTEX	10/22/97	<2.5		
59094	SB59-15-01	PAH	10/22/97	18.9		
59095	SB59-15-02	BTEX	10/22/97	<2.5		
59095	SB59-15-02	PAH	10/22/97	0.8		
59061	SB59-15-03	BTEX	10/22/97	4.8	SB59-15	0.022
59061	SB59-15-03	PAH	10/22/97	<0.6	SB59-15	0.4504
59096	SB59-15-04	BTEX	10/22/97	0.3		
59096	SB59-15-04	PAH	10/22/97	<0.6		
59062	SB59-14-01	BTEX	10/22/97	2.8	SB59-14	0.022
59062	SB59-14-01	PAH	10/22/97	17.7	SB59-14	6.179
59097	SB59-14-02	BTEX	10/22/97	<2.5		
59097	SB59-14-02	PAH	10/22/97	0.8		
59098	SB59-14-03	BTEX	10/22/97	<2.5		
59098	SB59-14-03	PAH	10/22/97	<0.6		
59099	SB59-14-04	BTEX	10/22/97	<2.5		
59099	SB59-14-04	PAH	10/22/97	<0.6		
59076	SB59-20-01	BTEX	10/23/1997	<2.5		
59076	SB59-20-01	PAH	10/22/1997	>25		
59100	SB59-20-02	BTEX	10/23/1997	3.5		
59100	SB59-20-02	PAH	10/22/1997	0.9		
59066	SB59-20-03	BTEX	10/23/1997	4	SB59-20	0.022

SAMPLE I.D.	SAMPLE LOCATION	TEST TYPE	DATE ANALYZED	ESTIMATED CONCENTRATION (PPM)	REPORT SAMPLE ID SENT TO LABORATORY	L RES (P
59120	SB59-17-06	PAH	10/23/1997	<0.6		
59121	SB59-17-07	BTEX	10/23/1997	3.5		
59121	SB59-17-07	PAH	10/23/1997	<0.6		
59124	SB59-18-03	BTEX	10/24/97	6.4		
59124	SB59-18-03	PAH	10/24/97	>25		
59125	SB59-18-04	BTEX	10/24/97	<2.5		
59125	SB59-18-04	PAH	10/24/97	>25		
59126	SB59-18-05	BTEX	10/24/97	<2.5		
59126	SB59-18-05	PAH	10/24/97	0.9		
59127	SB59-18-06	BTEX	10/24/97	4.8	SB59-18	0
59127	SB59-18-06	PAH	10/24/97	>25	SB59-18	1(
59128	SB59-18-09	BTEX	10/24/97	3.9		
59128	SB59-18-09	PAH	10/24/97	<0.6		
59129	SB59-12-01	BTEX	10/24/97	4.8	MW59-6	0
59129	SB59-12-01	PAH	10/24/97	24	MW59-6	3
59122	SB59-12-02	BTEX	10/24/97	<2.5		
59122	SB59-12-02	PAH	10/24/97	>25		
59123	SB59-12-04	BTEX	10/24/97	<2.5		
59123	SB59-12-04	PAH	10/24/97	<0.6		
59130	SB59-10-01	BTEX	10/24/97	<2.5	SB59-10	0
59130	SB59-10-01	PAH	10/24/97	<0.6	SB59-10	0.

te:
EX minimum detection limit- 2.5 ppm. PAH minimum detection limit- 0.6 ppm; maximum detection limit- 25 ppm.
Samples SB59-11 (59132) and SB59-17 duplicate (59131) were also sent to laboratory for analysis, but were not screened in the field.
Sample SB59-11 (59132) came from the same depth interval as SB59-11-2 (59087).
o results are the sum of the detections for benzene, ethylbenzene, toluene, and total xylenes with values with U or UJ qualifiers being summed as 1/2 the detection limit.

TABLE B-3
SENECA ARMY DEPOT ACTIVITY
SEAD-71 PHASE I REMEDIAL INVESTIGATION
IMMUNOASSAY FIELD SCREENING RESULTS- TEST PITS

SAMPLE I.D.	SAMPLE LOCATION	TEST TYPE	DATE ANALYZED	ESTIMATED CONCENTRATION (PPM)	REPORT SAMPLE ID SENT TO LABORATORY	LAB RESULTS (PPM)
71002	TP71-3	PAH	NA	NA	TP71-3-1	2.990
71002	TP71-3	BTEX	10/15/1997	11.6	TP71-3-1	0.020
71004	TP71-4	PAH	NA	NA		
71004	TP71-4	BTEX	10/14/1997	4.3		
71005	TP71-4	PAH	NA	NA		
71005	TP71-4	BTEX	10/14/1997	<2.5		
71006	TP71-4	PAH	NA	NA	TP71-4-2	0.624
71006	TP71-4	BTEX	10/14/1997	3.5	TP71-4-2	0.024
71007	TP71-5	PAH	NA	NA	TP71-5-1	0.453
71007	TP71-5	BTEX	10/15/1997	3.05	TP71-5-1	0.024
71008	TP71-5	PAH	NA	NA		
71008	TP71-5	BTEX	10/15/1997	<2.5		
71010	TP71-6	PAH	NA	NA	TP71-6-1	0.385
71010	TP71-6	BTEX	10/15/1997	3.3	TP71-6-1	0.024
71011	TP71-6	PAH	NA	NA		
71011	TP71-6	BTEX	10/15/1997	<2.5		
71012	TP71-6	PAH	NA	NA		
71012	TP71-6	BTEX	10/15/1997	<2.5		

Notes:

1) NA- Not analyzed
2) BTEX minimum detection limit- 2.5 ppm. PAH minimum detection limit- 0.6 ppm; maximun detection limit- 25 ppm.
3) Sample TP71-3-2 (71003) was sent to the laboratory for analysis, but was not screened in the field.

APPENDIX C

SOIL BORING LOGS FOR SEAD-59 AND SEAD-71

LOG OF BORING NO. SB59-6

PROJECT: SEAD-59 & SEAD-71 RI/FS
PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY. 14541
ASSOCIATED UNIT/AREA: SEAD-59
PROJECT NO: 731747
DATE STARTED: 10/20/97
DATE COMPLETED: 10/20/97
DRILLING CONTRACTOR: AMERICAN AUGER AND DITCHING
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3 INCH SPLIT SPOONS

DEPTH TO WATER (ft): 4.5
BORING LOCATION (N/E):
REFERENCE COORDINATE SYSTEM:
GROUND SURFACE ELEVATION (ft):
DATUM:
INSPECTOR: N. SMITH
CHECKED BY: F. O'LOUGHLIN

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
59077	4 6 11 15	2.00	1	0	ML	1		Dark brown SILT, trace fine Sand and organics, damp. Brown-gray SILT, little Clay, trace Shale fragments, stiff, damp.	FL
59078	13 10 10 21	2.00	1.4	0	ML	2 3			
59055	10 10 13 50/1	1.60	.8	0	ML	4 4.0 5		Gray SILT, some Clay and Shale fragments, damp. Wet at 4.5 feet.	TL
								BORING TERMINATED AT 5.6 FEET. TOP OF WEATHERED BEDROCK.	BRK

NOTES: Laboratory Sample ID- 59055. Monitoring well MW59-4 was installed in this boring.

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LOG OF BORING SB59-6

LOG OF BORING NO. SB59-7

PROJECT: **SEAD-59 & SEAD-71 RI/FS**
PROJECT LOCATION: **Seneca Army Depot Activity, Romulus, NY. 14541**
ASSOCIATED UNIT/AREA: **SEAD-59**
PROJECT NO: **731747**
DATE STARTED: **10/20/97**
DATE COMPLETED: **10/20/97**
DRILLING CONTRACTOR: **AMERICAN AUGER AND DITCHING**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **3 INCH SPLIT SPOONS**

DEPTH TO WATER (ft): **4.8**
BORING LOCATION (N/E):
REFERENCE COORDINATE SYSTEM:
GROUND SURFACE ELEVATION (ft):
DATUM:
INSPECTOR: **N. SMITH**
CHECKED BY: **F. O'LOUGHLIN**

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
59056	4 8 8 10	2.00	1.4	0	ML	1 2		Dark brown SILT, little(+) fine-medium Sand, damp. Brown CLAY, some Silt, damp.	FL
59079	10 10 7 9	2.00	1.3	0	ML	2.0 3		Brown SILT, little(+) fine Sand, trace Clay and Shale fragments, moist.	TL
59080	15 52 44 29	2.00	1.8	0		4 4.8 5		Dark gray weathered SHALE, wet	WSH
						6		BORING TERMINATED AT 6 FEET. TOP OF BEDROCK	BRK

NOTES: Laboratory sample ID- 59056

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LOG OF BORING SB59-7

LOG OF BORING NO. SB59-8

PROJECT: **SEAD-59 & SEAD-71 RI/FS**
PROJECT LOCATION: **Seneca Army Depot Activity, Romulus, NY. 14541**
ASSOCIATED UNIT/AREA: **SEAD-59**
PROJECT NO: **731747**
DATE STARTED: **10/20/97**
DATE COMPLETED: **10/20/97**
DRILLING CONTRACTOR: **AMERICAN AUGER AND DITCHING**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **3 INCH SPLIT SPOONS**

DEPTH TO WATER (ft): **6**
BORING LOCATION (N/E):
REFERENCE COORDINATE SYSTEM:
GROUND SURFACE ELEVATION (ft):
DATUM:
INSPECTOR: **N. SMITH**
CHECKED BY: **F. O'LOUGHLIN**

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
59057	6 8 12 18	2.00	.9	0	ML	1		Brown SILT, little fine Sand and organics, dry.	FL
59081	18 18 24 18	2.00	1.1	0	ML	2 2.5 3		Brown SILT, little gray Clay, trace orange iron staining, dry	TL
59082	12 11 5 6	2.00	.4	0	ML	4 5			
59083	50/.8'	0.80	.8	0	ML	6		Gray SILT, little fine Sand and Shale, loose, wet.	
								BORING TERMINATED AT 6.8 FEET. TOP OF BEDROCK.	BRK

NOTES: Laboratory sample ID- 59057

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LOG OF BORING SB59-8

LOG OF BORING NO. SB59-9

PROJECT: SEAD-59 & SEAD-71 RI/FS
PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY. 14541
ASSOCIATED UNIT/AREA: SEAD-59
PROJECT NO: 731747
DATE STARTED: 10/21/97
DATE COMPLETED: 10/21/97
DRILLING CONTRACTOR: AMERICAN AUGER AND DITCHING
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3 INCH SPLIT SPOONS

DEPTH TO WATER (ft): 5.4
BORING LOCATION (N/E):
REFERENCE COORDINATE SYSTEM:
GROUND SURFACE ELEVATION (ft):
DATUM:
INSPECTOR: N. SMITH
CHECKED BY: F. O'LOUGHLIN

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
59084	5 10 12 50/3"	1.80	1	0	ML	1		Brown SILT, little fine Sand, trace medium Gravel, dry.	FL
						2.0			
59059	43 50 40 37	2.00	1.7	0	ML	2 3		Brown SILT and fine SAND, trace Shale fragments, dry. Cobble from 2- 2.5 feet.	TL
59085	38 30 32 50/3	1.80	1.4	0	ML	4 5		Gray SILT, little fine Sand, Clay and weathered Shale, wet.	
								BORING TERMINATED AT 5.8 FEET. TOP OF BEDROCK.	BRK

NOTES: Laboratory sample ID- 59059.

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LOG OF BORING SB59-9

LOG OF BORING NO. SB59-10

PROJECT: **SEAD-59 & SEAD-71 RI/FS**
PROJECT LOCATION: **Seneca Army Depot Activity, Romulus, NY. 14541**
ASSOCIATED UNIT/AREA: **SEAD-59**
PROJECT NO: **731747**
DATE STARTED: **10/24/97**
DATE COMPLETED: **10/24/97**
DRILLING CONTRACTOR: **AMERICAN AUGER AND DITCHING**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **3 INCH SPLIT SPOONS**

DEPTH TO WATER (ft): **NA**
BORING LOCATION (N/E):
REFERENCE COORDINATE SYSTEM:
GROUND SURFACE ELEVATION (ft):
DATUM:
INSPECTOR: **N. SMITH**
CHECKED BY: **F. O'LOUGHLIN**

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
59130	25 100/3"	0.80	.8	0	GM	1.0		Brown SILT and Cobbles, dry.	FL
						1		Encountered split spoon refusal at 2 feet below ground surface. Attempted to drill and sample at two different locations near the originally proposed location, but encountered split spoon refusal at 2 feet below ground surface. Encountered auger refusal at 5 feet below ground surface.	TL
						2			
						3			
						4			
						5		BORING TERMINATED AT 5 FEET. TOP OF BEDROCK.	BRK

NOTES: Laboratory sample ID- 59130 (Includes analyses for limited chemical and physical testing).

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LOG OF BORING SB59-10

LOG OF BORING NO. SB59-11

PROJECT: **SEAD-59 & SEAD-71 RI/FS**
PROJECT LOCATION: **Seneca Army Depot Activity, Romulus, NY. 14541**
ASSOCIATED UNIT/AREA: **SEAD-59**
PROJECT NO: **731747**
DATE STARTED: **10/21/97**
DATE COMPLETED: **10/21/97**
DRILLING CONTRACTOR: **AMERICAN AUGER AND DITCHING**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **3 INCH SPLIT SPOONS**

DEPTH TO WATER (ft): **NA**
BORING LOCATION (N/E):
REFERENCE COORDINATE SYSTEM:
GROUND SURFACE ELEVATION (ft):
DATUM:
INSPECTOR: **N. SMITH**
CHECKED BY: **F. O'LOUGHLIN**

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
59086	5 7 9 15	2.00	1.7	0	ML	1		Dark brown SILT, little fine Sand, trace organics, dry. Light brown SILT, little(+) fine Sand, trace Shale fragments, dry.	FL
59087 59132	25 50 80 100	2.00		0	ML	2 2.8 3		Brown SILT, fine SAND, and SHALE fragments, dry.	TL
59088	150 150	1.00	1	0	ML	4 4.5		Weathered SHALE fragments, moist.	WSH
						5		BORING TERMINATED AT 5 FEET. TOP OF BEDROCK.	BRK

NOTES: Laboratory sample ID- 59132.

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LOG OF BORING SB59-11

LOG OF BORING NO. SB59-12

PROJECT: **SEAD-59 & SEAD-71 RI/FS**
PROJECT LOCATION: **Seneca Army Depot Activity, Romulus, NY. 14541**
ASSOCIATED UNIT/AREA: **SEAD-59**
PROJECT NO: **731747**
DATE STARTED: **10/24/97**
DATE COMPLETED: **10/24/97**
DRILLING CONTRACTOR: **AMERICAN AUGER AND DITCHING**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **3 INCH SPLIT SPOONS**

DEPTH TO WATER (ft): **7**
BORING LOCATION (N/E):
REFERENCE COORDINATE SYSTEM:
GROUND SURFACE ELEVATION (ft):
DATUM:
INSPECTOR: **N. SMITH**
CHECKED BY: **F. O'LOUGHLIN**

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
						0		Augered to 1'	FL
59129	28 40 38 22	2.00	1.6	0	ML	1 2		Brown SILT, little stone, trace coal and cinders, stiff, dry. Gray SILT and SHALE fragments, dry.	
						3.0			
59122	43 48 50/3"	1.30	1	0	ML	3 4		Grayish brown SILT, little fine Sand, trace cobbles, dry.	TL
	42 44 68/4"	1.40	0			5 6		NO RECOVERY FROM 5 FEET TO 7 FEET.	
59123	20 38 30 28	2.00	1.7	0	ML	7 8		Brown SILT, little very fine to fine Sand and rock fragments, trace Clay, moist to wet.	
						9.0			
	83 50/1"	0.60	.5	0		9		Weathered SHALE.	WSH
								TERMINATED BORING AT 9.6 FEET. TOP OF BEDROCK	BRK

NOTES: Laboratory sample ID- 59129(includes analyses for limited chemical and physical testing). Lab sample ID- 59122: analyzed for limited chemical and physical testing only. Installed monitoring well MW59-6 in this soil boring.

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LOG OF BORING SB59-12

LOG OF BORING NO. SB59-13

PROJECT: SEAD-59 & SEAD-71 RI/FS
PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY. 14541
ASSOCIATED UNIT/AREA: SEAD-59
PROJECT NO: 731747
DATE STARTED: 10/21/97
DATE COMPLETED: 10/21/97
DRILLING CONTRACTOR: AMERICAN AUGER AND DITCHING
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3 INCH SPLIT SPOONS

DEPTH TO WATER (ft): 6.9
BORING LOCATION (N/E):
REFERENCE COORDINATE SYSTEM:
GROUND SURFACE ELEVATION (ft):
DATUM:
INSPECTOR: N. SMITH
CHECKED BY: F. O'LOUGHLIN

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
59091	12 15 15 11	2.00	1.3	0	ML	1		Brown SILT, little fine Sand, trace fine-medium Gravel, dry.	FL
59092	10 13 20 30	2.00	1.4	0	ML	2 2.5		Brown SILT, little Clay and fine Sand, dry.	
						3		Brown and gray SILT, little(+) Clay, trace fine Sand and Shale fragments, trace orange iron staining, damp.	TL
59093	30 35 35 30	2.00	.5	11	ML	4		Brown-gray SILT, little fine Sand and weathered Shale, damp, slight odor.	
59060	25 30 100 100	2.00	1.5	37	ML	5 6 6.9			
						7		Dark gray SHALE with silt filled fractures, moist, hydrocarbon odor.	WSH
						8		BORING TERMINATED AT 8 FEET. TOP OF BEDROCK.	BRK

NOTES: Laboratory sample ID- 59060.

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LOG OF BORING SB59-13

LOG OF BORING NO. SB59-14

PROJECT: SEAD-59 & SEAD-71 RI/FS
PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY. 14541
ASSOCIATED UNIT/AREA: SEAD-59
PROJECT NO: 731747
DATE STARTED: 10/22/97
DATE COMPLETED: 10/22/97
DRILLING CONTRACTOR: AMERICAN AUGER AND DITCHING
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3 INCH SPLIT SPOONS

DEPTH TO WATER (ft): 6
BORING LOCATION (N/E):
REFERENCE COORDINATE SYSTEM:
GROUND SURFACE ELEVATION (ft):
DATUM:
INSPECTOR: N. SMITH
CHECKED BY: F. O'LOUGHLIN

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
59062	20 32 18 22	2.00	1.6	0	ML	1		Brown SILT, little fine Sand and stone, dry.	FL
								Dark brown SILT, little Clay, trace(+) fine Sand and Gravel, dry.	
59097	18 23 33 29	2.00	1.3	0	ML	2 3		Brown-gray SILT, little(+) Clay, little pebbles(.5"-1"), damp.	
59098	45 21 13 11	2.00	1.1	0	ML	4			
						4.7		Iron stained cobble at 4.5 feet.	
						5		Brown SILT, little fine Sand, trace Clay, trace iron staining, moist.	TL
59099	18 13 15 4	2.00	.9	0	ML	6			
						6.0		Fine SHALE fragments, little gray Silt and Clay, wet.	
						6.8		Brown SILT, little fine Sand, trace Clay, wet.	
						7		Weathered SHALE, wet.	WSH
	50/.1"	0.10	1	0		8			
								BORING TERMINATED AT 8.1 FEET.	BRK

NOTES: Laboratory sample ID- 59062

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LOG OF BORING SB59-14

LOG OF BORING NO. SB59-15

PROJECT: **SEAD-59 & SEAD-71 RI/FS**
PROJECT LOCATION: **Seneca Army Depot Activity, Romulus, NY. 14541**
ASSOCIATED UNIT/AREA: **SEAD-59**
PROJECT NO: **731747**
DATE STARTED: **10/21/97**
DATE COMPLETED: **10/21/97**
DRILLING CONTRACTOR: **AMERICAN AUGER AND DITCHING**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **3 INCH SPLIT SPOONS**

DEPTH TO WATER (ft): **6**
BORING LOCATION (N/E):
REFERENCE COORDINATE SYSTEM:
GROUND SURFACE ELEVATION (ft):
DATUM:
INSPECTOR: **N. SMITH**
CHECKED BY: **F. O'LOUGHLIN**

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
59094	13 23 30 20	2.00	1.7	0	ML	1		Dark gray SILT, little Clay, trace fine Sand and Gravel, damp.	FL
								Dark gray SILT and weathered SHALE, damp.	
59095	12 13 14 20	2.00	1.5	0	ML	2 3		Dark brown-black SILT, some Clay, trace organics, stiff, damp.	
								Light brown-gray SILT, little Clay and fine Sand lenses, damp.	
59061	18 29 42 46	2.00	1.3	0	ML	4 4.0 5		Gray SILT, little fine Sand and rock fragments, trace Clay, damp.	TL
59096	42 25 18 50	1.90	1		ML	6 6.8 7		Wet at 6 feet.	
								Gray weathered SHALE, wet.	WSH
								BORING TERMINATED AT 7.9 FEET. TOP OF BEDROCK.	BRK

NOTES: Laboratory sample ID- 59061

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LOG OF BORING SB59-15

LOG OF BORING NO. SB59-16

PROJECT: SEAD-59 & SEAD-71 RI/FS
PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY. 14541
ASSOCIATED UNIT/AREA: SEAD-59
PROJECT NO: 731747
DATE STARTED: 10/23/97
DATE COMPLETED: 10/23/97
DRILLING CONTRACTOR: AMERICAN AUGER AND DITCHING
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3 INCH SPLIT SPOONS

DEPTH TO WATER (ft): NA
BORING LOCATION (N/E):
REFERENCE COORDINATE SYSTEM:
GROUND SURFACE ELEVATION (ft):
DATUM:
INSPECTOR: N. SMITH
CHECKED BY: F. O'LOUGHLIN

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
59064	9 13 10 16	2.00	1.5	0	ML	1		Gray SILT, CLAY, Stone, Cinders, and wood, damp.	FL
	22 19 17 11	2.00	.3	0	ML	2 3		Wood in the tip of the spoon.	
59114	11 14 15 20	2.00	.9	0	ML	4 5		Gray SILT, some Clay, trace iron staining, damp.	
59115	17 11 6 50/4"	1.90	1.8	0	ML	6 6.6 7		Brown SILT and fine SAND, little medium Shale fragments, moist.	TL
	50	0.00	0	0		8		BORING TERMINATED AT 8 FEET. TOP OF BEDROCK.	BRK

NOTES: Laboratory sample ID- 59064.

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LOG OF BORING SB59-16

LOG OF BORING NO. SB59-17

PROJECT: SEAD-59 & SEAD-71 RI/FS
PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY. 14541
ASSOCIATED UNIT/AREA: SEAD-59
PROJECT NO: 731747
DATE STARTED: 10/23/97
DATE COMPLETED: 10/23/97
DRILLING CONTRACTOR: AMERICAN AUGER AND DITCHING
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3 INCH SPLIT SPOONS

DEPTH TO WATER (ft): 13
BORING LOCATION (N/E):
REFERENCE COORDINATE SYSTEM:
GROUND SURFACE ELEVATION (ft):
DATUM:
INSPECTOR: N. SMITH
CHECKED BY: F. O'LOUGHLIN

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
59116	8 19 20 23	2.00	2	0	ML	1		Brown SILT, SAND, Stone, Concrete debris, dry.	FL
59117	20 15 18 12	2.00	1.2	0	ML	2 3		Dark gray SILT, CLAY, Stone, and asphalt, dry.	
59118	11 100 23 16	2.00	.5	0	ML	4 5		Dark gray SILT, some Clay, little Shale fragments, damp. Cobbles at 4.5- 5 feet.	
59119	15 7 9 12	2.00	.5	0	ML	6 7		Dark brown-gray SILT, little Clay, little iron staining, damp.	
59068	7 6 6 12	2.00	1.2	0	ML	8 9 10		Brown-gray SILT, little fine Sand and rock fragments, trace Clay, moist.	
						10.0			

NOTES: Laboratory sample ID's- 59068(Dup-59131).

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LOG OF BORING SB59-17

PROJECT: SEAD-59 & SEAD-71 RI/FS
PROJECT NO: 731747
PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY. 14541

GROUND SURFACE ELEVATION:
INSPECTOR: N. SMITH
CHECKED BY: F. O'LOUGHLIN

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
59120	26 31 28.50	2.00	.9	0	ML	11		Brown SILT, some fine Sand, little Shale fragments and pebbles, damp.	TL
59121	20 28 48 50/4	1.90	1.2	0	ML	12 13 13.0			
								Gray SILT, some fine SAND and weathered Shale, moist to wet.	WSH
								BORING TERMINATED AT 13.9 FEET.	BRK

NOTES: Laboratory sample ID's- 59068(Dup-59131).

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LOG OF BORING SB59-17

LOG OF BORING NO. SB59-18

PROJECT: SEAD-59 & SEAD-71 RI/FS
PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY. 14541
ASSOCIATED UNIT/AREA: SEAD-59
PROJECT NO: 731747
DATE STARTED: 10/24/97
DATE COMPLETED: 10/24/97
DRILLING CONTRACTOR: AMERICAN AUGER AND DITCHING
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3 INCH SPLIT SPOONS

DEPTH TO WATER (ft): 16.5
BORING LOCATION (N/E):
REFERENCE COORDINATE SYSTEM:
GROUND SURFACE ELEVATION (ft):
DATUM:
INSPECTOR: N. SMITH
CHECKED BY: F. O'LOUGHLIN

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
	14 25 28 36	2.00	1.6	0	ML	1		Brown SILT, some Stone, Sand, and asphalt debris, dry.	FL
	29 38 18 31	2.00	1.4	0	ML	2 3			
59124	23 28 8 11	2.00	1.6	1.2	ML	4 5		Brown SILT, some asphalt debris, Stone, and Clay, dry. Asphalt debris appears to be burnt.	
59125	10 13 16 16	2.00	1.8	0	ML	6 7		Stone and asphalt, dry. Gray and black SILT, some Clay, little Stone and brick, damp.	
59126	10 7 13 15	2.00	1.2	0	ML	8 9		Little burnt wood. Dark brown SILT, some Clay, trace organics, damp. Light brown SILT, little fine to medium Sand, moist.	
						10			
						10.0			

NOTES: Laboratory sample ID- 59127.

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LOG OF BORING SB59-18

PROJECT: SEAD-59 & SEAD-71 RI/FS
PROJECT NO: 731747
PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY. 14541

GROUND SURFACE ELEVATION:
INSPECTOR: N. SMITH
CHECKED BY: F. O'LOUGHLIN

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
59127	8 18 16 18	2.00	1	0	ML	11		Brown and gray SILT, trace(+) Clay, fine Sand, and fine Gravel, trace organics, iron stained, stiff, damp.	TL
	21 19 25 26	2.00	1.1	0	ML	12 13		Brown SILT, some fine Sand, little rock fragments, trace organics, moist.	
	15 100/3"	0.80	.2	0	ML	14 15			
59128	21 50/3"	0.80	.5	0	ML	16 17		Brown SILT, some fine Sand, little Shale fragments, moist. Tip of spoon is wet.	
	100/3"	0.30	.3	0		18 18.0		SHALE fragments, little fine Sand and Silt, wet.	WSH
								TERMINATED BORING AT 18.3 FEET. TOP OF BEDROCK.	BRK

NOTES: Laboratory sample ID- 59127.

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LOG OF BORING SB59-18

LOG OF BORING NO. SB59-19

PROJECT: SEAD-59 & SEAD-71 RI/FS
PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY. 14541
ASSOCIATED UNIT/AREA: SEAD-59
PROJECT NO: 731747
DATE STARTED: 10/22/97
DATE COMPLETED: 10/22/97
DRILLING CONTRACTOR: AMERICAN AUGER AND DITCHING
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3 INCH SPLIT SPOONS

DEPTH TO WATER (ft): NA
BORING LOCATION (N/E):
REFERENCE COORDINATE SYSTEM:
GROUND SURFACE ELEVATION (ft):
DATUM:
INSPECTOR: N. SMITH
CHECKED BY: F. O'LOUGHLIN

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
59101	25 15 20 30	2.00	1.8	0	ML	1		Brown-gray SILT, SAND, and Stone, dense, dry.	FL
59065	12 8 8 10	2.00	.7	0	ML	2 3		Black SILT, SAND, asphalt debris, and Cinders, dense, dry. Slight creosote odor.	
59102	10 10 18 12	2.00	1.5	0	ML	4 5		Dark brown-gray SILT, little fine Sand, trace Clay, damp. Light brown SILT, little Clay, trace fine Sand and black organic staining, dense, damp.	
59103	12 18 18 20	2.00	1	0	ML	6 7		Light brown-gray SILT, some Clay, heavy iron staining, dense, damp.	
59104	22 33 42 50	2.00	1.3	0	ML	8 8.7 9 10		Brown SILT, little fine Sand and rock fragments, moist.	TL

NOTES: Laboratory sample ID- 59065.

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LOG OF BORING SB59-19

PROJECT: SEAD-59 & SEAD-71 RI/FS
PROJECT NO: 731747
PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY. 14541

GROUND SURFACE ELEVATION:
INSPECTOR: N. SMITH
CHECKED BY: F. O'LOUGHLIN

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
	50 50	1.00	0					NO RECOVERY (10'-11')	WSH
						11		TERMINATED BORING AT 11 FEET.	

NOTES: Laboratory sample ID- 59065.

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LOG OF BORING SB59-19

LOG OF BORING NO. SB59-20

PROJECT: SEAD-59 & SEAD-71 RI/FS
PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY. 14541
ASSOCIATED UNIT/AREA: SEAD-59
PROJECT NO: 731747
DATE STARTED: 10/22/97
DATE COMPLETED: 10/22/97
DRILLING CONTRACTOR: AMERICAN AUGER AND DITCHING
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3 INCH SPLIT SPOONS

DEPTH TO WATER (ft): NA
BORING LOCATION (N/E):
REFERENCE COORDINATE SYSTEM:
GROUND SURFACE ELEVATION (ft):
DATUM:
INSPECTOR: N. SMITH
CHECKED BY: F. O'LOUGHLIN

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
59076	20 20 23 13	2.00	1.4	0	ML	1		Brown SILT, fine SAND, Stone asphalt, and debris, damp.	FL
59100	28 8 13 18	2.00	1.1	0	ML	2 3		Brown-gray SILT, some Clay, stiff, damp.	
59066	32 22 50 56	2.00	.5	0	ML	4.0 4 5		Brown-gray SILT, little Clay, Sand, and rock, damp.	TL
						6		TERMINATED BORING AT 6 FEET.	

NOTES: Laboratory sample ID- 59066.

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LOG OF BORING SB59-20

LOG OF BORING NO. SB59-21

PROJECT: SEAD-59 & SEAD-71 RI/FS
PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY. 14541
ASSOCIATED UNIT/AREA: SEAD-59
PROJECT NO: 731747
DATE STARTED: 10/22/97
DATE COMPLETED: 10/22/97
DRILLING CONTRACTOR: AMERICAN AUGER AND DITCHING
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3 INCH SPLIT SPOONS

DEPTH TO WATER (ft): 8
BORING LOCATION (N/E):
REFERENCE COORDINATE SYSTEM:
GROUND SURFACE ELEVATION (ft):
DATUM:
INSPECTOR: N. SMITH
CHECKED BY: F. O'LOUGHLIN

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
59067	5 6 11 12	2.00	1.1	0	ML	1		Dark brown SILT, litttle organics, damp. Light brown-gray SILT, little(+) Clay, trace iron staining, damp.	FL
59109	12 20 25 31	2.00	1.7	0	ML	2 3		Light brown-gray SILT, trace Clay, fine Sand, and medium-coarse Gravel, little iron staining, dry.	
59110	33 46 36 36	2.00	1.3	0	ML	4 4.6			
						5		Brown SILT, some fine Sand, little rock fragments, moist.	TL
59111	30 40 50 100	2.00	1.7	0	ML	6 7			
59112	40 50 76 80	2.00	1	0	SM	8 9		Brown fine-medium SAND, some Silt, little Shale, wet.	
						10 10.0			

NOTES: Laboratory sample ID- 59067.

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LOG OF BORING SB59-21

PROJECT: SEAD-59 & SEAD-71 RI/FS
PROJECT NO: 731747
PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY. 14541

GROUND SURFACE ELEVATION:
INSPECTOR: N. SMITH
CHECKED BY: F. O'LOUGHLIN

Sample Number	Blow Counts (# Blows per 6")	SAMPLE ADVANCE	SAMPLE RECOVERY	VOC SRCEEN-PID (PPM)	USCS CLASS	Depth (ft.)	MACRO LITHOLOGY	DESCRIPTION	USCS
	20 70	1.00	.5					Dark gray weathered SHALE, wet.	WSH
						11		TERMINATED BORING AT 11 FEET.	

NOTES: Laboratory sample ID- 59067.

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LOG OF BORING SB59-21

APPENDIX D

CHEMICAL DATA
FOR SEAD-59 AND SEAD-71

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 MW59-4 SOIL 59055 4 6 10/20/1997 SA RI PHASE 1 STEP 1	SEAD-59 MW59-6 SOIL 59129 1 2.6 10/24/1997 SA RI PHASE 1 STE	SEAD-59 SB59-1 SOIL SB59-1-01 0 0.2 2/20/1994 SA ESI	SEAD-59 SB59-1 SOIL SB59-1-08 6 8 2/20/1994 DU ESI	SEAD-59 SB59-1 SOIL SB59-1-04 6 8 2/20/1994 SA ESI	SI SI SC SI SA ES
	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
E ORGANIC COMPOUNDS													
hloroethane	UG/KG	0	0.0%	800	0	0	56	12 U	12 U	12 U		13 U	
trachloroethane	UG/KG	0	0.0%	600	0	0	56	12 U	12 U	12 U		13 U	
hloroethane	UG/KG	0	0.0%		0	0	56	12 U	12 U	12 U		13 U	
roethane	UG/KG	0	0.0%	200	0	0	56	12 U	12 U	12 U		13 U	
roethene	UG/KG	0	0.0%	400	0	0	56	12 U	12 U	12 U		13 U	
roethane	UG/KG	0	0.0%	100	0	0	56	12 U	12 U	12 U		13 U	
roethene (total)	UG/KG	0	0.0%		0	0	56	12 U	12 U	12 U		13 U	
ropropane	UG/KG	0	0.0%		0	0	56	12 U	12 U	12 U		13 U	
	UG/KG	150	3.6%	200	0	2	56	12 U	12 U	12 U		47 U	
	UG/KG	5900	5.4%	60	2	3	56	12 U	12 U	12 U		13 U	
hloromethane	UG/KG	0	0.0%		0	0	56	12 U	12 U	12 U		13 U	
n	UG/KG	0	0.0%		0	0	56	12 U	12 U	12 U		13 U	
sulfide	UG/KG	4	1.8%	2700	0	1	56	12 U	12 U	12 U		13 U	
trachloride	UG/KG	0	0.0%	600	0	0	56	12 U	12 U	12 U		13 U	
zene	UG/KG	0	0.0%	1700	0	0	56	12 U	12 U	12 U		13 U	
romomethane	UG/KG	0	0.0%		0	0	56	12 U	12 U	12 U		13 U	
ane	UG/KG	0	0.0%	1900	0	0	56	12 U	12 U	12 U		13 U	
n	UG/KG	0	0.0%	300	0	0	56	12 U	12 U	12 U		13 U	
chloropropene	UG/KG	0	0.0%		0	0	56	12 U	12 U	12 U		13 U	
ene	UG/KG	260000	7.1%	5500	1	4	56	12 U	12 U	12 U		13 U	
mide	UG/KG	0	0.0%		0	0	56	12 U	12 U	12 U		13 U	
yl ketone	UG/KG	0	0.0%		0	0	56	12 U	12 U	12 U		13 U	
oride	UG/KG	3	3.6%		0	2	56	12 U	12 U	12 U		13 U	
yl ketone	UG/KG	36	7.1%	300	0	4	56	12 U	12 U	12 U		14 U	
butyl ketone	UG/KG	0	0.0%	1000	0	0	56	12 U	12 U	12 U		13 U	
chloride	UG/KG	2	5.4%	100	0	3	56	12 U	12 U	12 U		13 U	
	UG/KG	0	0.0%		0	0	56	12 U	12 U	12 U		13 U	
oethene	UG/KG	0	0.0%	1400	0	0	56	12 U	12 U	12 U		13 U	
	UG/KG	830000	16.1%	1500	1	9	56	12 U	12 U	12 U		13 U	
X	MG/KG	15	86.7%		0	26	30	4	4.8				
nes	UG/KG	1000000	10.7%	1200	1	6	56	12 U	12 U	12 U		13 U	
Dichloropropene	UG/KG	0	0.0%		0	0	56	12 U	12 U	12 U		13 U	
thene	UG/KG	2	3.6%	700	0	2	56	12 U	12 U	12 U		13 U	
ide	UG/KG	0	0.0%	200	0	0	56	12 U	12 U	12 U		13 U	
ATILE ORGANIC COMPOUNDS													
lorobenzene	UG/KG	28	1.8%	3400	0	1	56	78 U	73 U	1500 U	1900 U	420 U	
robenzene	UG/KG	0	0.0%	7900	0	0	56	78 U	73 U	1500 U	1900 U	420 U	
robenzene	UG/KG	0	0.0%	1600	0	0	56	78 U	73 U	1500 U	1900 U	420 U	
robenzene	UG/KG	0	0.0%	8500	0	0	56	78 U	73 U	1500 U	1900 U	420 U	
(1-Chloropropane)	UG/KG	0	0.0%		0	0	22			1500 U	1900 U	420 U	
lorophenol	UG/KG	0	0.0%	100	0	0	56	190 U	180 U	3700 U	4700 U	1000 U	
lorophenol	UG/KG	0	0.0%		0	0	56	78 U	73 U	1500 U	1900 U	420 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59	SEAD-59	SEAD-59	SEAD-59	SEAD-59	S
								MW59-4	MW59-6	SB59-1	SB59-1	SB59-1	S
								SOIL	SOIL	SOIL	SOIL	SOIL	S
								59055	59129	SB59-1-01	SB59-1-08	SB59-1-04	S
								4	1	0	6	6	
								6	2.6	0.2	8	8	
								10/20/1997	10/24/1997	2/20/1994	2/20/1994	2/20/1994	
								SA	SA	SA	DU	SA	S
			Frequency		Number	Number	Number	RI PHASE 1 STEP 1	RI PHASE 1 STE	ESI	ESI	ESI	E
r	Units	Maximum	of Detection	TAGM	of Exceed.	of Detections	of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
orophenol	UG/KG	0	0.0%	400	0	0	56	78 U	73 U	1500 U	1900 U	420 U	
hylphenol	UG/KG	0	0.0%		0	0	56	78 U	73 U	1500 U	1900 U	420 U	
ophenol	UG/KG	0	0.0%	200	0	0	56	190 U	180 U	3700 U	4700 U	1000 U	
otoluene	UG/KG	0	0.0%		0	0	56	78 U	73 U	1500 U	1900 U	420 U	
otoluene	UG/KG	0	0.0%	1000	0	0	56	78 U	73 U	1500 U	1900 U	420 U	
aphthalene	UG/KG	0	0.0%		0	0	56	78 U	73 U	1500 U	1900 U	420 U	
henol	UG/KG	0	0.0%	800	0	0	56	78 U	73 U	1500 U	1900 U	420 U	
aphthalene	UG/KG	67000	66.1%	36400	2	37	56	78 U	9.9 J	150 J	150 J	110 J	
henol	UG/KG	0	0.0%	100	0	0	56	78 U	73 U	1500 U	1900 U	420 U	
line	UG/KG	0	0.0%	430	0	0	56	190 U	180 U	3700 U	4700 U	1000 U	
enol	UG/KG	0	0.0%	330	0	0	56	78 U	73 U	1500 U	1900 U	420 U	
orobenzidine	UG/KG	0	0.0%		0	0	56	78 U	73 UJ	1500 U	1900 U	420 U	
line	UG/KG	0	0.0%	500	0	0	56	190 U	180 UJ	3700 U	4700 U	1000 U	
o-2-methylphenol	UG/KG	0	0.0%		0	0	56	190 U	180 U	3700 U	4700 U	1000 U	
henyl phenyl ether	UG/KG	0	0.0%		0	0	56	78 U	73 U	1500 U	1900 U	420 U	
3-methylphenol	UG/KG	0	0.0%	240	0	0	56	78 U	73 U	1500 U	1900 U	420 U	
niline	UG/KG	0	0.0%	220	0	0	56	78 U	73 U	1500 U	1900 U	420 U	
henyl phenyl ether	UG/KG	0	0.0%		0	0	56	78 U	73 U	1500 U	1900 U	420 U	
henol	UG/KG	83	3.6%	900	0	2	56	78 U	73 U	1500 U	1900 U	420 U	
line	UG/KG	0	0.0%		0	0	56	190 U	180 U	3700 U	4700 U	1000 U	
enol	UG/KG	0	0.0%	100	0	0	56	190 U	180 U	3700 U	4700 U	1000 U	
hene	UG/KG	20000	69.6%	50000	0	39	56	78 U	28 J	390 J	390 J	160 J	
hylene	UG/KG	5700	51.8%	41000	0	29	56	78 U	12 J	660 J	640 J	120 J	
ne	UG/KG	38000	64.3%	50000	0	36	56	78 U	63 J	1400 J	1400 J	270 J	
anthracene	UG/KG	67000	78.6%	224	31	44	56	78 U	**270**	**4700**	**5000**	**780**	
pyrene	UG/KG	70000	76.8%	61	33	43	56	78 U	**230**	**5400** J	**5500** J	**870**	
luoranthene	UG/KG	58000	82.1%	1100	13	46	56	78 U	180	**5000** J	**5100** J	730	
i)perylene	UG/KG	35000	69.6%	50000	0	39	56	78 U	180	1900 J	2400 J	430	
luoranthene	UG/KG	48000	73.2%	1100	12	41	56	78 U	280	**5800** J	**6100** J	800	
oroethoxy)methane	UG/KG	0	0.0%		0	0	56	78 U	73 U	1500 U	1900 U	420 U	
oroethyl)ether	UG/KG	0	0.0%		0	0	56	78 U	73 U	1500 U	1900 U	420 U	
oroisopropyl)ether	UG/KG	0	0.0%		0	0	34	78 U	73 U				
ylhexyl)phthalate	UG/KG	15000	60.7%	50000	0	34	56	13 J	15 J	1500 U	1900 U	80 J	
zylphthalate	UG/KG	1000	7.1%	50000	0	4	56	78 U	73 U	1500 U	1900 U	420 U	
e	UG/KG	33000	64.3%		0	36	56	78 U	80	1200 J	1300 J	210 J	
	UG/KG	63000	80.4%	400	26	45	56	78 U	280	**4800**	**5100**	**930**	
phthalate	UG/KG	250	39.3%	8100	0	22	56	78 U	8.2 J	1500 U	1900 U	30 J	
phthalate	UG/KG	11	8.9%	50000	0	5	56	78 U	4 J	1500 UJ	1900 UJ	420 U	
h)anthracene	UG/KG	17000	60.7%	14	29	34	56	78 U	**60** J	**930** J	1900 UJ	420 U	
uran	UG/KG	18000	60.7%	6200	1	34	56	78 U	22 J	280 J	280 J	110 J	
thalate	UG/KG	12	26.8%	7100	0	15	56	5.5 J	11 J	1500 U	1900 U	420 U	
hthalate	UG/KG	0	0.0%	2000	0	0	56	78 U	73 U	1500 U	1900 U	420 U	
ene	UG/KG	160000	82.1%	50000	1	46	56	78 U	540	9700	9900	1500	
	UG/KG	38000	67.9%	50000	0	38	56	78 U	42 J	730 J	730 J	200 J	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 MW59-4 SOIL 59055 4 6 10/20/1997 SA RI PHASE 1 STEP 1	SEAD-59 MW59-6 SOIL 59129 1 2.6 10/24/1997 SA RI PHASE 1 STE	SEAD-59 SB59-1 SOIL SB59-1-01 0 0.2 2/20/1994 SA ESI	SEAD-59 SB59-1 SOIL SB59-1-08 6 8 2/20/1994 DU ESI	SEAD-59 SB59-1 SOIL SB59-1-04 6 8 2/20/1994 SA ESI	S S S S S E
er	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
robenzene	UG/KG	0	0.0%	410	0	0	56	78 U	73 U	1500 U	1900 U	420 U	
robutadiene	UG/KG	0	0.0%		0	0	56	78 U	73 U	1500 U	1900 U	420 U	
rocyclopentadiene	UG/KG	0	0.0%		0	0	56	78 U	73 U	1500 U	1900 U	420 U	
roethane	UG/KG	0	0.0%		0	0	56	78 U	73 U	1500 U	1900 U	420 U	
2,3-cd)pyrene	UG/KG	34000	75.0%	3200	4	42	56	78 U	180	2000 J	2200 J	400 J	
ne	UG/KG	0	0.0%	4400	0	0	56	78 U	73 U	1500 U	1900 U	420 U	
diphenylamine	UG/KG	0	0.0%		0	0	56	78 U	73 U	1500 U	1900 U	420 U	
dipropylamine	UG/KG	0	0.0%		0	0	56	78 U	73 U	1500 U	1900 U	420 U	
ene	UG/KG	29000	62.5%	13000	2	35	56	78 U	12 J	130 J	140 J	160 J	
ene	UG/KG	0	0.0%	200	0	0	56	78 U	73 U	1500 U	1900 U	420 U	
prophenol	UG/KG	0	0.0%	1000	0	0	56	190 U	180 U	3700 U	4700 U	1000 U	
rene	UG/KG	140000	82.1%	50000	2	46	56	78 U	360	6100	6200	980	
	UG/KG	17	3.6%	30	0	2	56	78 U	73 U	1500 U	1900 U	420 U	
	UG/KG	120000	85.5%	50000	1	47	55	78 U	470	12000	13000	1400	
DES/PCBS													
	UG/KG	450	54.5%	2900	0	30	55	3.9 U	2.4 J	5.9		36	
	UG/KG	150	60.0%	2100	0	33	55	3.6 J	25	11 J		25	
	UG/KG	350	52.7%	2100	0	29	55	4.4	33	38 J		25	
	UG/KG	1.2	3.6%	41	0	2	55	2 U	1.9 U	2 U		2.2 U	
C	UG/KG	14	7.3%	110	0	4	55	9.9 J	1.9 U	2 U		2.2 U	
lordane	UG/KG	81	23.6%		0	13	55	2 U	1.2 J	2 U		2.2 U	
016	UG/KG	0	0.0%		0	0	55	39 U	37 U	38 U		42 U	
221	UG/KG	0	0.0%		0	0	55	80 U	74 U	78 U		86 U	
232	UG/KG	0	0.0%		0	0	55	39 U	37 U	38 U		42 U	
242	UG/KG	0	0.0%		0	0	54	39 U	37 U	38 U		42 U	
248	UG/KG	0	0.0%		0	0	55	39 U	37 U	38 U		42 U	
254	UG/KG	63	3.6%	10000	0	2	55	39 U	37 U	38 U		42 U	
260	UG/KG	0	0.0%	10000	0	0	55	39 U	37 U	38 U		42 U	
C	UG/KG	4.7	12.7%	200	0	7	55	3.4 J	1.9 U	2 U		2.2 U	
C	UG/KG	8.5	12.7%	300	0	7	55	1.2 J	1.9 U	2 U		2.2 U	
	UG/KG	4.9	7.3%	44	0	4	55	3.9 U	3.7 U	3.8 U		4.2 U	
an I	UG/KG	26	14.5%	900	0	8	55	2 U	1.9 U	2 U		2.2 U	
an II	UG/KG	7.1	9.1%	900	0	5	55	3.9 U	3.7 U	5.1 J		4.2 U	
an sulfate	UG/KG	20	7.3%	1000	0	4	55	3.9 U	3.7 U	3.8 U		4.2 U	
	UG/KG	32	14.5%	100	0	8	55	3.9 U	3.7 U	3.8 U		4.2 U	
dehyde	UG/KG	15	20.0%		0	11	55	3.9 U	3.7 U	5.6 J		4.2 U	
tone	UG/KG	77	14.5%		0	8	55	3.9 U	4	3.8 U		4.2 U	
BHC/Lindane	UG/KG	0	0.0%	60	0	0	55	2.6 U	1.9 U	2 U		2.2 U	
Chlordane	UG/KG	100	20.0%	540	0	11	55	2 U	1.5 J	2 U		2.2 U	
or	UG/KG	0	0.0%	100	0	0	55	2 U	1.9 U	2 U		2.2 U	
or epoxide	UG/KG	10	25.5%	20	0	14	55	2 U	1 J	2 U		2.2 U	
hlor	UG/KG	110	3.6%		0	2	55	20 U	19 U	20 U		22 U	
ne	UG/KG	0	0.0%		0	0	55	200 U	190 U	200 U		220 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59	SEAD-59	SEAD-59	SEAD-59	SEAD-59	S
								MW59-4	MW59-6	SB59-1	SB59-1	SB59-1	S
								SOIL	SOIL	SOIL	SOIL	SOIL	S
								59055	59129	SB59-1-01	SB59-1-08	SB59-1-04	S
								4	1	0	6	6	
								6	2.6	0.2	8	8	
								10/20/1997	10/24/1997	2/20/1994	2/20/1994	2/20/1994	
								SA	SA	SA	DU	SA	S
			Frequency of		Number of	Number of	Number of	RI PHASE 1 STEP 1	RI PHASE 1 STE	ESI	ESI	ESI	E
	Units	Maximum	Detection	TAGM	Exceed.	Detections	Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
	MG/KG	20600	100.0%	19300	1	55	55	10700	15100	11200 J		13000 J	
	MG/KG	424	21.8%	5.9	1	12	55	0.58 UJ	0.62 UJ	0.56 J		0.74 J	
	MG/KG	6.1	100.0%	8.2	0	55	55	4.8	4.7	5 J		4.4 J	
	MG/KG	304	100.0%	300	1	55	55	49.7	88.8	77.6 J		108 J	
	MG/KG	0.91	100.0%	1.1	0	55	55	0.39	0.46	0.46 J		0.58 J	
	MG/KG	3.2	38.2%	2.3	1	21	55	0.08 U	0.09 U	0.5 J		0.37 J	
	MG/KG	214000	100.0%	121000	5	55	55	2060	34200	**150000** J		83700 J	
	MG/KG	25.5	100.0%	29.6	0	55	55	18.5	24	18.4 J		18.4 J	
	MG/KG	14.7	100.0%	30	0	55	55	11.4	12	9.4 J		7.1 J	
	MG/KG	36.1	100.0%	33	1	55	55	12.5	31.2	25.4 J		32.9 J	
	MG/KG	0	0.0%	0.35	0	0	55	0.62 UJ	0.6 UJ	0.56 U		0.63 U	
	MG/KG	33300	100.0%	36500	0	55	55	25300	28600	20400 J		18300 J	
	MG/KG	139	100.0%	24.8	29	55	55	15.7	**32.7**	**51.6** J		**38.4** J	
m	MG/KG	34400	100.0%	21500	1	55	55	4390	7020	8690 J		8610 J	
e	MG/KG	1150	100.0%	1060	1	55	55	376	623	516 J		418 J	
	MG/KG	1.6	61.8%	0.1	11	34	55	0.04 U	0.08	0.05 J		**0.16** J	
	MG/KG	41.4	100.0%	49	0	55	55	29.7	40.2	27 J		23 J	
	MG/KG	2520	100.0%	2380	1	55	55	1110	2060	2140 J		2290 J	
	MG/KG	2.2	32.7%	2	1	18	55	0.8 U	**2.2**	0.27 J		1 J	
	MG/KG	4.1	7.3%	0.75	1	4	55	0.22 U	0.24 U	0.16 U		0.15 U	
	MG/KG	2310	80.0%	172	18	44	55	98	103 U	135 J		**353** J	
	MG/KG	0	0.0%	0.7	0	0	55	0.82 UJ	0.88 UJ	0.17 U		0.27 U	
	MG/KG	41.9	100.0%	150	0	55	55	14.8	23.6	41.9 J		24.8 J	
	MG/KG	1550	100.0%	110	8	55	55	**133**	86.1	86.4 J		**116** J	
NALYSES													
rite Nitrogen	MG/KG	9.9	100.0%		0	34	34	0.55	3.01				
oleum Hydrocarbons	MG/KG	19700	70.9%		0	39	55	27.7 U	50.2	380	182	220	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 SB59-10 SOIL 59130 0 0.8 10/24/1997 SA RI PHASE 1 STE	SEAD-59 SB59-11 SOIL 59132 3 5 10/24/1997 SA RI PHASE 1 STE	SEAD-59 SB59-13 SOIL 59060 6 6.9 10/21/1997 SA RI PHASE 1 STE	SEAD-59 SB59-14 SOIL 59062 0 1.6 10/22/1997 SA RI PHASE 1 STE	SEAD-59 SB59-15 SOIL 59061 4 5.3 10/21/1997 SA RI PHASE 1 STE	SE SE SC 1 SA RI
	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
E ORGANIC COMPOUNDS													
loroethane	UG/KG	0	0.0%	800	0	0	56	12 U	11 U	55 U	11 U	11 U	
trachloroethane	UG/KG	0	0.0%	600	0	0	56	12 U	11 U	55 U	11 U	11 U	
loroethane	UG/KG	0	0.0%		0	0	56	12 U	11 U	55 U	11 U	11 U	
roethane	UG/KG	0	0.0%	200	0	0	56	12 U	11 U	55 U	11 U	11 U	
roethene	UG/KG	0	0.0%	400	0	0	56	12 U	11 U	55 U	11 U	11 U	
roethane	UG/KG	0	0.0%	100	0	0	56	12 U	11 U	55 U	11 U	11 U	
roethene (total)	UG/KG	0	0.0%		0	0	56	12 U	11 U	55 U	11 U	11 U	
ropropane	UG/KG	0	0.0%		0	0	56	12 U	11 U	55 U	11 U	11 U	
	UG/KG	150	3.6%	200	0	2	56	12 U	11 U	55 U	150	11 U	
	UG/KG	5900	5.4%	60	2	3	56	12 U	11 U	55 U	11 U	11 U	
loromethane	UG/KG	0	0.0%		0	0	56	12 U	11 U	55 U	11 U	11 U	
n	UG/KG	0	0.0%		0	0	56	12 U	11 U	55 U	11 U	11 U	
sulfide	UG/KG	4	1.8%	2700	0	1	56	12 U	11 U	55 U	11 U	11 U	
rachloride	UG/KG	0	0.0%	600	0	0	56	12 U	11 U	55 U	11 U	11 U	
zene	UG/KG	0	0.0%	1700	0	0	56	12 U	11 U	55 U	11 U	11 U	
omomethane	UG/KG	0	0.0%		0	0	56	12 U	11 U	55 U	11 U	11 U	
ane	UG/KG	0	0.0%	1900	0	0	56	12 U	11 U	55 U	11 U	11 U	
n	UG/KG	0	0.0%	300	0	0	56	12 U	11 U	55 U	11 U	11 U	
chloropropene	UG/KG	0	0.0%		0	0	56	12 U	11 U	55 U	11 U	11 U	
ene	UG/KG	260000	7.1%	5500	1	4	56	12 U	11 U	55 U	11 U	11 U	
mide	UG/KG	0	0.0%		0	0	56	12 U	11 U	55 U	11 U	11 U	
yl ketone	UG/KG	0	0.0%		0	0	56	12 U	11 U	55 U	11 U	11 U	
oride	UG/KG	3	3.6%		0	2	56	12 U	11 U	55 U	11 U	11 U	
yl ketone	UG/KG	36	7.1%	300	0	4	56	12 U	11 U	55 U	11 U	11 U	
butyl ketone	UG/KG	0	0.0%	1000	0	0	56	12 U	11 U	55 U	11 U	11 U	
chloride	UG/KG	2	5.4%	100	0	3	56	12 U	11 U	55 U	2 J	11 U	
	UG/KG	0	0.0%		0	0	56	12 U	11 U	55 U	11 U	11 U	
oethene	UG/KG	0	0.0%	1400	0	0	56	12 U	11 U	55 U	11 U	11 U	
	UG/KG	830000	16.1%	1500	1	9	56	12 U	11 U	55 U	11 U	11 U	
X	MG/KG	15	86.7%		0	26	30	2.5 U		6	2.8	4.8	
nes	UG/KG	1000000	10.7%	1200	1	6	56	12 U	11 U	55 U	11 U	11 U	
Dichloropropene	UG/KG	0	0.0%		0	0	56	12 U	11 U	55 U	11 U	11 U	
thene	UG/KG	2	3.6%	700	0	2	56	12 U	11 U	55 U	2 J	11 U	
ide	UG/KG	0	0.0%	200	0	0	56	12 U	11 U	55 U	11 U	11 U	
ATILE ORGANIC COMPOUNDS													
lorobenzene	UG/KG	28	1.8%	3400	0	1	56	82 U	70 U	140 U	190 U	77 U	
robenzene	UG/KG	0	0.0%	7900	0	0	56	82 U	70 U	140 U	190 U	77 U	
robenzene	UG/KG	0	0.0%	1600	0	0	56	82 U	70 U	140 U	190 U	77 U	
robenzene	UG/KG	0	0.0%	8500	0	0	56	82 U	70 U	140 U	190 U	77 U	
(1-Chloropropane)	UG/KG	0	0.0%		0	0	22						
lorophenol	UG/KG	0	0.0%	100	0	0	56	200 U	170 U	350 U	450 U	190 U	
lorophenol	UG/KG	0	0.0%		0	0	56	82 U	70 UJ	140 U	190 U	77 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 SB59-10 SOIL 59130 0 0.8 10/24/1997 SA RI PHASE 1 STE	SEAD-59 SB59-11 SOIL 59132 3 5 10/24/1997 SA RI PHASE 1 STE	SEAD-59 SB59-13 SOIL 59060 6 6.9 10/21/1997 SA RI PHASE 1 STE	SEAD-59 SB59-14 SOIL 59062 0 1.6 10/22/1997 SA RI PHASE 1 STE	SEAD-59 SB59-15 SOIL 59061 4 5.3 10/21/1997 SA RI PHASE 1 STE	SE SB SC 1 SA RI
	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
ophenol	UG/KG	0	0.0%	400	0	0	56	82 U	70 U	140 U	190 U	77 U	
ylphenol	UG/KG	0	0.0%		0	0	56	82 U	70 U	140 U	190 U	77 U	
phenol	UG/KG	0	0.0%	200	0	0	56	200 U	170 UJ	350 U	450 U	190 U	
oluene	UG/KG	0	0.0%		0	0	56	82 U	70 U	140 U	190 U	77 U	
oluene	UG/KG	0	0.0%	1000	0	0	56	82 U	70 U	140 U	190 U	77 U	
phthalene	UG/KG	0	0.0%		0	0	56	82 U	70 U	140 U	190 U	77 U	
enol	UG/KG	0	0.0%	800	0	0	56	82 U	70 U	140 U	190 U	77 U	
phthalene	UG/KG	67000	66.1%	36400	2	37	56	82 U	70 U	93 J	35 J	77 U	
enol	UG/KG	0	0.0%	100	0	0	56	82 U	70 U	140 U	190 U	77 U	
ne	UG/KG	0	0.0%	430	0	0	56	200 U	170 U	350 U	450 U	190 U	
nol	UG/KG	0	0.0%	330	0	0	56	82 U	70 U	140 U	190 U	77 U	
robenzidine	UG/KG	0	0.0%		0	0	56	82 U	70 U	140 U	190 UJ	77 U	
ne	UG/KG	0	0.0%	500	0	0	56	200 U	170 UJ	350 U	450 UJ	190 U	
2-methylphenol	UG/KG	0	0.0%		0	0	56	200 U	170 U	350 U	450 U	190 U	
enyl phenyl ether	UG/KG	0	0.0%		0	0	56	82 U	70 U	140 U	190 U	77 U	
-methylphenol	UG/KG	0	0.0%	240	0	0	56	82 U	70 U	140 U	190 U	77 U	
iline	UG/KG	0	0.0%	220	0	0	56	82 U	70 UJ	140 U	190 U	77 U	
enyl phenyl ether	UG/KG	0	0.0%		0	0	56	82 U	70 U	140 U	190 U	77 U	
enol	UG/KG	83	3.6%	900	0	2	56	82 U	70 U	140 U	190 U	77 U	
ne	UG/KG	0	0.0%		0	0	56	200 U	170 U	350 U	450 U	190 U	
nol	UG/KG	0	0.0%	100	0	0	56	200 U	170 U	350 U	450 U	190 U	
ene	UG/KG	20000	69.6%	50000	0	39	56	82 U	70 U	110 J	50 J	77 U	
ylene	UG/KG	5700	51.8%	41000	0	29	56	82 U	70 U	140 U	190 U	77 U	
e	UG/KG	38000	64.3%	50000	0	36	56	82 U	70 U	140 U	140 J	77 U	
nthracene	UG/KG	67000	78.6%	224	31	44	56	52 J	3.8 J	140 U	530	77 U	
yrene	UG/KG	70000	76.8%	61	33	43	56	44 J	3.6 J	140 U	380	77 U	
uoranthene	UG/KG	58000	82.1%	1100	13	46	56	59 J	3.8 J	140 U	320	7.6 J	
perylene	UG/KG	35000	69.6%	50000	0	39	56	20 J	70 U	140 U	250	77 U	
uoranthene	UG/KG	48000	73.2%	1100	12	41	56	70 J	3.7 J	140 U	380	77 U	
roethoxy)methane	UG/KG	0	0.0%		0	0	56	82 U	70 U	140 U	190 U	77 U	
roethyl)ether	UG/KG	0	0.0%		0	0	56	82 U	70 U	140 U	190 U	77 U	
roisopropyl)ether	UG/KG	0	0.0%		0	0	34	82 U	70 U	140 U	190 U	77 U	
lhexyl)phthalate	UG/KG	15000	60.7%	50000	0	34	56	15 J	16 J	38 J	47 J	17 J	
lphthalate	UG/KG	1000	7.1%	50000	0	4	56	82 U	70 U	140 U	190 U	77 U	
	UG/KG	33000	64.3%		0	36	56	82 U	70 U	140 U	140 J	77 U	
	UG/KG	63000	80.4%	400	26	45	56	61 J	4.8 J	140 U	610	4.8 J	
hthalate	UG/KG	250	39.3%	8100	0	22	56	6.7 J	9.9 J	140 U	190 U	5.4 J	
hthalate	UG/KG	11	8.9%	50000	0	5	56	5.3 J	70 U	140 U	190 U	77 U	
)anthracene	UG/KG	17000	60.7%	14	29	34	56	9.8 J	70 U	140 U	110 J	77 U	
ran	UG/KG	18000	60.7%	6200	1	34	56	82 U	70 U	110 J	30 J	77 U	
halate	UG/KG	12	26.8%	7100	0	15	56	7.9 J	5.4 J	140 U	12 J	11 J	
nthalate	UG/KG	0	0.0%	2000	0	0	56	82 U	70 U	140 U	190 U	77 U	
ne	UG/KG	160000	82.1%	50000	1	46	56	22 J	9.4 J	140 U	1100	4.8 J	
	UG/KG	38000	67.9%	50000	0	38	56	82 U	70 U	260	51 J	77 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 SB59-10 SOIL 59130 0 0.8 10/24/1997 SA RI PHASE 1 STE	SEAD-59 SB59-11 SOIL 59132 3 5 10/24/1997 SA RI PHASE 1 STE	SEAD-59 SB59-13 SOIL 59060 6 6.9 10/21/1997 SA RI PHASE 1 STE	SEAD-59 SB59-14 SOIL 59062 0 1.6 10/22/1997 SA RI PHASE 1 STE	SEAD-59 SB59-15 SOIL 59061 4 5.3 10/21/1997 SA RI PHASE 1 STE	SE SE SC 1 SA RI
	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
obenzene	UG/KG	0	0.0%	410	0	0	56	82 U	70 U	140 U	190 U	77 U	
obutadiene	UG/KG	0	0.0%		0	0	56	82 U	70 U	140 U	190 U	77 U	
ocyclopentadiene	UG/KG	0	0.0%		0	0	56	82 U	70 U	140 U	190 U	77 U	
oethane	UG/KG	0	0.0%		0	0	56	82 U	70 U	140 U	190 U	77 U	
,3-cd)pyrene	UG/KG	34000	75.0%	3200	4	42	56	23 J	70 U	140 U	230	77 U	
e	UG/KG	0	0.0%	4400	0	0	56	82 U	70 U	140 U	190 U	77 U	
diphenylamine	UG/KG	0	0.0%		0	0	56	82 U	70 U	140 U	190 U	77 U	
dipropylamine	UG/KG	0	0.0%		0	0	56	82 U	70 U	140 U	190 U	77 U	
ne	UG/KG	29000	62.5%	13000	2	35	56	82 U	70 U	69 J	33 J	77 U	
ene	UG/KG	0	0.0%	200	0	0	56	82 U	70 U	140 U	190 U	77 U	
rophenol	UG/KG	0	0.0%	1000	0	0	56	200 U	170 UJ	350 U	450 U	190 U	
ene	UG/KG	140000	82.1%	50000	2	46	56	82 U	11 J	280	800	4.6 J	
	UG/KG	17	3.6%	30	0	2	56	82 U	70 U	140 U	190 U	77 U	
	UG/KG	120000	85.5%	50000	1	47	55	49 J	7.2 J	25 J	1100	5.1 J	
ES/PCBS													
	UG/KG	450	54.5%	2900	0	30	55	4.1 U	3.5 U	3.6 U	30	3.8 U	
	UG/KG	150	60.0%	2100	0	33	55	4.1 U	3.5 U	3.6 U	42	1.8 J	
	UG/KG	350	52.7%	2100	0	29	55	4.1 U	3.5 U	3.6 U	52	3.8 U	
	UG/KG	1.2	3.6%	41	0	2	55	2.1 U	1.8 U	1.8 U	1.9 U	2 U	
C	UG/KG	14	7.3%	110	0	4	55	2.1 U	1.8 U	6.6 UJ	18 UJ	6.3 UJ	
ordane	UG/KG	81	23.6%		0	13	55	2.1 U	1.8 U	1.8 U	5.1	2 U	
16	UG/KG	0	0.0%		0	0	55	41 U	35 U	36 U	38 U	38 U	
21	UG/KG	0	0.0%		0	0	55	84 U	71 U	73 U	76 U	78 U	
32	UG/KG	0	0.0%		0	0	55	41 U	35 U	36 U	38 U	38 U	
42	UG/KG	0	0.0%		0	0	54	41 U	35 U	36 U	38 U	38 U	
48	UG/KG	0	0.0%		0	0	55	41 U	35 U	36 U	38 U	38 U	
54	UG/KG	63	3.6%	10000	0	2	55	41 U	35 U	36 U	38 U	38 U	
60	UG/KG	0	0.0%	10000	0	0	55	41 U	35 U	36 U	38 U	38 U	
	UG/KG	4.7	12.7%	200	0	7	55	2.1 U	1.8 U	2.6 J	1.9 UJ	2.4 J	
C	UG/KG	8.5	12.7%	300	0	7	55	2.1 U	1.8 U	0.95 J	8.5 J	2 U	
	UG/KG	4.9	7.3%	44	0	4	55	4.1 U	3.5 U	3.6 U	3.8 U	3.8 U	
n I	UG/KG	26	14.5%	900	0	8	55	2.1 U	1.8 U	1.8 U	1.9 U	2 U	
n II	UG/KG	7.1	9.1%	900	0	5	55	4.1 U	3.5 U	3.6 U	3.8 U	3.8 U	
n sulfate	UG/KG	20	7.3%	1000	0	4	55	4.1 U	3.5 U	3.6 U	10	3.8 U	
	UG/KG	32	14.5%	100	0	8	55	4.1 U	3.5 U	3.6 U	3.7 J	3.8 U	
ehyde	UG/KG	15	20.0%		0	11	55	4.1 U	3.5 U	3.6 U	3.1 J	3.8 U	
one	UG/KG	77	14.5%		0	8	55	4.1 U	3.5 U	3.6 U	11	3.8 U	
HC/Lindane	UG/KG	0	0.0%	60	0	0	55	2.1 U	1.8 U	2 UJ	1.9 U	1.9 UJ	
hlordane	UG/KG	100	20.0%	540	0	11	55	2.1 U	1.8 U	1.8 U	5.8	2 U	
r	UG/KG	0	0.0%	100	0	0	55	2.1 U	1.8 U	1.8 U	1.9 U	2 U	
r epoxide	UG/KG	10	25.5%	20	0	14	55	2.1 U	1.8 U	1.8 U	2.6	2 U	
hlor	UG/KG	110	3.6%		0	2	55	21 U	18 U	18 U	19 U	20 U	
e	UG/KG	0	0.0%		0	0	55	210 U	180 U	180 U	190 U	200 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 SB59-10 SOIL 59130 0 0.8 10/24/1997 SA RI PHASE 1 STE	SEAD-59 SB59-11 SOIL 59132 3 5 10/24/1997 SA RI PHASE 1 STE	SEAD-59 SB59-13 SOIL 59060 6 6.9 10/21/1997 SA RI PHASE 1 STE	SEAD-59 SB59-14 SOIL 59062 0 1.6 10/22/1997 SA RI PHASE 1 STE	SEAD-59 SB59-15 SOIL 59061 4 5.3 10/21/1997 SA RI PHASE 1 STE	S S S S R
er	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
n	MG/KG	20600	100.0%	19300	1	55	55	**20600**	7740	11100	8970	7450	
	MG/KG	424	21.8%	5.9	1	12	55	0.69 UJ	0.61 UJ	0.6 UJ	0.63 UJ	0.64 UJ	
	MG/KG	6.1	100.0%	8.2	0	55	55	5.1	4.1	5.7	4.5	3.9	
	MG/KG	304	100.0%	300	1	55	55	154	43.7	52	67	52.7	
	MG/KG	0.91	100.0%	1.1	0	55	55	0.91	0.24	0.27	0.31	0.23	
	MG/KG	3.2	38.2%	2.3	1	21	55	0.1 U	0.08 U	0.08 U	0.09 U	0.09 U	
	MG/KG	214000	100.0%	121000	5	55	55	4030	72200	33900	51000	**123000**	
n	MG/KG	25.5	100.0%	29.6	0	55	55	25.5	13	18.6	16.6	12.7	
	MG/KG	14.7	100.0%	30	0	55	55	9	8.1	14.2	8.7	8.1	
	MG/KG	36.1	100.0%	33	1	55	55	25	19.7	21	21.4	19.1	
	MG/KG	0	0.0%	0.35	0	0	55	0.67 UJ	0.56 UJ	0.58 UJ	0.57 UJ	0.58 UJ	
	MG/KG	33300	100.0%	36500	0	55	55	29000	18400	28900	19300	16900	
	MG/KG	139	100.0%	24.8	29	55	55	15	9.6	8.7	**45.5**	8.3	
um	MG/KG	34400	100.0%	21500	1	55	55	4880	13600	7990	8340	14900	
se	MG/KG	1150	100.0%	1060	1	55	55	313	356	576	406	469	
	MG/KG	1.6	61.8%	0.1	11	34	55	0.09	0.04 U	0.05 U	0.05	0.06 U	
	MG/KG	41.4	100.0%	49	0	55	55	31.1	23.2	35.5	25.4	23.8	
m	MG/KG	2520	100.0%	2380	1	55	55	2340	1000	1060	1480	1160	
	MG/KG	2.2	32.7%	2	1	18	55	1.2	0.84 U	0.83 U	0.87 U	0.89 U	
	MG/KG	4.1	7.3%	0.75	1	4	55	0.26 U	0.23 U	0.23 U	0.24 U	0.24 U	
	MG/KG	2310	80.0%	172	18	44	55	**287**	127	112	**1440**	**817**	
	MG/KG	0	0.0%	0.7	0	0	55	0.97 UJ	0.86 UJ	0.85 UJ	0.89 UJ	0.91 UJ	
n	MG/KG	41.9	100.0%	150	0	55	55	34.3	12.6	15	17.2	12.9	
	MG/KG	1550	100.0%	110	8	55	55	81	80.5	60.5	72.8	67.1	
ANALYSES													
trite Nitrogen	MG/KG	9.9	100.0%		0	34	34	0.39	0.16	0.03	0.17	0.06	
roleum Hydrocarbons	MG/KG	19700	70.9%		0	39	55	26.8 U	24.2 U	691	197	24.7 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 SB59-17 SOIL 59131 8 9.2 10/23/1997 DU RI PHASE 1 STE	SEAD-59 SB59-17 SOIL 59068 8 9.2 10/23/1997 SA RI PHASE 1 STE	SEAD-59 SB59-18 SOIL 59127 10 11 10/24/1997 SA RI PHASE 1 STE	SEAD-59 SB59-19 SOIL 59065 2 2.7 10/22/1997 SA RI PHASE 1 STE	SEAD-59 SB59-2 SOIL SB59-2-20 0 0.2 5/26/1994 DU ESI	S S S S S E
er	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
E ORGANIC COMPOUNDS													
hloroethane	UG/KG	0	0.0%	800	0	0	56	60 U	11 U	11 U	53 U	11 U	
etrachloroethane	UG/KG	0	0.0%	600	0	0	56	60 U	11 U	11 U	53 U	11 U	
hloroethane	UG/KG	0	0.0%		0	0	56	60 U	11 U	11 U	53 U	11 U	
roethane	UG/KG	0	0.0%	200	0	0	56	60 U	11 U	11 U	53 U	11 U	
roethene	UG/KG	0	0.0%	400	0	0	56	60 U	11 U	11 U	53 U	11 U	
roethane	UG/KG	0	0.0%	100	0	0	56	60 U	11 U	11 U	53 U	11 U	
roethene (total)	UG/KG	0	0.0%		0	0	56	60 U	11 U	11 U	53 U	11 U	
propropane	UG/KG	0	0.0%		0	0	56	60 U	11 U	11 U	53 U	11 U	
	UG/KG	150	3.6%	200	0	2	56	60 U	11 U	11 U	53 U	11 U	
	UG/KG	5900	5.4%	60	2	3	56	6 J	11 U	11 U	53 U	11 U	
hloromethane	UG/KG	0	0.0%		0	0	56	60 U	11 U	11 U	53 U	11 U	
m	UG/KG	0	0.0%		0	0	56	60 U	11 U	11 U	53 U	11 U	
isulfide	UG/KG	4	1.8%	2700	0	1	56	60 U	11 U	11 U	53 U	11 U	
etrachloride	UG/KG	0	0.0%	600	0	0	56	60 U	11 U	11 U	53 U	11 U	
nzene	UG/KG	0	0.0%	1700	0	0	56	60 U	11 U	11 U	53 U	11 U	
romomethane	UG/KG	0	0.0%		0	0	56	60 U	11 U	11 U	53 U	11 U	
ane	UG/KG	0	0.0%	1900	0	0	56	60 U	11 U	11 U	53 U	11 U	
m	UG/KG	0	0.0%	300	0	0	56	60 U	11 U	11 U	53 U	11 U	
ichloropropene	UG/KG	0	0.0%		0	0	56	60 U	11 U	11 U	53 U	11 U	
zene	UG/KG	260000	7.1%	5500	1	4	56	14 J	11 U	11 U	53 U	11 U	
omide	UG/KG	0	0.0%		0	0	56	60 U	11 U	11 U	53 U	11 U	
tyl ketone	UG/KG	0	0.0%		0	0	56	60 U	11 U	11 U	53 U	11 U	
loride	UG/KG	3	3.6%		0	2	56	60 U	11 U	11 U	53 U	11 U	
hyl ketone	UG/KG	36	7.1%	300	0	4	56	60 U	11 U	11 U	53 U	11 U	
obutyl ketone	UG/KG	0	0.0%	1000	0	0	56	60 U	11 U	11 U	53 U	11 U	
e chloride	UG/KG	2	5.4%	100	0	3	56	60 U	11 U	11 U	53 U	11 U	
	UG/KG	0	0.0%		0	0	56	60 U	11 U	11 U	53 U	11 U	
roethene	UG/KG	0	0.0%	1400	0	0	56	60 U	11 U	11 U	53 U	11 U	
	UG/KG	830000	16.1%	1500	1	9	56	16 J	11 U	11 U	12 J	11 U	
EX	MG/KG	15	86.7%		0	26	30		5.2	4.8	15		
enes	UG/KG	1000000	10.7%	1200	1	6	56	140	11 U	11 U	98	11 U	
-Dichloropropene	UG/KG	0	0.0%		0	0	56	60 U	11 U	11 U	53 U	11 U	
ethene	UG/KG	2	3.6%	700	0	2	56	60 U	11 U	11 U	53 U	11 U	
ride	UG/KG	0	0.0%	200	0	0	56	60 U	11 U	11 U	53 U	11 U	
LATILE ORGANIC COMPOUNDS													
hlorobenzene	UG/KG	28	1.8%	3400	0	1	56	75 U	75 U	380 U	22000 U	740 U	
robenzene	UG/KG	0	0.0%	7900	0	0	56	75 U	75 U	380 U	22000 U	740 U	
robenzene	UG/KG	0	0.0%	1600	0	0	56	75 U	75 U	380 U	22000 U	740 U	
robenzene	UG/KG	0	0.0%	8500	0	0	56	75 U	75 U	380 U	22000 U	740 U	
s(1-Chloropropane)	UG/KG	0	0.0%		0	0	22					740 U	
chlorophenol	UG/KG	0	0.0%	100	0	0	56	180 U	180 U	910 U	53000 U	1800 U	
chlorophenol	UG/KG	0	0.0%		0	0	56	75 U	75 U	380 U	22000 UJ	740 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 SB59-17 SOIL 59131 8 9.2 10/23/1997 DU RI PHASE 1 STE	SEAD-59 SB59-17 SOIL 59068 8 9.2 10/23/1997 SA RI PHASE 1 STE	SEAD-59 SB59-18 SOIL 59127 10 11 10/24/1997 SA RI PHASE 1 STE	SEAD-59 SB59-19 SOIL 59065 2 2.7 10/22/1997 SA RI PHASE 1 STE	SEAD-59 SB59-2 SOIL SB59-2-20 0 0.2 5/26/1994 DU ESI	S S S S S
er	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
orophenol	UG/KG	0	0.0%	400	0	0	56	75 U	75 U	380 U	22000 U	740 U	
thylphenol	UG/KG	0	0.0%		0	0	56	75 U	75 U	380 U	22000 U	740 U	
ophenol	UG/KG	0	0.0%	200	0	0	56	180 U	180 U	910 UJ	53000 UJ	1800 U	
otoluene	UG/KG	0	0.0%		0	0	56	75 U	75 U	380 U	22000 U	740 U	
otoluene	UG/KG	0	0.0%	1000	0	0	56	75 U	75 U	380 U	22000 U	740 U	
naphthalene	UG/KG	0	0.0%		0	0	56	75 U	75 U	380 U	22000 U	740 U	
phenol	UG/KG	0	0.0%	800	0	0	56	75 U	75 U	380 U	22000 U	740 U	
naphthalene	UG/KG	67000	66.1%	36400	2	37	56	18 J	22 J	250 J	29000	68 J	
phenol	UG/KG	0	0.0%	100	0	0	56	75 U	75 U	380 U	22000 U	740 U	
iline	UG/KG	0	0.0%	430	0	0	56	180 U	180 U	910 U	53000 U	1800 U	
enol	UG/KG	0	0.0%	330	0	0	56	75 U	75 U	380 U	22000 U	740 U	
orobenzidine	UG/KG	0	0.0%		0	0	56	75 U	75 U	380 U	22000 UJ	740 U	
iline	UG/KG	0	0.0%	500	0	0	56	180 U	180 U	910 U	53000 UJ	1800 U	
o-2-methylphenol	UG/KG	0	0.0%		0	0	56	180 U	180 U	910 U	53000 U	1800 U	
phenyl phenyl ether	UG/KG	0	0.0%		0	0	56	75 U	75 U	380 U	22000 U	740 U	
3-methylphenol	UG/KG	0	0.0%	240	0	0	56	75 U	75 U	380 U	22000 U	740 U	
aniline	UG/KG	0	0.0%	220	0	0	56	75 U	75 U	380 UJ	22000 UJ	740 U	
phenyl phenyl ether	UG/KG	0	0.0%		0	0	56	75 U	75 U	380 U	22000 U	740 U	
phenol	UG/KG	83	3.6%	900	0	2	56	75 U	75 U	380 UJ	22000 U	740 U	
iline	UG/KG	0	0.0%		0	0	56	180 U	180 U	910 U	53000 U	1800 U	
enol	UG/KG	0	0.0%	100	0	0	56	180 U	180 U	910 U	53000 U	1800 U	
thene	UG/KG	20000	69.6%	50000	0	39	56	11 J	16 J	180 J	20000 J	110 J	
thylene	UG/KG	5700	51.8%	41000	0	29	56	75 U	4.6 J	41 J	5700 J	490 J	
ne	UG/KG	38000	64.3%	50000	0	36	56	16 J	35 J	380	38000	560 J	
anthracene	UG/KG	67000	78.6%	224	31	44	56	23 J	71 J	**620**	**67000**	**3500** J	
pyrene	UG/KG	70000	76.8%	61	33	43	56	18 J	54 J	**570**	**70000**	**3000**	
fluoranthene	UG/KG	58000	82.1%	1100	13	46	56	20 J	56 J	920	**58000**	**4400**	
hi)perylene	UG/KG	35000	69.6%	50000	0	39	56	10 J	35 J	320 J	35000	1500	
fluoranthene	UG/KG	48000	73.2%	1100	12	41	56	20 J	66 J	380 U	**48000**	**2100** J	
oroethoxy)methane	UG/KG	0	0.0%		0	0	56	75 U	75 U	380 U	22000 U	740 U	
oroethyl)ether	UG/KG	0	0.0%		0	0	56	75 U	75 U	380 U	22000 U	740 U	
oroisopropyl)ether	UG/KG	0	0.0%		0	0	34	75 U	75 U	380 U	22000 U		
ylhexyl)phthalate	UG/KG	15000	60.7%	50000	0	34	56	15 J	26 J	380 U	22000 U	37 J	
zylphthalate	UG/KG	1000	7.1%	50000	0	4	56	75 U	75 U	380 U	22000 U	740 U	
e	UG/KG	33000	64.3%		0	36	56	14 J	29 J	370 J	33000	190 J	
e	UG/KG	63000	80.4%	400	26	45	56	22 J	72 J	**600**	**63000**	**2700** J	
lphthalate	UG/KG	250	39.3%	8100	0	22	56	5.1 J	5 J	380 U	22000 U	740 U	
phthalate	UG/KG	11	8.9%	50000	0	5	56	75 U	75 U	380 U	22000 U	740 U	
h)anthracene	UG/KG	17000	60.7%	14	29	34	56	4.8 J	13 J	**150** J	**17000** J	**870**	
uran	UG/KG	18000	60.7%	6200	1	34	56	9.1 J	16 J	280 J	**18000** J	83 J	
nthalate	UG/KG	12	26.8%	7100	0	15	56	6.8 J	8.5 J	380 U	22000 U	740 U	
phthalate	UG/KG	0	0.0%	2000	0	0	56	75 U	75 U	380 U	22000 U	740 U	
ene	UG/KG	160000	82.1%	50000	1	46	56	55 J	170	1500	**160000**	4400 J	
	UG/KG	38000	67.9%	50000	0	38	56	15 J	34 J	530	38000	220 J	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 SB59-17 SOIL 59131 8 9.2 10/23/1997 DU RI PHASE 1 STE	SEAD-59 SB59-17 SOIL 59068 8 9.2 10/23/1997 SA RI PHASE 1 STE	SEAD-59 SB59-18 SOIL 59127 10 11 10/24/1997 SA RI PHASE 1 STE	SEAD-59 SB59-19 SOIL 59065 2 2.7 10/22/1997 SA RI PHASE 1 STE	SEAD-59 SB59-2 SOIL SB59-2-20 0 0.2 5/26/1994 DU ESI	SE SE SC SE SA ES
	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
obenzene	UG/KG	0	0.0%	410	0	0	56	75 U	75 U	380 U	22000 U	740 U	
obutadiene	UG/KG	0	0.0%		0	0	56	75 U	75 U	380 UJ	22000 U	740 U	
ocyclopentadiene	UG/KG	0	0.0%		0	0	56	75 U	75 U	380 U	22000 U	740 U	
oethane	UG/KG	0	0.0%		0	0	56	75 U	75 U	380 U	22000 U	740 U	
,3-cd)pyrene	UG/KG	34000	75.0%	3200	4	42	56	10 J	33 J	300 J	**34000**	2200	
e	UG/KG	0	0.0%	4400	0	0	56	75 U	75 U	380 U	22000 U	740 U	
iphenylamine	UG/KG	0	0.0%		0	0	56	75 U	75 U	380 U	22000 U	740 U	
ipropylamine	UG/KG	0	0.0%		0	0	56	75 U	75 U	380 U	22000 U	740 U	
ne	UG/KG	29000	62.5%	13000	2	35	56	23 J	20 J	750	**29000**	78 J	
ne	UG/KG	0	0.0%	200	0	0	56	75 U	75 U	380 U	22000 U	740 U	
ophenol	UG/KG	0	0.0%	1000	0	0	56	180 U	180 U	910 U	53000 UJ	1800 U	
ene	UG/KG	140000	82.1%	50000	2	46	56	63 J	180	1900	**140000**	2100 J	
	UG/KG	17	3.6%	30	0	2	56	75 U	75 U	380 U	22000 U	740 U	
	UG/KG	120000	85.5%	50000	1	47	55	53 J	170	1300	**120000**	5800 J	
ES/PCBS													
	UG/KG	450	54.5%	2900	0	30	55	3.8 U	3.8 U	12 U	16	4.8 J	
	UG/KG	150	60.0%	2100	0	33	55	3.8 U	3.8 U	8.2 U	10	6.5 J	
	UG/KG	350	52.7%	2100	0	29	55	3.8 U	3.8 U	11 U	43	13 J	
	UG/KG	1.2	3.6%	41	0	2	55	1.9 U	1.9 U	1.9 U	1.8 U	0.96 J	
C	UG/KG	14	7.3%	110	0	4	55	1.9 U	1.9 U	1.9 U	1.8 U	1.9 UJ	
ordane	UG/KG	81	23.6%		0	13	55	1.9 U	1.9 U	1.9 U	1.8 U	3.4 J	
16	UG/KG	0	0.0%		0	0	55	38 U	38 U	38 U	35 U	37 UJ	
21	UG/KG	0	0.0%		0	0	55	76 U	76 U	76 U	71 U	75 UJ	
32	UG/KG	0	0.0%		0	0	55	38 U	38 U	38 U	35 U	37 UJ	
42	UG/KG	0	0.0%		0	0	54	38 U	38 U	38 U	35 U	37 UJ	
48	UG/KG	0	0.0%		0	0	55	38 U	38 U	38 U	35 U	37 UJ	
54	UG/KG	63	3.6%	10000	0	2	55	38 U	38 U	38 U	35 U	37 UJ	
60	UG/KG	0	0.0%	10000	0	0	55	38 U	38 U	38 U	35 U	37 UJ	
	UG/KG	4.7	12.7%	200	0	7	55	1.9 U	1.9 U	1.9 U	1.8 U	1.9 UJ	
	UG/KG	8.5	12.7%	300	0	7	55	1.9 U	1.9 U	1.9 U	1.8 U	1.9 UJ	
	UG/KG	4.9	7.3%	44	0	4	55	3.8 U	3.8 U	3.8 U	2.9 J	3.7 UJ	
a I	UG/KG	26	14.5%	900	0	8	55	1.9 U	1.9 U	1.9 U	3.8	2.6 J	
a II	UG/KG	7.1	9.1%	900	0	5	55	3.8 U	3.8 U	3.8 U	2.8 J	4 J	
a sulfate	UG/KG	20	7.3%	1000	0	4	55	3.8 U	3.8 U	3.8 U	20	3.7 UJ	
	UG/KG	32	14.5%	100	0	8	55	3.8 U	3.8 U	3.8 U	32	3.7 UJ	
ehyde	UG/KG	15	20.0%		0	11	55	3.8 U	3.8 U	3.8 U	15	3.7 UJ	
one	UG/KG	77	14.5%		0	8	55	3.8 U	3.8 U	3.8 U	77 J	3.7 UJ	
HC/Lindane	UG/KG	0	0.0%	60	0	0	55	1.9 U	1.9 U	1.9 U	1.8 U	1.9 UJ	
hlordane	UG/KG	100	20.0%	540	0	11	55	1.9 U	1.9 U	1.9 U	1.8 U	1 9 UJ	
	UG/KG	0	0.0%	100	0	0	55	1.9 U	1.9 U	1.9 U	1.8 U	1.9 UJ	
epoxide	UG/KG	10	25.5%	20	0	14	55	1.9 U	1.9 U	1.9 U	2.5	1.9 UJ	
lor	UG/KG	110	3.6%		0	2	55	19 U	19 U	19 U	110	19 UJ	
e	UG/KG	0	0.0%		0	0	55	190 U	190 U	190 U	180 U	190 UJ	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 SB59-17 SOIL 59131 8 9.2 10/23/1997 DU RI PHASE 1 STE	SEAD-59 SB59-17 SOIL 59068 8 9.2 10/23/1997 SA RI PHASE 1 STE	SEAD-59 SB59-18 SOIL 59127 10 11 10/24/1997 SA RI PHASE 1 STE	SEAD-59 SB59-19 SOIL 59065 2 2.7 10/22/1997 SA RI PHASE 1 STE	SEAD-59 SB59-2 SOIL SB59-2-20 0 0.2 5/26/1994 DU ESI	SI SI SC SI SA ES
	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
	MG/KG	20600	100.0%	19300	1	55	55	6390	5400	9660	11500	11800	
	MG/KG	424	21.8%	5.9	1	12	55	0.62 UJ	0.55 UJ	0.64 UJ	0.61 UJ	0.38 J	
	MG/KG	6.1	100.0%	8.2	0	55	55	3.5	2.9	3	4.4	5.7	
	MG/KG	304	100.0%	300	1	55	55	40	35.8	71.7	75.3	79.5	
	MG/KG	0.91	100.0%	1.1	0	55	55	0.21	0.16	0.32	0.42	0.53 J	
	MG/KG	3.2	38.2%	2.3	1	21	55	0.09 U	0.08 U	0.09 U	0.08 U	0.87 J	
	MG/KG	214000	100.0%	121000	5	55	55	88800	101000	95900	60000	66400	
	MG/KG	25.5	100.0%	29.6	0	55	55	10.2	9	14.2	19.3	21.2	
	MG/KG	14.7	100.0%	30	0	55	55	7.3	5.9	7.1	11.3	12.3	
	MG/KG	36.1	100.0%	33	1	55	55	17.6	17.4	18.6	26	28.9	
	MG/KG	0	0.0%	0.35	0	0	55	0.59 UJ	0.61 UJ	0.58 UJ	0.58 UJ	0.54 U	
	MG/KG	33300	100.0%	36500	0	55	55	14800	12300	16500	22400	24500	
	MG/KG	139	100.0%	24.8	29	55	55	6.6	5.9	19.6	20.8	**49.8**	
m	MG/KG	34400	100.0%	21500	1	55	55	14800	14200	17200	11000	15200	
e	MG/KG	1150	100.0%	1060	1	55	55	391	334	378	436	542	
	MG/KG	1.6	61.8%	0.1	11	34	55	0.05 U	0.05 U	0.07	0.05	**1.6** J	
	MG/KG	41.4	100.0%	49	0	55	55	19.8	17.1	20.9	36	32.3	
	MG/KG	2520	100.0%	2380	1	55	55	1230	936	1940	1950	1750 J	
	MG/KG	2.2	32.7%	2	1	18	55	0.86 U	0.76 U	0.88 U	0.84 U	0.81 J	
	MG/KG	4.1	7.3%	0.75	1	4	55	0.24 U	0.21 U	0.24 U	0.23 U	0.11 UJ	
	MG/KG	2310	80.0%	172	18	44	55	165	152	**258**	101 U	171 J	
	MG/KG	0	0.0%	0.7	0	0	55	0.88 UJ	0.77 UJ	0.9 UJ	0.86 UJ	0.41 U	
	MG/KG	41.9	100.0%	150	0	55	55	12.3	9.9	19.1	22	21.3	
	MG/KG	1550	100.0%	110	8	55	55	64.7	51.1	50	76.2	102	
NALYSES													
rite Nitrogen	MG/KG	9.9	100.0%		0	34	34	0.02	0.03	0.11	0.03		
oleum Hydrocarbons	MG/KG	19700	70.9%		0	39	55	25.3 U	22.7 U	1290	2880	774	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 SB59-2 SOIL SB59-2-02 2 4 5/26/1994 SA ESI	SEAD-59 SB59-2 SOIL SB59-2-04 6 7 5/26/1994 SA ESI	SEAD-59 SB59-20 SOIL 59066 4 4.5 10/22/1997 SA RI PHASE 1 STE	SEAD-59 SB59-21 SOIL 59067 0 1.1 10/22/1997 SA RI PHASE 1 STE	SEAD-59 SB59-3 SOIL SB59-3-00 0 0.2 5/25/1994 SA ESI	SI SI SC SI SA ES
	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
ORGANIC COMPOUNDS													
loroethane	UG/KG	0	0.0%	800	0	0	56	12 U	12 U	11 U	12 U	11 U	
trachloroethane	UG/KG	0	0.0%	600	0	0	56	12 U	12 U	11 U	12 U	11 U	
loroethane	UG/KG	0	0.0%		0	0	56	12 U	12 U	11 U	12 U	11 U	
roethane	UG/KG	0	0.0%	200	0	0	56	12 U	12 U	11 U	12 U	11 U	
roethene	UG/KG	0	0.0%	400	0	0	56	12 U	12 U	11 U	12 U	11 U	
roethane	UG/KG	0	0.0%	100	0	0	56	12 U	12 U	11 U	12 U	11 U	
roethene (total)	UG/KG	0	0.0%		0	0	56	12 U	12 U	11 U	12 U	11 U	
ropropane	UG/KG	0	0.0%		0	0	56	12 U	12 U	11 U	12 U	11 U	
	UG/KG	150	3.6%	200	0	2	56	45 U	23 U	11 U	12 U	11 U	
	UG/KG	5900	5.4%	60	2	3	56	12 U	12 U	11 U	12 U	11 U	
loromethane	UG/KG	0	0.0%		0	0	56	12 U	12 U	11 U	12 U	11 U	
n	UG/KG	0	0.0%		0	0	56	12 U	12 U	11 U	12 U	11 U	
ulfide	UG/KG	4	1.8%	2700	0	1	56	12 U	12 U	11 U	12 U	11 U	
rachloride	UG/KG	0	0.0%	600	0	0	56	12 U	12 U	11 U	12 U	11 U	
zene	UG/KG	0	0.0%	1700	0	0	56	12 U	12 U	11 U	12 U	11 U	
omomethane	UG/KG	0	0.0%		0	0	56	12 U	12 U	11 U	12 U	11 U	
ane	UG/KG	0	0.0%	1900	0	0	56	12 U	12 U	11 U	12 U	11 U	
n	UG/KG	0	0.0%	300	0	0	56	12 U	12 U	11 U	12 U	11 U	
chloropropene	UG/KG	0	0.0%		0	0	56	12 U	12 U	11 U	12 U	11 U	
ene	UG/KG	260000	7.1%	5500	1	4	56	12 U	12 U	11 U	12 U	11 U	
mide	UG/KG	0	0.0%		0	0	56	12 U	12 U	11 U	12 U	11 U	
yl ketone	UG/KG	0	0.0%		0	0	56	12 U	12 U	11 U	12 U	11 U	
oride	UG/KG	3	3.6%		0	2	56	12 U	12 U	11 U	12 U	11 U	
yl ketone	UG/KG	36	7.1%	300	0	4	56	12 J	12 U	11 U	12 U	11 U	
outyl ketone	UG/KG	0	0.0%	1000	0	0	56	12 U	12 U	11 U	12 U	11 U	
chloride	UG/KG	2	5.4%	100	0	3	56	12 U	12 U	11 U	12 U	11 U	
	UG/KG	0	0.0%		0	0	56	12 U	12 U	11 U	12 U	11 U	
oethene	UG/KG	0	0.0%	1400	0	0	56	12 U	12 U	11 U	12 U	11 U	
	UG/KG	830000	16.1%	1500	1	9	56	12 U	12 U	11 U	12 U	11 U	
X	MG/KG	15	86.7%		0	26	30			4	6.5		
nes	UG/KG	1000000	10.7%	1200	1	6	56	12 U	12 U	11 U	12 U	11 U	
Dichloropropene	UG/KG	0	0.0%		0	0	56	12 U	12 U	11 U	12 U	11 U	
hene	UG/KG	2	3.6%	700	0	2	56	12 U	12 U	11 U	12 U	11 U	
ide	UG/KG	0	0.0%	200	0	0	56	12 U	12 U	11 U	12 U	11 U	
ATILE ORGANIC COMPOUNDS													
lorobenzene	UG/KG	28	1.8%	3400	0	1	56	820 U	390 U	66 U	66 U	370 U	
robenzene	UG/KG	0	0.0%	7900	0	0	56	820 U	390 U	66 U	66 U	370 U	
robenzene	UG/KG	0	0.0%	1600	0	0	56	820 U	390 U	66 U	66 U	370 U	
robenzene	UG/KG	0	0.0%	8500	0	0	56	820 U	390 U	66 U	66 U	370 U	
(1-Chloropropane)	UG/KG	0	0.0%		0	0	22	820 U	390 U			370 U	
lorophenol	UG/KG	0	0.0%	100	0	0	56	2000 U	940 U	160 U	160 U	890 U	
lorophenol	UG/KG	0	0.0%		0	0	56	820 U	390 U	66 UJ	66 UJ	370 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 SB59-2 SOIL SB59-2-02 2 4 5/26/1994 SA ESI	SEAD-59 SB59-2 SOIL SB59-2-04 6 7 5/26/1994 SA ESI	SEAD-59 SB59-20 SOIL 59066 4 4.5 10/22/1997 SA RI PHASE 1 STE	SEAD-59 SB59-21 SOIL 59067 0 1.1 10/22/1997 SA RI PHASE 1 STE	SEAD-59 SB59-3 SOIL SB59-3-00 0 0.2 5/25/1994 SA ESI	SE SE SC SE SA ES
	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
rophenol	UG/KG	0	0.0%	400	0	0	56	820 U	390 U	66 U	66 U	370 U	
nylphenol	UG/KG	0	0.0%		0	0	56	820 U	390 U	66 U	66 U	370 U	
phenol	UG/KG	0	0.0%	200	0	0	56	2000 U	940 U	160 UJ	160 UJ	890 U	
toluene	UG/KG	0	0.0%		0	0	56	820 U	390 U	66 U	66 U	370 U	
toluene	UG/KG	0	0.0%	1000	0	0	56	820 U	390 U	66 U	66 U	370 U	
aphthalene	UG/KG	0	0.0%		0	0	56	820 U	390 U	66 U	66 U	370 U	
nenol	UG/KG	0	0.0%	800	0	0	56	820 U	390 U	66 U	66 U	370 U	
aphthalene	UG/KG	67000	66.1%	36400	2	37	56	160 J	150 J	14 J	66 U	370 U	
nenol	UG/KG	0	0.0%	100	0	0	56	820 U	390 U	66 U	66 U	370 U	
ine	UG/KG	0	0.0%	430	0	0	56	2000 U	940 U	160 U	160 U	890 U	
nol	UG/KG	0	0.0%	330	0	0	56	820 U	390 U	66 U	66 U	370 U	
robenzidine	UG/KG	0	0.0%		0	0	56	820 U	390 U	66 UJ	66 UJ	370 U	
ine	UG/KG	0	0.0%	500	0	0	56	2000 U	940 U	160 UJ	160 UJ	890 U	
-2-methylphenol	UG/KG	0	0.0%		0	0	56	2000 U	940 U	160 U	160 U	890 U	
henyl phenyl ether	UG/KG	0	0.0%		0	0	56	820 U	390 U	66 U	66 U	370 U	
-methylphenol	UG/KG	0	0.0%	240	0	0	56	820 U	390 U	66 U	66 U	370 U	
niline	UG/KG	0	0.0%	220	0	0	56	820 U	390 U	66 UJ	66 UJ	370 U	
henyl phenyl ether	UG/KG	0	0.0%		0	0	56	820 U	390 U	66 U	66 U	370 U	
henol	UG/KG	83	3.6%	900	0	2	56	820 U	28 J	66 U	66 U	370 U	
ine	UG/KG	0	0.0%		0	0	56	2000 U	940 U	160 U	160 U	890 U	
nol	UG/KG	0	0.0%	100	0	0	56	2000 U	940 U	160 U	160 U	890 U	
hene	UG/KG	20000	69.6%	50000	0	39	56	230 J	100 J	6.1 J	66 U	56 J	
ylene	UG/KG	5700	51.8%	41000	0	29	56	100 J	23 J	66 U	66 U	120 J	
e	UG/KG	38000	64.3%	50000	0	36	56	440 J	160 J	8.4 J	66 U	290 J	
nthracene	UG/KG	67000	78.6%	224	31	44	56	**1600**	**260** J	20 J	9.6 J	**910**	
yrene	UG/KG	70000	76.8%	61	33	43	56	**1500**	**250** J	22 J	8.1 J	47 J	
uoranthene	UG/KG	58000	82.1%	1100	13	46	56	**3100** J	290 J	19 J	15 J	430	
)perylene	UG/KG	35000	69.6%	50000	0	39	56	740 J	130 J	22 J	11 J	370 U	
uoranthene	UG/KG	48000	73.2%	1100	12	41	56	820 UJ	270 J	20 J	12 J	440	
roethoxy)methane	UG/KG	0	0.0%		0	0	56	820 U	390 U	66 U	66 U	370 U	
roethyl)ether	UG/KG	0	0.0%		0	0	56	820 U	390 U	66 U	66 U	370 U	
roisopropyl)ether	UG/KG	0	0.0%		0	0	34			66 U	66 U		
lhexyl)phthalate	UG/KG	15000	60.7%	50000	0	34	56	72 J	35 J	16 J	21 J	660	
ylphthalate	UG/KG	1000	7.1%	50000	0	4	56	820 U	390 U	66 U	66 U	370 U	
	UG/KG	33000	64.3%		0	36	56	220 J	64 J	11 J	6.6 J	39 J	
	UG/KG	63000	80.4%	400	26	45	56	**1500**	270 J	25 J	14 J	**700**	
phthalate	UG/KG	250	39.3%	8100	0	22	56	820 U	390 U	5.5 J	4.8 J	67 J	
phthalate	UG/KG	11	8.9%	50000	0	5	56	820 U	390 U	66 U	66 U	370 U	
n)anthracene	UG/KG	17000	60.7%	14	29	34	56	**470** J	**84** J	4.7 J	66 U	**160** J	
ran	UG/KG	18000	60.7%	6200	1	34	56	820 U	82 J	5.6 J	66 U	26 J	
thalate	UG/KG	12	26.8%	7100	0	15	56	820 U	390 U	10 J	8.1 J	370 U	
hthalate	UG/KG	0	0.0%	2000	0	0	56	820 U	390 U	66 U	66 U	370 U	
ene	UG/KG	160000	82.1%	50000	1	46	56	3200	750	54 J	28 J	1700	
	UG/KG	38000	67.9%	50000	0	38	56	380 J	160 J	8.6 J	66 U	79 J	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 SB59-2 SOIL SB59-2-02 2 4 5/26/1994 SA ESI	SEAD-59 SB59-2 SOIL SB59-2-04 6 7 5/26/1994 SA ESI	SEAD-59 SB59-20 SOIL 59066 4 4.5 10/22/1997 SA RI PHASE 1 STE	SEAD-59 SB59-21 SOIL 59067 0 1.1 10/22/1997 SA RI PHASE 1 STE	SEAD-59 SB59-3 SOIL SB59-3-00 0 0.2 5/25/1994 SA ESI	SI SI SI SI SA ES
	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
obenzene	UG/KG	0	0.0%	410	0	0	56	820 U	390 U	66 U	66 U	370 U	
obutadiene	UG/KG	0	0.0%		0	0	56	820 U	390 U	66 U	66 U	370 U	
ocyclopentadiene	UG/KG	0	0.0%		0	0	56	820 U	390 U	66 U	66 U	370 U	
oethane	UG/KG	0	0.0%		0	0	56	820 U	390 U	66 U	66 U	370 U	
2.3-cd)pyrene	UG/KG	34000	75.0%	3200	4	42	56	940	130 J	14 J	9.6 J	82 J	
e	UG/KG	0	0.0%	4400	0	0	56	820 U	390 U	66 U	66 U	370 U	
diphenylamine	UG/KG	0	0.0%		0	0	56	820 U	390 U	66 U	66 U	370 U	
dipropylamine	UG/KG	0	0.0%		0	0	56	820 U	390 U	66 U	66 U	370 U	
ne	UG/KG	29000	62.5%	13000	2	35	56	170 J	160 J	19 J	66 U	21 J	
ene	UG/KG	0	0.0%	200	0	0	56	820 U	390 U	66 U	66 U	370 U	
rophenol	UG/KG	0	0.0%	1000	0	0	56	2000 U	940 U	160 UJ	160 UJ	890 U	
ene	UG/KG	140000	82.1%	50000	2	46	56	1800	620	43 J	20 J	740	
	UG/KG	17	3.6%	30	0	2	56	820 U	390 U	66 U	66 U	370 U	
	UG/KG	120000	85.5%	50000	1	47	55	3200	510	48 J	21 J	190 J	
ES/PCBS													
	UG/KG	450	54.5%	2900	0	30	55	48 J	5.4 J	3.7 U	4.2 U	7.7 J	
	UG/KG	150	60.0%	2100	0	33	55	81 J	8.2 J	3.7 U	4.2 U	19 J	
	UG/KG	350	52.7%	2100	0	29	55	16 J	3.9 UJ	3.7 U	4.2 U	33	
	UG/KG	1.2	3.6%	41	0	2	55	1.2 J	2 UJ	1.9 U	2.2 U	3.8 U	
C	UG/KG	14	7.3%	110	0	4	55	2.1 UJ	2 UJ	1.9 U	2.2 U	3.8 U	
ordane	UG/KG	81	23.6%		0	13	55	5.2 J	2 UJ	1.9 U	2.2 U	5.1 J	
16	UG/KG	0	0.0%		0	0	55	41 UJ	39 UJ	37 U	42 U	73 U	
21	UG/KG	0	0.0%		0	0	55	84 UJ	79 UJ	75 U	85 U	150 U	
32	UG/KG	0	0.0%		0	0	55	41 UJ	39 UJ	37 U	42 U	73 U	
42	UG/KG	0	0.0%		0	0	54	41 UJ	39 UJ	37 U	42 U	73 U	
48	UG/KG	0	0.0%		0	0	55	41 UJ	39 UJ	37 U	42 U	73 U	
54	UG/KG	63	3.6%	10000	0	2	55	41 UJ	39 UJ	37 U	42 U	73 U	
60	UG/KG	0	0.0%	10000	0	0	55	41 UJ	39 UJ	37 U	42 U	73 U	
	UG/KG	4.7	12.7%	200	0	7	55	2.1 UJ	2 UJ	1.9 U	2.2 U	3.8 U	
C	UG/KG	8.5	12.7%	300	0	7	55	2.1 UJ	2 UJ	1.9 U	2.2 U	3.8 U	
	UG/KG	4.9	7.3%	44	0	4	55	4.1 UJ	3.9 UJ	3.7 U	4.2 U	7.3 U	
n I	UG/KG	26	14.5%	900	0	8	55	16 J	4.1 J	1.9 U	2.2 U	3.8 U	
n II	UG/KG	7.1	9.1%	900	0	5	55	4.1 UJ	3.9 UJ	3.7 U	4.2 U	7.3 U	
n sulfate	UG/KG	20	7.3%	1000	0	4	55	4.1 UJ	3.9 UJ	3.7 U	4.2 U	7.3 U	
	UG/KG	32	14.5%	100	0	8	55	4.1 UJ	3.9 UJ	3.7 U	4.2 U	7.3 U	
ehyde	UG/KG	15	20.0%		0	11	55	4.1 UJ	3.9 UJ	3.7 U	4.2 U	13 J	
one	UG/KG	77	14.5%		0	8	55	4.1 UJ	3.9 UJ	3.7 U	4.2 U	7.3 U	
HC/Lindane	UG/KG	0	0.0%	60	0	0	55	2.1 UJ	2 UJ	1.9 U	2.2 U	3.8 U	
hlordane	UG/KG	100	20.0%	540	0	11	55	2.1 UJ	2 UJ	1.9 U	2.2 U	7.4	
r	UG/KG	0	0.0%	100	0	0	55	2.1 UJ	2 UJ	1.9 U	2.2 U	3.8 U	
r epoxide	UG/KG	10	25.5%	20	0	14	55	2.1 UJ	2 UJ	1.9 U	2.2 U	3.8 U	
nlor	UG/KG	110	3.6%		0	2	55	21 UJ	20 UJ	19 U	22 U	38 U	
e	UG/KG	0	0.0%		0	0	55	210 UJ	200 UJ	190 U	220 U	380 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

er	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	SEAD-59 SB59-2 SOIL SB59-2-02 2 4 5/26/1994 SA ESI Value (Q)	SEAD-59 SB59-2 SOIL SB59-2-04 6 7 5/26/1994 SA ESI Value (Q)	SEAD-59 SB59-20 SOIL 59066 4 4.5 10/22/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 SB59-21 SOIL 59067 0 1.1 10/22/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 SB59-3 SOIL SB59-3-00 0 0.2 5/25/1994 SA ESI Value (Q)	S S S S E
n	MG/KG	20600	100.0%	19300	1	55	55	12500	9340	10700	14300	9020	
y	MG/KG	424	21.8%	5.9	1	12	55	0.84 J	0.26 J	0.63 UJ	0.68 UJ	0.15 UJ	
	MG/KG	6.1	100.0%	8.2	0	55	55	6	3.8	3.9	5.2	5.1	
	MG/KG	304	100.0%	300	1	55	55	93.4	66	88.2	167	59.1	
n	MG/KG	0.91	100.0%	1.1	0	55	55	0.67 J	0.42 J	0.38	0.44	0.48 J	
n	MG/KG	3.2	38.2%	2.3	1	21	55	0.9 J	0.41 J	0.09 U	0.09 U	0.75	
	MG/KG	214000	100.0%	121000	5	55	55	44500	65800	44000	5450	108000	
m	MG/KG	25.5	100.0%	29.6	0	55	55	21.1	15.5	15.7	20.7	15.2	
	MG/KG	14.7	100.0%	30	0	55	55	11.7	9.1	8.3	11.3	8.7	
	MG/KG	36.1	100.0%	33	1	55	55	28.1	19.7	17.5	25	21.1	
	MG/KG	0	0.0%	0.35	0	0	55	0.56 U	0.59 U	0.63 UJ	0.75 UJ	0.46 U	
	MG/KG	33300	100.0%	36500	0	55	55	24600	20900	19100	24700	18100	
	MG/KG	139	100.0%	24.8	29	55	55	**50.3**	12.9	9.3	**58.6**	**29.2** J	
um	MG/KG	34400	100.0%	21500	1	55	55	8540	9190	9770	4300	11500	
ese	MG/KG	1150	100.0%	1060	1	55	55	664	836	407	1050	555	
	MG/KG	1.6	61.8%	0.1	11	34	55	0.08 J	0.04 J	0.05 U	**0.32**	0.04 J	
	MG/KG	41.4	100.0%	49	0	55	55	31.8	24.7	23.7	28.8	23.4	
m	MG/KG	2520	100.0%	2380	1	55	55	1690 J	1280 J	1440	1600	1460 J	
n	MG/KG	2.2	32.7%	2	1	18	55	1.3	0.49 J	0.87 U	1.5	0.38 J	
	MG/KG	4.1	7.3%	0.75	1	4	55	0.32 J	0.08 UJ	0.24 U	0.26 U	0.1 UJ	
	MG/KG	2310	80.0%	172	18	44	55	168 J	148 J	**696**	113 U	**183** J	
	MG/KG	0	0.0%	0.7	0	0	55	0.4 U	0.29 U	0.89 UJ	0.97 UJ	0.24 U	
m	MG/KG	41.9	100.0%	150	0	55	55	24.2	16.4	18.8	23.1	17.3	
	MG/KG	1550	100.0%	110	8	55	55	**115**	75.5	81.7	87	75	
ANALYSES													
itrite Nitrogen	MG/KG	9.9	100.0%		0	34	34			0.1	1.15		
troleum Hydrocarbons	MG/KG	19700	70.9%		0	39	55	513	69	24.8	26 U	1360	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 SB59-3 SOIL SB59-3-04 6 8 5/25/1994 SA ESI	SEAD-59 SB59-4 SOIL SB59-4-00 0 0.2 5/25/1994 SA ESI	SEAD-59 SB59-4 SOIL SB59-4-05 8 10 5/25/1994 SA ESI	SEAD-59 SB59-4 SOIL SB59-4-10 10 20 5/25/1994 SA ESI	SEAD-59 SB59-5 SOIL SB59-5-00 0 0.2 5/25/1994 SA ESI	SE SE SO SE SA ES
	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
E ORGANIC COMPOUNDS													
hloroethane	UG/KG	0	0.0%	800	0	0	56	11 U	11 U	18 U	11 U	11 U	
trachloroethane	UG/KG	0	0.0%	600	0	0	56	11 U	11 U	18 U	11 U	11 U	
hloroethane	UG/KG	0	0.0%		0	0	56	11 U	11 U	18 U	11 U	11 U	
roethane	UG/KG	0	0.0%	200	0	0	56	11 U	11 U	18 U	11 U	11 U	
roethene	UG/KG	0	0.0%	400	0	0	56	11 U	11 U	18 U	11 U	11 U	
roethane	UG/KG	0	0.0%	100	0	0	56	11 U	11 U	18 U	11 U	11 U	
roethene (total)	UG/KG	0	0.0%		0	0	56	11 U	11 U	18 U	11 U	11 U	
ropropane	UG/KG	0	0.0%		0	0	56	11 U	11 U	18 U	11 U	11 U	
	UG/KG	150	3.6%	200	0	2	56	11 U	11 U	18 U	11 U	11 U	
	UG/KG	5900	5.4%	60	2	3	56	11 U	11 U	18 U	11 U	11 U	
hloromethane	UG/KG	0	0.0%		0	0	56	11 U	11 U	18 U	11 U	11 U	
n	UG/KG	0	0.0%		0	0	56	11 U	11 U	18 U	11 U	11 U	
sulfide	UG/KG	4	1.8%	2700	0	1	56	11 U	11 U	4 J	11 U	11 U	
trachloride	UG/KG	0	0.0%	600	0	0	56	11 U	11 U	18 U	11 U	11 U	
zene	UG/KG	0	0.0%	1700	0	0	56	11 U	11 U	18 U	11 U	11 U	
romomethane	UG/KG	0	0.0%		0	0	56	11 U	11 U	18 U	11 U	11 U	
ane	UG/KG	0	0.0%	1900	0	0	56	11 U	11 U	18 U	11 U	11 U	
n	UG/KG	0	0.0%	300	0	0	56	11 U	11 U	18 U	11 U	11 U	
chloropropene	UG/KG	0	0.0%		0	0	56	11 U	11 U	18 U	11 U	11 U	
zene	UG/KG	260000	7.1%	5500	1	4	56	11 U	11 U	18 U	11 U	11 U	
mide	UG/KG	0	0.0%		0	0	56	11 U	11 U	18 U	11 U	11 U	
yl ketone	UG/KG	0	0.0%		0	0	56	11 U	11 U	18 U	11 U	11 U	
oride	UG/KG	3	3.6%		0	2	56	11 U	11 U	18 U	11 U	11 U	
yl ketone	UG/KG	36	7.1%	300	0	4	56	11 U	11 U	18 U	11 U	11 U	
butyl ketone	UG/KG	0	0.0%	1000	0	0	56	11 U	11 U	18 U	11 U	11 U	
chloride	UG/KG	2	5.4%	100	0	3	56	11 U	11 U	2 J	11 U	11 U	
	UG/KG	0	0.0%		0	0	56	11 U	11 U	18 U	11 U	11 U	
oethene	UG/KG	0	0.0%	1400	0	0	56	11 U	11 U	18 U	11 U	11 U	
	UG/KG	830000	16.1%	1500	1	9	56	11 U	11 U	18 U	11 U	11 U	
X	MG/KG	15	86.7%		0	26	30						
nes	UG/KG	1000000	10.7%	1200	1	6	56	11 U	11 U	18 U	11 U	11 U	
-Dichloropropene	UG/KG	0	0.0%		0	0	56	11 U	11 U	18 U	11 U	11 U	
thene	UG/KG	2	3.6%	700	0	2	56	11 U	11 U	18 U	11 U	11 U	
ride	UG/KG	0	0.0%	200	0	0	56	11 U	11 U	18 U	11 U	11 U	
ATILE ORGANIC COMPOUNDS													
hlorobenzene	UG/KG	28	1.8%	3400	0	1	56	360 U	740 U	420 U	360 U	1800 U	
robenzene	UG/KG	0	0.0%	7900	0	0	56	360 U	740 U	420 U	360 U	1800 U	
robenzene	UG/KG	0	0.0%	1600	0	0	56	360 U	740 U	420 U	360 U	1800 U	
robenzene	UG/KG	0	0.0%	8500	0	0	56	360 U	740 U	420 U	360 U	1800 U	
s(1-Chloropropane)	UG/KG	0	0.0%		0	0	22	360 U	740 U	420 U	360 U	1800 U	
hlorophenol	UG/KG	0	0.0%	100	0	0	56	880 U	1800 U	1000 U	870 U	4400 U	
hlorophenol	UG/KG	0	0.0%		0	0	56	360 U	740 U	420 U	360 U	1800 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 SB59-3 SOIL SB59-3-04 6 8 5/25/1994 SA ESI	SEAD-59 SB59-4 SOIL SB59-4-00 0 0.2 5/25/1994 SA ESI	SEAD-59 SB59-4 SOIL SB59-4-05 8 10 5/25/1994 SA ESI	SEAD-59 SB59-4 SOIL SB59-4-10 10 20 5/25/1994 SA ESI	SEAD-59 SB59-5 SOIL SB59-5-00 0 0.2 5/25/1994 SA ESI	S S S S S A E
r	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
rophenol	UG/KG	0	0.0%	400	0	0	56	360 U	740 U	420 U	360 U	1800 U	
hylphenol	UG/KG	0	0.0%		0	0	56	360 U	740 U	420 U	360 U	1800 U	
phenol	UG/KG	0	0.0%	200	0	0	56	880 U	1800 U	1000 U	870 U	4400 U	
toluene	UG/KG	0	0.0%		0	0	56	360 U	740 U	420 U	360 U	1800 U	
toluene	UG/KG	0	0.0%	1000	0	0	56	360 U	740 U	420 U	360 U	1800 U	
aphthalene	UG/KG	0	0.0%		0	0	56	360 U	740 U	420 U	360 U	1800 U	
henol	UG/KG	0	0.0%	800	0	0	56	360 U	740 U	420 U	360 U	1800 U	
aphthalene	UG/KG	67000	66.1%	36400	2	37	56	360 U	56 J	37 J	360 U	1800 U	
henol	UG/KG	0	0.0%	100	0	0	56	360 U	740 U	420 U	360 U	1800 U	
line	UG/KG	0	0.0%	430	0	0	56	880 U	1800 U	1000 U	870 U	4400 U	
enol	UG/KG	0	0.0%	330	0	0	56	360 U	740 U	420 U	360 U	1800 U	
robenzidine	UG/KG	0	0.0%		0	0	56	360 U	740 U	420 U	360 U	1800 U	
line	UG/KG	0	0.0%	500	0	0	56	880 U	1800 U	1000 U	870 U	4400 U	
-2-methylphenol	UG/KG	0	0.0%		0	0	56	880 U	1800 U	1000 U	870 U	4400 U	
henyl phenyl ether	UG/KG	0	0.0%		0	0	56	360 U	740 U	420 U	360 U	1800 U	
3-methylphenol	UG/KG	0	0.0%	240	0	0	56	360 U	740 U	420 U	360 U	1800 U	
niline	UG/KG	0	0.0%	220	0	0	56	360 U	740 U	420 U	360 U	1800 U	
henyl phenyl ether	UG/KG	0	0.0%		0	0	56	360 U	740 U	420 U	360 U	1800 U	
henol	UG/KG	83	3.6%	900	0	2	56	360 U	740 U	420 U	360 U	1800 U	
line	UG/KG	0	0.0%		0	0	56	880 U	1800 U	1000 U	870 U	4400 U	
enol	UG/KG	0	0.0%	100	0	0	56	880 U	1800 U	1000 U	870 U	4400 U	
nene	UG/KG	20000	69.6%	50000	0	39	56	360 U	63 J	93 J	360 U	310 J	
nylene	UG/KG	5700	51.8%	41000	0	29	56	360 U	610 J	52 J	360 U	1100 J	
ne	UG/KG	38000	64.3%	50000	0	36	56	360 U	740 J	250 J	360 U	1500 J	
anthracene	UG/KG	67000	78.6%	224	31	44	56	360 U	**2100**	**740**	360 U	**6400**	
pyrene	UG/KG	70000	76.8%	61	33	43	56	360 U	**420** J	**360** J	360 U	**5800**	
luoranthene	UG/KG	58000	82.1%	1100	13	46	56	360 U	**2200**	730	360 U	**6300**	
)perylene	UG/KG	35000	69.6%	50000	0	39	56	360 U	740 U	420 U	360 U	790 J	
uoranthene	UG/KG	48000	73.2%	1100	12	41	56	360 U	**1500**	590	360 U	**4600**	
proethoxy)methane	UG/KG	0	0.0%		0	0	56	360 U	740 U	420 U	360 U	1800 U	
proethyl)ether	UG/KG	0	0.0%		0	0	56	360 U	740 U	420 U	360 U	1800 U	
proisopropyl)ether	UG/KG	0	0.0%		0	0	34						
ylhexyl)phthalate	UG/KG	15000	60.7%	50000	0	34	56	360 U	740 U	420 U	360 U	1800 U	
ylphthalate	UG/KG	1000	7.1%	50000	0	4	56	360 U	740 U	420 U	360 U	1800 U	
	UG/KG	33000	64.3%		0	36	56	360 U	63 J	160 J	360 U	180 J	
	UG/KG	63000	80.4%	400	26	45	56	360 U	**1800**	**820**	360 U	**6200**	
phthalate	UG/KG	250	39.3%	8100	0	22	56	360 U	250 J	120 J	360 U	1800 U	
phthalate	UG/KG	11	8.9%	50000	0	5	56	360 U	740 U	420 U	360 U	1800 U	
n)anthracene	UG/KG	17000	60.7%	14	29	34	56	360 U	**570** J	**160** J	360 U	**1900**	
ran	UG/KG	18000	60.7%	6200	1	34	56	360 U	45 J	64 J	360 U	1800 U	
thalate	UG/KG	12	26.8%	7100	0	15	56	360 U	740 U	420 U	360 U	1800 U	
hthalate	UG/KG	0	0.0%	2000	0	0	56	360 U	740 U	420 U	360 U	1800 U	
ene	UG/KG	160000	82.1%	50000	1	46	56	360 U	3200	1900	19 J	9900	
	UG/KG	38000	67.9%	50000	0	38	56	360 U	90 J	100 J	360 U	300 J	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 SB59-3 SOIL SB59-3-04 6 8 5/25/1994 SA ESI	SEAD-59 SB59-4 SOIL SB59-4-00 0 0.2 5/25/1994 SA ESI	SEAD-59 SB59-4 SOIL SB59-4-05 8 10 5/25/1994 SA ESI	SEAD-59 SB59-4 SOIL SB59-4-10 10 20 5/25/1994 SA ESI	SEAD-59 SB59-5 SOIL SB59-5-00 0 0.2 5/25/1994 SA ESI	SE SE SO SE SA ES
	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
obenzene	UG/KG	0	0.0%	410	0	0	56	360 U	740 U	420 U	360 U	1800 U	
obutadiene	UG/KG	0	0.0%		0	0	56	360 U	740 U	420 U	360 U	1800 U	
ocyclopentadiene	UG/KG	0	0.0%		0	0	56	360 U	740 U	420 U	360 U	1800 U	
oethane	UG/KG	0	0.0%		0	0	56	360 U	740 U	420 U	360 U	1800 U	
2,3-cd)pyrene	UG/KG	34000	75.0%	3200	4	42	56	360 U	470 J	300 J	360 U	**5300**	
e	UG/KG	0	0.0%	4400	0	0	56	360 U	740 U	420 U	360 U	1800 U	
diphenylamine	UG/KG	0	0.0%		0	0	56	360 U	740 U	420 U	360 U	1800 U	
dipropylamine	UG/KG	0	0.0%		0	0	56	360 U	740 U	420 U	360 U	1800 U	
ne	UG/KG	29000	62.5%	13000	2	35	56	360 U	95 J	100 J	360 U	240 J	
ene	UG/KG	0	0.0%	200	0	0	56	360 U	740 U	420 U	360 U	1800 U	
rophenol	UG/KG	0	0.0%	1000	0	0	56	880 U	1800 U	1000 U	870 U	4400 U	
ene	UG/KG	140000	82.1%	50000	2	46	56	360 U	1100	1100	360 U	4300	
	UG/KG	17	3.6%	30	0	2	56	360 U	740 U	420 U	360 U	1800 U	
	UG/KG	120000	85.5%	50000	1	47	55	360 U	1200	940	28 J	10000	
ES/PCBS													
	UG/KG	450	54.5%	2900	0	30	55	3.6 UJ	6.1 J	450	3.6 UJ	37 U	
	UG/KG	150	60.0%	2100	0	33	55	3.6 UJ	7.3 J	140	3.6 UJ	37 U	
	UG/KG	350	52.7%	2100	0	29	55	3.6 UJ	15 J	350	3.6 UJ	37 U	
	UG/KG	1.2	3.6%	41	0	2	55	1.9 UJ	3.8 U	22 U	1.8 UJ	19 U	
C	UG/KG	14	7.3%	110	0	4	55	1.9 UJ	3.8 U	22 U	1.8 UJ	19 U	
ordane	UG/KG	81	23.6%		0	13	55	1.9 UJ	3.8 U	22 U	1.8 UJ	19 U	
16	UG/KG	0	0.0%		0	0	55	36 UJ	74 U	420 U	36 UJ	370 U	
21	UG/KG	0	0.0%		0	0	55	74 UJ	150 U	850 U	73 UJ	740 U	
32	UG/KG	0	0.0%		0	0	55	36 UJ	74 U	420 U	36 UJ	370 U	
42	UG/KG	0	0.0%		0	0	54	36 UJ	74 U	420 U	36 UJ	370 U	
48	UG/KG	0	0.0%		0	0	55	36 UJ	74 U	420 U	36 UJ	370 U	
54	UG/KG	63	3.6%	10000	0	2	55	36 UJ	74 U	420 U	36 UJ	370 U	
60	UG/KG	0	0.0%	10000	0	0	55	36 UJ	74 U	420 U	36 UJ	370 U	
	UG/KG	4.7	12.7%	200	0	7	55	1.9 UJ	3.8 U	22 U	1.8 UJ	19 U	
C	UG/KG	8.5	12.7%	300	0	7	55	1.9 UJ	3.8 U	22 U	1.8 UJ	19 U	
	UG/KG	4.9	7.3%	44	0	4	55	3.6 UJ	7.4 U	42 U	3.6 UJ	37 U	
n I	UG/KG	26	14.5%	900	0	8	55	1.9 UJ	3.8 U	22 U	1.8 UJ	19 U	
n II	UG/KG	7.1	9.1%	900	0	5	55	3.6 UJ	7.4 U	42 U	3.6 UJ	37 U	
n sulfate	UG/KG	20	7.3%	1000	0	4	55	3.6 UJ	7.4 U	42 U	3.6 UJ	37 U	
	UG/KG	32	14.5%	100	0	8	55	3.6 UJ	7.4 U	42 U	3.6 UJ	37 U	
ehyde	UG/KG	15	20.0%		0	11	55	3.6 UJ	7.4 U	42 U	3.6 UJ	37 U	
one	UG/KG	77	14.5%		0	8	55	3.6 UJ	7.4 U	42 U	3.6 UJ	37 U	
HC/Lindane	UG/KG	0	0.0%	60	0	0	55	1.9 UJ	3.8 U	22 U	1.8 UJ	19 U	
hlordane	UG/KG	100	20.0%	540	0	11	55	1.9 UJ	2.7 J	22 U	1.8 UJ	19 U	
r	UG/KG	0	0.0%	100	0	0	55	1.9 UJ	3.8 U	22 U	1.8 UJ	19 U	
r epoxide	UG/KG	10	25.5%	20	0	14	55	1.9 UJ	3.8 U	22 U	1.8 UJ	19 U	
nlor	UG/KG	110	3.6%		0	2	55	19 UJ	38 U	220 U	18 UJ	190 U	
e	UG/KG	0	0.0%		0	0	55	190 UJ	380 U	2200 U	180 UJ	1900 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	SEAD-59 SB59-3 SOIL SB59-3-04 6 8 5/25/1994 SA ESI Value (Q)	SEAD-59 SB59-4 SOIL SB59-4-00 0 0.2 5/25/1994 SA ESI Value (Q)	SEAD-59 SB59-4 SOIL SB59-4-05 8 10 5/25/1994 SA ESI Value (Q)	SEAD-59 SB59-4 SOIL SB59-4-10 10 20 5/25/1994 SA ESI Value (Q)	SEAD-59 SB59-5 SOIL SB59-5-00 0 0.2 5/25/1994 SA ESI Value (Q)	SE SE SO SE SA ES
	MG/KG	20600	100.0%	19300	1	55	55	8020	13100	4200	7550	12600	
	MG/KG	424	21.8%	5.9	1	12	55	0.15 UJ	0.17 UJ	**424** J	0.22 UJ	0.41 J	
	MG/KG	6.1	100.0%	8.2	0	55	55	4.4	5.3	3.8	3.7	5.1	
	MG/KG	304	100.0%	300	1	55	55	62.9	90.1	**304**	21.1 J	101	
	MG/KG	0.91	100.0%	1.1	0	55	55	0.39 J	0.62 J	0.37 J	0.38 J	0.63 J	
	MG/KG	3.2	38.2%	2.3	1	21	55	0.52 J	1	**3.2**	0.42 J	1.3	
	MG/KG	214000	100.0%	121000	5	55	55	71100	51000	**214000**	61700	59500	
	MG/KG	25.5	100.0%	29.6	0	55	55	13.3	20.8	14.7	12.8	22.1	
	MG/KG	14.7	100.0%	30	0	55	55	7.9	10.7	4 J	7.7 J	11.3	
	MG/KG	36.1	100.0%	33	1	55	55	18.4	31	14.2	15.6	32.5	
	MG/KG	0	0.0%	0.35	0	0	55	0.51 U	0.51 U	0.61 U	0.47 U	0.53 U	
	MG/KG	33300	100.0%	36500	0	55	55	17600	23800	6540	17300	24800	
	MG/KG	139	100.0%	24.8	29	55	55	9.3 J	**59.8** J	**139** J	9.5 J	**91.9** J	
m	MG/KG	34400	100.0%	21500	1	55	55	18500	10600	7980	14600	8640	
e	MG/KG	1150	100.0%	1060	1	55	55	403	653	298	328	586	
	MG/KG	1.6	61.8%	0.1	11	34	55	0.03 J	0.08	**0.11**	0.03 J	0.04 J	
	MG/KG	41.4	100.0%	49	0	55	55	22.5	41.3	10.6	21.3	33.1	
	MG/KG	2520	100.0%	2380	1	55	55	1370 J	1850 J	845 J	1100 J	1620 J	
	MG/KG	2.2	32.7%	2	1	18	55	0.26 U	0.28 U	0.28 J	0.96 J	0.37 U	
	MG/KG	4.1	7.3%	0.75	1	4	55	0.11 UJ	0.12 UJ	0.11 J	0.15 UJ	0.15 UJ	
	MG/KG	2310	80.0%	172	18	44	55	**198** J	80 J	125 J	140 J	79.1 J	
	MG/KG	0	0.0%	0.7	0	0	55	0.24 U	0.27 U	0.22 U	0.34 U	0.35 U	
	MG/KG	41.9	100.0%	150	0	55	55	13.6	23.2	13.9	12.1	22.1	
	MG/KG	1550	100.0%	110	8	55	55	53.6	**131**	**341**	54.9	106	
NALYSES													
rite Nitrogen	MG/KG	9.9	100.0%		0	34	34						
oleum Hydrocarbons	MG/KG	19700	70.9%		0	39	55	29 U	594	778	40	527	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 SB59-5 SOIL SB59-5-06 10 12 5/25/1994 SA ESI	SEAD-59 SB59-7 SOIL 59056 0 2 10/20/1997 SA RI PHASE 1 STE	SEAD-59 SB59-8 SOIL 59057 0 2 10/20/1997 SA RI PHASE 1 STE	SEAD-59 SB59-9 SOIL 59059 2 3.7 10/21/1997 SA RI PHASE 1 STE	SEAD-59 TP59-1 SOIL TP59-1 2 2 6/8/1994 SA ESI	S T S S R
r	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
E ORGANIC COMPOUNDS													
hloroethane	UG/KG	0	0.0%	800	0	0	56	11 U	11 U	13 U	10 U	30000 U	
etrachloroethane	UG/KG	0	0.0%	600	0	0	56	11 U	11 U	13 U	10 U	30000 U	
hloroethane	UG/KG	0	0.0%		0	0	56	11 U	11 U	13 U	10 U	30000 U	
roethane	UG/KG	0	0.0%	200	0	0	56	11 U	11 U	13 U	10 U	30000 U	
roethene	UG/KG	0	0.0%	400	0	0	56	11 U	11 U	13 U	10 U	30000 U	
roethane	UG/KG	0	0.0%	100	0	0	56	11 U	11 U	13 U	10 U	30000 U	
roethene (total)	UG/KG	0	0.0%		0	0	56	11 U	11 U	13 U	10 U	30000 U	
ropropane	UG/KG	0	0.0%		0	0	56	11 U	11 U	13 U	10 U	30000 U	
	UG/KG	150	3.6%	200	0	2	56	11 U	11 U	13 U	10 U	30000 U	
	UG/KG	5900	5.4%	60	2	3	56	11 U	11 U	13 U	10 U	**5900** J	
hloromethane	UG/KG	0	0.0%		0	0	56	11 U	11 U	13 U	10 U	30000 U	
m	UG/KG	0	0.0%		0	0	56	11 U	11 U	13 U	10 U	30000 U	
sulfide	UG/KG	4	1.8%	2700	0	1	56	11 U	11 U	13 U	10 U	30000 U	
trachloride	UG/KG	0	0.0%	600	0	0	56	11 U	11 U	13 U	10 U	30000 U	
nzene	UG/KG	0	0.0%	1700	0	0	56	11 U	11 U	13 U	10 U	30000 U	
romomethane	UG/KG	0	0.0%		0	0	56	11 U	11 U	13 U	10 U	30000 U	
ane	UG/KG	0	0.0%	1900	0	0	56	11 U	11 U	13 U	10 U	30000 U	
m	UG/KG	0	0.0%	300	0	0	56	11 U	11 U	13 U	10 U	30000 U	
chloropropene	UG/KG	0	0.0%		0	0	56	11 U	11 U	13 U	10 U	30000 U	
zene	UG/KG	260000	7.1%	5500	1	4	56	11 U	11 U	13 U	10 U	**260000**	
omide	UG/KG	0	0.0%		0	0	56	11 U	11 U	13 U	10 U	30000 U	
tyl ketone	UG/KG	0	0.0%		0	0	56	11 U	11 U	13 U	10 U	30000 U	
loride	UG/KG	3	3.6%		0	2	56	11 U	11 U	13 U	10 U	30000 U	
nyl ketone	UG/KG	36	7.1%	300	0	4	56	11 U	11 U	13 U	10 U	30000 U	
obutyl ketone	UG/KG	0	0.0%	1000	0	0	56	11 U	11 U	13 U	10 U	30000 U	
e chloride	UG/KG	2	5.4%	100	0	3	56	11 U	11 U	13 U	10 U	30000 U	
	UG/KG	0	0.0%		0	0	56	11 U	11 U	13 U	10 U	30000 U	
roethene	UG/KG	0	0.0%	1400	0	0	56	11 U	11 U	13 U	10 U	30000 U	
	UG/KG	830000	16.1%	1500	1	9	56	11 U	11 U	13 U	10 U	**830000**	
X	MG/KG	15	86.7%		0	26	30		2.5 U	6.3	4.6		
nes	UG/KG	1000000	10.7%	1200	1	6	56	11 U	11 U	13 U	10 U	**1000000**	
-Dichloropropene	UG/KG	0	0.0%		0	0	56	11 U	11 U	13 U	10 U	30000 U	
thene	UG/KG	2	3.6%	700	0	2	56	11 U	11 U	13 U	10 U	30000 U	
ride	UG/KG	0	0.0%	200	0	0	56	11 U	11 U	13 U	10 U	30000 U	
ATILE ORGANIC COMPOUNDS													
hlorobenzene	UG/KG	28	1.8%	3400	0	1	56	380 U	81 U	81 U	69 U	87000 U	
robenzene	UG/KG	0	0.0%	7900	0	0	56	380 U	81 U	81 U	69 U	87000 U	
robenzene	UG/KG	0	0.0%	1600	0	0	56	380 U	81 U	81 U	69 U	87000 U	
robenzene	UG/KG	0	0.0%	8500	0	0	56	380 U	81 U	81 U	69 U	87000 U	
s(1-Chloropropane)	UG/KG	0	0.0%		0	0	22	380 U				87000 U	
hlorophenol	UG/KG	0	0.0%	100	0	0	56	920 U	200 U	200 U	170 U	210000 U	
hlorophenol	UG/KG	0	0.0%		0	0	56	380 U	81 U	81 U	69 U	87000 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59	SEAD-59	SEAD-59	SEAD-59	SEAD-59	S
								SB59-5	SB59-7	SB59-8	SB59-9	TP59-1	T
								SOIL	SOIL	SOIL	SOIL	SOIL	S
								SB59-5-06	59056	59057	59059	TP59-1	
								10	0	0	2	2	
								12	2	2	3.7	2	
								5/25/1994	10/20/1997	10/20/1997	10/21/1997	6/8/1994	
								SA	SA	SA	SA	SA	S
			Frequency		Number	Number	Number	ESI	RI PHASE 1 STE	RI PHASE 1 STE	RI PHASE 1 STE	ESI	R
r	Units	Maximum	of Detection	TAGM	of Exceed.	of Detections	of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
rophenol	UG/KG	0	0.0%	400	0	0	56	380 U	81 U	81 U	69 U	87000 U	
hylphenol	UG/KG	0	0.0%		0	0	56	380 U	81 U	81 U	69 U	87000 U	
ophenol	UG/KG	0	0.0%	200	0	0	56	920 U	200 U	200 U	170 U	210000 U	
otoluene	UG/KG	0	0.0%		0	0	56	380 U	81 U	81 U	69 U	87000 U	
otoluene	UG/KG	0	0.0%	1000	0	0	56	380 U	81 U	81 U	69 U	87000 U	
aphthalene	UG/KG	0	0.0%		0	0	56	380 U	81 U	81 U	69 U	87000 U	
henol	UG/KG	0	0.0%	800	0	0	56	380 U	81 U	81 U	69 U	87000 U	
aphthalene	UG/KG	67000	66.1%	36400	2	37	56	380 U	15 J	81 U	69 U	87000 U	
henol	UG/KG	0	0.0%	100	0	0	56	380 U	81 U	81 U	69 U	87000 U	
line	UG/KG	0	0.0%	430	0	0	56	920 U	200 U	200 U	170 U	210000 U	
enol	UG/KG	0	0.0%	330	0	0	56	380 U	81 U	81 U	69 U	87000 U	
obenzidine	UG/KG	0	0.0%		0	0	56	380 U	81 U	81 U	69 U	87000 U	
line	UG/KG	0	0.0%	500	0	0	56	920 U	200 U	200 U	170 U	210000 U	
-2-methylphenol	UG/KG	0	0.0%		0	0	56	920 U	200 U	200 U	170 U	210000 U	
henyl phenyl ether	UG/KG	0	0.0%		0	0	56	380 U	81 U	81 U	69 U	87000 U	
3-methylphenol	UG/KG	0	0.0%	240	0	0	56	380 U	81 U	81 U	69 U	87000 U	
niline	UG/KG	0	0.0%	220	0	0	56	380 U	81 U	81 U	69 U	87000 U	
henyl phenyl ether	UG/KG	0	0.0%		0	0	56	380 U	81 U	81 U	69 U	87000 U	
henol	UG/KG	83	3.6%	900	0	2	56	380 U	81 U	81 U	69 U	87000 U	
line	UG/KG	0	0.0%		0	0	56	920 U	200 U	200 U	170 U	210000 U	
enol	UG/KG	0	0.0%	100	0	0	56	920 U	200 U	200 U	170 U	210000 U	
nene	UG/KG	20000	69.6%	50000	0	39	56	380 U	9.1 J	81 U	69 U	87000 U	
nylene	UG/KG	5700	51.8%	41000	0	29	56	380 U	81 U	81 U	69 U	87000 U	
ne	UG/KG	38000	64.3%	50000	0	36	56	380 U	19 J	81 U	69 U	87000 U	
anthracene	UG/KG	67000	78.6%	224	31	44	56	380 U	160	6.6 J	69 U	87000 U	
pyrene	UG/KG	70000	76.8%	61	33	43	56	380 U	140	7 J	69 U	87000 U	
luoranthene	UG/KG	58000	82.1%	1100	13	46	56	380 U	180	7.7 J	4.8 J	87000 U	
i)perylene	UG/KG	35000	69.6%	50000	0	39	56	380 U	88	6.3 J	69 U	87000 U	
luoranthene	UG/KG	48000	73.2%	1100	12	41	56	380 U	160	8.4 J	69 U	87000 U	
proethoxy)methane	UG/KG	0	0.0%		0	0	56	380 U	81 U	81 U	69 U	87000 U	
proethyl)ether	UG/KG	0	0.0%		0	0	56	380 U	81 U	81 U	69 U	87000 U	
proisopropyl)ether	UG/KG	0	0.0%		0	0	34		81 U	81 U	69 U		
ylhexyl)phthalate	UG/KG	15000	60.7%	50000	0	34	56	380 U	42 J	69 J	24 J	15000 J	
ylphthalate	UG/KG	1000	7.1%	50000	0	4	56	380 U	9.6 J	81 U	69 U	87000 U	
e	UG/KG	33000	64.3%		0	36	56	380 U	33 J	81 U	69 U	87000 U	
	UG/KG	63000	80.4%	400	26	45	56	380 U	180	7.8 J	69 U	87000 U	
phthalate	UG/KG	250	39.3%	8100	0	22	56	380 U	8.2 J	5.8 J	7.1 J	87000 U	
phthalate	UG/KG	11	8.9%	50000	0	5	56	380 U	8.4 J	11 J	69 U	87000 U	
h)anthracene	UG/KG	17000	60.7%	14	29	34	56	380 U	36 J	81 U	69 U	87000 U	
ran	UG/KG	18000	60.7%	6200	1	34	56	380 U	9.4 J	81 U	69 U	87000 U	
thalate	UG/KG	12	26.8%	7100	0	15	56	380 U	12 J	10 J	12 J	87000 U	
hthalate	UG/KG	0	0.0%	2000	0	0	56	380 U	81 U	81 U	69 U	87000 U	
ene	UG/KG	160000	82.1%	50000	1	46	56	380 U	320	11 J	69 U	87000 U	
	UG/KG	38000	67.9%	50000	0	38	56	380 U	81 U	81 U	69 U	87000 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

r	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	SEAD-59 SB59-5 SOIL SB59-5-06 10 12 5/25/1994 SA ESI Value (Q)	SEAD-59 SB59-7 SOIL 59056 0 2 10/20/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 SB59-8 SOIL 59057 0 2 10/20/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 SB59-9 SOIL 59059 2 3.7 10/21/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-1 SOIL TP59-1 2 2 6/8/1994 SA ESI Value (Q)	S T S S R
robenzene	UG/KG	0	0.0%	410	0	0	56	380 U	81 U	81 U	69 U	87000 U	
robutadiene	UG/KG	0	0.0%		0	0	56	380 U	81 U	81 U	69 U	87000 U	
rocyclopentadiene	UG/KG	0	0.0%		0	0	56	380 U	81 U	81 U	69 U	87000 U	
roethane	UG/KG	0	0.0%		0	0	56	380 U	81 U	81 U	69 U	87000 U	
2,3-cd)pyrene	UG/KG	34000	75.0%	3200	4	42	56	380 U	83	6 J	69 U	87000 U	
ne	UG/KG	0	0.0%	4400	0	0	56	380 U	81 U	81 U	69 U	87000 U	
diphenylamine	UG/KG	0	0.0%		0	0	56	380 U	81 U	81 U	69 U	87000 U	
dipropylamine	UG/KG	0	0.0%		0	0	56	380 U	81 U	81 U	69 U	87000 U	
ene	UG/KG	29000	62.5%	13000	2	35	56	380 U	11 J	81 U	69 U	87000 U	
ene	UG/KG	0	0.0%	200	0	0	56	380 U	81 U	81 U	69 U	87000 U	
rophenol	UG/KG	0	0.0%	1000	0	0	56	920 U	200 U	200 U	170 U	210000 U	
rene	UG/KG	140000	82.1%	50000	2	46	56	380 U	120	6 J	69 U	87000 U	
	UG/KG	17	3.6%	30	0	2	56	380 U	81 U	81 U	69 U	87000 U	
	UG/KG	120000	85.5%	50000	1	47	55	380 U	290	13 J	69 U	87000 U	
DES/PCBS													
	UG/KG	450	54.5%	2900	0	30	55	3.8 U	6	4.1 U	3.5 U	7	
	UG/KG	150	60.0%	2100	0	33	55	3.8 U	14	4.1 U	2.5 J	13 J	
	UG/KG	350	52.7%	2100	0	29	55	3.8 U	21	4.1 U	3.9	4.3 U	
	UG/KG	1.2	3.6%	41	0	2	55	2 U	2.1 U	2.1 U	1.8 U	2.2 U	
C	UG/KG	14	7.3%	110	0	4	55	2 U	14 J	9	8.2 UJ	2.2 U	
ordane	UG/KG	81	23.6%		0	13	55	2 U	3.6	2.1 U	1.8 U	1.3 J	
016	UG/KG	0	0.0%		0	0	55	38 U	41 U	41 U	35 U	43 U	
221	UG/KG	0	0.0%		0	0	55	77 U	83 U	84 U	70 U	88 U	
232	UG/KG	0	0.0%		0	0	55	38 U	41 U	41 U	35 U	43 U	
242	UG/KG	0	0.0%		0	0	54	38 U	41 U	41 U	35 U	43 U	
248	UG/KG	0	0.0%		0	0	55	38 U	41 U	41 U	35 U	43 U	
254	UG/KG	63	3.6%	10000	0	2	55	38 U	41 U	41 U	35 U	43 U	
260	UG/KG	0	0.0%	10000	0	0	55	38 U	41 U	41 U	35 U	43 U	
C	UG/KG	4.7	12.7%	200	0	7	55	2 U	4.7 J	3.6 J	3 J	2.2 U	
C	UG/KG	8.5	12.7%	300	0	7	55	2 U	1.8 J	1.4 J	1.1 J	2.2 J	
	UG/KG	4.9	7.3%	44	0	4	55	3.8 U	4.1 U	4.1 U	3.5 U	3.6 J	
an I	UG/KG	26	14.5%	900	0	8	55	2 U	2.1 U	2.1 U	1.8 U	1.5 J	
an II	UG/KG	7.1	9.1%	900	0	5	55	3.8 U	4.1 U	4.1 U	3.5 U	4.3 U	
an sulfate	UG/KG	20	7.3%	1000	0	4	55	3.8 U	4.1 U	4.1 U	3.5 U	4.3 U	
	UG/KG	32	14.5%	100	0	8	55	3.8 U	4.1 U	4.1 U	3.5 U	4.3 U	
dehyde	UG/KG	15	20.0%		0	11	55	3.8 U	4.1 U	4.1 U	3.5 U	4.3 U	
tone	UG/KG	77	14.5%		0	8	55	3.8 U	4.1 U	4.1 U	3.5 U	4.3 U	
BHC/Lindane	UG/KG	0	0.0%	60	0	0	55	2 U	2.6 U	2.9 U	2.6 UJ	2.2 U	
Chlordane	UG/KG	100	20.0%	540	0	11	55	2 U	3.8	2.1 U	1.8 U	2.2 U	
or	UG/KG	0	0.0%	100	0	0	55	2 U	2.1 U	2.1 U	1.8 U	2.2 U	
or epoxide	UG/KG	10	25.5%	20	0	14	55	2 U	1.2 J	2.1 U	1.8 U	2.2 U	
hlor	UG/KG	110	3.6%		0	2	55	20 U	21 U	21 U	18 U	22 U	
ne	UG/KG	0	0.0%		0	0	55	200 U	210 U	210 U	180 U	220 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

							SEAD-59	SEAD-59	SEAD-59	SEAD-59	SEAD-59	SE
							SB59-5	SB59-7	SB59-8	SB59-9	TP59-1	TP
							SOIL	SOIL	SOIL	SOIL	SOIL	SO
							SB59-5-06	59056	59057	59059	TP59-1	
							10	0	0	2	2	
							12	2	2	3.7	2	
							5/25/1994	10/20/1997	10/20/1997	10/21/1997	6/8/1994	
							SA	SA	SA	SA	SA	SA
							ESI	RI PHASE 1 STE	RI PHASE 1 STE	RI PHASE 1 STE	ESI	RI
	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
	MG/KG	20600	100.0%	19300	1	55	55	7030	9840	15200	7180	16000 J	
	MG/KG	424	21.8%	5.9	1	12	55	0.18 UJ	0.72 UJ	0.69 UJ	0.58 UJ	0.26 UJ	
	MG/KG	6.1	100.0%	8.2	0	55	55	5.1	4.1	5.2	3.8	6.1	
	MG/KG	304	100.0%	300	1	55	55	36 J	66.2	192	47.9	120 J	
	MG/KG	0.91	100.0%	1.1	0	55	55	0.42 J	0.41	0.36	0.25	0.61 J	
	MG/KG	3.2	38.2%	2.3	1	21	55	0.61 J	0.1 U	0.1 U	0.08 U	0.6 J	
	MG/KG	214000	100.0%	121000	5	55	55	85200	59700	7390	91000	7690 J	
	MG/KG	25.5	100.0%	29.6	0	55	55	13.1	19.5	20.7	11.9	23.8 J	
	MG/KG	14.7	100.0%	30	0	55	55	8.1 J	9.4	12.5	8.1	14.7 J	
	MG/KG	36.1	100.0%	33	1	55	55	18.8	24.9	28.4	18.7	19.6 J	
	MG/KG	0	0.0%	0.35	0	0	55	0.56 U	0.62 UJ	0.65 UJ	0.53 UJ	0.58 U	
	MG/KG	33300	100.0%	36500	0	55	55	18100	19900	26300	16100	33300 J	
	MG/KG	139	100.0%	24.8	29	55	55	12.3 J	**40.9**	**55.5**	8.5	15	
n	MG/KG	34400	100.0%	21500	1	55	55	**34400**	7840	4740	18300	5210 J	
e	MG/KG	1150	100.0%	1060	1	55	55	477	367	**1150**	385	507 J	
	MG/KG	1.6	61.8%	0.1	11	34	55	0.04 J	0.06	**0.21**	0.05 U	0.07 JR	
	MG/KG	41.4	100.0%	49	0	55	55	27	25.7	28.5	21.4	34.4 J	
	MG/KG	2520	100.0%	2380	1	55	55	922 J	1500	1770	1430	1540	
	MG/KG	2.2	32.7%	2	1	18	55	0.31 U	0.99 U	1.4	0.79 U	1.2	
	MG/KG	4.1	7.3%	0.75	1	4	55	0.13 UJ	0.27 U	0.26 U	0.22 U	0.1 UJ	
	MG/KG	2310	80.0%	172	18	44	55	**274** J	**1510**	115 U	142	140 J	
	MG/KG	0	0.0%	0.7	0	0	55	0.29 U	1 UJ	0.98 UJ	0.81 UJ	0.38 U	
	MG/KG	41.9	100.0%	150	0	55	55	13.3	18.1	25.4	13.7	25.3 J	
	MG/KG	1550	100.0%	110	8	55	55	64.9	67.6	86	61.2	**1550** J	
NALYSES													
ite Nitrogen	MG/KG	9.9	100.0%		0	34	34		0.5	8.34	0.15		
oleum Hydrocarbons	MG/KG	19700	70.9%		0	39	55	70	133	27.3 U	23.3 U	3820	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	SEAD-59 TP59-11A-2 SOIL 59026 4 4.5 10/9/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-12A-1 SOIL 59018 1 1.5 10/9/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-12A-2 SOIL 59019 1 1.5 10/9/1997 DU RI PHASE 1 STE Value (Q)	SEAD-59 TP59-12B-2 SOIL 59023 2.5 3 10/9/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-13A-1 SOIL 59010 3.5 4 10/8/1997 SA RI PHASE 1 STE Value (Q)	SE TP SO SA RI
ORGANIC COMPOUNDS													
loroethane	UG/KG	0	0.0%	800	0	0	56	11 U	12 U	12 U	11 U	120 U	
trachloroethane	UG/KG	0	0.0%	600	0	0	56	11 U	12 U	12 U	11 U	120 U	
loroethane	UG/KG	0	0.0%		0	0	56	11 U	12 U	12 U	11 U	120 U	
roethane	UG/KG	0	0.0%	200	0	0	56	11 U	12 U	12 U	11 U	120 U	
roethene	UG/KG	0	0.0%	400	0	0	56	11 U	12 U	12 U	11 U	120 U	
roethane	UG/KG	0	0.0%	100	0	0	56	11 U	12 U	12 U	11 U	120 U	
roethene (total)	UG/KG	0	0.0%		0	0	56	11 U	12 U	12 U	11 U	120 U	
ropropane	UG/KG	0	0.0%		0	0	56	11 U	12 U	12 U	11 U	120 U	
	UG/KG	150	3.6%	200	0	2	56	7 U	12 U	12 U	11 U	120 U	
	UG/KG	5900	5.4%	60	2	3	56	7 U	12 U	12 U	11 U	120 U	
loromethane	UG/KG	0	0.0%		0	0	56	11 U	12 U	12 U	11 U	120 U	
n	UG/KG	0	0.0%		0	0	56	11 U	12 U	12 U	11 U	120 U	
ulfide	UG/KG	4	1.8%	2700	0	1	56	11 U	12 U	12 U	11 U	120 U	
rachloride	UG/KG	0	0.0%	600	0	0	56	11 U	12 U	12 U	11 U	120 U	
zene	UG/KG	0	0.0%	1700	0	0	56	11 U	12 U	12 U	11 U	120 U	
omomethane	UG/KG	0	0.0%		0	0	56	11 U	12 U	12 U	11 U	120 U	
ne	UG/KG	0	0.0%	1900	0	0	56	11 U	12 U	12 U	11 U	120 U	
n	UG/KG	0	0.0%	300	0	0	56	11 U	12 U	12 U	11 U	120 U	
chloropropene	UG/KG	0	0.0%		0	0	56	11 U	12 U	12 U	11 U	120 U	
ene	UG/KG	260000	7.1%	5500	1	4	56	11 U	12 U	12 U	11 U	110 J	
mide	UG/KG	0	0.0%		0	0	56	11 U	12 U	12 U	11 U	120 U	
yl ketone	UG/KG	0	0.0%		0	0	56	11 U	12 U	12 U	11 U	120 U	
oride	UG/KG	3	3.6%		0	2	56	11 U	12 U	12 U	11 U	120 U	
yl ketone	UG/KG	36	7.1%	300	0	4	56	11 U	12 U	12 U	11 U	120 U	
outyl ketone	UG/KG	0	0.0%	1000	0	0	56	11 U	12 U	12 U	11 U	120 U	
chloride	UG/KG	2	5.4%	100	0	3	56	11 U	12 U	12 U	11 U	120 U	
	UG/KG	0	0.0%		0	0	56	11 U	12 U	12 U	11 U	120 U	
oethene	UG/KG	0	0.0%	1400	0	0	56	11 U	12 U	12 U	11 U	120 U	
	UG/KG	830000	16.1%	1500	1	9	56	11 U	12 U	12 U	11 U	120 U	
X	MG/KG	15	86.7%		0	26	30	2.5	5.2	5	6		
nes	UG/KG	1000000	10.7%	1200	1	6	56	11 U	12 U	12 U	11 U	120 U	
Dichloropropene	UG/KG	0	0.0%		0	0	56	11 U	12 U	12 U	11 U	120 U	
hene	UG/KG	2	3.6%	700	0	2	56	11 U	12 U	12 U	11 U	120 U	
de	UG/KG	0	0.0%	200	0	0	56	11 U	12 U	12 U	11 U	120 U	
ATILE ORGANIC COMPOUNDS													
lorobenzene	UG/KG	28	1.8%	3400	0	1	56	1400 U	200 U	160 U	74 U	8000 U	
robenzene	UG/KG	0	0.0%	7900	0	0	56	1400 U	200 U	160 U	74 U	8000 U	
robenzene	UG/KG	0	0.0%	1600	0	0	56	1400 U	200 U	160 U	74 U	8000 U	
robenzene	UG/KG	0	0.0%	8500	0	0	56	1400 U	200 U	160 U	74 U	8000 U	
(1-Chloropropane)	UG/KG	0	0.0%		0	0	22						
lorophenol	UG/KG	0	0.0%	100	0	0	56	3500 U	490 U	380 U	180 U	20000 U	
lorophenol	UG/KG	0	0.0%		0	0	56	1400 U	200 U	160 U	74 U	8000 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 TP59-11A-2 SOIL 59026 4 4.5 10/9/1997 SA RI PHASE 1 STE	SEAD-59 TP59-12A-1 SOIL 59018 1 1.5 10/9/1997 SA RI PHASE 1 STE	SEAD-59 TP59-12A-2 SOIL 59019 1 1.5 10/9/1997 DU RI PHASE 1 STE	SEAD-59 TP59-12B-2 SOIL 59023 2.5 3 10/9/1997 SA RI PHASE 1 STE	SEAD-59 TP59-13A-1 SOIL 59010 3.5 4 10/8/1997 SA RI PHASE 1 STE	SE TP SO SA RI
	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
rophenol	UG/KG	0	0.0%	400	0	0	56	1400 U	200 U	160 U	74 U	8000 U	
nylphenol	UG/KG	0	0.0%		0	0	56	1400 U	200 U	160 U	74 U	8000 U	
phenol	UG/KG	0	0.0%	200	0	0	56	3500 U	490 U	380 U	180 U	20000 U	
toluene	UG/KG	0	0.0%		0	0	56	1400 U	200 U	160 U	74 U	8000 U	
toluene	UG/KG	0	0.0%	1000	0	0	56	1400 U	200 U	160 U	74 U	8000 U	
aphthalene	UG/KG	0	0.0%		0	0	56	1400 U	200 U	160 U	74 U	8000 U	
henol	UG/KG	0	0.0%	800	0	0	56	1400 U	200 U	160 U	74 U	8000 U	
aphthalene	UG/KG	67000	66.1%	36400	2	37	56	210 J	21 J	16 J	74 U	10000	
henol	UG/KG	0	0.0%	100	0	0	56	1400 U	200 U	160 U	74 U	8000 U	
ine	UG/KG	0	0.0%	430	0	0	56	3500 U	490 U	380 U	180 UJ	20000 U	
enol	UG/KG	0	0.0%	330	0	0	56	1400 U	200 U	160 U	74 U	8000 U	
robenzidine	UG/KG	0	0.0%		0	0	56	1400 U	200 U	160 U	74 UJ	8000 U	
ine	UG/KG	0	0.0%	500	0	0	56	3500 U	490 U	380 U	180 UJ	20000 U	
-2-methylphenol	UG/KG	0	0.0%		0	0	56	3500 U	490 U	380 U	180 U	20000 U	
henyl phenyl ether	UG/KG	0	0.0%		0	0	56	1400 U	200 U	160 U	74 U	8000 U	
-methylphenol	UG/KG	0	0.0%	240	0	0	56	1400 U	200 U	160 U	74 U	8000 U	
niline	UG/KG	0	0.0%	220	0	0	56	1400 U	200 U	160 U	74 U	8000 U	
henyl phenyl ether	UG/KG	0	0.0%		0	0	56	1400 U	200 U	160 U	74 U	8000 U	
henol	UG/KG	83	3.6%	900	0	2	56	1400 U	200 U	160 U	74 U	8000 U	
ine	UG/KG	0	0.0%		0	0	56	3500 U	490 U	380 U	180 U	20000 U	
enol	UG/KG	0	0.0%	100	0	0	56	3500 U	490 U	380 U	180 UJ	20000 U	
hene	UG/KG	20000	69.6%	50000	0	39	56	340 J	92 J	59 J	74 U	1600 J	
nylene	UG/KG	5700	51.8%	41000	0	29	56	290 J	200 U	160 U	74 U	8000 U	
e	UG/KG	38000	64.3%	50000	0	36	56	1100 J	130 J	110 J	74 U	8000 U	
nthracene	UG/KG	67000	78.6%	224	31	44	56	**3500**	**450**	**480**	74 U	8000 U	
yrene	UG/KG	70000	76.8%	61	33	43	56	**4100**	**480**	**450**	74 U	8000 U	
luoranthene	UG/KG	58000	82.1%	1100	13	46	56	**3400**	480	470	74 U	8000 U	
)perylene	UG/KG	35000	69.6%	50000	0	39	56	2400	340	290	74 U	8000 U	
luoranthene	UG/KG	48000	73.2%	1100	12	41	56	**3200**	430	380	74 U	8000 U	
roethoxy)methane	UG/KG	0	0.0%		0	0	56	1400 U	200 U	160 U	74 U	8000 U	
roethyl)ether	UG/KG	0	0.0%		0	0	56	1400 U	200 U	160 U	74 U	8000 U	
roisopropyl)ether	UG/KG	0	0.0%		0	0	34	1400 U	200 U	160 U	74 U	8000 U	
ylhexyl)phthalate	UG/KG	15000	60.7%	50000	0	34	56	1400 U	200 U	14 J	6.8 J	8000 U	
ylphthalate	UG/KG	1000	7.1%	50000	0	4	56	1400 U	200 U	160 U	74 U	8000 U	
e	UG/KG	33000	64.3%		0	36	56	610 J	250	150 J	74 U	8000 U	
	UG/KG	63000	80.4%	400	26	45	56	**3700**	**520**	**500**	74 U	8000 U	
phthalate	UG/KG	250	39.3%	8100	0	22	56	1400 U	200 U	160 U	6.3 J	8000 U	
phthalate	UG/KG	11	8.9%	50000	0	5	56	1400 U	200 U	160 U	74 U	8000 U	
h)anthracene	UG/KG	17000	60.7%	14	29	34	56	**890** J	**110** J	**140** J	74 U	8000 U	
ran	UG/KG	18000	60.7%	6200	1	34	56	230 J	42 J	27 J	74 U	1400 J	
thalate	UG/KG	12	26.8%	7100	0	15	56	1400 U	200 U	160 U	74 U	8000 U	
hthalate	UG/KG	0	0.0%	2000	0	0	56	1400 U	200 U	160 U	74 U	8000 U	
ene	UG/KG	160000	82.1%	50000	1	46	56	7300	1100	1000	74 U	8000 U	
	UG/KG	38000	67.9%	50000	0	38	56	640 J	81 J	55 J	74 U	3000 J	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

r	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	SEAD-59 TP59-11A-2 SOIL 59026 4 4.5 10/9/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-12A-1 SOIL 59018 1 1.5 10/9/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-12A-2 SOIL 59019 1 1.5 10/9/1997 DU RI PHASE 1 STE Value (Q)	SEAD-59 TP59-12B-2 SOIL 59023 2.5 3 10/9/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-13A-1 SOIL 59010 3.5 4 10/8/1997 SA RI PHASE 1 STE Value (Q)	S T S S R
robenzene	UG/KG	0	0.0%	410	0	0	56	1400 U	200 U	160 U	74 U	8000 U	
robutadiene	UG/KG	0	0.0%		0	0	56	1400 U	200 U	160 U	74 U	8000 U	
rocyclopentadiene	UG/KG	0	0.0%		0	0	56	1400 U	200 U	160 U	74 U	8000 U	
roethane	UG/KG	0	0.0%		0	0	56	1400 U	200 U	160 U	74 U	8000 U	
2,3-cd)pyrene	UG/KG	34000	75.0%	3200	4	42	56	2300	300	270	74 U	8000 U	
e	UG/KG	0	0.0%	4400	0	0	56	1400 U	200 U	160 U	74 U	8000 U	
diphenylamine	UG/KG	0	0.0%		0	0	56	1400 U	200 U	160 U	74 U	8000 U	
dipropylamine	UG/KG	0	0.0%		0	0	56	1400 U	200 U	160 U	74 U	8000 U	
ene	UG/KG	29000	62.5%	13000	2	35	56	110 J	34 J	17 J	74 U	8000 U	
ene	UG/KG	0	0.0%	200	0	0	56	1400 U	200 U	160 U	74 U	8000 U	
rophenol	UG/KG	0	0.0%	1000	0	0	56	3500 U	490 U	380 U	180 U	20000 U	
rene	UG/KG	140000	82.1%	50000	2	46	56	5000	750	610	74 U	5200 J	
	UG/KG	17	3.6%	30	0	2	56	1400 U	200 U	160 U	74 U	8000 U	
	UG/KG	120000	85.5%	50000	1	47	55	7000	800	890	74 U	8000 U	
DES/PCBS													
	UG/KG	450	54.5%	2900	0	30	55	13	10	7.5	3.7 U	26	
	UG/KG	150	60.0%	2100	0	33	55	13	29	21	3.7 U	10	
	UG/KG	350	52.7%	2100	0	29	55	12	8.1	5.1	3.7 U	4 U	
	UG/KG	1.2	3.6%	41	0	2	55	1.8 U	2.1 U	2 U	1.9 U	2.1 U	
C	UG/KG	14	7.3%	110	0	4	55	1.8 U	2.1 U	2 U	1.9 U	2.1 U	
lordane	UG/KG	81	23.6%		0	13	55	1.1 J	2.1 U	2 U	1.9 U	17	
016	UG/KG	0	0.0%		0	0	55	36 U	40 U	40 U	37 U	40 U	
221	UG/KG	0	0.0%		0	0	55	73 U	82 U	81 U	75 U	82 U	
232	UG/KG	0	0.0%		0	0	55	36 U	40 U	40 U	37 U	40 U	
242	UG/KG	0	0.0%		0	0	54	36 U	40 U	40 U	37 U	40 U	
248	UG/KG	0	0.0%		0	0	55	36 U	40 U	40 U	37 U	40 U	
254	UG/KG	63	3.6%	10000	0	2	55	36 U	40 U	40 U	37 U	40 U	
260	UG/KG	0	0.0%	10000	0	0	55	36 U	40 U	40 U	37 U	40 U	
C	UG/KG	4.7	12.7%	200	0	7	55	1.8 U	2.1 U	2 U	1.9 U	2.1 U	
C	UG/KG	8.5	12.7%	300	0	7	55	1.8 U	2.1 U	2 U	1.9 U	2.1 U	
	UG/KG	4.9	7.3%	44	0	4	55	3.6 U	4 U	4 U	3.7 U	4 U	
an I	UG/KG	26	14.5%	900	0	8	55	1.8 U	2.1 U	2 U	1.9 U	2.1 U	
an II	UG/KG	7.1	9.1%	900	0	5	55	3.6 U	4 U	4 U	3.7 U	4 U	
an sulfate	UG/KG	20	7.3%	1000	0	4	55	3.6 U	4 U	4 U	3.7 U	4 U	
	UG/KG	32	14.5%	100	0	8	55	7.7	4 U	4 U	3.7 U	4 U	
dehyde	UG/KG	15	20.0%		0	11	55	3.5 J	4 U	4 U	3.7 U	4 U	
tone	UG/KG	77	14.5%		0	8	55	4.4	4 U	4 U	3.7 U	4 U	
BHC/Lindane	UG/KG	0	0.0%	60	0	0	55	1.8 U	2.1 U	2 U	1.9 U	2.1 U	
Chlordane	UG/KG	100	20.0%	540	0	11	55	1 J	2.1 U	2 U	1.9 U	18	
or	UG/KG	0	0.0%	100	0	0	55	1.8 U	2.1 U	2 U	1.9 U	2.1 U	
or epoxide	UG/KG	10	25.5%	20	0	14	55	1 J	1.7 J	1 J	1.9 U	2.1 U	
hlor	UG/KG	110	3.6%		0	2	55	18 U	21 U	20 U	19 U	21 U	
ne	UG/KG	0	0.0%		0	0	55	180 U	210 U	200 U	190 U	210 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

r	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	SEAD-59 TP59-11A-2 SOIL 59026 4 4.5 10/9/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-12A-1 SOIL 59018 1 1.5 10/9/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-12A-2 SOIL 59019 1 1.5 10/9/1997 DU RI PHASE 1 STE Value (Q)	SEAD-59 TP59-12B-2 SOIL 59023 2.5 3 10/9/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-13A-1 SOIL 59010 3.5 4 10/8/1997 SA RI PHASE 1 STE Value (Q)	S T S S R
n	MG/KG	20600	100.0%	19300	1	55	55	9950 J	12000 J	10000 J	11900 J	9510 J	
	MG/KG	424	21.8%	5.9	1	12	55	0.56 UJ	0.54 UJ	0.58 UJ	0.61 UJ	0.51 UJ	
	MG/KG	6.1	100.0%	8.2	0	55	55	3.5	2.7	3	4	4.8	
	MG/KG	304	100.0%	300	1	55	55	77.8	91.6	79.7	84.5	33.2	
	MG/KG	0.91	100.0%	1.1	0	55	55	0.39	0.48	0.36	0.49	0.46	
	MG/KG	3.2	38.2%	2.3	1	21	55	0.08 U	0.07 U	0.08 U	0.08 U	0.07 U	
	MG/KG	214000	100.0%	121000	5	55	55	98900	26900	63900	2770	8570	
n	MG/KG	25.5	100.0%	29.6	0	55	55	16.4	19.4	15.2	17.7	17.5	
	MG/KG	14.7	100.0%	30	0	55	55	9.5	11.5	8.5	8.1	13.8	
	MG/KG	36.1	100.0%	33	1	55	55	**36.1**	28.1	23	16.6	27	
	MG/KG	0	0.0%	0.35	0	0	55	0.58 U	0.65 U	0.6 U	0.61 U	0.65 U	
	MG/KG	33300	100.0%	36500	0	55	55	18200	22600	17600	20800	22200	
	MG/KG	139	100.0%	24.8	29	55	55	**65.2** J	**81.6** J	**38.4** J	8.5 J	17.6 J	
m	MG/KG	34400	100.0%	21500	1	55	55	8970 J	6770 J	9300 J	4240 J	6250 J	
se	MG/KG	1150	100.0%	1060	1	55	55	442 J	375 J	463 J	226 J	285 J	
	MG/KG	1.6	61.8%	0.1	11	34	55	**0.15**	0.1	**0.11**	0.05 U	0.05 U	
	MG/KG	41.4	100.0%	49	0	55	55	26.8	28.2	23.3	24	35	
n	MG/KG	2520	100.0%	2380	1	55	55	1540	1510	1590	1580	1090	
	MG/KG	2.2	32.7%	2	1	18	55	0.78 U	0.74 U	0.79 U	0.84 U	0.71 U	
	MG/KG	4.1	7.3%	0.75	1	4	55	0.25	0.2 U	0.22 U	0.23 U	0.2 U	
	MG/KG	2310	80.0%	172	18	44	55	99.5	80.1 U	85.5 U	90.6 U	**1150**	
	MG/KG	0	0.0%	0.7	0	0	55	1.2 U	1.1 U	1.2 U	1.3 U	1.1 U	
n	MG/KG	41.9	100.0%	150	0	55	55	18.7	21.4	18.4	19.8	16	
	MG/KG	1550	100.0%	110	8	55	55	90.9 J	**122** J	87.9 J	70.4 J	97.2 J	
ANALYSES													
trite Nitrogen	MG/KG	9.9	100.0%		0	34	34	1.5	1.6	1.3	0.31	0.08	
roleum Hydrocarbons	MG/KG	19700	70.9%		0	39	55	1220	156	151	25.8 U	5090	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	SEAD-59 TP59-14-3 SOIL 59030 1.5 2 10/10/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-15-1 SOIL 59031 6 6 10/10/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-15-5 SOIL 59035 6 6.5 10/10/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-16-1 SOIL 59036 3.5 4 10/10/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-17-3 SOIL 59044 3 3.5 10/13/1997 SA RI PHASE 1 STE Value (Q)	SI TF SC 1 SA RI
E ORGANIC COMPOUNDS													
loroethane	UG/KG	0	0.0%	800	0	0	56	12 U	57 U	12 U	13 U	11 U	
trachloroethane	UG/KG	0	0.0%	600	0	0	56	12 U	57 U	12 U	13 U	11 U	
loroethane	UG/KG	0	0.0%		0	0	56	12 U	57 U	12 U	13 U	11 U	
roethane	UG/KG	0	0.0%	200	0	0	56	12 U	57 U	12 U	13 U	11 U	
roethene	UG/KG	0	0.0%	400	0	0	56	12 U	57 U	12 U	13 U	11 U	
roethane	UG/KG	0	0.0%	100	0	0	56	12 U	57 U	12 U	13 U	11 U	
roethene (total)	UG/KG	0	0.0%		0	0	56	12 U	57 U	12 U	13 U	11 U	
ropropane	UG/KG	0	0.0%		0	0	56	12 U	57 U	12 U	13 U	11 U	
	UG/KG	150	3.6%	200	0	2	56	12 U	57 U	12 U	13 U	11 U	
	UG/KG	5900	5.4%	60	2	3	56	12 U	57 U	12 U	13 U	11 U	
loromethane	UG/KG	0	0.0%		0	0	56	12 U	57 U	12 U	13 U	11 U	
n	UG/KG	0	0.0%		0	0	56	12 U	57 U	12 U	13 U	11 U	
sulfide	UG/KG	4	1.8%	2700	0	1	56	12 U	57 U	12 U	13 U	11 U	
rachloride	UG/KG	0	0.0%	600	0	0	56	12 U	57 U	12 U	13 U	11 U	
zene	UG/KG	0	0.0%	1700	0	0	56	12 U	57 U	12 U	13 U	11 U	
omomethane	UG/KG	0	0.0%		0	0	56	12 U	57 U	12 U	13 U	11 U	
ane	UG/KG	0	0.0%	1900	0	0	56	12 U	57 U	12 U	13 U	11 U	
n	UG/KG	0	0.0%	300	0	0	56	12 U	57 U	12 U	13 U	11 U	
chloropropene	UG/KG	0	0.0%		0	0	56	12 U	57 U	12 U	13 U	11 U	
ene	UG/KG	260000	7.1%	5500	1	4	56	12 U	22 J	12 U	13 U	11 U	
mide	UG/KG	0	0.0%		0	0	56	12 U	57 U	12 U	13 U	11 U	
yl ketone	UG/KG	0	0.0%		0	0	56	12 U	57 U	12 U	13 U	11 U	
oride	UG/KG	3	3.6%		0	2	56	12 U	57 U	12 U	13 U	11 U	
yl ketone	UG/KG	36	7.1%	300	0	4	56	12 U	57 U	12 U	30	11 U	
butyl ketone	UG/KG	0	0.0%	1000	0	0	56	12 U	57 U	12 U	13 U	11 U	
chloride	UG/KG	2	5.4%	100	0	3	56	12 U	57 U	12 U	13 U	11 U	
	UG/KG	0	0.0%		0	0	56	12 U	57 U	12 U	13 U	11 U	
oethene	UG/KG	0	0.0%	1400	0	0	56	12 U	57 U	12 U	13 U	11 U	
	UG/KG	830000	16.1%	1500	1	9	56	12 U	9 J	2 J	13 U	2 J	
X	MG/KG	15	86.7%		0	26	30	3.9		6	2.5 U	2.8	
nes	UG/KG	1000000	10.7%	1200	1	6	56	12 U	190	12 U	13 U	11 U	
Dichloropropene	UG/KG	0	0.0%		0	0	56	12 U	57 U	12 U	13 U	11 U	
thene	UG/KG	2	3.6%	700	0	2	56	12 U	57 U	12 U	13 U	11 U	
ide	UG/KG	0	0.0%	200	0	0	56	12 U	57 U	12 U	13 U	11 U	
ATILE ORGANIC COMPOUNDS													
lorobenzene	UG/KG	28	1.8%	3400	0	1	56	380 U	76000 U	1500 U	78 U	360 U	
robenzene	UG/KG	0	0.0%	7900	0	0	56	380 U	76000 U	1500 U	78 U	360 U	
robenzene	UG/KG	0	0.0%	1600	0	0	56	380 U	76000 U	1500 U	78 U	360 U	
robenzene	UG/KG	0	0.0%	8500	0	0	56	380 U	76000 U	1500 U	78 U	360 U	
(1-Chloropropane)	UG/KG	0	0.0%		0	0	22						
lorophenol	UG/KG	0	0.0%	100	0	0	56	920 U	180000 U	3700 U	190 U	880 U	
lorophenol	UG/KG	0	0.0%		0	0	56	380 U	76000 U	1500 U	78 U	360 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

r	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	SEAD-59 TP59-14-3 SOIL 59030 1.5 2 10/10/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-15-1 SOIL 59031 6 6 10/10/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-15-5 SOIL 59035 6 6.5 10/10/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-16-1 SOIL 59036 3.5 4 10/10/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-17-3 SOIL 59044 3 3.5 10/13/1997 SA RI PHASE 1 STE Value (Q)	S T S S R
rophenol	UG/KG	0	0.0%	400	0	0	56	380 U	76000 U	1500 U	78 U	360 U	
hylphenol	UG/KG	0	0.0%		0	0	56	380 U	76000 U	1500 U	78 U	360 U	
phenol	UG/KG	0	0.0%	200	0	0	56	920 U	180000 U	3700 UJ	190 U	880 U	
otoluene	UG/KG	0	0.0%		0	0	56	380 U	76000 U	1500 U	78 U	360 U	
otoluene	UG/KG	0	0.0%	1000	0	0	56	380 U	76000 U	1500 U	78 U	360 U	
aphthalene	UG/KG	0	0.0%		0	0	56	380 U	76000 U	1500 U	78 U	360 U	
henol	UG/KG	0	0.0%	800	0	0	56	380 U	76000 U	1500 U	78 U	360 U	
aphthalene	UG/KG	67000	66.1%	36400	2	37	56	26 J	**66000** J	100 J	16 J	970	
henol	UG/KG	0	0.0%	100	0	0	56	380 U	76000 U	1500 U	78 U	360 U	
line	UG/KG	0	0.0%	430	0	0	56	920 U	180000 U	3700 U	190 U	880 U	
enol	UG/KG	0	0.0%	330	0	0	56	380 U	76000 U	1500 U	78 U	360 U	
robenzidine	UG/KG	0	0.0%		0	0	56	380 U	76000 U	1500 U	78 UJ	360 U	
line	UG/KG	0	0.0%	500	0	0	56	920 U	180000 U	3700 U	190 UJ	880 U	
-2-methylphenol	UG/KG	0	0.0%		0	0	56	920 U	180000 U	3700 U	190 U	880 U	
henyl phenyl ether	UG/KG	0	0.0%		0	0	56	380 U	76000 U	1500 U	78 U	360 U	
3-methylphenol	UG/KG	0	0.0%	240	0	0	56	380 U	76000 U	1500 U	78 U	360 U	
niline	UG/KG	0	0.0%	220	0	0	56	380 U	76000 U	1500 U	78 U	360 U	
henyl phenyl ether	UG/KG	0	0.0%		0	0	56	380 U	76000 U	1500 U	78 U	360 U	
henol	UG/KG	83	3.6%	900	0	2	56	380 U	76000 U	1500 U	78 U	360 U	
line	UG/KG	0	0.0%		0	0	56	920 U	180000 U	3700 U	190 U	880 U	
enol	UG/KG	0	0.0%	100	0	0	56	920 U	180000 U	3700 U	190 UJ	880 U	
nene	UG/KG	20000	69.6%	50000	0	39	56	68 J	12000 J	270 J	19 J	510	
nylene	UG/KG	5700	51.8%	41000	0	29	56	53 J	76000 U	130 J	9.9 J	130 J	
ne	UG/KG	38000	64.3%	50000	0	36	56	120 J	11000 J	390 J	27 J	210 J	
anthracene	UG/KG	67000	78.6%	224	31	44	56	**800**	**20000** J	**3200**	210	**1000**	
yrene	UG/KG	70000	76.8%	61	33	43	56	**910**	**22000** J	**3600**	**220**	**1300**	
luoranthene	UG/KG	58000	82.1%	1100	13	46	56	880	**16000** J	**3200**	250	1000	
i)perylene	UG/KG	35000	69.6%	50000	0	39	56	580	11000 J	2300	160	900	
luoranthene	UG/KG	48000	73.2%	1100	12	41	56	710	**18000** J	**3100**	180	**1200**	
proethoxy)methane	UG/KG	0	0.0%		0	0	56	380 U	76000 U	1500 U	78 U	360 U	
proethyl)ether	UG/KG	0	0.0%		0	0	56	380 U	76000 U	1500 U	78 U	360 U	
proisopropyl)ether	UG/KG	0	0.0%		0	0	34	380 U	76000 U	1500 U	78 U	360 U	
ylhexyl)phthalate	UG/KG	15000	60.7%	50000	0	34	56	380 U	76000 U	1500 U	17 J	360 U	
ylphthalate	UG/KG	1000	7.1%	50000	0	4	56	380 U	76000 U	1000 J	4.2 J	360 U	
e	UG/KG	33000	64.3%		0	36	56	160 J	76000 U	590 J	34 J	150 J	
	UG/KG	63000	80.4%	400	26	45	56	**1100**	**21000** J	**4400**	240	**1100**	
phthalate	UG/KG	250	39.3%	8100	0	22	56	380 U	76000 U	1500 U	78 U	360 U	
phthalate	UG/KG	11	8.9%	50000	0	5	56	380 U	76000 U	1500 U	5.6 J	360 U	
h)anthracene	UG/KG	17000	60.7%	14	29	34	56	**210** J	**4100** J	**710** J	**74** J	**350** J	
ran	UG/KG	18000	60.7%	6200	1	34	56	34 J	76000 U	140 J	78 U	440	
thalate	UG/KG	12	26.8%	7100	0	15	56	380 U	76000 U	1500 U	78 U	360 U	
hthalate	UG/KG	0	0.0%	2000	0	0	56	380 U	76000 U	1500 U	78 U	360 U	
ene	UG/KG	160000	82.1%	50000	1	46	56	1900	47000 J	8600	430	1900	
	UG/KG	38000	67.9%	50000	0	38	56	120 J	26000 J	620 J	78 U	220 J	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

er	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed	Number of Detections	Number of Analyses	SEAD-59 TP59-14-3 SOIL 59030 1.5 2 10/10/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-15-1 SOIL 59031 6 6 10/10/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-15-5 SOIL 59035 6 6.5 10/10/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-16-1 SOIL 59036 3.5 4 10/10/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-17-3 SOIL 59044 3 3.5 10/13/1997 SA RI PHASE 1 STE Value (Q)
robenzene	UG/KG	0	0.0%	410	0	0	56	380 U	76000 U	1500 U	78 U	360 U
robutadiene	UG/KG	0	0.0%		0	0	56	380 U	76000 U	1500 U	78 U	360 U
rocyclopentadiene	UG/KG	0	0.0%		0	0	56	380 U	76000 U	1500 U	78 U	360 U
roethane	UG/KG	0	0.0%		0	0	56	380 U	76000 U	1500 U	78 U	360 U
,2,3-cd)pyrene	UG/KG	34000	75.0%	3200	4	42	56	510	**10000** J	2000	160	840
ne	UG/KG	0	0.0%	4400	0	0	56	380 U	76000 U	1500 U	78 U	360 U
odiphenylamine	UG/KG	0	0.0%		0	0	56	380 U	76000 U	1500 U	78 U	360 U
odipropylamine	UG/KG	0	0.0%		0	0	56	380 U	76000 U	1500 U	78 U	360 U
lene	UG/KG	29000	62.5%	13000	2	35	56	380 U	**14000** J	1500 U	10 J	610
zene	UG/KG	0	0.0%	200	0	0	56	380 U	76000 U	1500 U	78 U	360 U
orophenol	UG/KG	0	0.0%	1000	0	0	56	920 U	180000 U	3700 UJ	190 U	880 U
nrene	UG/KG	140000	82.1%	50000	2	46	56	1400	**53000** J	6500	160	830
	UG/KG	17	3.6%	30	0	2	56	380 U	76000 U	1500 U	78 U	360 U
	UG/KG	120000	85.5%	50000	1	47	55	1800	43000 J	8000	370	1600
DES/PCBS												
	UG/KG	450	54.5%	2900	0	30	55	3.8 U	37	3.8 U	3.9 U	11 J
	UG/KG	150	60.0%	2100	0	33	55	3.8 U	3.8 U	3.8 U	3.9 U	15
	UG/KG	350	52.7%	2100	0	29	55	3.8 U	17 J	3.8 U	3.9 U	24
	UG/KG	1.2	3.6%	41	0	2	55	2 U	1.9 U	2 U	2 U	1.9 U
HC	UG/KG	14	7.3%	110	0	4	55	2 U	1 J	2 U	2 U	1.9 U
hlordane	UG/KG	81	23.6%		0	13	55	2 U	2.4	2 U	2 U	1.9 U
016	UG/KG	0	0.0%		0	0	55	38 U	38 U	38 U	39 U	36 U
221	UG/KG	0	0.0%		0	0	55	77 U	76 U	77 U	80 U	74 U
232	UG/KG	0	0.0%		0	0	55	38 U	38 U	38 U	39 U	36 U
242	UG/KG	0	0.0%		0	0	54	38 U	38 U	38 U	39 U	36 U
248	UG/KG	0	0.0%		0	0	55	38 U	38 U	38 U	39 U	36 U
254	UG/KG	63	3.6%	10000	0	2	55	38 U	38 U	38 U	39 U	36 U
260	UG/KG	0	0.0%	10000	0	0	55	38 U	38 U	38 U	39 U	36 U
C	UG/KG	4.7	12.7%	200	0	7	55	2 U	1.5 J	2 U	2 U	1.9 U
IC	UG/KG	8.5	12.7%	300	0	7	55	2 U	1.9 U	2 U	2 U	1.9 U
	UG/KG	4.9	7.3%	44	0	4	55	3.8 U	3.8 U	3.8 U	3.9 U	3.6 U
an I	UG/KG	26	14.5%	900	0	8	55	2 U	26 J	2 U	2 U	1.9 U
an II	UG/KG	7.1	9.1%	900	0	5	55	3.8 U	2.2 J	3.8 U	3.9 U	3.6 U
an sulfate	UG/KG	20	7.3%	1000	0	4	55	3.8 U	3.8 U	3.8 U	3.9 U	3.6 U
	UG/KG	32	14.5%	100	0	8	55	3.8 U	5.8 J	3.8 U	3.9 U	6.2
ldehyde	UG/KG	15	20.0%		0	11	55	3.8 U	7.8	3.8 U	3.9 U	3.7 J
etone	UG/KG	77	14.5%		0	8	55	3.8 U	6 J	3.8 U	3.9 U	3.3 J
BHC/Lindane	UG/KG	0	0.0%	60	0	0	55	2 U	1.9 U	2 U	2 U	1.9 U
Chlordane	UG/KG	100	20.0%	540	0	11	55	2 U	1.9 U	2 U	2 U	1 J
lor	UG/KG	0	0.0%	100	0	0	55	2 U	1.9 U	2 U	2 U	1.9 U
or epoxide	UG/KG	10	25.5%	20	0	14	55	2 U	1.9 U	2 U	2 U	1.6 J
chlor	UG/KG	110	3.6%		0	2	55	20 U	19 U	20 U	20 U	19 U
ne	UG/KG	0	0.0%		0	0	55	200 U	190 U	200 U	200 U	190 U

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

r	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	SEAD-59 TP59-14-3 SOIL 59030 1.5 2 10/10/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-15-1 SOIL 59031 6 6 10/10/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-15-5 SOIL 59035 6 6.5 10/10/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-16-1 SOIL 59036 3.5 4 10/10/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-17-3 SOIL 59044 3 3.5 10/13/1997 SA RI PHASE 1 STE Value (Q)	S T S S R
n	MG/KG	20600	100.0%	19300	1	55	55	8210 J	8390 J	11900 J	12400 J	12300 J	
	MG/KG	424	21.8%	5.9	1	12	55	0.51 UJ	0.53 UJ	0.62 UJ	0.6 UJ	0.56 UJ	
	MG/KG	6.1	100.0%	8.2	0	55	55	3.9	3.6	4.1	3.8	5.5	
	MG/KG	304	100.0%	300	1	55	55	80.8	49.1	72.6	94.4	69.5	
	MG/KG	0.91	100.0%	1.1	0	55	55	0.41	0.28	0.45	0.45	0.46	
)	MG/KG	3.2	38.2%	2.3	1	21	55	0.07 U	0.07 U	0.09 U	0.08 U	0.08 U	
	MG/KG	214000	100.0%	121000	5	55	55	85000	71700	29200	5590	59600	
n	MG/KG	25.5	100.0%	29.6	0	55	55	15.8	20.4	18.4	18.9	21.2	
	MG/KG	14.7	100.0%	30	0	55	55	9.4	8.2	8.9	9.8	12.6	
	MG/KG	36.1	100.0%	33	1	55	55	30.3	30.1	28.1	20.2	30.2	
	MG/KG	0	0.0%	0.35	0	0	55	0.7 U	0.63 U	0.61 U	0.66 U	0.66 U	
	MG/KG	33300	100.0%	36500	0	55	55	17600	32700	21300	22700	25800	
	MG/KG	139	100.0%	24.8	29	55	55	**36.5** J	**65.1** J	**47** J	13.9 J	**30.4** J	
m	MG/KG	34400	100.0%	21500	1	55	55	10000 J	9580 J	9520 J	4810 J	12900 J	
se	MG/KG	1150	100.0%	1060	1	55	55	358 J	528 J	496 J	561 J	454 J	
	MG/KG	1.6	61.8%	0.1	11	34	55	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	
	MG/KG	41.4	100.0%	49	0	55	55	29.5	26.6	24.4	29.5	41.4	
m	MG/KG	2520	100.0%	2380	1	55	55	1180	1340	1590	1610	1780	
	MG/KG	2.2	32.7%	2	1	18	55	0.7 U	0.73 U	0.86 U	0.82 U	0.77 U	
	MG/KG	4.1	7.3%	0.75	1	4	55	0.19 U	0.2 U	0.24 U	0.23 U	0.21 U	
	MG/KG	2310	80.0%	172	18	44	55	120	110	92.5 U	**355**	155	
	MG/KG	0	0.0%	0.7	0	0	55	1.1 U	1.1 U	1.3 U	1.2 U	1.2 U	
n	MG/KG	41.9	100.0%	150	0	55	55	18	17.9	26.3	21.5	21.2	
	MG/KG	1550	100.0%	110	8	55	55	81.8 J	102 J	83.6 J	72.6 J	83.8 J	
ANALYSES													
trite Nitrogen	MG/KG	9.9	100.0%		0	34	34	0.6	0.05	4	0.18	1.3	
roleum Hydrocarbons	MG/KG	19700	70.9%		0	39	55	430	19700	667	218	23.8 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	SEAD-59 TP59-2 SOIL TP59-2 7 7 2/20/1994 SA ESI Value (Q)	SEAD-59 TP59-3 SOIL TP59-3-2 1.5 1.5 6/28/1994 SA ESI Value (Q)	SEAD-59 TP59-3 SOIL TP59-3X 1.5 1.5 6/28/1994 SA ESI Value (Q)	SEAD-59 TP59-3 SOIL TP59-3-1 3 3 6/8/1994 SA ESI Value (Q)	SEAD-59 TP59-4 SOIL TP59-4 2 2 6/8/1994 SA ESI Value (Q)	SI TF SC TF SA ES
E ORGANIC COMPOUNDS													
loroethane	UG/KG	0	0.0%	800	0	0	56	11 U	12 U	3300 U		1800 U	
trachloroethane	UG/KG	0	0.0%	600	0	0	56	11 U	12 U	3300 U		1800 U	
loroethane	UG/KG	0	0.0%		0	0	56	11 U	12 U	3300 U		1800 U	
roethane	UG/KG	0	0.0%	200	0	0	56	11 U	12 U	3300 U		1800 U	
roethene	UG/KG	0	0.0%	400	0	0	56	11 U	12 U	3300 U		1800 U	
roethane	UG/KG	0	0.0%	100	0	0	56	11 U	12 U	3300 U		1800 U	
roethene (total)	UG/KG	0	0.0%		0	0	56	11 U	12 U	3300 U		1800 U	
ropropane	UG/KG	0	0.0%		0	0	56	11 U	12 U	3300 U		1800 U	
	UG/KG	150	3.6%	200	0	2	56	17 U	16 U	3300 U		1800 U	
	UG/KG	5900	5.4%	60	2	3	56	11 U	12 U	2000 J		1800 U	
loromethane	UG/KG	0	0.0%		0	0	56	11 U	12 U	3300 U		1800 U	
n	UG/KG	0	0.0%		0	0	56	11 U	12 U	3300 U		1800 U	
sulfide	UG/KG	4	1.8%	2700	0	1	56	11 U	12 U	3300 U		1800 U	
rachloride	UG/KG	0	0.0%	600	0	0	56	11 U	12 U	3300 U		1800 U	
zene	UG/KG	0	0.0%	1700	0	0	56	11 U	12 U	3300 U		1800 U	
omomethane	UG/KG	0	0.0%		0	0	56	11 U	12 U	3300 U		1800 U	
ane	UG/KG	0	0.0%	1900	0	0	56	11 U	12 U	3300 U		1800 U	
n	UG/KG	0	0.0%	300	0	0	56	11 U	12 U	3300 U		1800 U	
chloropropene	UG/KG	0	0.0%		0	0	56	11 U	12 U	3300 U		1800 U	
ene	UG/KG	260000	7.1%	5500	1	4	56	11 U	12 U	3300 U		1800 U	
mide	UG/KG	0	0.0%		0	0	56	11 U	12 U	3300 U		1800 U	
yl ketone	UG/KG	0	0.0%		0	0	56	11 U	12 U	3300 U		1800 U	
oride	UG/KG	3	3.6%		0	2	56	11 U	12 U	3300 U		1800 U	
yl ketone	UG/KG	36	7.1%	300	0	4	56	11 U	12 U	3300 U		1800 U	
butyl ketone	UG/KG	0	0.0%	1000	0	0	56	11 U	12 U	3300 U		1800 U	
chloride	UG/KG	2	5.4%	100	0	3	56	11 U	12 U	3300 U		1800 U	
	UG/KG	0	0.0%		0	0	56	11 U	12 U	3300 U		1800 U	
oethene	UG/KG	0	0.0%	1400	0	0	56	11 U	12 U	3300 U		1800 U	
	UG/KG	830000	16.1%	1500	1	9	56	11 U	12 U	440 J		220 J	
X	MG/KG	15	86.7%		0	26	30						
nes	UG/KG	1000000	10.7%	1200	1	6	56	11 U	12 U	1200 J		410 J	
Dichloropropene	UG/KG	0	0.0%		0	0	56	11 U	12 U	3300 U		1800 U	
thene	UG/KG	2	3.6%	700	0	2	56	11 U	12 U	3300 U		1800 U	
ide	UG/KG	0	0.0%	200	0	0	56	11 U	12 U	3300 U		1800 U	
ATILE ORGANIC COMPOUNDS													
lorobenzene	UG/KG	28	1.8%	3400	0	1	56	1800 U			4000 U	98000 U	
robenzene	UG/KG	0	0.0%	7900	0	0	56	1800 U			4000 U	98000 U	
robenzene	UG/KG	0	0.0%	1600	0	0	56	1800 U			4000 U	98000 U	
robenzene	UG/KG	0	0.0%	8500	0	0	56	1800 U			4000 U	98000 U	
(1-Chloropropane)	UG/KG	0	0.0%		0	0	22	1800 U			4000 U	98000 U	
lorophenol	UG/KG	0	0.0%	100	0	0	56	4500 U			9800 U	240000 U	
lorophenol	UG/KG	0	0.0%		0	0	56	1800 U			4000 U	98000 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

r	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	SEAD-59 TP59-2 SOIL TP59-2 7 7 2/20/1994 SA ESI Value (Q)	SEAD-59 TP59-3 SOIL TP59-3-2 1.5 1.5 6/28/1994 SA ESI Value (Q)	SEAD-59 TP59-3 SOIL TP59-3X 1.5 1.5 6/28/1994 SA ESI Value (Q)	SEAD-59 TP59-3 SOIL TP59-3-1 3 3 6/8/1994 SA ESI Value (Q)	SEAD-59 TP59-4 SOIL TP59-4 2 2 6/8/1994 SA ESI Value (Q)	S T S T S E Value (Q)
orophenol	UG/KG	0	0.0%	400	0	0	56	1800 U			4000 U	98000 U	
thylphenol	UG/KG	0	0.0%		0	0	56	1800 U			4000 U	98000 U	
ophenol	UG/KG	0	0.0%	200	0	0	56	4500 U			9800 U	240000 U	
otoluene	UG/KG	0	0.0%		0	0	56	1800 U			4000 U	98000 U	
otoluene	UG/KG	0	0.0%	1000	0	0	56	1800 U			4000 U	98000 U	
aphthalene	UG/KG	0	0.0%		0	0	56	1800 U			4000 U	98000 U	
henol	UG/KG	0	0.0%	800	0	0	56	1800 U			4000 U	98000 U	
aphthalene	UG/KG	67000	66.1%	36400	2	37	56	400 J			4000 U	**67000** J	
henol	UG/KG	0	0.0%	100	0	0	56	1800 U			4000 U	98000 U	
line	UG/KG	0	0.0%	430	0	0	56	4500 U			9800 U	240000 U	
enol	UG/KG	0	0.0%	330	0	0	56	1800 U			4000 U	98000 U	
orobenzidine	UG/KG	0	0.0%		0	0	56	1800 U			4000 U	98000 U	
line	UG/KG	0	0.0%	500	0	0	56	4500 U			9800 U	240000 U	
o-2-methylphenol	UG/KG	0	0.0%		0	0	56	4500 U			9800 U	240000 U	
henyl phenyl ether	UG/KG	0	0.0%		0	0	56	1800 U			4000 U	98000 U	
3-methylphenol	UG/KG	0	0.0%	240	0	0	56	1800 U			4000 U	98000 U	
niline	UG/KG	0	0.0%	220	0	0	56	1800 U			4000 U	98000 U	
henyl phenyl ether	UG/KG	0	0.0%		0	0	56	1800 U			4000 U	98000 U	
henol	UG/KG	83	3.6%	900	0	2	56	1800 U			4000 U	98000 U	
line	UG/KG	0	0.0%		0	0	56	4500 U			9800 U	240000 U	
enol	UG/KG	0	0.0%	100	0	0	56	4500 U			9800 U	240000 U	
hene	UG/KG	20000	69.6%	50000	0	39	56	870 J			4000 U	98000 U	
hylene	UG/KG	5700	51.8%	41000	0	29	56	460 J			4000 U	98000 U	
ne	UG/KG	38000	64.3%	50000	0	36	56	2100			4000 U	98000 U	
anthracene	UG/KG	67000	78.6%	224	31	44	56	**4200**			**930** J	98000 U	
pyrene	UG/KG	70000	76.8%	61	33	43	56	**4600** J			**900** J	98000 U	
fluoranthene	UG/KG	58000	82.1%	1100	13	46	56	**4400** J			830 J	98000 U	
i)perylene	UG/KG	35000	69.6%	50000	0	39	56	1400 J			640 J	98000 U	
fluoranthene	UG/KG	48000	73.2%	1100	12	41	56	**4900** J			710 J	98000 U	
oroethoxy)methane	UG/KG	0	0.0%		0	0	56	1800 U			4000 U	98000 U	
oroethyl)ether	UG/KG	0	0.0%		0	0	56	1800 U			4000 U	98000 U	
oroisopropyl)ether	UG/KG	0	0.0%		0	0	34						
ylhexyl)phthalate	UG/KG	15000	60.7%	50000	0	34	56	1800 U			4000 U	98000 U	
tylphthalate	UG/KG	1000	7.1%	50000	0	4	56	1800 U			320 J	98000 U	
e	UG/KG	33000	64.3%		0	36	56	1500 J			4000 U	98000 U	
	UG/KG	63000	80.4%	400	26	45	56	**4400**			**1100** J	98000 U	
phthalate	UG/KG	250	39.3%	8100	0	22	56	1800 U			4000 U	98000 U	
phthalate	UG/KG	11	8.9%	50000	0	5	56	1800 UJ			4000 U	98000 U	
h)anthracene	UG/KG	17000	60.7%	14	29	34	56	1800 UJ			4000 U	98000 U	
uran	UG/KG	18000	60.7%	6200	1	34	56	1800 U			4000 U	98000 U	
thalate	UG/KG	12	26.8%	7100	0	15	56	1800 U			4000 U	98000 U	
hthalate	UG/KG	0	0.0%	2000	0	0	56	1800 U			4000 U	98000 U	
ene	UG/KG	160000	82.1%	50000	1	46	56	10000			1500 J	98000 U	
	UG/KG	38000	67.9%	50000	0	38	56	1300 J			4000 U	22000 J	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

								SEAD-59 TP59-2 SOIL TP59-2 7 7 2/20/1994 SA ESI	SEAD-59 TP59-3 SOIL TP59-3-2 1.5 1.5 6/28/1994 SA ESI	SEAD-59 TP59-3 SOIL TP59-3X 1.5 1.5 6/28/1994 SA ESI	SEAD-59 TP59-3 SOIL TP59-3-1 3 3 6/8/1994 SA ESI	SEAD-59 TP59-4 SOIL TP59-4 2 2 6/8/1994 SA ESI	SE TP SC TP SA ES
	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	
obenzene	UG/KG	0	0.0%	410	0	0	56	1800 U			4000 U	98000 U	
obutadiene	UG/KG	0	0.0%		0	0	56	1800 U			4000 U	98000 U	
ocyclopentadiene	UG/KG	0	0.0%		0	0	56	1800 U			4000 U	98000 U	
oethane	UG/KG	0	0.0%		0	0	56	1800 U			4000 U	98000 U	
,3-cd)pyrene	UG/KG	34000	75.0%	3200	4	42	56	1500 J			520 J	98000 U	
e	UG/KG	0	0.0%	4400	0	0	56	1800 U			4000 U	98000 U	
iphenylamine	UG/KG	0	0.0%		0	0	56	1800 U			4000 U	98000 U	
ipropylamine	UG/KG	0	0.0%		0	0	56	1800 U			4000 U	98000 U	
ne	UG/KG	29000	62.5%	13000	2	35	56	290 J			4000 U	98000 U	
ne	UG/KG	0	0.0%	200	0	0	56	1800 U			4000 U	98000 U	
ophenol	UG/KG	0	0.0%	1000	0	0	56	4500 U			9800 U	240000 U	
ene	UG/KG	140000	82.1%	50000	2	46	56	8300			980 J	46000 J	
	UG/KG	17	3.6%	30	0	2	56	1800 U			4000 U	98000 U	
	UG/KG	120000	85.5%	50000	1	47	55	12000			1700 J	98000 U	
ES/PCBS													
	UG/KG	450	54.5%	2900	0	30	55	15			7 J	25 J	
	UG/KG	150	60.0%	2100	0	33	55	26 J			7.7 J	12	
	UG/KG	350	52.7%	2100	0	29	55	20 J			8.2 J	4.9 U	
	UG/KG	1.2	3.6%	41	0	2	55	3.8 U			2.1 U	2.5 U	
	UG/KG	14	7.3%	110	0	4	55	3.8 U			2.1 U	2.5 U	
rdane	UG/KG	81	23.6%		0	13	55	3.8 U			2.1 U	2.5 U	
16	UG/KG	0	0.0%		0	0	55	73 U			40 U	49 U	
21	UG/KG	0	0.0%		0	0	55	150 U			82 U	100 U	
32	UG/KG	0	0.0%		0	0	55	73 U			40 U	49 U	
42	UG/KG	0	0.0%		0	0	54				40 U	49 U	
48	UG/KG	0	0.0%		0	0	55	73 U			40 U	49 U	
54	UG/KG	63	3.6%	10000	0	2	55	73 U			63	49 U	
60	UG/KG	0	0.0%	10000	0	0	55	73 U			40 U	49 U	
	UG/KG	4.7	12.7%	200	0	7	55	3.8 U			2.1 U	2.5 U	
	UG/KG	8.5	12.7%	300	0	7	55	3.8 U			2.1 U	2.5 U	
	UG/KG	4.9	7.3%	44	0	4	55	7.3 U			4 U	4.9 U	
n I	UG/KG	26	14.5%	900	0	8	55	3.8 U			2.1 U	1.5 J	
n II	UG/KG	7.1	9.1%	900	0	5	55	7.1 J			4 U	4.9 U	
n sulfate	UG/KG	20	7.3%	1000	0	4	55	7.3 U			2.6 J	4.9 U	
	UG/KG	32	14.5%	100	0	8	55	7.3 U			4 U	4.9 U	
ehyde	UG/KG	15	20.0%		0	11	55	6.3 J			4 U	4.9 U	
one	UG/KG	77	14.5%		0	8	55	7.3 U			4 U	4.9 U	
HC/Lindane	UG/KG	0	0.0%	60	0	0	55	3.8 U			2.1 U	2.5 U	
nlordane	UG/KG	100	20.0%	540	0	11	55	3.8 U			2.1 U	2.5 U	
	UG/KG	0	0.0%	100	0	0	55	3.8 U			2.1 U	2.5 U	
epoxide	UG/KG	10	25.5%	20	0	14	55	2.2 J			2.1 U	2.5 U	
lor	UG/KG	110	3.6%		0	2	55	38 U			21 U	25 U	
e	UG/KG	0	0.0%		0	0	55	380 U			210 U	250 U	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

r	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	SEAD-59 TP59-2 SOIL TP59-2 7 7 2/20/1994 SA ESI Value (Q)	SEAD-59 TP59-3 SOIL TP59-3-2 1.5 1.5 6/28/1994 SA ESI Value (Q)	SEAD-59 TP59-3 SOIL TP59-3X 1.5 1.5 6/28/1994 SA ESI Value (Q)	SEAD-59 TP59-3 SOIL TP59-3-1 3 3 6/8/1994 SA ESI Value (Q)	SEAD-59 TP59-4 SOIL TP59-4 2 2 6/8/1994 SA ESI Value (Q)	S T S T S E
n	MG/KG	20600	100.0%	19300	1	55	55	10200 J			12300 J	14600 J	
	MG/KG	424	21.8%	5.9	1	12	55	0.47 J			0.32 J	0.65 J	
	MG/KG	6.1	100.0%	8.2	0	55	55	4.8 J			4.6	4.9	
	MG/KG	304	100.0%	300	1	55	55	52.6 J			104 J	114 J	
	MG/KG	0.91	100.0%	1.1	0	55	55	0.43 J			0.52 J	0.72 J	
	MG/KG	3.2	38.2%	2.3	1	21	55	0.4 J			0.63 J	0.74 J	
	MG/KG	214000	100.0%	121000	5	55	55	42700 J			53100 J	7780 J	
n	MG/KG	25.5	100.0%	29.6	0	55	55	16.9 J			20.7 J	19.9 J	
	MG/KG	14.7	100.0%	30	0	55	55	9.1 J			9.8 J	7.9 J	
	MG/KG	36.1	100.0%	33	1	55	55	24 J			26.9 J	23.2 J	
	MG/KG	0	0.0%	0.35	0	0	55	0.55 U			0.46 U	0.69 U	
	MG/KG	33300	100.0%	36500	0	55	55	19700 J			23600 J	21000 J	
	MG/KG	139	100.0%	24.8	29	55	55	**29.7** J			**31.2**	19.9	
um	MG/KG	34400	100.0%	21500	1	55	55	6380 J			14600 J	2710 J	
se	MG/KG	1150	100.0%	1060	1	55	55	425 J			426 J	1050 J	
	MG/KG	1.6	61.8%	0.1	11	34	55	0.04 J			0.11 UR	0.17 UR	
	MG/KG	41.4	100.0%	49	0	55	55	25.3 J			30.1 J	17.2 J	
n	MG/KG	2520	100.0%	2380	1	55	55	1350 J			1820	1320	
	MG/KG	2.2	32.7%	2	1	18	55	0.12 U			0.49 U	1.9	
	MG/KG	4.1	7.3%	0.75	1	4	55	0.09 U			0.09 UJ	0.13 UJ	
	MG/KG	2310	80.0%	172	18	44	55	116 J			**272** J	**2310**	
	MG/KG	0	0.0%	0.7	0	0	55	0.21 U			0.34 U	0.48 U	
n	MG/KG	41.9	100.0%	150	0	55	55	18.7 J			22.1 J	24 J	
	MG/KG	1550	100.0%	110	8	55	55	72.3 J			89.7 J	73.1 J	
ANALYSES													
trite Nitrogen	MG/KG	9.9	100.0%		0	34	34						
roleum Hydrocarbons	MG/KG	19700	70.9%		0	39	55	1790			440	7870	

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

Parameter	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	SEAD-59 TP59-6-2 SOIL 59002 6 6.5 10/7/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-7-2 SOIL 59008 3 3.5 10/8/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-8-2 SOIL 59050 1.5 2 10/13/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-9-2 SOIL 59052 2 2.5 10/13/1997 SA RI PHASE 1 STE Value (Q)
VOLATILE ORGANIC COMPOUNDS											
1,1,1-Trichloroethane	UG/KG	0	0.0%	800	0	0	56	13 U	11 U	12 U	12 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0.0%	600	0	0	56	13 U	11 U	12 U	12 U
1,1,2-Trichloroethane	UG/KG	0	0.0%		0	0	56	13 U	11 U	12 U	12 U
1,1-Dichloroethane	UG/KG	0	0.0%	200	0	0	56	13 U	11 U	12 U	12 U
1,1-Dichloroethene	UG/KG	0	0.0%	400	0	0	56	13 U	11 U	12 U	12 U
1,2-Dichloroethane	UG/KG	0	0.0%	100	0	0	56	13 U	11 U	12 U	12 U
1,2-Dichloroethene (total)	UG/KG	0	0.0%		0	0	56	13 U	11 U	12 U	12 U
1,2-Dichloropropane	UG/KG	0	0.0%		0	0	56	13 U	11 U	12 U	12 U
Acetone	UG/KG	150	3.6%	200	0	2	56	13 U	9 U	12 U	12 U
Benzene	UG/KG	5900	5.4%	60	2	3	56	13 U	11 U	12 U	12 U
Bromodichloromethane	UG/KG	0	0.0%		0	0	56	13 U	11 U	12 U	12 U
Bromoform	UG/KG	0	0.0%		0	0	56	13 U	11 U	12 U	12 U
Carbon disulfide	UG/KG	4	1.8%	2700	0	1	56	13 U	11 U	12 U	12 U
Carbon tetrachloride	UG/KG	0	0.0%	600	0	0	56	13 U	11 U	12 U	12 U
Chlorobenzene	UG/KG	0	0.0%	1700	0	0	56	13 U	11 U	12 U	12 U
Chlorodibromomethane	UG/KG	0	0.0%		0	0	56	13 U	11 U	12 U	12 U
Chloroethane	UG/KG	0	0.0%	1900	0	0	56	13 U	11 U	12 U	12 U
Chloroform	UG/KG	0	0.0%	300	0	0	56	13 U	11 U	12 U	12 U
Cis-1,3-Dichloropropene	UG/KG	0	0.0%		0	0	56	13 U	11 U	12 U	12 U
Ethyl benzene	UG/KG	260000	7.1%	5500	1	4	56	13 U	11 U	12 U	12 U
Methyl bromide	UG/KG	0	0.0%		0	0	56	13 U	11 U	12 U	12 U
Methyl butyl ketone	UG/KG	0	0.0%		0	0	56	13 U	11 U	12 U	12 U
Methyl chloride	UG/KG	3	3.6%		0	2	56	13 U	11 U	12 U	12 U
Methyl ethyl ketone	UG/KG	36	7.1%	300	0	4	56	36 J	11 U	12 U	12 U
Methyl isobutyl ketone	UG/KG	0	0.0%	1000	0	0	56	13 U	11 U	12 U	12 U
Methylene chloride	UG/KG	2	5.4%	100	0	3	56	13 U	11 U	12 U	12 U
Styrene	UG/KG	0	0.0%		0	0	56	13 U	11 U	12 U	12 U
Tetrachloroethene	UG/KG	0	0.0%	1400	0	0	56	13 U	11 U	12 U	12 U
Toluene	UG/KG	830000	16.1%	1500	1	9	56	13 U	11 U	12 U	12 U
Total BTEX	MG/KG	15	86.7%		0	26	30	8	4.5	3.5	2.5 U
Total Xylenes	UG/KG	1000000	10.7%	1200	1	6	56	13 U	11 U	12 U	12 U
Trans-1,3-Dichloropropene	UG/KG	0	0.0%		0	0	56	13 U	11 U	12 U	12 U
Trichloroethene	UG/KG	2	3.6%	700	0	2	56	13 U	11 U	12 U	12 U
Vinyl chloride	UG/KG	0	0.0%	200	0	0	56	13 U	11 U	12 U	12 U
SEMIVOLATILE ORGANIC COMPOUNDS											
1,2,4-Trichlorobenzene	UG/KG	28	1.8%	3400	0	1	56	89 U	88 U	150 U	150 U
1,2-Dichlorobenzene	UG/KG	0	0.0%	7900	0	0	56	89 U	88 U	150 U	150 U
1,3-Dichlorobenzene	UG/KG	0	0.0%	1600	0	0	56	89 U	88 U	150 U	150 U
1,4-Dichlorobenzene	UG/KG	0	0.0%	8500	0	0	56	89 U	88 U	150 U	150 U
2,2'-oxybis(1-Chloropropane)	UG/KG	0	0.0%		0	0	22				
2,4,5-Trichlorophenol	UG/KG	0	0.0%	100	0	0	56	220 U	210 U	360 U	370 U
2,4,6-Trichlorophenol	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

Parameter	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	SEAD-59 TP59-6-2 SOIL 59002 6 6.5 10/7/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-7-2 SOIL 59008 3 3.5 10/8/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-8-2 SOIL 59050 1.5 2 10/13/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-9-2 SOIL 59052 2 2.5 10/13/1997 SA RI PHASE 1 STE Value (Q)
2,4-Dichlorophenol	UG/KG	0	0.0%	400	0	0	56	89 U	88 U	150 U	150 U
2,4-Dimethylphenol	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
2,4-Dinitrophenol	UG/KG	0	0.0%	200	0	0	56	220 U	210 U	360 U	370 U
2,4-Dinitrotoluene	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
2,6-Dinitrotoluene	UG/KG	0	0.0%	1000	0	0	56	89 U	88 U	150 U	150 U
2-Chloronaphthalene	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
2-Chlorophenol	UG/KG	0	0.0%	800	0	0	56	89 U	88 U	150 U	150 U
2-Methylnaphthalene	UG/KG	67000	66.1%	36400	2	37	56	17 J	88 U	14 J	10 J
2-Methylphenol	UG/KG	0	0.0%	100	0	0	56	89 U	88 U	150 U	150 U
2-Nitroaniline	UG/KG	0	0.0%	430	0	0	56	220 U	210 U	360 U	370 U
2-Nitrophenol	UG/KG	0	0.0%	330	0	0	56	89 U	88 U	150 U	150 U
3,3'-Dichlorobenzidine	UG/KG	0	0.0%		0	0	56	89 UJ	88 UJ	150 U	150 U
3-Nitroaniline	UG/KG	0	0.0%	500	0	0	56	220 UJ	210 UJ	360 U	370 U
4,6-Dinitro-2-methylphenol	UG/KG	0	0.0%		0	0	56	220 U	210 U	360 U	370 U
4-Bromophenyl phenyl ether	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
4-Chloro-3-methylphenol	UG/KG	0	0.0%	240	0	0	56	89 U	88 U	150 U	150 U
4-Chloroaniline	UG/KG	0	0.0%	220	0	0	56	89 U	88 U	150 U	150 U
4-Chlorophenyl phenyl ether	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
4-Methylphenol	UG/KG	83	3.6%	900	0	2	56	83 J	88 U	150 U	150 U
4-Nitroaniline	UG/KG	0	0.0%		0	0	56	220 U	210 U	360 U	370 U
4-Nitrophenol	UG/KG	0	0.0%	100	0	0	56	220 U	210 U	360 U	370 U
Acenaphthene	UG/KG	20000	69.6%	50000	0	39	56	29 J	15 J	18 J	44 J
Acenaphthylene	UG/KG	5700	51.8%	41000	0	29	56	11 J	18 J	8 J	7.9 J
Anthracene	UG/KG	38000	64.3%	50000	0	36	56	61 J	54 J	43 J	88 J
Benzo(a)anthracene	UG/KG	67000	78.6%	224	31	44	56	**280**	**290**	200	**320**
Benzo(a)pyrene	UG/KG	70000	76.8%	61	33	43	56	**260**	**330**	**210**	**340**
Benzo(b)fluoranthene	UG/KG	58000	82.1%	1100	13	46	56	220 J	310	230	320
Benzo(ghi)perylene	UG/KG	35000	69.6%	50000	0	39	56	180	200	140 J	210
Benzo(k)fluoranthene	UG/KG	48000	73.2%	1100	12	41	56	260	300	180	300
Bis(2-Chloroethoxy)methane	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
Bis(2-Chloroethyl)ether	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0.0%		0	0	34	89 U	88 U	150 U	150 U
Bis(2-Ethylhexyl)phthalate	UG/KG	15000	60.7%	50000	0	34	56	13 J	14 J	19 J	41 J
Butylbenzylphthalate	UG/KG	1000	7.1%	50000	0	4	56	89 U	88 U	150 U	150 U
Carbazole	UG/KG	33000	64.3%		0	36	56	82 J	51 J	56 J	120 J
Chrysene	UG/KG	63000	80.4%	400	26	45	56	310	340	220	360
Di-n-butylphthalate	UG/KG	250	39.3%	8100	0	22	56	8.2 J	13 J	12 J	80 J
Di-n-octylphthalate	UG/KG	11	8.9%	50000	0	5	56	89 U	88 U	150 U	150 U
Dibenz(a,h)anthracene	UG/KG	17000	60.7%	14	29	34	56	**74** J	**92**	**52** J	**84** J
Dibenzofuran	UG/KG	18000	60.7%	6200	1	34	56	14 J	9.6 J	13 J	21 J
Diethyl phthalate	UG/KG	12	26.8%	7100	0	15	56	89 U	4.9 J	150 U	150 U
Dimethylphthalate	UG/KG	0	0.0%	2000	0	0	56	89 U	88 U	150 U	150 U
Fluoranthene	UG/KG	160000	82.1%	50000	1	46	56	590	590	460	790
Fluorene	UG/KG	38000	67.9%	50000	0	38	56	27 J	22 J	18 J	46 J

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

Parameter	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	SEAD-59 TP59-6-2 SOIL 59002 6 6.5 10/7/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-7-2 SOIL 59008 3 3.5 10/8/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-8-2 SOIL 59050 1.5 2 10/13/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-9-2 SOIL 59052 2 2.5 10/13/1997 SA RI PHASE 1 STE Value (Q)
2,4-Dichlorophenol	UG/KG	0	0.0%	400	0	0	56	89 U	88 U	150 U	150 U
2,4-Dimethylphenol	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
2,4-Dinitrophenol	UG/KG	0	0.0%	200	0	0	56	220 U	210 U	360 U	370 U
2,4-Dinitrotoluene	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
2,6-Dinitrotoluene	UG/KG	0	0.0%	1000	0	0	56	89 U	88 U	150 U	150 U
2-Chloronaphthalene	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
2-Chlorophenol	UG/KG	0	0.0%	800	0	0	56	89 U	88 U	150 U	150 U
2-Methylnaphthalene	UG/KG	67000	66.1%	36400	2	37	56	17 J	88 U	14 J	10 J
2-Methylphenol	UG/KG	0	0.0%	100	0	0	56	89 U	88 U	150 U	150 U
2-Nitroaniline	UG/KG	0	0.0%	430	0	0	56	220 U	210 U	360 U	370 U
2-Nitrophenol	UG/KG	0	0.0%	330	0	0	56	89 U	88 U	150 U	150 U
3,3'-Dichlorobenzidine	UG/KG	0	0.0%		0	0	56	89 UJ	88 UJ	150 U	150 U
3-Nitroaniline	UG/KG	0	0.0%	500	0	0	56	220 UJ	210 UJ	360 U	370 U
4,6-Dinitro-2-methylphenol	UG/KG	0	0.0%		0	0	56	220 U	210 U	360 U	370 U
4-Bromophenyl phenyl ether	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
4-Chloro-3-methylphenol	UG/KG	0	0.0%	240	0	0	56	89 U	88 U	150 U	150 U
4-Chloroaniline	UG/KG	0	0.0%	220	0	0	56	89 U	88 U	150 U	150 U
4-Chlorophenyl phenyl ether	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
4-Methylphenol	UG/KG	83	3.6%	900	0	2	56	83 J	88 U	150 U	150 U
4-Nitroaniline	UG/KG	0	0.0%		0	0	56	220 U	210 U	360 U	370 U
4-Nitrophenol	UG/KG	0	0.0%	100	0	0	56	220 U	210 U	360 U	370 U
Acenaphthene	UG/KG	20000	69.6%	50000	0	39	56	29 J	15 J	18 J	44 J
Acenaphthylene	UG/KG	5700	51.8%	41000	0	29	56	11 J	18 J	8 J	7.9 J
Anthracene	UG/KG	38000	64.3%	50000	0	36	56	61 J	54 J	43 J	88 J
Benzo(a)anthracene	UG/KG	67000	78.6%	224	31	44	56	**280**	**290**	200	**320**
Benzo(a)pyrene	UG/KG	70000	76.8%	61	33	43	56	**260**	**330**	**210**	**340**
Benzo(b)fluoranthene	UG/KG	58000	82.1%	1100	13	46	56	220 J	310	230	320
Benzo(ghi)perylene	UG/KG	35000	69.6%	50000	0	39	56	180	200	140 J	210
Benzo(k)fluoranthene	UG/KG	48000	73.2%	1100	12	41	56	260	300	180	300
Bis(2-Chloroethoxy)methane	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
Bis(2-Chloroethyl)ether	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0.0%		0	0	34	89 U	88 U	150 U	150 U
Bis(2-Ethylhexyl)phthalate	UG/KG	15000	60.7%	50000	0	34	56	13 J	14 J	19 J	41 J
Butylbenzylphthalate	UG/KG	1000	7.1%	50000	0	4	56	89 U	88 U	150 U	150 U
Carbazole	UG/KG	33000	64.3%		0	36	56	82 J	51 J	56 J	120 J
Chrysene	UG/KG	63000	80.4%	400	26	45	56	310	340	220	360
Di-n-butylphthalate	UG/KG	250	39.3%	8100	0	22	56	8.2 J	13 J	12 J	80 J
Di-n-octylphthalate	UG/KG	11	8.9%	50000	0	5	56	89 U	88 U	150 U	150 U
Dibenz(a,h)anthracene	UG/KG	17000	60.7%	14	29	34	56	**74** J	**92**	**52** J	**84** J
Dibenzofuran	UG/KG	18000	60.7%	6200	1	34	56	14 J	9.6 J	13 J	21 J
Diethyl phthalate	UG/KG	12	26.8%	7100	0	15	56	89 U	4.9 J	150 U	150 U
Dimethylphthalate	UG/KG	0	0.0%	2000	0	0	56	89 U	88 U	150 U	150 U
Fluoranthene	UG/KG	160000	82.1%	50000	1	46	56	590	590	460	790
Fluorene	UG/KG	38000	67.9%	50000	0	38	56	27 J	22 J	18 J	46 J

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

Parameter	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	SEAD-59 TP59-6-2 SOIL 59002 6 6.5 10/7/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-7-2 SOIL 59008 3 3.5 10/8/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-8-2 SOIL 59050 1.5 2 10/13/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-9-2 SOIL 59052 2 2.5 10/13/1997 SA RI PHASE 1 STE Value (Q)
Hexachlorobenzene	UG/KG	0	0.0%	410	0	0	56	89 U	88 U	150 U	150 U
Hexachlorobutadiene	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
Hexachlorocyclopentadiene	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
Hexachloroethane	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
Indeno(1,2,3-cd)pyrene	UG/KG	34000	75.0%	3200	4	42	56	180	190	140 J	200
Isophorone	UG/KG	0	0.0%	4400	0	0	56	89 U	88 U	150 U	150 U
N-Nitrosodiphenylamine	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
N-Nitrosodipropylamine	UG/KG	0	0.0%		0	0	56	89 U	88 U	150 U	150 U
Naphthalene	UG/KG	29000	62.5%	13000	2	35	56	15 J	88 U	11 J	12 J
Nitrobenzene	UG/KG	0	0.0%	200	0	0	56	89 U	88 U	150 U	150 U
Pentachlorophenol	UG/KG	0	0.0%	1000	0	0	56	220 U	210 U	360 U	370 U
Phenanthrene	UG/KG	140000	82.1%	50000	2	46	56	370	280	200	460
Phenol	UG/KG	17	3.6%	30	0	2	56	17 J	88 U	150 U	150 U
Pyrene	UG/KG	120000	85.5%	50000	1	47	55	500	500	340	550
PESTICIDES/PCBS											
4,4'-DDD	UG/KG	450	54.5%	2900	0	30	55	70	42 J	3.7 U	3.4 J
4,4'-DDE	UG/KG	150	60.0%	2100	0	33	55	48	150 J	10	80
4,4'-DDT	UG/KG	350	52.7%	2100	0	29	55	59	290 J	10	36
Aldrin	UG/KG	1.2	3.6%	41	0	2	55	2.3 U	3.6 U	1.9 U	2 U
Alpha-BHC	UG/KG	14	7.3%	110	0	4	55	2.3 U	3.6 U	1.9 U	2 U
Alpha-Chlordane	UG/KG	81	23.6%		0	13	55	2.3 U	81 J	1.9 U	2 U
Aroclor-1016	UG/KG	0	0.0%		0	0	55	44 U	70 U	37 U	38 U
Aroclor-1221	UG/KG	0	0.0%		0	0	55	90 U	140 U	75 U	78 U
Aroclor-1232	UG/KG	0	0.0%		0	0	55	44 U	70 U	37 U	38 U
Aroclor-1242	UG/KG	0	0.0%		0	0	54	44 U	70 U	37 U	38 U
Aroclor-1248	UG/KG	0	0.0%		0	0	55	44 U	70 U	37 U	38 U
Aroclor-1254	UG/KG	63	3.6%	10000	0	2	55	44 U	70 U	37 U	38 U
Aroclor-1260	UG/KG	0	0.0%	10000	0	0	55	44 U	70 U	37 U	38 U
Beta-BHC	UG/KG	4.7	12.7%	200	0	7	55	2.3 U	3.6 U	1.9 U	2 U
Delta-BHC	UG/KG	8.5	12.7%	300	0	7	55	2.3 U	3.6 U	1.9 U	2 U
Dieldrin	UG/KG	4.9	7.3%	44	0	4	55	4.4 U	4.9 J	1.8 J	3.8 U
Endosulfan I	UG/KG	26	14.5%	900	0	8	55	2.3 U	3.6 U	1.9 U	2 U
Endosulfan II	UG/KG	7.1	9.1%	900	0	5	55	4.4 U	7 U	3.7 U	3.8 U
Endosulfan sulfate	UG/KG	20	7.3%	1000	0	4	55	4.3 J	7 U	3.7 U	3.8 U
Endrin	UG/KG	32	14.5%	100	0	8	55	4.4 U	7 U	3.7 U	3.8 U
Endrin aldehyde	UG/KG	15	20.0%		0	11	55	4.4 U	7 U	3.7 U	3.8 U
Endrin ketone	UG/KG	77	14.5%		0	8	55	4.4 U	7 U	3.7 U	3.8 U
Gamma-BHC/Lindane	UG/KG	0	0.0%	60	0	0	55	2.3 U	3.6 U	1.9 U	2 U
Gamma-Chlordane	UG/KG	100	20.0%	540	0	11	55	2.3 U	100 J	1.9 U	2 U
Heptachlor	UG/KG	0	0.0%	100	0	0	55	2.3 U	3.6 U	1.9 U	2 U
Heptachlor epoxide	UG/KG	10	25.5%	20	0	14	55	5.7 J	10	1.9 U	3 J
Methoxychlor	UG/KG	110	3.6%		0	2	55	23 U	36 U	19 U	20 U
Toxaphene	UG/KG	0	0.0%		0	0	55	230 U	360 U	190 U	200 U

Table D-1
Seneca Army Depot Activity
SEAD-59 ESI and Phase I RI Soil Data

Parameter	Units	Maximum	Frequency of Detection	TAGM	Number of Exceed.	Number of Detections	Number of Analyses	SEAD-59 TP59-6-2 SOIL 59002 6 6.5 10/7/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-7-2 SOIL 59008 3 3.5 10/8/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-8-2 SOIL 59050 1.5 2 10/13/1997 SA RI PHASE 1 STE Value (Q)	SEAD-59 TP59-9-2 SOIL 59052 2 2.5 10/13/1997 SA RI PHASE 1 STE Value (Q)
METALS											
Aluminum	MG/KG	20600	100.0%	19300	1	55	55	12600 J	4450 J	12500 J	10700 J
Antimony	MG/KG	424	21.8%	5.9	1	12	55	0.73 UJ	0.51 UJ	0.56 UJ	0.6 UJ
Arsenic	MG/KG	6.1	100.0%	8.2	0	55	55	6	2.7	5.1	4.5
Barium	MG/KG	304	100.0%	300	1	55	55	101	51	113	77.1
Beryllium	MG/KG	0.91	100.0%	1.1	0	55	55	0.52	0.24	0.32	0.4
Cadmium	MG/KG	3.2	38.2%	2.3	1	21	55	0.1 U	0.07 U	0.08 U	0.08 U
Calcium	MG/KG	214000	100.0%	121000	5	55	55	28000	190000	28200	25900
Chromium	MG/KG	25.5	100.0%	29.6	0	55	55	18.8	8.4	18.6	15.8
Cobalt	MG/KG	14.7	100.0%	30	0	55	55	10.6	4.2	11.7	8.9
Copper	MG/KG	36.1	100.0%	33	1	55	55	25.1	20.6	25.3	21.1
Cyanide	MG/KG	0	0.0%	0.35	0	0	55	0.72 U	0.55 U	0.48 U	0.71 U
Iron	MG/KG	33300	100.0%	36500	0	55	55	25600	8280	23200	19500
Lead	MG/KG	139	100.0%	24.8	29	55	55	65.5 J	31.3 J	53.7 J	29.5 J
Magnesium	MG/KG	34400	100.0%	21500	1	55	55	4600 J	8290 J	5710 J	5940 J
Manganese	MG/KG	1150	100.0%	1060	1	55	55	572 J	249 J	886 J	422 J
Mercury	MG/KG	1.6	61.8%	0.1	11	34	55	0.15	0.11	0.09	0.09
Nickel	MG/KG	41.4	100.0%	49	0	55	55	25.4	12	27.8	23.1
Potassium	MG/KG	2520	100.0%	2380	1	55	55	1490	726	1460	1180
Selenium	MG/KG	2.2	32.7%	2	1	18	55	1 U	0.7 U	0.77	0.83 U
Silver	MG/KG	4.1	7.3%	0.75	1	4	55	0.28 U	4.1	0.21 U	0.23 U
Sodium	MG/KG	2310	80.0%	172	18	44	55	134	87.9	83.1 U	89.6 U
Thallium	MG/KG	0	0.0%	0.7	0	0	55	1.5 U	1 U	1.2 U	1.2 U
Vanadium	MG/KG	41.9	100.0%	150	0	55	55	21.5	14.4	20.9	17.3
Zinc	MG/KG	1550	100.0%	110	8	55	55	114 J	61.5 J	105 J	68.8 J
OTHER ANALYSES											
Nitrate/Nitrite Nitrogen	MG/KG	9.9	100.0%		0	34	34	1	0.45	1.5	2.7
Total Petroleum Hydrocarbons	MG/KG	19700	70.9%		0	39	55	111	393	55.3	27.6 U

Table D-2
Seneca Army Depot
SEAD-71 ESI and Phase I RI Soil Data

	STUDY ID:						RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	R
	SDG						SEAD-71	SEAD-71	SEAD-71	SEAD-71	
	ES ID						SS71-1	SS71-10	SS71-11	SS71-12	
	SAMP_ID:						71013	71017	71024	71023	
	FIELD QC CODE:						SA	SA	SA	SA	
	SAMP. DETH TOP:						0	0	0	0	
	SAMP. DEPTH BOT:						0.2	0.2	0.2	0.2	
	MATRIX:						SOIL	SOIL	SOIL	SOIL	
	SAMP. DATE:						19-Nov-97	19-Nov-97	20-Nov-97	20-Nov-97	
ND	UNIT	Number of Analyses	Number of Detections	Frequency of Detection	Maximum Value	Number of Exceedances	TAGM				
E ORGANICS											
hloroethane	UG/KG	34	6	17.65%	23	0	800	13. U	12. U	11. U	11. U
etrachloroethane	UG/KG	34	0	0.00%	0	0	600	13. U	12. U	11. U	11. U
hloroethane	UG/KG	34	0	0.00%	0	0		13. U	12. U	11. U	11. U
roethane	UG/KG	34	0	0.00%	0	0	200.	13. U	12. U	11. U	11. U
roethene	UG/KG	34	0	0.00%	0	0	400.	13. U	12. U	11. U	11. U
roethane	UG/KG	34	0	0.00%	0	0	100.	13. U	12. U	11. U	11. U
roethene (total)	UG/KG	34	0	0.00%	0	0		13. U	12. U	11. U	11. U
ropropane	UG/KG	34	0	0.00%	0	0		13. U	12. U	11. U	11. U
	UG/KG	34	2	5.88%	74	0	200	13. U	12. U	11. U	11. U
	UG/KG	34	1	2.94%	2	0	60	2. J	12. U	11. U	11. U
hloromethane	UG/KG	34	0	0.00%	0	0		13. U	12. U	11. U	11. U
m	UG/KG	34	0	0.00%	0	0		13. U	12. U	11. U	11. U
isulfide	UG/KG	34	0	0.00%	0	0	2,700.	13. U	12. U	11. U	11. U
etrachloride	UG/KG	34	0	0.00%	0	0	600.	13. U	12. U	11. U	11. U
nzene	UG/KG	34	0	0.00%	0	0	1,700.	13. U	12. U	11. U	11. U
romomethane	UG/KG	34	0	0.00%	0	0		13. U	12. U	11. U	11. U
ane	UG/KG	34	0	0.00%	0	0	1,900.	13. U	12. U	11. U	11. U
m	UG/KG	34	0	0.00%	0	0	300.	13. U	12. U	11. U	11. U
ichloropropene	UG/KG	34	0	0.00%	0	0		13. U	12. U	11. U	11. U
zene	UG/KG	34	2	5.88%	4	0	5,500.	13. U	12. U	11. U	11. U
omide	UG/KG	34	0	0.00%	0	0		13. U	12. U	11. U	11. U
tyl ketone	UG/KG	34	0	0.00%	0	0		13. U	12. U	11. U	11. U
loride	UG/KG	34	0	0.00%	0	0		13. U	12. U	11. U	11. U
hyl ketone	UG/KG	34	0	0.00%	0	0	300.	13. U	12. U	11. U	11. U
obutyl ketone	UG/KG	34	0	0.00%	0	0	1,000.	13. U	12. U	11. U	11. U
e chloride	UG/KG	34	9	26.47%	11	0	100.	2. J	12. U	11. U	11. U
	UG/KG	34	1	2.94%	1	0		13. U	12. U	11. U	11. U
roethene	UG/KG	34	4	11.76%	33	0	1,400.	13. U	12. U	11. U	11. U
	UG/KG	34	8	23.53%	16	0	1,500.	4. J	12. U	4. J	4. J
enes	UG/KG	34	4	11.76%	96	0	1,200.	13. U	12. U	11. U	11. U
-Dichloropropene	UG/KG	34	0	0.00%	0	0		13. U	12. U	11. U	11. U
ethene	UG/KG	34	0	0.00%	0	0	700.	13. U	12. U	11. U	11. U
ride	UG/KG	34	0	0.00%	0	0	200.	13. U	12. U	11. U	11. U
LATILE ORGANICS											
hlorobenzene	UG/KG	34	0	0.00%	0	0	3,400.	300. U	93. U	72,000. U	23,000. U
robenzene	UG/KG	34	0	0.00%	0	0	7,900.	300. U	93. U	72,000. U	23,000. U
robenzene	UG/KG	34	0	0.00%	0	0	1,600.	300. U	93. U	72,000. U	23,000. U
robenzene	UG/KG	34	0	0.00%	0	0	8,500.	300. U	93. U	72,000. U	23,000. U
s(1-Chloropropane)	UG/KG	8	0	0.00%	0	0					
hlorophenol	UG/KG	34	0	0.00%	0	0	100	720. U	220. U	180,000. U	56,000. U
hlorophenol	UG/KG	34	0	0.00%	0	0		300. U	93. U	72,000. U	23,000. U
rophenol	UG/KG	34	0	0.00%	0	0	400.	300. U	93. U	72,000. U	23,000. U
thylphenol	UG/KG	34	0	0.00%	0	0		300. U	93. U	72,000. U	23,000. U
ophenol	UG/KG	34	0	0.00%	0	0	200.	720. U	220. U	180,000. U	56,000. U
otoluene	UG/KG	34	0	0.00%	0	0		300. U	93. U	72,000. U	23,000. U
otoluene	UG/KG	34	0	0.00%	0	0	1,000	300. U	93. U	72,000. U	23,000. U
aphthalene	UG/KG	34	0	0.00%	0	0		300. U	93. U	72,000. U	23,000. U
henol	UG/KG	34	0	0.00%	0	0	800.	300. U	93. U	72,000. U	23,000. U
aphthalene	UG/KG	34	14	41.18%	31000	0	36,400	72. J	8.6 J	5,300. J	4,000. J
henol	UG/KG	34	0	0.00%	0	0	100.	300. U	93. U	72,000. U	23,000. U
line	UG/KG	34	0	0.00%	0	0	430.	720. U	220. U	180,000. U	56,000. U
enol	UG/KG	34	0	0.00%	0	0	330.	300. U	93. U	72,000. U	23,000. U
lorobenzidine	UG/KG	34	0	0.00%	0	0		300. U	93. U	72,000. U	23,000. U
line	UG/KG	34	0	0.00%	0	0	500.	720. U	220. U	180,000. U	56,000. U
o-2-methylphenol	UG/KG	34	0	0.00%	0	0		720. U	220. U	180,000. U	56,000. U
henyl phenyl ether	UG/KG	34	0	0.00%	0	0		300. U	93. U	72,000. U	23,000. U
3-methylphenol	UG/KG	34	0	0.00%	0	0	240.	300. U	93. U	72,000. U	23,000. U

Table D-2
Seneca Army Depot
SEAD-71 ESI and Phase I RI Soil Data

	STUDY ID:						RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	R
	SDG						SEAD-71	SEAD-71	SEAD-71	SEAD-71	
	ES ID						SS71-1	SS71-10	SS71-11	SS71-12	
	SAMP_ID:						71013	71017	71024	71023	
	FIELD QC CODE:						SA	SA	SA	SA	
	SAMP. DETH TOP:						0	0	0	0	
	SAMP. DEPTH BOT:						0.2	0.2	0.2	0.2	
	MATRIX:						SOIL	SOIL	SOIL	SOIL	
	SAMP. DATE:						19-Nov-97	19-Nov-97	20-Nov-97	20-Nov-97	
UND	UNIT	Number of Analyses	Number of Detections	Frequency of Detection	Maximum Value	Number of Exceedances	TAGM				
aniline	UG/KG	34	0	0.00%	0	0	220.	300. U	93. U	72,000. U	23,000. U
ohenyl phenyl ether	UG/KG	34	0	0.00%	0	0		300. U	93. U	72,000. U	23,000. U
ohenol	UG/KG	34	0	0.00%	0	0	900.	300. U	93. U	72,000. U	23,000. U
iline	UG/KG	34	0	0.00%	0	0		720. U	220. U	180,000. U	56,000. U
enol	UG/KG	34	0	0.00%	0	0	100.	720. U	220. U	180,000. U	56,000. U
thene	UG/KG	34	24	70.59%	42000	0	50,000.	300. U	22. J	28,000. J	12,000. J
thylene	UG/KG	34	5	14.71%	340	0	41,000.	300 U	93. U	72,000. U	23,000. U
ne	UG/KG	34	27	79.41%	100000	3	50,000.	68. J	47. J	[redacted]	32,000.
anthracene	UG/KG	34	32	94.12%	150000	25	224	[redacted]	220.	[redacted]	[redacted]
pyrene	UG/KG	34	31	91.18%	120000	29	61.	[redacted]	[redacted]	[redacted]	[redacted]
fluoranthene	UG/KG	34	31	91.18%	88000	16	1,100.	750	280.	[redacted]	21,000. J
i]perylene	UG/KG	34	30	88.24%	62000	1	50,000.	370.	140.	62,000. J	19,000. J
fluoranthene	UG/KG	34	24	70.59%	130000	13	1,100.	750.	250.	[redacted]	[redacted]
oroethoxy)methane	UG/KG	34	0	0.00%	0	0		300. U	93. U	72,000. U	23,000. U
oroethyl)ether	UG/KG	34	0	0.00%	0	0		300. U	93. U	72,000. U	23,000. U
oroisopropyl)ether	UG/KG	34	0	0.00%	0	0		300. U	93. U	72,000. U	23,000. U
ylhexyl)phthalate	UG/KG	34	3	8.82%	15	0	50,000.	300. U	93. U	72,000. U	23,000. U
zylphthalate	UG/KG	34	0	0.00%	0	0	50,000.	300 U	93. U	72,000. U	23,000. U
e	UG/KG	34	28	82.35%	77000	0		110. J	75. J	39,000. J	20,000. J
	UG/KG	34	32	94.12%	150000	23	400.	[redacted]	290.	[redacted]	[redacted]
iphthalate	UG/KG	34	2	5.88%	140	0	8,100.	300. U	93. U	72,000. U	23,000. U
iphthalate	UG/KG	34	0	0.00%	0	0	50,000.	300. U	93. U	72,000. U	23,000. U
h]anthracene	UG/KG	34	28	82.35%	25000	27	14.	[redacted] J	[redacted] J	[redacted] J	[redacted] J
uran	UG/KG	34	22	64.71%	38000	5	6,200.	100. J	13. J	[redacted] J	[redacted] J
nthalate	UG/KG	34	0	0.00%	0	0	7,100.	300. U	93. U	72,000. U	23,000. U
phthalate	UG/KG	34	0	0.00%	0	0	2,000.	300. U	93. U	72,000. U	23,000. U
ene	UG/KG	34	33	97.06%	440000	7	50,000.	1,100.	480.	[redacted]	[redacted]
	UG/KG	34	25	73.53%	62000	1	50,000.	300. U	18. J	35,000. J	19,000. J
robenzene	UG/KG	34	0	0.00%	0	0	410.	300. U	93. U	72,000. U	23,000. U
robutadiene	UG/KG	34	0	0.00%	0	0		300. U	93. U	72,000. U	23,000. U
rocyclopentadiene	UG/KG	34	0	0.00%	0	0		300. U	93. U	72,000. U	23,000. U
roethane	UG/KG	34	0	0.00%	0	0		300. U	93. U	72,000. U	23,000. U
2,3-cd]pyrene	UG/KG	34	30	88.24%	65000	9	3,200.	360.	140.	[redacted] J	[redacted] J
ne	UG/KG	34	0	0.00%	0	0	4,400.	300. U	93. U	72,000. U	23,000. U
diphenylamine	UG/KG	34	0	0.00%	0	0		300. U	93. U	72,000. U	23,000. U
dipropylamine	UG/KG	34	0	0.00%	0	0		300. U	93. U	72,000. U	23,000. U
ene	UG/KG	34	15	44.12%	46000	2	13,000.	78. J	93. U	6,000. J	8,000. J
zene	UG/KG	34	0	0.00%	0	0	200.	300. U	93. U	72,000. U	23,000. U
orophenol	UG/KG	34	0	0.00%	0	0	1,000.	720. U	220. U	180,000. U	56,000. U
rene	UG/KG	34	32	94.12%	290000	6	50,000.	440.	210.	[redacted]	[redacted]
	UG/KG	34	1	2.94%	4.5	0	30.	300. U	93. U	72,000. U	23,000. U
	UG/KG	34	33	97.06%	280000	7	50,000.	900.	380.	[redacted]	[redacted]
DES/PCBS											
	UG/KG	34	11	32.35%	240	0	2,900.	5.9	4.6 U	26. J	35. U
	UG/KG	34	21	61.76%	810	0	2,100.	88.	22.	26. J	35. U
	UG/KG	34	22	64.71%	1300	0	2,100.	54.	25.	43.	35. U
	UG/KG	34	0	0.00%	0	0	41.	2.3 U	2.4 U	19. U	18. U
IC	UG/KG	34	8	23.53%	18	0	110.	2.2 J	2.4 U	19. U	18. U
lordane	UG/KG	34	2	5.88%	74	0		2.3 U	2.4 U	19. U	18. U
016	UG/KG	34	0	0.00%	0	0		44. U	46. U	370. U	350. U
221	UG/KG	34	0	0.00%	0	0		90. U	94. U	740. U	700. U
232	UG/KG	34	0	0.00%	0	0		44. U	46. U	370. U	350. U
242	UG/KG	34	0	0.00%	0	0		44. U	46. U	370. U	350. U
248	UG/KG	34	0	0.00%	0	0		44. U	46. U	370. U	350. U
254	UG/KG	34	0	0.00%	0	0	10,000.	44. U	46. U	370. U	350. U
260	UG/KG	34	0	0.00%	0	0	10,000.	44. U	46. U	370. U	350. U
C	UG/KG	34	7	20.59%	32	0	200.	2.3 U	2.4 U	21.	18. U
C	UG/KG	34	1	2.94%	1.8	0	300.	2.3 U	2.4 U	19. U	18. U

Table D-2
Seneca Army Depot
SEAD-71 ESI and Phase I RI Soil Data

	STUDY ID:						RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	R
	SDG						SEAD-71	SEAD-71	SEAD-71	SEAD-71	
	ES ID						SS71-1	SS71-10	SS71-11	SS71-12	
	SAMP_ID:						71013	71017	71024	71023	
	FIELD QC CODE:						SA	SA	SA	SA	
	SAMP. DETH TOP:						0	0	0	0	
	SAMP. DEPTH BOT:						0.2	0.2	0.2	0.2	
	MATRIX:						SOIL	SOIL	SOIL	SOIL	
	SAMP. DATE:						19-Nov-97	19-Nov-97	20-Nov-97	20-Nov-97	
UND	UNIT	Number of Analyses	Number of Detections	Frequency of Detection	Maximum Value	Number of Exceedances	TAGM				
	UG/KG	34	3	8.82%	3.5	0	44.	4.4 U	4.6 U	37. U	35. U
n I	UG/KG	34	11	32.35%	200	0	900.	2.3 U	2.4 U	15. J	18. U
n II	UG/KG	34	6	17.65%	52	0	900.	4.4 U	4.6 U	37. U	35. U
n sulfate	UG/KG	34	12	35.29%	110	0	1,000.	2.7 J	4.6 U	37. U	48.
	UG/KG	34	11	32.35%	120	1	100.	6.3	4.6 U	55.	35. U
dehyde	UG/KG	34	19	55.88%	120	0		4.8	9.1	70.	34. J
tone	UG/KG	34	18	52.94%	160	0		7.7	17.	160.	35. U
BHC/Lindane	UG/KG	34	1	2.94%	4	0	60.	2.3 U	2.4 U	19. U	18. U
Chlordane	UG/KG	34	4	11.76%	22	0	540	1.2 J	2.4 U	19. U	18. U
or	UG/KG	34	1	2.94%	1.2	0	100.	2.3 U	2.4 U	19. U	18. U
or epoxide	UG/KG	34	14	41.18%	180	4	20.	4.3	2.4 U	17. J	18. U
hlor	UG/KG	34	12	35.29%	520	0		23. U	24. U	270.	210.
ne	UG/KG	34	0	0.00%	0	0		230. U	240. U	1,900. U	1,800. U
n	MG/KG	34	34	100.00%	18000	0	19,520.	7,250.	9,080.	2,900.	2,450.
	MG/KG	34	12	35.29%	19.3	1	6.	1.9 J	.95 UJ	.98 J	.7 UJ
	MG/KG	34	34	100.00%	14.8	4	8.9	4.9	7.4	5.8	3.2
	MG/KG	34	34	100.00%	179	0	300.	51.2 J	53.4 J	50.5 J	88.1 J
	MG/KG	34	33	97.06%	0.88	0	1.13	.26	.25	.08	.08
	MG/KG	34	15	44.12%	12.1	4	2.46	.08 UJ	.08 UJ	[redacted] J	.06 UJ
	MG/KG	34	34	100.00%	295000	11	125,300.	35,100.	11,100.	[redacted]	[redacted]
n	MG/KG	34	34	100.00%	60.3	4	30.	13.4 J	14.2 J	19.1 J	5.8 J
	MG/KG	34	34	100.00%	14.6	0	30.	7.4	8.7	5.6	4.3
	MG/KG	34	34	100.00%	134	12	33.	[redacted] J	28.8 J	24.8 J	5.4 J
	MG/KG	34	0	0.00%	0	0	.35	.67 U	.74 U	.59 U	.59 U
	MG/KG	34	34	100.00%	65100	2	37,410.	31,800.	24,100.	19,100.	5,990.
	MG/KG	34	34	100.00%	3470	22	24.4	[redacted] J	[redacted] J	[redacted] J	16.9 J
m	MG/KG	34	34	100.00%	59300	6	21,700.	5,050.	4,170.	[redacted]	[redacted]
se	MG/KG	34	34	100.00%	853	0	1,100.	383. J	554. J	361. J	286. J
	MG/KG	34	16	47.06%	2.7	4	.1	[redacted] J	.07 UJ	[redacted] J	.05 UJ
	MG/KG	34	34	100.00%	110	2	50.	19.9	[redacted]	18.2	11.9
n	MG/KG	34	34	100.00%	2940	1	2,623.	1,330.	1,030.	1,190.	1,370.
	MG/KG	34	15	44.12%	1.8	0	2.	1.4 J	1.8 J	.99 UJ	.94 UJ
	MG/KG	34	5	14.71%	0.69	0	.8	.54 UJ	.57 UJ	2.2 UJ	.42 UJ
	MG/KG	34	30	88.24%	1040	19	188.	[redacted]	[redacted]	[redacted]	[redacted]
	MG/KG	34	1	2.94%	2.3	1	.855	1.6 U	1.7 U	1.3 U	1.3 U
n	MG/KG	34	34	100.00%	29.2	0	150.	16.	13.7	14.8	10.
	MG/KG	34	33	97.06%	3660	13	115.	95.3 J	[redacted] J	[redacted] J	44.7 J
ANALYSES	MG/KG										
roleum Hydrocarbons	MG/KG	26	22	84.62%	9060			243.	26. U	29.7 U	182.
trite Nitrogen		26	26	100.00%	30.2			11	.52	.12	.02

Table D-2
Seneca Army Depot
SEAD-71 ESI and Phase I RI Soil Data

	STUDY ID:	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1
	SDG	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71
	ES ID	SS71-14	SS71-15	SS71-16	SS71-17	SS71-18	SS71-19	SS71-2
	SAMP_ID:	71025	71032	71021	71030	71022	71020	71014
	FIELD QC COD	SA	SA	SA	SA	SA	SA	SA
	SAMP. DETH T	0	0	0	0	0	0	0
	SAMP. DEPTH	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	MATRIX:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	SAMP. DATE:	20-Nov-97	21-Nov-97	20-Nov-97	21-Nov-97	20-Nov-97	20-Nov-97	19-Nov-97
OUND	UNIT							
ILE ORGANICS								
richloroethane	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
Tetrachloroethane	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
richloroethane	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
hloroethane	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
hloroethene	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
hloroethane	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
hloroethene (total)	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
hloropropane	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
e	UG/KG	74	13 U	12 U	11 U	11 U	13 U	8 J
e	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
ichloromethane	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
orm	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
disulfide	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
tetrachloride	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
enzene	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
ibromomethane	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
thane	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
orm	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
-Dichloropropene	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
enzene	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
bromide	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
butyl ketone	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
chloride	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
ethyl ketone	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
isobutyl ketone	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
ne chloride	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
loroethene	UG/KG	12 U	13 U	33	11 U	11 U	13 U	15 U
e	UG/KG	12 U	2 J	12 U	16	11 U	13 U	15 U
ylenes	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
,3-Dichloropropene	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
oethene	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
loride	UG/KG	12 U	13 U	12 U	11 U	11 U	13 U	15 U
OLATILE ORGANICS								
richlorobenzene	UG/KG	89 U	8,400 U	39,000 U	35,000 U	900 U	2,800 U	880 U
hlorobenzene	UG/KG	89 U	8,400 U	39,000 U	35,000 U	900 U	2,800 U	880 U
hlorobenzene	UG/KG	89 U	8,400 U	39,000 U	35,000 U	900 U	2,800 U	880 U
hlorobenzene	UG/KG	89 U	8,400 U	39,000 U	35,000 U	900 U	2,800 U	880 U
bis(1-Chloropropane)	UG/KG							
richlorophenol	UG/KG	220 U	20,000 U	94,000 U	85,000 U	2,200 U	6,800 U	2,100 U
richlorophenol	UG/KG	89 U	8,400 U	39,000 U	35,000 U	900 U	2,800 U	880 U
hlorophenol	UG/KG	89 U	8,400 U	39,000 U	35,000 U	900 U	2,800 U	880 U
ethylphenol	UG/KG	89 U	8,400 U	39,000 U	35,000 U	900 U	2,800 U	880 U
trophenol	UG/KG	220 U	20,000 U	94,000 U	85,000 U	2,200 U	6,800 U	2,100 U
trotoluene	UG/KG	89 U	8,400 U	39,000 U	35,000 U	900 U	2,800 U	880 U
trotoluene	UG/KG	89 U	8,400 U	39,000 U	35,000 U	900 U	2,800 U	880 U
onaphthalene	UG/KG	89 U	8,400 U	39,000 U	35,000 U	900 U	2,800 U	880 U
ophenol	UG/KG	89 U	8,400 U	39,000 U	35,000 U	900 U	2,800 U	880 U
ylnaphthalene	UG/KG	23 J	8,400 U	39,000 U	5,100 J	56 J	2,800 U	880 U
ylphenol	UG/KG	89 U	8,400 U	39,000 U	35,000 U	900 U	2,800 U	880 U
niline	UG/KG	220 U	20,000 U	94,000 U	85,000 U	2,200 U	6,800 U	2,100 U
henol	UG/KG	89 U	8,400 U	39,000 U	35,000 U	900 U	2,800 U	880 U
chlorobenzidine	UG/KG	89 U	8,400 U	39,000 U	35,000 U	900 U	2,800 U	880 U
niline	UG/KG	220 U	20,000 U	94,000 U	85,000 U	2,200 U	6,800 U	2,100 U
tro-2-methylphenol	UG/KG	220 U	20,000 U	94,000 U	85,000 U	2,200 U	6,800 U	2,100 U
ophenyl phenyl ether	UG/KG	89 U	8,400 U	39,000 U	35,000 U	900 U	2,800 U	880 U
o-3-methylphenol	UG/KG	89 U	8,400 U	39,000 U	35,000 U	900 U	2,800 U	880 U

Table D-2
Seneca Army Depot
SEAD-71 ESI and Phase I RI Soil Data

	STUDY ID:	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1
	SDG	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71
	ES ID	SS71-14	SS71-15	SS71-16	SS71-17	SS71-18	SS71-19	SS71-2
	SAMP_ID:	71025	71032	71021	71030	71022	71020	71014
	FIELD QC COD	SA	SA	SA	SA	SA	SA	SA
	SAMP. DETH T	0	0	0	0	0	0	0
	SAMP. DEPTH	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	MATRIX:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	SAMP. DATE:	20-Nov-97	21-Nov-97	20-Nov-97	21-Nov-97	20-Nov-97	20-Nov-97	19-Nov-97
OUND	UNIT							
oaniline	UG/KG	89. U	8,400 U	39,000 U	35,000. U	900. U	2,800. U	880. U
ophenyl phenyl ether	UG/KG	89. U	8,400. U	39,000. U	35,000 U	900 U	2,800. U	880. U
ylphenol	UG/KG	89 U	8,400 U	39,000 U	35,000. U	900. U	2,800. U	880 U
aniline	UG/KG	220 U	20,000. U	94,000. U	85,000. U	2,200. U	6,800. U	2,100. U
ohenol	UG/KG	220 U	20,000. U	94,000. U	85,000. U	2,200. U	6,800. U	2,100. U
hthene	UG/KG	10. J	1,600. J	6,400. J	30,000. J	230. J	510. J	69. J
hthylene	UG/KG	20. J	8,400. U	39,000. U	35,000. U	900. U	2,800. U	880. U
cene	UG/KG	380	7,900. J	30,000. J	[redacted]	390 J	1,000. J	170. J
e]anthracene	UG/KG	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
a]pyrene	UG/KG	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
b]fluoranthene	UG/KG	630 E	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
ghi]perylene	UG/KG	220.	12,000.	36,000 J	48,000.	1,300	2,600. J	820 J
k]fluoranthene	UG/KG	89. U	[redacted]	[redacted]	[redacted]	900 U	[redacted]	[redacted]
hloroethoxy)methane	UG/KG	89. U	8,400. U	39,000 U	35,000. U	900. U	2,800. U	880 U
hloroethyl)ether	UG/KG	89. U	8,400. U	39,000. U	35,000. U	900 U	2,800. U	880. U
hloroisopropyl)ether	UG/KG	89 U	8,400 U	39,000. U	35,000 U	900. U	2,800. U	880 U
thylhexyl)phthalate	UG/KG	89. U	8,400. U	39,000 U	35,000. U	900. U	2,800. U	880 U
nzylphthalate	UG/KG	89. U	8,400. U	39,000. U	35,000. U	900. U	2,800. U	880. U
ole	UG/KG	150.	5,100. J	9,300. J	47,000.	780. J	1,700. J	350. J
ne	UG/KG	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
tylphthalate	UG/KG	89. U	8,400. U	39,000. U	35,000. U	900. U	140. J	880. U
tylphthalate	UG/KG	89. U	8,400. U	39,000. U	35,000. U	900. U	2,800. U	880. U
[a,h]anthracene	UG/KG	[redacted] J	[redacted] J	[redacted] J	[redacted] J	[redacted] J	[redacted] J	[redacted] J
ofuran	UG/KG	31. J	680. J	3,000. J	[redacted] J	110. J	270. J	64. J
phthalate	UG/KG	89. U	8,400. U	39,000. U	35,000. U	900. U	2,800. U	880. U
ylphthalate	UG/KG	89 U	8,400. U	39,000. U	35,000. U	900. U	2,800. U	880. U
thene	UG/KG	480.	37,000.	[redacted]	[redacted]	5,300.	12,000.	3,000.
e	UG/KG	47. J	1,900 J	7,300. J	39,000.	190. J	570. J	67. J
lorobenzene	UG/KG	89. U	8,400. U	39,000. U	35,000. U	900 U	2,800. U	880. U
lorobutadiene	UG/KG	89 U	8,400. U	39,000. U	35,000. U	900. U	2,800. U	880. U
lorocyclopentadiene	UG/KG	89 U	8,400. U	39,000. U	35,000. U	900. U	2,800. U	880. U
loroethane	UG/KG	89. U	8,400 U	39,000. U	35,000. U	900. U	2,800. U	880. U
1,2,3-cd]pyrene	UG/KG	190.	[redacted] J	[redacted] J	[redacted]	1,200.	2,500. J	780. J
one	UG/KG	89. U	8,400 U	39,000. U	35,000. U	900. U	2,800. U	880. U
sodiphenylamine	UG/KG	89. U	8,400. U	39,000. U	35,000. U	900. U	2,800. U	880. U
sodipropylamine	UG/KG	89. U	8,400. U	39,000. U	35,000. U	900. U	2,800. U	880. U
alene	UG/KG	31. J	8,400. U	39,000. U	5,500. J	88 J	2,800. U	880. U
nzene	UG/KG	89. U	8,400. U	39,000. U	35,000. U	900 U	2,800. U	880 U
hlorophenol	UG/KG	220. U	20,000. U	94,000 U	85,000 U	2,200. U	6,800. U	2,100. U
threne	UG/KG	210.	24,000.	[redacted]	[redacted]	2,800.	8,300.	1,400.
	UG/KG	89. U	8,400. U	39,000. U	35,000. U	900 U	2,800. U	880. U
	UG/KG	520	35,000.	[redacted]	[redacted]	4,700.	11,000.	2,300.
CIDES/PCBS								
DD	UG/KG	4.4 U	110.	53.	240.	3.1 J	40. J	2.8 J
DE	UG/KG	18.	440.	360.	810.	20.	390.	44.
DT	UG/KG	21.	910.	1,300.	1,300.	46.	960.	53.
	UG/KG	2.3 U	22. U	20. U	18. U	1.8 U	22. U	2.3 U
BHC	UG/KG	2.3 U	22. U	20. U	18. J	1.2 J	22. U	1.9 J
Chlordane	UG/KG	2.3 U	22. U	20. U	18. U	1.8 U	22. U	2.3 U
-1016	UG/KG	44. U	420. U	390 U	350 U	36. U	420. U	44 U
-1221	UG/KG	90. U	850. U	790. U	710. U	73. U	850. U	89. U
-1232	UG/KG	44 U	420. U	390. U	350. U	36. U	420. U	44. U
-1242	UG/KG	44. U	420. U	390. U	350. U	36. U	420. U	44. U
-1248	UG/KG	44. U	420. U	390. U	350. U	36. U	420. U	44. U
-1254	UG/KG	44. U	420. U	390 U	350. U	36. U	420. U	44. U
-1260	UG/KG	44. U	420. U	390. U	350. U	36. U	420. U	44. U
HC	UG/KG	2.3 U	21. J	11. J	35.	1.9	22. U	2.3 U
HC	UG/KG	2.3 U	22. U	20. U	18. U	1.8 U	22. U	2.3 U

Table D-2
Seneca Army Depot
SEAD-71 ESI and Phase I RI Soil Data

	STUDY ID:	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1
	SDG	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71
	ES ID	SS71-14	SS71-15	SS71-16	SS71-17	SS71-18	SS71-19	SS71-2
	SAMP_ID:	71025	71032	71021	71030	71022	71020	71014
	FIELD QC COD	SA	SA	SA	SA	SA	SA	SA
	SAMP. DETH T	0	0	0	0	0	0	0
	SAMP. DEPTH	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	MATRIX:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	SAMP. DATE:	20-Nov-97	21-Nov-97	20-Nov-97	21-Nov-97	20-Nov-97	20-Nov-97	19-Nov-97
OUND	UNIT							
	UG/KG	3.4 J	42 U	39. U	35. U	3.6 U	42. U	3. J
lfan I	UG/KG	2.3 U	13. J	20. U	18. U	1.5 J	22. U	2.3 U
lfan II	UG/KG	4.4 U	52.	39. U	35. U	3.6 U	42. U	4.4 U
lfan sulfate	UG/KG	4.4 U	110.	39. U	35. U	12.	31. J	4.4
	UG/KG	8.1	53.	[redacted]	53.	2.7 J	42. U	2.4 J
ldehyde	UG/KG	5.2	110.	61.	53.	7.8	36. J	4.7
ketone	UG/KG	14.	130.	140.	180.	12.	26. J	6.6
-BHC/Lindane	UG/KG	2.3 U	22. U	20. U	18. U	1.8 U	22. U	2.3 U
-Chlordane	UG/KG	2.3 U	22. U	22	48.	1.5 J	22. U	2.3 U
hlor	UG/KG	2.3 U	22. U	20. U	18. U	1.8 U	22. U	2.3 U
hlor epoxide	UG/KG	2.3 U	[redacted]	[redacted]	[redacted]	3.1	19. J	6.4
ychlor	UG/KG	39.	140. J	200	240.	11. J	220. U	23. U
ene	UG/KG	230. U	2,200. U	2,000. U	1,800. U	180. U	2,200. U	230. U
S								
m	MG/KG	10,500.	4,230.	4,690	1,910.	1,710.	12,400.	14,000.
ny	MG/KG	.85 UJ	1.8 J	[redacted]	.67 UJ	.75 J	1.9 J	1. J
	MG/KG	4.1	5.9	[redacted]	3.5	2.1	[redacted]	6.1
	MG/KG	58.8 J	40.4 J	179. J	127. J	20.9 J	110. J	76.5 J
m	MG/KG	.31	19	.08	.07	.08	.36	.46
m	MG/KG	.07 UJ	[redacted]	[redacted]	.06 UJ	1.5 J	[redacted]	.08 UJ
	MG/KG	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	8,780.	8,370.
um	MG/KG	16.5 J	23.1 J	[redacted]	5.3 J	21.4 J	[redacted]	21. J
	MG/KG	10.	7.8	9.8	4.3	3.3	12.4	11.1
	MG/KG	19.5 J	[redacted]	[redacted]	7.4 J	19.8 J	[redacted]	[redacted]
e	MG/KG	.71 U	.63 U	.59 U	.56 U	.63 U	.64 U	.68 U
	MG/KG	19,600.	18,400.	36,100.	6,420.	8,260.	34,300.	25,900.
	MG/KG	[redacted]	[redacted]	[redacted]	15.6 J	[redacted]	[redacted]	[redacted]
sium	MG/KG	[redacted]	11,800.	10,800.	[redacted]	11,300.	4,750.	5,570.
nese	MG/KG	640. J	389. J	534. J	277. J	202. J	660. J	602. J
	MG/KG	.07 J	.06 UJ	[redacted]	.05 UJ	.05 UJ	.06 UJ	.09 J
	MG/KG	20.8	27.3	32.6	11.1	8.7	[redacted]	28.3
um	MG/KG	1,540.	1,120.	1,020.	849.	671.	1,610.	2,070.
m	MG/KG	1.3 J	1.1 UJ	1.8 J	.9 UJ	.9 UJ	1.5 J	1.4 J
	MG/KG	.51 UJ	.6 J	.44 J	.4 UJ	.4 UJ	.69 J	.54 UJ
	MG/KG	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	176.
n	MG/KG	1.5 U	1.5 U	1.3 U	1.2 U	1.2 U	1.5 U	1.6 U
um	MG/KG	17.8	20.1	17.3	7.4	8.6	22.3	23.9
	MG/KG	[redacted]	[redacted]	[redacted]	43.4 J	73.1 J	[redacted]	[redacted]
R ANALYSES	MG/KG							
etroleum Hydrocarbons	MG/KG	45.3	5,220.	1,120.	411.	851.	307.	90.4
Nitrite Nitrogen		.52	03	4.91	.51	5.07	.2	.98

Table D-2
Seneca Army Depot
SEAD-71 ESI and Phase I RI Soil Data

	STUDY ID:	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1
	SDG	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71
	ES ID	SS71-3	SS71-4	SS71-5	SS71-6	SS71-7	SS71-7	SS71-8
	SAMP_ID.	71015	71016	71029	71028	71026	71203	71019
	FIELD QC COD	SA	SA	SA	SA	SA	DU	SA
	SAMP. DETH T	0	0	0	0	0	0	0
	SAMP. DEPTH	0 2	0.2	0 2	0.2	0.2	0.2	0.2
	MATRIX:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	SAMP. DATE	19-Nov-97	19-Nov-97	21-Nov-97	21-Nov-97	20-Nov-97	20-Nov-97	19-Nov-97
UND	UNIT							
LE ORGANICS								
chloroethane	UG/KG	12 U	12. U	11 U	11 U	12. U	12 U	12. U
Tetrachloroethane	UG/KG	12 U	12. U	11. U	11 U	12. U	12 U	12. U
chloroethane	UG/KG	12. U	12 U	11. U	11. U	12 U	12. U	12. U
oroethane	UG/KG	12 U	12 U	11. U	11 U	12. U	12. U	12. U
oroethene	UG/KG	12 U	12 U	11. U	11 U	12. U	12. U	12. U
oroethane	UG/KG	12 U	12 U	11 U	11. U	12. U	12 U	12. U
oroethene (total)	UG/KG	12. U	12. U	11 U	11. U	12. U	12. U	12. U
oropropane	UG/KG	12. U	12. U	11 U	11. U	12. U	12. U	12. U
	UG/KG	12. U	12. U	11 U	11. U	12. U	12 U	12. U
	UG/KG	12. U	12 U	11. U	11 U	12. U	12. U	12. U
chloromethane	UG/KG	12. U	12. U	11. U	11. U	12. U	12. U	12. U
rm	UG/KG	12. U	12. U	11 U	11 U	12. U	12 U	12. U
isulfide	UG/KG	12 U	12 U	11. U	11 U	12. U	12. U	12. U
etrachloride	UG/KG	12 U	12. U	11. U	11 U	12. U	12. U	12. U
nzene	UG/KG	12. U	12. U	11. U	11. U	12. U	12. U	12. U
oromomethane	UG/KG	12 U	12. U	11 U	11. U	12 U	12. U	12. U
hane	UG/KG	12 U	12 U	11 U	11 U	12. U	12. U	12. U
rm	UG/KG	12 U	12. U	11. U	11. U	12. U	12. U	12. U
Dichloropropene	UG/KG	12. U	12. U	11 U	11. U	12. U	12 U	12. U
nzene	UG/KG	12. U	12 U	11. U	11. U	12. U	12. U	12. U
romide	UG/KG	12. U	12. U	11 U	11. U	12. U	12. U	12. U
utyl ketone	UG/KG	12. U	12. U	11. U	11. U	12. U	12. U	12. U
hloride	UG/KG	12 U	12 U	11 U	11 U	12. U	12. U	12. U
thyl ketone	UG/KG	12 U	12. U	11. U	11 U	12. U	12. U	12. U
obutyl ketone	UG/KG	12. U	12. U	11. U	11. U	12. U	12. U	12. U
e chloride	UG/KG	12. U	12. U	11. U	11. U	12. U	12. U	12. U
	UG/KG	12. U	12. U	11. U	11. U	12. U	12. U	12. U
roethene	UG/KG	12. U	12. U	11. U	11. U	12. U	12. U	12. U
	UG/KG	12. U	12 U	5 J	11. U	12 U	12 U	12. U
enes	UG/KG	12. U	12. U	11 U	11. U	12. U	12. U	12. U
3-Dichloropropene	UG/KG	12. U	12. U	11. U	11. U	12. U	12. U	12. U
ethene	UG/KG	12 U	12 U	11. U	11 U	12. U	12. U	12. U
oride	UG/KG	12 U	12. U	11. U	11 U	12. U	12 U	12 U
LATILE ORGANICS								
chlorobenzene	UG/KG	170 U	80. U	1,500 U	18,000. U	1,600. U	530. U	430. U
orobenzene	UG/KG	170. U	80. U	1,500. U	18,000 U	1,600. U	530. U	430. U
orobenzene	UG/KG	170. U	80 U	1,500 U	18,000. U	1,600. U	530. U	430. U
orobenzene	UG/KG	170. U	80 U	1,500 U	18,000. U	1,600. U	530. U	430. U
is(1-Chloropropane)	UG/KG							
chlorophenol	UG/KG	410. U	190. U	3,600. U	44,000. U	3,800 U	1,300. U	1,000. U
chlorophenol	UG/KG	170 U	80. U	1,500 U	18,000 U	1,600. U	530 U	430. U
orophenol	UG/KG	170. U	80 U	1,500 U	18,000. U	1,600. U	530. U	430 U
ethylphenol	UG/KG	170 U	80 U	1,500. U	18,000 U	1,600. U	530 U	430. U
rophenol	UG/KG	410. U	190. U	3,600. U	44,000. U	3,800. U	1,300 U	1,000. U
rotoluene	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
rotoluene	UG/KG	170. U	80. U	1,500 U	18,000. U	1,600. U	530. U	430. U
naphthalene	UG/KG	170 U	80. U	1,500 U	18,000. U	1,600. U	530 U	430. U
phenol	UG/KG	170. U	80. U	1,500 U	18,000. U	1,600. U	530 U	430. U
naphthalene	UG/KG	15. J	9.4 J	1,500. U	18,000 U	1,600 U	530 U	430. U
phenol	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600 U	530. U	430. U
iline	UG/KG	410. U	190. U	3,600. U	44,000. U	3,800 U	1,300 U	1,000. U
enol	UG/KG	170. U	80 U	1,500 U	18,000 U	1,600. U	530 U	430. U
lorobenzidine	UG/KG	170. U	80. U	1,500 U	18,000. U	1,600. U	530. U	430. U
iline	UG/KG	410. U	190. U	3,600. U	44,000. U	3,800. U	1,300 U	1,000. U
o-2-methylphenol	UG/KG	410. U	190. U	3,600 U	44,000. U	3,800 U	1,300 U	1,000. U
phenyl phenyl ether	UG/KG	170. U	80. U	1,500 U	18,000 U	1,600. U	530 U	430. U
3-methylphenol	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530 U	430. U

Table D-2
Seneca Army Depot
SEAD-71 ESI and Phase I RI Soil Data

	STUDY ID:	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1
	SDG	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71
	ES ID	SS71-3	SS71-4	SS71-5	SS71-6	SS71-7	SS71-7	SS71-8
	SAMP_ID:	71015	71016	71029	71028	71026	71203	71019
	FIELD QC COD	SA	SA	SA	SA	SA	DU	SA
	SAMP. DETH T	0	0	0	0	0	0	0
	SAMP. DEPTH	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	MATRIX:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	SAMP. DATE:	19-Nov-97	19-Nov-97	21-Nov-97	21-Nov-97	20-Nov-97	20-Nov-97	19-Nov-97
OUND	UNIT							
oaniline	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
ophenyl phenyl ether	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
ylphenol	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
niline	UG/KG	410. U	190. U	3,600. U	44,000. U	3,800. U	1,300. U	1,000. U
henol	UG/KG	410. U	190. U	3,600. U	44,000. U	3,800. U	1,300. U	1,000. U
hthene	UG/KG	52. J	5.5 J	290. J	2,600. J	1,600. U	530. U	96. J
hthylene	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	220. J	73. J
ene	UG/KG	120. J	12. J	590. J	10,000. J	2,600.	730.	240. J
a]anthracene	UG/KG	[redacted]	70. J	[redacted]	[redacted]	[redacted]	[redacted] J	[redacted]
a]pyrene	UG/KG	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
b]fluoranthene	UG/KG	950.	130.	[redacted]	[redacted]	[redacted] J	[redacted] J	[redacted]
ghi]perylene	UG/KG	310.	69. J	2,300.	31,000.	5,100.	2,700.	940.
k]fluoranthene	UG/KG	170. U	80. U	[redacted]	[redacted]	1,600. U	530. U	[redacted]
hloroethoxy)methane	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
hloroethyl)ether	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
hloroisopropyl)ether	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
thylhexyl)phthalate	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
nzylphthalate	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
ole	UG/KG	160. J	15. J	1,300. J	16,000. J	2,500.	1,100.	510.
ne	UG/KG	[redacted]	80.	[redacted]	[redacted]	[redacted] J	[redacted] J	[redacted]
tylphthalate	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
tylphthalate	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
[a,h]anthracene	UG/KG	[redacted] J	[redacted] J	[redacted] J	[redacted] J	[redacted]	[redacted]	[redacted] J
ofuran	UG/KG	22. J	80. U	190. J	1,300. J	1,600. U	87. J	75. J
phthalate	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
ylphthalate	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
thene	UG/KG	1,200.	140.	12,000.	[redacted]	37,000. J	14,000. J	2,400.
e	UG/KG	38. J	4.7 J	290. J	3,200. J	230. J	75. J	100. J
lorobenzene	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
lorobutadiene	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
lorocyclopentadiene	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
loroethane	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
1,2,3-cd]pyrene	UG/KG	310.	57. J	2,100.	[redacted]	[redacted]	2,700.	780.
rone	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
sodiphenylamine	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
sodipropylamine	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
alene	UG/KG	11. J	10. J	1,500. U	18,000. U	1,600. U	120. J	430. U
nzene	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
hlorophenol	UG/KG	410. U	190. U	3,600. U	44,000. U	3,800. U	1,300. U	1,000. U
threne	UG/KG	530.	50. J	5,700.	49,000.	5,200.	2,100.	860.
	UG/KG	170. U	80. U	1,500. U	18,000. U	1,600. U	530. U	430. U
	UG/KG	950.	110.	9,400.	[redacted]	35,000. J	14,000. E	1,900.
CIDES/PCBS								
DD	UG/KG	4.2 U	3.2 J	37. U	50.	40. U	40. U	4.3 U
DE	UG/KG	21.	19.	45.	99.	21. J	20. J	19.
DT	UG/KG	19.	16	37. U	250.	220.	210.	77.
	UG/KG	2.2 U	2. U	19. U	19. U	20. U	20. U	2.2 U
BHC	UG/KG	2.2 U	2. U	14. J	19. U	20. U	20. U	2.2 U
Chlordane	UG/KG	2.2 U	2. U	19. U	19. U	20. U	20. U	2.2 U
-1016	UG/KG	42. U	40. U	370. U	370. U	400. U	400. U	43. U
-1221	UG/KG	86. U	81 U	750. U	740. U	810. U	810. U	87. U
-1232	UG/KG	42. U	40. U	370. U	370. U	400. U	400. U	43. U
-1242	UG/KG	42. U	40. U	370. U	370. U	400. U	400. U	43. U
-1248	UG/KG	42. U	40. U	370. U	370. U	400. U	400. U	43. U
-1254	UG/KG	42. U	40. U	370. U	370. U	400. U	400. U	43. U
-1260	UG/KG	42. U	40. U	370. U	370. U	400. U	400. U	43. U
HC	UG/KG	2.2 U	2. U	19. U	19. U	20. U	20. U	2.2 U
HC	UG/KG	2.2 U	2. U	19. U	19. U	20. U	20. U	2.2 U

Table D-2
Seneca Army Depot
SEAD-71 ESI and Phase I RI Soil Data

	STUDY ID:	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1
	SDG	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71
	ES ID	SS71-3	SS71-4	SS71-5	SS71-6	SS71-7	SS71-7	SS71-8
	SAMP_ID:	71015	71016	71029	71028	71026	71203	71019
	FIELD QC COD	SA	SA	SA	SA	SA	DU	SA
	SAMP. DETH T	0	0	0	0	0	0	0
	SAMP. DEPTH	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	MATRIX:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	SAMP. DATE:	19-Nov-97	19-Nov-97	21-Nov-97	21-Nov-97	20-Nov-97	20-Nov-97	19-Nov-97
UND	UNIT							
	UG/KG	4.2 U	4. U	37. U	37 U	40. U	40. U	4.3 U
an I	UG/KG	2.2 U	2 U	19. U	19. U	20. U	20. U	2.2 U
an II	UG/KG	4.2 U	4. U	37. U	50.	52.	40. U	4.3 U
an sulfate	UG/KG	4. J	4 U	37. U	36. J	62.	40. U	4.6
	UG/KG	4.2 U	4. U	37. U	54.	40. U	40. U	4.3 U
dehyde	UG/KG	8.3	4.	37. U	120.	86.	46.	6.1
etone	UG/KG	6.4	4. U	23. J	120.	62.	44.	11.
BHC/Lindane	UG/KG	2.2 U	2. U	19. U	19. U	20. U	20. U	2.2 U
Chlordane	UG/KG	2.2 U	2. U	19. U	19. U	20. U	20. U	2.2 U
or	UG/KG	2.2 U	2. U	19. U	19. U	20. U	20. U	2.2 U
or epoxide	UG/KG	2.2 U	1.5 J	19. U	[redacted]	12. J	15. J	2.2 U
chlor	UG/KG	22. U	20. U	520.	170. J	200. U	200. U	62.
ne	UG/KG	220. U	200. U	1,900. U	1,900. U	2,000. U	2,000. U	220. U
n	MG/KG	12,500.	13,400.	2,060.	2,860.	3,020.	3,040.	13,600.
y	MG/KG	85 UJ	.82 UJ	5.2 J	.76 UJ	.78 UJ	1.2 J	.84 UJ
	MG/KG	4.6	4.7	[redacted]	4.8	2.5	2.4	5.9
	MG/KG	75.4 J	76.9 J	42.1 J	39.9 J	48.6 J	48.7 J	101. J
	MG/KG	.41	.44	.02 U	.11	.16	.16	.38
n	MG/KG	.07 UJ	.07 UJ	.07 UJ	1.1 J	.07 UJ	.07 UJ	.07 UJ
	MG/KG	27,100.	43,200.	[redacted]	[redacted]	4,210.	9,990.	27,300.
m	MG/KG	18. J	19.5 J	[redacted] J	14.6 J	10.2 J	12.6 J	22.2 J
	MG/KG	9.4	11.2	7.8	6.4	5.6	5.	11.5
	MG/KG	[redacted] J	24.9 J	[redacted] J	18.4 J	27.5 J	[redacted] J	23.6 J
	MG/KG	.73 U	.61 U	.58 U	.58 U	.65 U	.62 U	.71 U
	MG/KG	22,800.	24,900.	[redacted]	11,000.	9,050.	10,200.	27,200.
	MG/KG	[redacted] J	[redacted] J	[redacted] J	[redacted] J	[redacted] J	[redacted] J	[redacted] J
um	MG/KG	8,250.	10,200.	[redacted]	18,500.	900.	1,660.	6,820.
se	MG/KG	482. J	510. J	520. J	427. J	175. J	188. J	743. J
	MG/KG	.06 UJ	.05 UJ	.05 UJ	.05 UJ	.05 J	.06 J	.06 UJ
	MG/KG	25.1	30.6	33.6	16.4	16.8	14.2	26.9
m	MG/KG	1,960	1,810.	918.	1,240.	574.	510.	1,750.
	MG/KG	1.1 UJ	1.1 UJ	1.7 J	1. UJ	1. UJ	1.1 J	1.1 UJ
	MG/KG	.51 UJ	.49 UJ	.46 UJ	.46 UJ	.47 UJ	.47 UJ	.51 UJ
	MG/KG	[redacted]	[redacted]	[redacted]	[redacted]	135. U	[redacted]	[redacted]
	MG/KG	1.5 U	1.5 U	1.4 U	1.4 U	1.4 U	1.4 U	1.5 U
n	MG/KG	20.	19.6	9.2	11.	15.6	11.6	19.8
	MG/KG	105 J	352. UJ	[redacted] J	94.4 J	[redacted] J	[redacted] J	[redacted] J
ANALYSES	MG/KG							
roleum Hydrocarbons	MG/KG	100.	53.6	29.	174.	78.6	89.	292.
itrite Nitrogen		2.6	2.06	.33	.52	30.2	28.9	.03

Table D-2
Seneca Army Depot
SEAD-71 ESI and Phase I RI Soil Data

	STUDY ID:	ESI	ESI	ESI	ESI	ESI	ESI	ESI
	SDG	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71
	ES ID	TP71-1	TP71-1	TP71-1	TP71-1	TP71-2	TP71-2	TP71-2
	SAMP_ID:	TP71-1-1	TP71-1-2	TP71-1-3	TP71-1-4	TP71-2-1	TP71-2-2	TP71-2-3
	FIELD QC COD	SA	SA	SA	SA	SA	SA	SA
	SAMP. DETH T	3	3	3	4	1	2	2
	SAMP. DEPTH	3	3	3	4	1	2	3.3
	MATRIX:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	SAMP. DATE:	07-Jun-94	07-Jun 94	07-Jun-94	07-Jun-94	07-Jun-94	07-Jun-94	07-Jun-94
OUND	UNIT							
ILE ORGANICS								
richloroethane	UG/KG	4 J	7 J	10 J	23.	11 U	11. U	3. J
-Tetrachloroethane	UG/KG	12. U	12 U	11 U	12. U	11 U	11. U	12. U
richloroethane	UG/KG	12 U	12. U	11. U	12 U	11 U	11. U	12. U
hloroethane	UG/KG	12 U	12. U	11 U	12 U	11. U	11 U	12. U
hloroethene	UG/KG	12 U	12 U	11. U	12. U	11 U	11. U	12 U
hloroethane	UG/KG	12. U	12 U	11 U	12. U	11. U	11. U	12 U
hloroethene (total)	UG/KG	12 U	12. U	11 U	12. U	11. U	11. U	12 U
hloropropane	UG/KG	12 U	12. U	11 U	12. U	11. U	11. U	12. U
e	UG/KG	12. U	12 U	11 U	12. U	11. U	11. U	12 U
ne	UG/KG	12. U	12. U	11 U	12 U	11. U	11. U	12 U
ichloromethane	UG/KG	12. U	12. U	11 U	12 U	11. U	11. U	12. U
orm	UG/KG	12. U	12 U	11 U	12 U	11. U	11. U	12 U
disulfide	UG/KG	12. U	12 U	11 U	12. U	11. U	11. U	12. U
tetrachloride	UG/KG	12. U	12 U	11 U	12 U	11. U	11. U	12 U
enzene	UG/KG	12. U	12. U	11 U	12. U	11 U	11. U	12. U
ibromomethane	UG/KG	12 U	12 U	11 U	12. U	11 U	11. U	12 U
thane	UG/KG	12 U	12. U	11 U	12. U	11. U	11 U	12. U
orm	UG/KG	12. U	12 U	11 U	12. U	11. U	11. U	12. U
-Dichloropropene	UG/KG	12. U	12 U	11. U	12. U	11. U	11. U	12. U
enzene	UG/KG	12 U	12 U	11 U	12. U	11 U	11. U	12 U
bromide	UG/KG	12. U	12. U	11 U	12. U	11 U	11. U	12. U
butyl ketone	UG/KG	12. U	12. U	11 U	12. U	11. U	11. U	12 U
chloride	UG/KG	12. U	12. U	11 U	12 U	11. U	11. U	12. U
ethyl ketone	UG/KG	12. U	12. U	11 U	12 U	11. U	11. U	12. U
isobutyl ketone	UG/KG	12. U	12. U	11 U	12. U	11 U	11. U	12 U
ene chloride	UG/KG	2. J	2. J	2. J	2. J	2. J	2. J	3 J
	UG/KG	12. U	12. U	11. U	12. U	11. U	11. U	12. U
loroethene	UG/KG	1. J	1. J	3. J	12. U	11. U	11. U	12. U
e	UG/KG	12. U	12. U	11 U	12. U	11. U	11. U	12. U
ylenes	UG/KG	12. U	12 U	11 U	12. U	11. U	11. U	12. U
,3-Dichloropropene	UG/KG	12 U	12 U	11 U	12 U	11. U	11. U	12. U
roethene	UG/KG	12. U	12. U	11 U	12 U	11. U	11. U	12. U
hloride	UG/KG	12. U	12. U	11 U	12 U	11 U	11. U	12 U
OLATILE ORGANICS								
richlorobenzene	UG/KG	19,000. U	500. U	370 U	390. U	1,500. U	380. U	420. U
hlorobenzene	UG/KG	19,000. U	500 U	370. U	390. U	1,500. U	380 U	420. U
hlorobenzene	UG/KG	19,000. U	500 U	370. U	390. U	1,500. U	380. U	420. U
hlorobenzene	UG/KG	19,000. U	500 U	370. U	390. U	1,500. U	380. U	420. U
ybis(1-Chloropropane)	UG/KG	19,000. U	500. U	370 U	390 U	1,500. U	380. U	420. U
richlorophenol	UG/KG	45,000. U	1,200. U	900. U	940. U	3,800. U	930. U	1,000. U
richlorophenol	UG/KG	19,000. U	500 U	370. U	390 U	1,500 U	380. U	420. U
hlorophenol	UG/KG	19,000. U	500. U	370. U	390 U	1,500. U	380. U	420. U
ethylphenol	UG/KG	19,000. U	500 U	370. U	390. U	1,500. U	380. U	420. U
itrophenol	UG/KG	45,000. U	1,200 U	900 U	940 U	3,800. U	930. U	1,000. U
itrotoluene	UG/KG	19,000. U	500 U	370. U	390. U	1,500. U	380 U	420. U
itrotoluene	UG/KG	19,000. U	500 U	370 U	390 U	1,500. U	380. U	420. U
ronaphthalene	UG/KG	19,000. U	500. U	370. U	390. U	1,500. U	380. U	420. U
rophenol	UG/KG	19,000. U	500. U	370. U	390. U	1,500 U	380 U	420. U
ylnaphthalene	UG/KG	19,000. U	29 J	370. U	390 U	1,500 U	380 U	420. U
ylphenol	UG/KG	19,000. U	500 U	370. U	390. U	1,500. U	380 U	420. U
aniline	UG/KG	45,000. U	1,200. U	900. U	940. U	3,800. U	930. U	1,000. U
phenol	UG/KG	19,000. U	500. U	370. U	390. U	1,500. U	380. U	420. U
chlorobenzidine	UG/KG	19,000. U	500. U	370. U	390. U	1,500. U	380. U	420. U
aniline	UG/KG	45,000. U	1,200 U	900. U	940. U	3,600. U	930. U	1,000. U
itro-2-methylphenol	UG/KG	45,000. U	1,200. U	900 U	940. U	3,600. U	930. U	1,000. U
ophenyl phenyl ether	UG/KG	19,000. U	500. U	370. U	390. U	1,500. U	380. U	420. U
o-3-methylphenol	UG/KG	19,000. U	500 U	370. U	390. U	1,500. U	380. U	420. U

Table D-2
Seneca Army Depot
SEAD-71 ESI and Phase I RI Soil Data

	STUDY ID:	ESI	ESI	ESI	ESI	ESI	ESI	ESI
	SDG	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71
	ES ID	TP71-1	TP71-1	TP71-1	TP71-1	TP71-2	TP71-2	TP71-2
	SAMP_ID:	TP71-1-1	TP71-1-2	TP71-1-3	TP71-1-4	TP71-2-1	TP71-2-2	TP71-2-3
	FIELD QC COD	SA	SA	SA	SA	SA	SA	SA
	SAMP. DETH T	3	3	3	4	1	2	2
	SAMP. DEPTH	3	3	3	4	1	2	3.3
	MATRIX:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	SAMP. DATE:	07-Jun-94	07-Jun-94	07-Jun-94	07-Jun-94	07-Jun-94	07-Jun-94	07-Jun-94
UND	UNIT							
niline	UG/KG	19,000. U	500. U	370. U	390. U	1,500. U	380. U	420 U
henyl phenyl ether	UG/KG	19,000. U	500 U	370 U	390. U	1,500. U	380. U	420 U
henol	UG/KG	19,000. U	500 U	370. U	390. U	1,500. U	380. U	420 U
line	UG/KG	45,000. U	1,200. U	900 U	940. U	3,600. U	930. U	1,000. U
enol	UG/KG	45,000. U	1,200. U	900. U	940. U	3,600. U	930. U	1,000. U
hene	UG/KG	5,800. J	280. J	76. J	38. J	1,500. U	380. U	420 U
hylene	UG/KG	19,000 U	500 U	370. U	390 U	1,500. U	380. U	420. U
ne	UG/KG	11,000. J	560.	120. J	59. J	1,500. U	380. U	420. U
anthracene	UG/KG	[redacted]	[redacted]	[redacted]	180. J	[redacted]	[redacted] J	420. U
yrene	UG/KG	[redacted]	750.	[redacted]	[redacted] J	[redacted] J	[redacted] J	420. U
fluoranthene	UG/KG	[redacted]	930	710.	130. J	750. J	400.	420. U
i]peryiene	UG/KG	10,000. J	500	500.	82. J	370. J	150. J	420 U
fluoranthene	UG/KG	[redacted] J	570.	490.	140. J	490. J	240. J	420. U
oroethoxy)methane	UG/KG	19,000. U	500 U	370. U	390. U	1,500. U	380 U	420. U
oroethyl)ether	UG/KG	19,000. U	500 U	370. U	390. U	1,500. U	380. U	420. U
oroisopropyl)ether	UG/KG							
ylhexyl)phthalate	UG/KG	19,000. U	500. U	370. U	390. U	1,500. U	380. U	420. U
ylphthalate	UG/KG	19,000. U	500. U	370. U	390. U	1,500. U	380. U	420. U
e	UG/KG	9,500. J	360. J	100. J	30. J	1,500. U	380. U	420. U
	UG/KG	[redacted]	[redacted]	[redacted]	220. J	[redacted] J	360. J	420. U
lphthalate	UG/KG	19,000. U	500. U	370. U	390. U	1,500. U	380. U	420. U
lphthalate	UG/KG	19,000. U	500. U	370. U	390. U	1,500. U	380. U	420. U
h]anthracene	UG/KG	[redacted] J	[redacted] J	[redacted] J	[redacted] J	[redacted] J	[redacted] J	420. U
uran	UG/KG	19,000. U	120. J	370. U	390. U	1,500. U	380. U	420. U
thalate	UG/KG	19,000. U	500 U	370. U	390. U	1,500. U	380. U	420. U
hthalate	UG/KG	19,000. U	500. U	370. U	390. U	1,500. U	380. U	420. U
ene	UG/KG	[redacted]	2,600	1,400.	330. J	690. J	580.	63. J
	UG/KG	2,800. J	230. J	56. J	390. U	1,500. U	380. U	420. U
robenzene	UG/KG	19,000 U	500. U	370. U	390. U	1,500. U	380. U	420. U
robutadiene	UG/KG	19,000. U	500. U	370. U	390. U	1,500. U	380. U	420. U
rocyclopentadiene	UG/KG	19,000. U	500. U	370. U	390. U	1,500. U	380. U	420. U
roethane	UG/KG	19,000. U	500. U	370. U	390. U	1,500. U	380. U	420. U
2,3-cd]pyrene	UG/KG	[redacted] J	390 J	520.	88. J	430. J	220. J	420. U
ne	UG/KG	19,000. U	500. U	370. U	390. U	1,500. U	380. U	420. U
diphenylamine	UG/KG	19,000. U	500 U	370. U	390 U	1,500. U	380. U	420. U
dipropylamine	UG/KG	19,000. U	500. U	370. U	390. U	1,500. U	380. U	420. U
ene	UG/KG	19,000. U	77. J	370. U	29. J	1,500. U	380. U	420. U
zene	UG/KG	19,000. U	500. U	370. U	390. U	1,500. U	380. U	420. U
orophenol	UG/KG	45,000. U	1,200. U	900. U	940. U	3,600. U	930. U	1,000. U
rene	UG/KG	[redacted]	1,900.	770.	260. J	270. J	180. J	30. J
	UG/KG	19,000. U	500 U	370. U	390. U	1,500. U	380. U	420. U
	UG/KG	[redacted]	1,600.	2,000.	390.	1,000. J	660.	73. J
DES/PCBS								
	UG/KG	37 U	3.7 U	3.7 U	3.9 U	3.4 J	3.8 U	4.2 U
	UG/KG	37. U	3.7 U	3.1 J	4.2 J	3.7 U	3.8 U	4.2 U
	UG/KG	37 U	3.7 U	8.4	13.	2.7 J	3.8 U	4.2 U
	UG/KG	19. U	1.9 U	1.9 U	2. U	1.9 U	2. U	2.2 U
HC	UG/KG	19 U	1.9 U	1.9 U	2. U	1.9 U	2. U	2.2 U
lordane	UG/KG	74. J	1.9 U	1.9 U	2. U	2. J	2. U	2.2 U
016	UG/KG	370 U	37. U	37. U	39. U	37. U	38. U	42. U
221	UG/KG	750. U	76. U	75. U	79. U	78. U	78. U	86 U
232	UG/KG	370. U	37 U	37. U	39. U	37. U	38. U	42. U
242	UG/KG	370. U	37. U	37. U	39. U	37. U	38. U	42. U
248	UG/KG	370. U	37. U	37. U	39. U	37. U	38. U	42. U
254	UG/KG	370. U	37. U	37. U	39. U	37. U	38. U	42. U
260	UG/KG	370. U	37. U	37. U	39. U	37. U	38. U	42. U
C	UG/KG	19. U	1.9 U	1.9 U	2. U	1.9 U	2. U	2.2 U
C	UG/KG	19. U	1.9 U	1.9 U	2. U	1.9 U	2. U	2.2 U

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Seneca Army Depot
SEAD-71 ESI and Phase I RI Soil Data

	STUDY ID:	ESI	ESI	ESI	ESI	ESI	ESI	ESI
	SDG	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71
	ES ID	TP71-1	TP71-1	TP71-1	TP71-1	TP71-2	TP71-2	TP71-2
	SAMP_ID:	TP71-1-1	TP71-1-2	TP71-1-3	TP71-1-4	TP71-2-1	TP71-2-2	TP71-2-3
	FIELD QC COD	SA	SA	SA	SA	SA	SA	SA
	SAMP. DETH T	3	3	3	4	1	2	2
	SAMP. DEPTH	3	3	3	4	1	2	3.3
	MATRIX:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	SAMP. DATE:	07-Jun-94	07-Jun-94	07-Jun-94	07-Jun-94	07-Jun-94	07-Jun-94	07-Jun-94
UND	UNIT							
	UG/KG	37 U	3.5 J	3.7 U	3.9 U	3.7 U	3.8 U	4.2 U
an I	UG/KG	200 J	3.5	6.6 J	2.8 J	5.1 J	6.9 J	2.2 U
an II	UG/KG	26 J	2.5 J	3.7 U	3.9 U	2. J	3.8 U	4.2 U
an sulfate	UG/KG	37 U	3.7 U	3.7 U	3.9 U	2.2 J	3.8 U	4.2 U
	UG/KG	29. J	3.7 U	3.7 U	3.9 U	3.7 U	3.8 U	4.2 U
dehyde	UG/KG	37. U	3.7 U	3.7 U	3.9 U	3.7 U	3.8 U	4.2 U
etone	UG/KG	37. U	3.7 U	3.7 U	3.9 U	3.7 U	3.8 U	4.2 U
BHC/Lindane	UG/KG	19. U	1.9 U	1.9 U	2. U	1.9 U	2. U	2.2 U
Chlordane	UG/KG	19. U	1.9 U	1.9 U	2. U	1.9 U	2. U	2.2 U
lor	UG/KG	19. U	1.2 J	1.9 U	2. U	1.9 U	2. U	2.2 U
lor epoxide	UG/KG	19. U	1.9 U	1.9 U	2. U	1.9 U	2. U	2.2 U
chlor	UG/KG	190. U	19. U	19. U	20. U	19. U	20. U	22. U
ne	UG/KG	1,900. U	190. U	190. U	200. U	190. U	200. U	220. U
n	MG/KG	12,900.	13,100.	10,900.	9,960.	9,630.	12,500.	18,000.
	MG/KG	.19 J	.27 UJ	.23 UJ	.47 J	.21 J	.18 UJ	.23 UJ
	MG/KG	5.4	5.1	5.2	4.8	4.2	4.8	7.6
	MG/KG	86.2	69.2	69.8	63.5	37.5	57.6	108.
	MG/KG	.58 J	.56 J	.53 J	.47 J	.44 J	.48 J	.88 J
n	MG/KG	.53 J	.39 J	.45 J	.45 J	.44 J	.43 J	.45 J
	MG/KG	38,000. J	52,800. J	32,200. J	36,500. J	10,500. J	37,200. J	4,260. J
m	MG/KG	18.4	17.9	16.3	15.5	18.1	16.7	25.8
	MG/KG	9.4	9.3 J	9.7	8.7 J	11.4	9.	14.8
	MG/KG	25.4	19.	23.	26.7	[redacted]	17.5	[redacted]
	MG/KG	.54 U	.46 U	.5 U	.35 U	.54 U	.44 U	.54 U
	MG/KG	23,600.	22,700.	21,600.	20,000.	22,400.	22,100.	32,700.
	MG/KG	[redacted]	10.3	[redacted]	[redacted]	[redacted]	11.2	15.3
um	MG/KG	8,690.	7,910.	8,840.	9,180.	4,830.	13,100.	6,680.
ese	MG/KG	497.	390.	474.	458.	255.	434.	749.
	MG/KG	.03 J	.03 J	.03 J	.03 J	.04 J	[redacted]	.04 J
	MG/KG	26.8	25.2	24.9	24.6	42.5	23.2	38.8
m	MG/KG	1,340. J	1,540. J	1,230. J	1,520. J	992. J	1,010. J	1,830. J
n	MG/KG	.43 J	.57 U	.47 U	.56 U	.91	.37 U	.61 J
	MG/KG	.07 UJ	.11 UJ	.09 UJ	.1 UJ	.06 UJ	.07 UJ	.09 UJ
	MG/KG	54.9 J	108. J	140. J	90.7 J	50. J	45.6 J	17.6 U
	MG/KG	.25 U	.4 U	.33 U	.4 U	.24 U	.26 U	.34 U
m	MG/KG	19.7	20.1	17.9	18.2	15.4	19.2	29.2
	MG/KG	96.2	63.9	86.1	79.7	[redacted]	58.9	71.8
ANALYSES	MG/KG							
troleum Hydrocarbons	MG/KG							
itrite Nitrogen								

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Seneca Army Depot
SEAD-71 ESI and Phase I RI Soil Data

	STUDY ID	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1
	SDG	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71
	ES ID	TP71-3-1	TP71-3-2	TP71-4-2	TP71-5-1	TP71-6-1
	SAMP_ID:	71002	71003	71006	71007	71010
	FIELD QC COD	SA	SA	SA	SA	SA
	SAMP DETH T	0	10 5	10	7	12.5
	SAMP. DEPTH	8	11	10.5	7 5	13
	MATRIX:	SOIL	SOIL	SOIL	SOIL	SOIL
	SAMP DATE	14-Oct-97	14-Oct-97	14-Oct-97	14-Oct-97	15-Oct-97
ND	UNIT					
E ORGANICS						
hloroethane	UG/KG	11 U	110 U	12 U	12 U	4. J
etrachloroethane	UG/KG	11 U	110 U	12. U	12 U	12. U
hloroethane	UG/KG	11 U	110 U	12 U	12. U	12 U
roethane	UG/KG	11 U	110 U	12. U	12. U	12. U
roethene	UG/KG	11 U	110 U	12. U	12 U	12. U
roethane	UG/KG	11 U	110 U	12. U	12. U	12. U
roethene (total)	UG/KG	11 U	110 U	12. U	12. U	12. U
ropropane	UG/KG	11 U	110 U	12 U	12 U	12. U
	UG/KG	11. U	110 U	12. U	12. U	12 U
	UG/KG	11 U	110 U	12. U	12 U	12. U
hloromethane	UG/KG	11 U	110. U	12 U	12. U	12. U
m	UG/KG	11 U	110. U	12. U	12. U	12. U
sulfide	UG/KG	11 U	110. U	12. U	12. U	12. U
trachloride	UG/KG	11. U	110. U	12 U	12 U	12. U
nzene	UG/KG	11 U	110 U	12. U	12 U	12. U
romomethane	UG/KG	11. U	110 U	12 U	12. U	12 U
ane	UG/KG	11 U	110 U	12. U	12 U	12 U
n	UG/KG	11 U	110 U	12. U	12 U	12. U
chloropropene	UG/KG	11 U	110. U	12. U	12. U	12. U
zene	UG/KG	11 U	110. U	12. U	12 U	12. U
omide	UG/KG	11 U	110 U	12. U	12 U	12. U
tyl ketone	UG/KG	11. U	110 U	12 U	12. U	12. U
loride	UG/KG	11 U	110 U	12. U	12. U	12 U
yl ketone	UG/KG	11. U	110 U	12 U	12. U	12. U
butyl ketone	UG/KG	11 U	110 U	12. U	12. U	12. U
e chloride	UG/KG	11 U	110 U	12. U	12 U	12 U
	UG/KG	11 U	110 U	12 U	12. U	12. U
roethene	UG/KG	11 U	110. U	12. U	12. U	12. U
	UG/KG	11. U	110. U	12. U	12. U	12. U
nes	UG/KG	3. J	96. J	12. U	12. U	12. U
-Dichloropropene	UG/KG	11. U	110 U	12. U	12. U	12. U
thene	UG/KG	11 U	110. U	12. U	12. U	12. U
ride	UG/KG	11. U	110 U	12. U	12. U	12. U
ATILE ORGANICS						
hlorobenzene	UG/KG	66. U	760 U	78. U	78. U	78. U
robenzene	UG/KG	66 U	760. U	78 U	78. U	78. U
robenzene	UG/KG	66. U	760. U	78 U	78. U	78. U
robenzene	UG/KG	66. U	760 U	78. U	78. U	78. U
s(1-Chloropropane)	UG/KG					
hlorophenol	UG/KG	160. U	1,800 U	190. U	190. U	190. U
hlorophenol	UG/KG	66 U	760 U	78 U	78 U	78. U
rophenol	UG/KG	66 U	760 U	78. U	78. U	78. U
hylphenol	UG/KG	66 U	760 U	78. U	78. U	78 U
ophenol	UG/KG	160 U	1,800. U	190. U	190. U	190 U
otoluene	UG/KG	66 U	760 U	78 U	78. U	78. U
otoluene	UG/KG	66. U	760. U	78. U	78. U	78. U
aphthalene	UG/KG	66 U	760 U	78 U	78. U	78 U
henol	UG/KG	66 U	760 U	78. U	78 U	78. U
aphthalene	UG/KG	520.	31,000. J	78. U	78. U	78. U
henol	UG/KG	66 U	760 U	78. U	78. U	78. U
line	UG/KG	160. U	1,800 U	190 U	190. U	190. U
enol	UG/KG	66. U	760 U	78. U	78. U	78. U
orobenzidine	UG/KG	66. U	760 U	78. U	78. UJ	78. UJ
line	UG/KG	160. U	1,800 U	190. UJ	190. UJ	190. U
o-2-methylphenol	UG/KG	160. U	1,800 U	190. U	190. U	190. U
henyl phenyl ether	UG/KG	66. U	760 U	78. U	78. U	78. U
3-methylphenol	UG/KG	66 U	760 U	78. U	78. U	78. U

Table D-2
Seneca Army Depot
SEAD-71 ESI and Phase I RI Soil Data

	STUDY ID:	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1
	SDG	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71
	ES ID	TP71-3-1	TP71-3-2	TP71-4-2	TP71-5-1	TP71-6-1
	SAMP_ID:	71002	71003	71006	71007	71010
	FIELD QC COD	SA	SA	SA	SA	SA
	SAMP. DETH T	0	10.5	10	7	12.5
	SAMP. DEPTH	8	11	10.5	7.5	13
	MATRIX:	SOIL	SOIL	SOIL	SOIL	SOIL
	SAMP DATE:	14-Oct-97	14-Oct-97	14-Oct-97	14-Oct-97	15-Oct-97
OUND	UNIT					
oaniline	UG/KG	66. U	760. U	78. U	78. U	78. U
ophenyl phenyl ether	UG/KG	66. U	760. U	78. U	78. U	78. U
ylphenol	UG/KG	66. U	760. U	78. U	78. U	78. U
niline	UG/KG	160. U	1,800. U	190. UJ	190. UJ	190. UJ
henol	UG/KG	160. U	1,800. U	190. U	190. U	190. U
hthene	UG/KG	830. J	13,000. J	78. U	78. U	78. U
hthylene	UG/KG	66. U	340. J	78. U	78. U	78. U
cene	UG/KG	48. J	590. J	78. U	78. U	78. U
a]anthracene	UG/KG	32. J	240. J	78. U	18. J	3.9 J
a]pyrene	UG/KG	66. U	160. J	78. U	19. J	3.9 J
b]fluoranthene	UG/KG	66. U	130. J	78. U	21. J	4.4 J
ghi]perylene	UG/KG	66. U	76. J	78. U	12. J	78. U
k]fluoranthene	UG/KG	66. U	98. J	78. U	24. J	4.6 J
hloroethoxy)methane	UG/KG	66. U	760. U	78. U	78. U	78. U
hloroethyl)ether	UG/KG	66. U	760. U	78. U	78. U	78. U
hloroisopropyl)ether	UG/KG	66. U	760. U	78. U	78. U	78. U
thylhexyl)phthalate	UG/KG	66. U	760. U	7.8 J	15. J	7.6 J
nzylphthalate	UG/KG	66. U	760. U	78. U	78. U	78. U
ole	UG/KG	40. J	380. J	78. U	4.2 J	78. U
ne	UG/KG	49. J	290. J	78. U	28. J	4.6 J
tylphthalate	UG/KG	66. U	760. U	78. U	78. U	78. U
tylphthalate	UG/KG	66. U	760. U	78. U	78. U	78. U
a,h]anthracene	UG/KG	66. U	760. U	78. U	4.4 J	78. U
ofuran	UG/KG	670. J	[redacted] J	78. U	78. U	78. U
phthalate	UG/KG	66. U	760. U	78. U	78. U	78. U
ylphthalate	UG/KG	66. U	760. U	78. U	78. U	78. U
thene	UG/KG	220.	1,900.	78. U	52. J	6.9 J
e	UG/KG	270.	4,100.	78. U	78. U	78. U
lorobenzene	UG/KG	66. U	760. U	78. U	78. U	78. U
lorobutadiene	UG/KG	66. U	760. U	78. U	78. U	78. U
lorocyclopentadiene	UG/KG	66. U	760. U	78. U	78. U	78. U
loroethane	UG/KG	66. U	760. U	78. U	78. U	78. U
1,2,3-cd]pyrene	UG/KG	66. U	56. J	78. U	12. J	78. U
one	UG/KG	66. U	760. U	78. U	78. U	78. U
sodiphenylamine	UG/KG	66. U	760. U	78. U	78. U	78. U
sodipropylamine	UG/KG	66. U	760. U	78. U	78. U	78. U
alene	UG/KG	590. J	[redacted] J	78. U	78. U	78. U
nzene	UG/KG	66. U	760. U	78. U	78. U	78. U
hlorophenol	UG/KG	160. U	1,800. U	190. U	190. U	190. U
threne	UG/KG	350.	3,800.	78. U	24. J	78. U
	UG/KG	4.5 J	760. U	78. U	78. U	78. U
	UG/KG	370.	1,700.	78. U	44. J	6. J
CIDES/PCBS						
DD	UG/KG	3.9 U	3.8 U	3.9 U	3.9 U	3.9 U
DE	UG/KG	3.9 U	3.8 U	3.9 U	3.9 U	3.9 U
DT	UG/KG	3.9 U	5.1 J	3.9 U	3.9 U	3.9 U
	UG/KG	2. U	2. U	2. U	2. U	2. U
HC	UG/KG	2. U	2. U	2.9	4.9	18.
Chlordane	UG/KG	2. U	2. U	2. U	2. U	2. U
-1016	UG/KG	39. U	38. U	39. U	39. U	39. U
-1221	UG/KG	80. U	77. U	79. U	80. U	79. U
-1232	UG/KG	39. U	38. U	39. U	39. U	39. U
-1242	UG/KG	39. U	38. U	39. U	39. U	39. U
-1248	UG/KG	39. U	38. U	39. U	39. U	39. U
-1254	UG/KG	39. U	38. U	39. U	39. U	39. U
-1260	UG/KG	39. U	38. U	39. U	39. U	39. U
HC	UG/KG	2. U	2. U	2. U	2. J	2.7
HC	UG/KG	2. U	2. U	2. U	2. U	1.8 J

Table D-2
Seneca Army Depot
SEAD-71 ESI and Phase I RI Soil Data

	STUDY ID:	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1	RI Phase 1 Step 1
	SDG	SEAD-71	SEAD-71	SEAD-71	SEAD-71	SEAD-71
	ES ID	TP71-3-1	TP71-3-2	TP71-4-2	TP71-5-1	TP71-6-1
	SAMP_ID:	71002	71003	71006	71007	71010
	FIELD QC COD	SA	SA	SA	SA	SA
	SAMP. DETH T	0	10.5	10	7	12.5
	SAMP. DEPTH	8	11	10.5	7.5	13
	MATRIX:	SOIL	SOIL	SOIL	SOIL	SOIL
	SAMP. DATE:	14-Oct-97	14-Oct-97	14-Oct-97	14-Oct-97	15-Oct-97
UND	UNIT					
	UG/KG	3.9 U	3.8 U	3.9 U	3.9 U	3.9 U
an I	UG/KG	2. U	2. U	2. U	2. U	2. U
an II	UG/KG	3.9 U	3.8 U	3.9 U	3.9 U	3.9 U
an sulfate	UG/KG	3.9 U	3.8 U	3.9 U	3.9 U	3.9 U
	UG/KG	3.9 U	3.7 J	3.9 U	3.9 U	3.9 U
dehyde	UG/KG	3.9 U	7.2 J	3.9 U	3. J	3.9 U
tone	UG/KG	3.9 U	2.2 J	3.9 U	3.9 U	3.9 U
BHC/Lindane	UG/KG	2. U	2. U	2. U	2. U	4.
Chlordane	UG/KG	2. U	1.1 J	2. U	2. U	2. U
or	UG/KG	2. U	2. U	2. U	2. U	2. U
or epoxide	UG/KG	2. U	1.5 J	2. U	2. U	2. U
chlor	UG/KG	20. U	19. J	20. U	20. U	20. U
ne	UG/KG	200. U	200. U	200. U	200. U	200. U
n	MG/KG	8,090 J	8,430. J	14,500. J	12,400.	9,400.
	MG/KG	.56 UJ	.52 UJ	.68 UJ	.65 UJ	.64 UJ
	MG/KG	4.3	2.9	3.1	5.3	4.1
	MG/KG	51.3	60.6	94.1	78.1	48.8
	MG/KG	.21	.13	.56	.31	.31
n	MG/KG	.08 U	.07 U	.09 U	.09 U	.09 U
	MG/KG	[redacted]	66,100.	36,000.	42,800.	46,600.
m	MG/KG	12.9	13.9	21.2	17.6	14.5
	MG/KG	11.	7.	9.	9.4	8.6
	MG/KG	15.2	17.1	19.1	19.4	18.8
	MG/KG	.65 U	.67 U	.64 U	.6 UJ	.59 UJ
	MG/KG	18,000.	15,900.	21,600.	21,500.	19,200.
	MG/KG	8.9 J	7.6 J	9.8 J	16.	7.3
um	MG/KG	6,760. J	17,700. J	8,120. J	10,100.	10,100.
se	MG/KG	784 J	853. J	345. J	623.	345.
	MG/KG	.05 U	.05 U	.05 U	.05 U	.05 U
	MG/KG	26.2	21.	28.	24.1	23.3
m	MG/KG	1,120.	1,440.	2,940.	1,950.	1,340.
	MG/KG	.77 U	.72 U	.93 U	1.2	.88 U
	MG/KG	.21 U	.2 U	.26 U	.25 U	.24 U
	MG/KG	83.3 U	92.	109.	108. U	138.
	MG/KG	1.2 U	1.1 U	1.4 U	.92 UJ	.91 UJ
n	MG/KG	15.1	15.	24.9	20.2	14.8
	MG/KG	57. J	64.3 J	61.5 J	82.1	73.4
ANALYSES	MG/KG					
roleum Hydrocarbons	MG/KG	1,800.	9,060.	23.3 U	24.4 U	74.
itrite Nitrogen		.02	.06	.02	.21	.02

Table 4-1
Seneca Army Depot
SEAD-71 Phase I Remedial Investigation
Summary of Compounds Detected in Soil During
SEAD-71 ESI and Phase I RI

COMPOUND	UNIT	NUMBER OF ANALYSES	NUMBER OF DETECTIONS	FREQUENCY OF DETECTION	MAXIMUM VALUE	NUMBER ABOVE TAGM	TAGM
VOLATILE ORGANICS							
1,1,1-Trichloroethane	UG/KG	34	6	17.65%	23	0	800.
1,1,2,2-Tetrachloroethane	UG/KG	34	0	0.00%	0	0	600.
1,1,2-Trichloroethane	UG/KG	34	0	0.00%	0	0	
1,1-Dichloroethane	UG/KG	34	0	0.00%	0	0	200.
1,1-Dichloroethene	UG/KG	34	0	0.00%	0	0	400.
1,2-Dichloroethane	UG/KG	34	0	0.00%	0	0	100.
1,2-Dichloroethene (total)	UG/KG	34	0	0.00%	0	0	
1,2-Dichloropropane	UG/KG	34	0	0.00%	0	0	
Acetone	UG/KG	34	2	5.88%	74	0	200.
Benzene	UG/KG	34	1	2.94%	2	0	60.
Bromodichloromethane	UG/KG	34	0	0.00%	0	0	
Bromoform	UG/KG	34	0	0.00%	0	0	
Carbon disulfide	UG/KG	34	0	0.00%	0	0	2,700.
Carbon tetrachloride	UG/KG	34	0	0.00%	0	0	600.
Chlorobenzene	UG/KG	34	0	0.00%	0	0	1,700.
Chlorodibromomethane	UG/KG	34	0	0.00%	0	0	
Chloroethane	UG/KG	34	0	0.00%	0	0	1,900.
Chloroform	UG/KG	34	0	0.00%	0	0	300.
Cis-1,3-Dichloropropene	UG/KG	34	0	0.00%	0	0	
Ethyl benzene	UG/KG	34	2	5.88%	4	0	5,500.
Methyl bromide	UG/KG	34	0	0.00%	0	0	
Methyl butyl ketone	UG/KG	34	0	0.00%	0	0	
Methyl chloride	UG/KG	34	0	0.00%	0	0	
Methyl ethyl ketone	UG/KG	34	0	0.00%	0	0	300.
Methyl isobutyl ketone	UG/KG	34	0	0.00%	0	0	1,000.
Methylene chloride	UG/KG	34	9	26.47%	11	0	100.
Styrene	UG/KG	34	1	2.94%	1	0	
Tetrachloroethene	UG/KG	34	4	11.76%	33	0	1,400.
Toluene	UG/KG	34	8	23.53%	16	0	1,500.
Total Xylenes	UG/KG	34	4	11.76%	96	0	1,200.
Trans-1,3-Dichloropropene	UG/KG	34	0	0.00%	0	0	
Trichloroethene	UG/KG	34	0	0.00%	0	0	700.
Vinyl chloride	UG/KG	34	0	0.00%	0	0	200.
SEMIVOLATILE ORGANICS							
1,2,4-Trichlorobenzene	UG/KG	34	0	0.00%	0	0	3,400.
1,2-Dichlorobenzene	UG/KG	34	0	0.00%	0	0	7,900.
1,3-Dichlorobenzene	UG/KG	34	0	0.00%	0	0	1,600.
1,4-Dichlorobenzene	UG/KG	34	0	0.00%	0	0	8,500.
2,2'-oxybis(1-Chloropropane)	UG/KG	8	0	0.00%	0	0	
2,4,5-Trichlorophenol	UG/KG	34	0	0.00%	0	0	100.
2,4,6-Trichlorophenol	UG/KG	34	0	0.00%	0	0	
2,4-Dichlorophenol	UG/KG	34	0	0.00%	0	0	400.
2,4-Dimethylphenol	UG/KG	34	0	0.00%	0	0	
2,4-Dinitrophenol	UG/KG	34	0	0.00%	0	0	200.
2,4-Dinitrotoluene	UG/KG	34	0	0.00%	0	0	
2,6-Dinitrotoluene	UG/KG	34	0	0.00%	0	0	1,000.
2-Chloronaphthalene	UG/KG	34	0	0.00%	0	0	
2-Chlorophenol	UG/KG	34	0	0.00%	0	0	800.
2-Methylnaphthalene	UG/KG	34	14	41.18%	31000	0	36,400.
2-Methylphenol	UG/KG	34	0	0.00%	0	0	100.
2-Nitroaniline	UG/KG	34	0	0.00%	0	0	430.
2-Nitrophenol	UG/KG	34	0	0.00%	0	0	330.
3,3`-Dichlorobenzidine	UG/KG	34	0	0.00%	0	0	

Table 4-1
Seneca Army Depot
SEAD-71 Phase I Remedial Investigation
Summary of Compounds Detected in Soil During
SEAD-71 ESI and Phase I RI

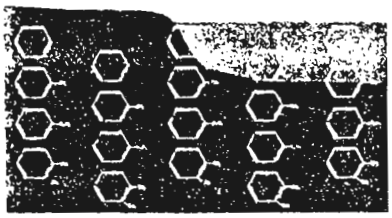
COMPOUND	UNIT	NUMBER OF ANALYSES	NUMBER OF DETECTIONS	FREQUENCY OF DETECTION	MAXIMUM VALUE	NUMBER ABOVE TAGM	TAGM
3-Nitroaniline	UG/KG	34	0	0.00%	0	0	500.
4,6-Dinitro-2-methylphenol	UG/KG	34	0	0.00%	0	0	
4-Bromophenyl phenyl ether	UG/KG	34	0	0.00%	0	0	
4-Chloro-3-methylphenol	UG/KG	34	0	0.00%	0	0	240.
4-Chloroaniline	UG/KG	34	0	0.00%	0	0	220.
4-Chlorophenyl phenyl ether	UG/KG	34	0	0.00%	0	0	
4-Methylphenol	UG/KG	34	0	0.00%	0	0	900.
4-Nitroaniline	UG/KG	34	0	0.00%	0	0	
4-Nitrophenol	UG/KG	34	0	0.00%	0	0	100.
Acenaphthene	UG/KG	34	24	70.59%	42000	0	50,000.
Acenaphthylene	UG/KG	34	5	14.71%	340	0	41,000.
Anthracene	UG/KG	34	27	79.41%	100000	3	50,000.
Benzo[a]anthracene	UG/KG	34	32	94.12%	150000	25	224.
Benzo[a]pyrene	UG/KG	34	31	91.18%	120000	29	61.
Benzo[b]fluoranthene	UG/KG	34	31	91.18%	88000	16	1,100.
Benzo[ghi]perylene	UG/KG	34	30	88.24%	62000	1	50,000.
Benzo[k]fluoranthene	UG/KG	34	24	70.59%	130000	13	1,100.
Bis(2-Chloroethoxy)methane	UG/KG	34	0	0.00%	0	0	
Bis(2-Chloroethyl)ether	UG/KG	34	0	0.00%	0	0	
Bis(2-Chloroisopropyl)ether	UG/KG	34	0	0.00%	0	0	
Bis(2-Ethylhexyl)phthalate	UG/KG	34	3	8.82%	15	0	50,000.
Butylbenzylphthalate	UG/KG	34	0	0.00%	0	0	50,000.
Carbazole	UG/KG	34	28	82.35%	77000	0	
Chrysene	UG/KG	34	32	94.12%	150000	23	400.
Di-n-butylphthalate	UG/KG	34	2	5.88%	140	0	8,100.
Di-n-octylphthalate	UG/KG	34	0	0.00%	0	0	50,000.
Dibenz[a,h]anthracene	UG/KG	34	28	82.35%	25000	27	14.
Dibenzofuran	UG/KG	34	22	64.71%	38000	5	6,200.
Diethyl phthalate	UG/KG	34	0	0.00%	0	0	7,100.
Dimethylphthalate	UG/KG	34	0	0.00%	0	0	2,000.
Fluoranthene	UG/KG	34	33	97.06%	440000	7	50,000.
Fluorene	UG/KG	34	25	73.53%	62000	1	50,000.
Hexachlorobenzene	UG/KG	34	0	0.00%	0	0	410.
Hexachlorobutadiene	UG/KG	34	0	0.00%	0	0	
Hexachlorocyclopentadiene	UG/KG	34	0	0.00%	0	0	
Hexachloroethane	UG/KG	34	0	0.00%	0	0	
Indeno[1,2,3-cd]pyrene	UG/KG	34	30	88.24%	65000	9	3,200.
Isophorone	UG/KG	34	0	0.00%	0	0	4,400.
N-Nitrosodiphenylamine	UG/KG	34	0	0.00%	0	0	
N-Nitrosodipropylamine	UG/KG	34	0	0.00%	0	0	
Naphthalene	UG/KG	34	15	44.12%	46000	2	13,000.
Nitrobenzene	UG/KG	34	0	0.00%	0	0	200.
Pentachlorophenol	UG/KG	34	0	0.00%	0	0	1,000.
Phenanthrene	UG/KG	34	32	94.12%	290000	6	50,000.
Phenol	UG/KG	34	1	2.94%	4.5	0	30.
Pyrene	UG/KG	34	33	97.06%	280000	7	50,000.
PESTICIDES/PCBS							
4,4`-DDD	UG/KG	34	11	32.35%	240	0	2,900.
4,4`-DDE	UG/KG	34	21	61.76%	810	0	2,100.
4,4`-DDT	UG/KG	34	22	64.71%	1300	0	2,100.
Aldrin	UG/KG	34	0	0.00%	0	0	41.
Alpha-BHC	UG/KG	34	8	23.53%	18	0	110.
Alpha-Chlordane	UG/KG	34	2	5.88%	74	0	
Aroclor-1016	UG/KG	34	0	0.00%	0	0	

Table 4-1
Seneca Army Depot
SEAD-71 Phase I Remedial Investigation
Summary of Compounds Detected in Soil During
SEAD-71 ESI and Phase I RI

COMPOUND	UNIT	NUMBER OF ANALYSES	NUMBER OF DETECTIONS	FREQUENCY OF DETECTION	MAXIMUM VALUE	NUMBER ABOVE TAGM	TAGM
Aroclor-1221	UG/KG	34	0	0.00%	0	0	
Aroclor-1232	UG/KG	34	0	0.00%	0	0	
Aroclor-1242	UG/KG	34	0	0.00%	0	0	
Aroclor-1248	UG/KG	34	0	0.00%	0	0	
Aroclor-1254	UG/KG	34	0	0.00%	0	0	10,000.
Aroclor-1260	UG/KG	34	0	0.00%	0	0	10,000.
Beta-BHC	UG/KG	34	7	20.59%	32	0	200.
Delta-BHC	UG/KG	34	1	2.94%	1.8	0	300.
Dieldrin	UG/KG	34	3	8.82%	3.5	0	44.
Endosulfan I	UG/KG	34	11	32.35%	200	0	900.
Endosulfan II	UG/KG	34	6	17.65%	52	0	900.
Endosulfan sulfate	UG/KG	34	12	35.29%	110	0	1,000.
Endrin	UG/KG	34	11	32.35%	120	1	100.
Endrin aldehyde	UG/KG	34	19	55.88%	120	0	
Endrin ketone	UG/KG	34	18	52.94%	160	0	
Gamma-BHC/Lindane	UG/KG	34	1	2.94%	4	0	60.
Gamma-Chlordane	UG/KG	34	4	11.76%	22	0	540.
Heptachlor	UG/KG	34	1	2.94%	1.2	0	100.
Heptachlor epoxide	UG/KG	34	14	41.18%	180	4	20.
Methoxychlor	UG/KG	34	12	35.29%	520	0	
Toxaphene	UG/KG	34	0	0.00%	0	0	
METALS							
Aluminum	MG/KG	34	34	100.00%	18000	0	19,520.
Antimony	MG/KG	34	12	35.29%	19.3	1	6.
Arsenic	MG/KG	34	34	100.00%	14.6	4	8.9
Barium	MG/KG	34	34	100.00%	179	0	300.
Beryllium	MG/KG	34	33	97.06%	0.88	0	1.13
Cadmium	MG/KG	34	15	44.12%	12.1	4	2.46
Calcium	MG/KG	34	34	100.00%	295000	11	125,300.
Chromium	MG/KG	34	34	100.00%	60.3	4	30.
Cobalt	MG/KG	34	34	100.00%	14.6	0	30.
Copper	MG/KG	34	34	100.00%	134	12	33.
Cyanide	MG/KG	34	0	0.00%	0	0	.35
Iron	MG/KG	34	34	100.00%	65100	2	37,410.
Lead	MG/KG	34	34	100.00%	3470	22	24.4
Magnesium	MG/KG	34	34	100.00%	59300	6	21,700.
Manganese	MG/KG	34	34	100.00%	853	0	1,100.
Mercury	MG/KG	34	16	47.06%	2.7	4	.1
Nickel	MG/KG	34	34	100.00%	110	2	50.
Potassium	MG/KG	34	34	100.00%	2940	1	2,623.
Selenium	MG/KG	34	15	44.12%	1.8	0	2.
Silver	MG/KG	34	5	14.71%	0.69	0	.8
Sodium	MG/KG	34	30	88.24%	1040	19	188.
Thallium	MG/KG	34	1	2.94%	2.3	1	.855
Vanadium	MG/KG	34	34	100.00%	29.2	0	150.
Zinc	MG/KG	34	33	97.06%	3660	13	115.
		34	34	100.00%	0	0	
OTHER ANALYSES	MG/KG						
Total Petroleum Hydrocarbons	MG/KG	26	22	84.62%	9060		
Nitrate/Nitrite Nitrogen		26	26	100.00%	30.2		

APPENDIX E
BTEX AND PAH METHODS FOR FIELD TESTS

D TECH BTEX Field Test Kit



Dual Particle Assay!

ELIMINATES DEPENDENCY

- Temperature
- Timing

D TECH BTEX FIELD TEST KIT FEATURES

Sensitive
- 0.6 ppm BTEX in water
- 2.5 ppm BTEX in soil

Fast
- Provides test results for water or soil samples in less than 15 minutes

Easy-to-use
- Requires no special training

Convenient
- Materials for testing water samples included in basic kit; soil samples require prior extraction with D TECH Soil Extraction Pac (TK-1003S-1).
- Kit package designed for use as on-site workstation

Dual Particle Assay for even faster results – easier use.

Benzene, toluene, ethyl benzene and xylene (BTEX) account for 20-40% of the composition for gasoline. As a result, BTEX analysis is widely used for investigating gasoline spills and leaks.

Often it is desirable to test samples in the field for BTEX contamination. However, this isn't always possible, or practical, using conventional laboratory methods. The D TECH BTEX Field Test Kit is a convenient, economical alternative that is ideally suited for on-site use.

The D TECH BTEX Field Test Kit allows you to quickly identify "hot spots," map sites, monitor remediation, determine risk, and select samples for further laboratory analysis. A complete test takes less than 15 minutes with ppb sensitivity and semiquantitative accuracy. In field tests, D TECH BTEX test kit results show excellent correlation with EPA SW-846 Method 8020.

General Description

The D TECH BTEX field test kit is specific for the toxic aromatic components of petroleum products, including benzene, toluene, ethylbenzene and xylene, referred to collectively as BTEX. Total BTEX values can also be used to correlate Total Petroleum Hydrocarbons (TPH) in gasoline contaminated soil.

The basic D TECH BTEX kit contains materials to test four (4) water samples and is designed as an on-site workstation. Step-by-step instructions guide the user through the analysis procedure. No previous laboratory or field testing experience is required. Soil samples require prior extraction using the D TECH Soil Extraction Pac.

Methodology

The D TECH BTEX test kit is based upon a recent innovation in immunoassay technology for environmental on-site testing – the Dual Particle Assay. The D TECH Dual Particle Assay method uses antibodies specific for BTEX molecules to create an immediate colorimetric response to BTEX contamination in soil or water. Sample preparation involves only a few simple steps and the entire analysis procedure takes only 15 minutes to complete. Samples can be quantitated with a hand-held D TECHTOR meter or quickly screened using the color comparison card supplied with the kit.

D TECH
Environmental Detection Systems

Assay Range

	Water	Soil
BTEX w/ DTECHTOR	0.6–10 ppm	2.5–35 ppm
BTEX w/ Color Card	0.6–10 ppm	2.5–35 ppm

Method Performance

	False Negative	False Positive
Soil	< 1 %	< 6 %
Water	< 1 %	< 8 %

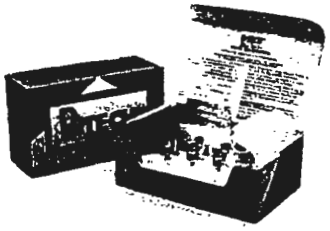
Interfering Substances

The D TECH BTEX test kit has been tested for cross reactivity with the following compounds:

Compound	MDL* (ppm)
PAHs	None
PCBs	None
PCP	None
Transformer Oil	None

Soil Matrix Effects

The BTEX procedure has been tested using 32 different soil types. No significant matrix effects have been determined.



D TECH BTEX Field Test Kit

Order No. TK-1008-1

- Includes materials necessary to test four (4) samples
- Step-by-step instruction guide
- Color comparison card

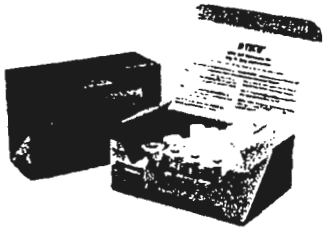
the DTECHTOR Environmental Field Test Meter

The D TECHTOR is a hand-held reflectometer for interpreting results of D TECH BTEX test samples. It is completely portable and powered with a 9-volt, plug-in battery. Operation is a simple push-button procedure that takes only one minute. Readings are displayed in a large, easy-to-read window, along with sample ID, date, and time of analysis. Readings for up to 127 samples can be stored in memory.

Size: 7" x 2" x 1½" Weight: 170 gm (6 oz) with battery

Order No. TK-1001M-1

- Includes calibrators, protective canisters, and meter cover
- Step-by-step instruction guide
- Maintenance and service manual



D TECH BTEX Soil Extraction Pac

Order No. TK-1003S-1

- Includes calibration pipettes, soil sampling tubes, extraction vials and reagents for four (4) sample extractions
- Instructions for use

Ordering Information

D TECH Field Test Products can be ordered from EM Science by calling toll-free **1-800-222-0342** or by sending a fax to **1-800-336-4422**.

D TECH Field Test Products currently available from EM Science include:

- D TECH TNT and RDX Field Test Kits
- D TECH PAH Field Test Kit
- D TECH BTEX Field Test Kit
- D TECH PCB Field Test Kit
- D TECH PCB Wipe Test Kit
- *the* DTECHTOR Meter

For complete technical information on D TECH Field Test Products, call the EM Science Technical Support Group at **1-800-222-0342.**

D TECH
Environmental Detection Systems

EM Science/Strategic Diagnostics Incorporated
480 Democrat Road
Gibbstown, NJ 08027
800-222-0342

D TECH is a registered trademark of EM Industries Inc. EM Science is a Division of EM Industries Inc., and an Associate of E. Merck, Darmstadt, Germany © 1995 EM Science Printed in the U.S.A. on recycled paper DT-1003-3

BTEX TEST KIT INSTRUCTION GUIDE

TK-1003-1
800-544-8881

IMPORTANT
Read all instructions and handling procedures before using this kit. For assistance call SDI's TECHNICAL SERVICE HOT LINE 1-800-544-8881

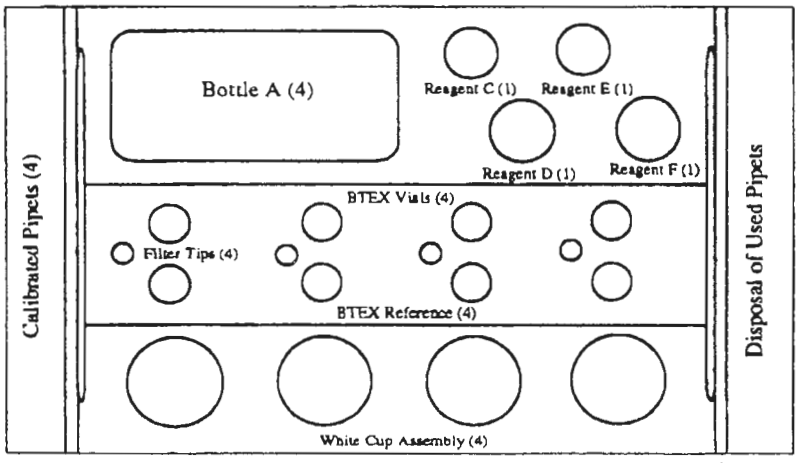
INTENDED USE
The D TECH® BTEX (Benzene, Toluene, Ethylbenzene and Xylene) on-site and laboratory test kit is designed to provide quick, semiquantitative and reliable test results for making environmental decisions. The D TECH® BTEX Test Kit can be used on-site for identifying "hot spots", site mapping, monitoring of remediation processes and selecting site samples for laboratory analysis.

PRINCIPLE
The D TECH® system for analyzing trace amounts of BTEX is based on immunoassay technology. An antibody specific for BTEX has been labeled with an enzyme. This antibody is reacted with BTEX and solid particles forming a complex which is collected on the membrane of the cup assembly. A color developing solution added to the surface of the cup assembly develops a color inversely proportional to the concentration of BTEX Equivalents in the sample (less color indicates more BTEX present in sample). BTEX Equivalents are measured at parts per million (ppm) in soil and parts per billion (ppb) in water samples.

TEST KIT DESCRIPTION
The D TECH® BTEX Test Kit, Item #TK-1003-1, contains sufficient materials to perform four tests. This kit can test water samples or be used with the D TECH BTEX Soil Extraction Pac, Item #TK-1003S-1, to test soil samples. The BTEX Soil Extraction Pac contains only the materials needed to extract BTEX from soil for semiquantitation with this D TECH® BTEX Test Kit. The results can be obtained by using the enclosed Color Card or the DTECHTOR Meter, Item #TK-1001M-1.

STORAGE/STABILITY
This kit has excellent stability at room temperature and under refrigeration. For expiration dating under these conditions, see the package label.

MATERIALS PROVIDED
See the tray diagram below. This diagram includes the kit component names and quantity of each item.



Not shown in diagram

Used Kit Label (1)

Instruction Guide (1)

Color Card (1)

Data Labels (4)
for Cup Assembly

Red Dot Labels (4)
for identifying used
Bottle A components

ACCESSORIES SUPPLIED BY USER
Timing Device (minutes)
D TECH® BTEX Soil Extraction Pac, Item #TK-1003S-1 (if testing soil samples)
the DTECHTOR Meter, Item #TK-1001M-1 (optional)

BTEX TEST KIT INSTRUCTION GUIDE

TK-1003-1
800-544-8881

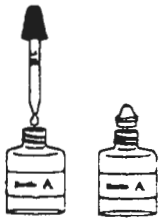
This package is designed to serve as a WORK STATION. At the conclusion of the test, the components can be left in the package for proper disposal.

Important: Read all Health/Safety Comments on page 4 prior to use.

Step 1: Choose the corresponding sample source to determine the first step.

WATER SAMPLE: Using a clean calibrated pipet, transfer **1 mL** of sample to **Bottle A**. Snap a filter tip on **Bottle A**. Gently mix.

SOIL SAMPLE: Using a clean calibrated pipet, transfer **1 mL** of **Bottle 2** solution from the D TECH BTEX Soil Extraction Pac, (Item #TK-1003S-1) to **Bottle A**; snap a filter tip on **Bottle A**. Gently mix. Re-cap **Bottle 2** and set aside.

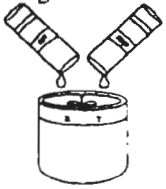


Note: The vials in the next two steps need to stand five (5) minutes after dispensing the liquid. The solutions in these vials will remain cloudy.

Step 2: Squeeze **Bottle A** filling the **BTEX Vial** to a level between the two lines (approximately 13-14 drops). Gently mix.

Step 3: Squeeze the contents of **Reagent C** (white cap) to fill the **BTEX Reference** vial to a level between the 2 lines. Gently mix.

Step 4: After 5 minutes, pour the contents of the **BTEX Vial** onto the **T** (test) side of the cup assembly. Pour the contents of the **Reference** vial onto the **R** side of the cup assembly. Allow the liquid to drain completely through on both sides.

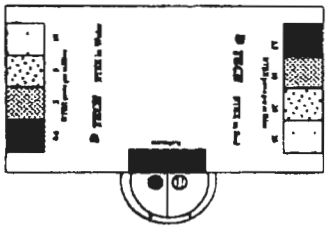


Step 5: Add approximately 10 drops of **Reagent D** solution (yellow cap) into each side of the cup assembly. Drain completely.

Step 6: Add approximately 5 drops of **Reagent E** solution (blue cap) to each side of the cup assembly. Be sure to add this solution immediately to the second well after addition to the first well. Drain completely.

Step 7: When the color of the R (left) side of cup assembly matches the color of the reference bar of the **Color Card**, add 8 drops of **Reagent F** solution (red cap) into each side of the cup assembly. The color development time is approximately 10 minutes at 70°F. (More time is required at lower temperatures and less time is required at higher temperatures.) Drain completely.

Step 8: Read the results.



COLOR CARD: Match the color on the T side of the cup assembly to the **Color Card**.

and/or

the DTECHTOR: Quantitate the result using *the* DTECHTOR Meter (see Instrument Operator's Guide for complete instructions).

See Interpretation of the Test section (page 3) to determine concentration of BTEX Equivalents. Record the result on a **Cup**

the DTECHTOR Meter Set Up

the DTECHTOR light sources must be calibrated whenever the meter is turned on. Calibrators are provided with the meter for this purpose. The **Calibrator** must be clean and white to insure valid results.

Step 1: Insert **Calibrator** into the **Meter Head** and hold firmly in place. (ZERO)

Step 2: Press the Square Button 1 time. When calibration is complete the meter will display..... (SET)

Step 3: Remove **Calibrator** and return it to its protective cannister. Display remains ..... (SET)

Step 4: Press the Square Button 2 times to select meter program #2 (Program to be used for the BTEX test) (SET #2)

Step 5: Insert Cup Assembly (test) into the Meter Head and firmly hold in place. (TEST #1)

Step 6: To read the reference color, double click the Red Square Button. (- - -)

Step 7: If the reference reading is between 350 and 390 proceed to Step 8. Otherwise, the device needs to develop longer. Wait approximately 30 seconds and repeat Step 6. (370)

Note: If the reference reading is below the target range, color development has proceeded too long. The most accurate result is achieved when the test is read when the reference is within the target range.

Step 8: Obtain the result by immediately pressing the Red Square Button 1 time. (- - -)
Obtain the meter reading. For example ..... (45%)

Step 9: Record the results then press the Red Button 1 time while holding the Cup Assembly in place. (- - -)

Step 10: (Optional) Key in a 4 digit sample ID number. This feature can be used for sample identification if the data is to be downloaded to a computer.

Step 11: Remove the Cup Assembly.

Step 12: Insert the next Cup Assembly (test) and repeat Steps 5-11.

BTEX TEST KIT INSTRUCTION GUIDE

TK-1003-1
800-544-8881

PERFORMANCE CHARACTERISTICS

INTERPRETATION OF THE TEST The results from the D TECH® BTEX Test Kit can be interpreted using either the **Color Card** supplied with the kit or ***the* DTECHTOR** and the table provided below. If the color of the test does not exactly match a panel of the color card, user interpretation is required.

the DTECHTOR Table

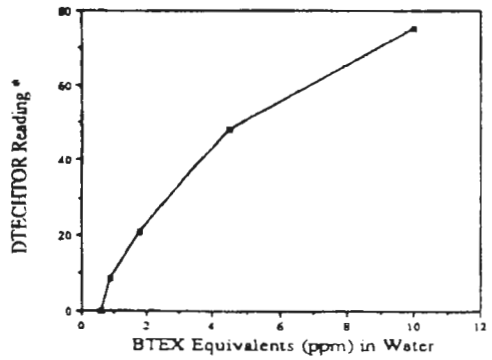
Sample	*the* DTECHTOR Reading	BTEX Equivalents (ppm)
Water	LO	<0.6
	1 - 10	0.6 - 1.0
	10 - 25	1.0 - 2.5
	25 - 50	2.5 - 5.0
	50 - 75	5.0 - 10
	HI	>10
		(ppm)
Soil	LO	<2.5
	1 - 15	2.5 - 5.0
	15 - 35	5.0 - 10
	35 - 60	10 - 20
	60 - 75	20 - 35
	HI	>35

SENSITIVITY The D TECH ®BTEX Test Kit can be used to reliably measure BTEX in the following ranges:

Sample Card	*the* DTECHTOR	Color
Water (ppm)	0.6 - 10	0.6 - 10
Soil (ppm)	2.5 - 35	2.5 - 35

The Minimum Detection Limit (MDL) of the test for BTEX in a water sample is 600 ppb and in soil is 2.5 ppm. The graph below is a typical standard curve for the D TECH BTEX Test Kit.

D TECH BTEX Test Kit
Standard Curve



*Percent Reflectance Relative to Reference

SPECIFICITY The D TECH® BTEX Test Kit has been tested for cross-reactivity with compounds having similiar structures to the BTEX group. The table below summarizes the cross-reactivity of these compounds in water samples using *the* DTECHTOR. A positive test result may be due to the presence of BTEX (BTEX Equivalents). Samples testing positive for BTEX should be confirmed by standard methods. The D TECH® BTEX Test Kit has been designed to minimize the effect of environmental interferences. Sample pH does not effect test results.

Compound	IC_{50}[a] (ppm)	MDL[b] (ppm)	Cross-reactivity[c]
Benzene	12.6	1.2	+
Toluene	4.5	0.6	+
Ethylbenzene	4.3	0.6	+
Xylenes	4.3	0.6	+
O-Cresol	10.0	1.5	+
Chlorobenzene	14.0	1.8	+
1,2-Dichlorobenzene	21.0	6.0	+
Nitrobenzene	23.0	6.0	+
2-Nitrophenol	55	7.0	+
Methylcyclohexane	NA	100	-
cis 1,3-Dichloropropene	NA	200	-
Iso-octane	NA	NA	-
Benzoic Acid	NA	NA	-
Hexane	NA	NA	-

[a] The IC_{50} is defined as the concentration of compound required to produce a test response equivalent to 50% of the maximum response.

[b] The Minimum Detection Limit (MDL) is defined as the lowest concentration of compound that yields a positive test result.

[c] A compound is considered cross-reactive when a concentration 100 times the MDL of BTEX (60 ppm) yields a positive test result

NA - Not Applicable. Results could not be quantitated by the addition of 1000 ppm of analyte.

TESTING HIGHER BTEX CONCENTRATIONS

BTEX concentrations greater than the upper limit of the test may be determined by diluting the extract with a purge and trap grade methanol. For example, an extract from a 100 ppm soil sample, processed using the D TECH® BTEX Soil Extraction Pac, may be diluted 1:10 in methanol and run in the D TECH® BTEX Test Kit. The concentration of the undiluted sample (100 ppm) is determined by multiplying the BTEX concentration of the diluted sample (10 ppm) by the dilution factor (10). For further information, please call our technical service hot line 1-800-544-8881

D TECH® BTEX TEST KIT INSTRUCTION GUIDE

TK-1003-1
800-544-8881

HEALTH/SAFETY

Material Safety Data Sheets (MSDS) have been supplied with the purchase of this product. The MSDS should be read before using this test. During the execution of the test, any excess BTEX is absorbed into the **Cup Assembly** absorbant plug. It is not retained on the surface of the **Cup Assembly**. When all kit components have been used, apply the warning label to seal the box and set it aside for proper disposal. In this section, we have emphasized health and safety precautions that should be followed when handling these solutions.

PROTECT EYES WITH SAFETY GLASSES
PROTECT SKIN WITH PROTECTIVE GLOVES

Associated Hazards
May be irritating to skin, eyes, and mucous membranes.

Symptoms of Exposure
May be irritating on contact with skin, eyes, and mucous membranes.

First Aid Measures
GET MEDICAL ASSISTANCE FOR ALL CASES OF OVEREXPOSURE

Skin:	Wash thoroughly with soap and water.
Eyes:	Immediately flush with water for at least 15 minutes.
Inhalation:	Remove to fresh air; give artificial respiration if breathing has stopped.
Ingestion:	Get immediate medical attention; if conscious, give water freely.

TECHNICAL ASSISTANCE

To Place an Order or Receive Technical Assistance, please call Strategic Diagnostics Inc. at:

Toll-free (within the US)	800-544-8881
Phone	302-456-6789
Fax	302-456-6782

GENERAL LIMITED WARRANTY

SDI's products are manufactured under strict quality control guidelines and are warranted to be free from defects in materials and workmanship. New instruments and related non-expendable items are warranted for one year from date of shipment against defective materials or workmanship under normal use and service. Warranty obligation is limited to repair or replacement of the defective product or to refund of the purchase price, at the discretion of SDI. Other warranties, express or implied, are disclaimed. SDI's liability under any warranty claim shall not exceed the refund of the purchase price paid by the customer. Under no circumstances shall SDI be liable for special, indirect or consequential damages.

SAFETY

To receive complete safety information on this product, contact SDI Technical Support.

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SDI

D TECH BTEX TEST KIT INSTRUCTION GUIDE

TK-1003-1
800-544-8881

Determining TPH Concentration for Various Fuels

the DTECHTOR

Determine the % relative reflectance using the DTECHTOR meter.
Use the conversion table below to determine the concentration range of TPH for the appropriate fuel.

		DTECHTOR METER READING			
	LO	0% - 25%	25% - 50%	50% - 75%	HI
Gasoline	<80 ppm	80-250 ppm	250-700 ppm	700-3000 ppm	3000 ppm
Diesel	<40 ppm	40-750 ppm	750-2500 ppm	2500-3000 ppm	5000 ppm
Kerosene	<60 ppm	60-700 ppm	700-2500 ppm	2500-9000 ppm	9000 ppm
JP-4	<80 ppm	80-250 ppm	250-600 ppm	600-2000 ppm	2000 ppm
JP-5	<100 ppm	100-700 ppm	700-2000 ppm	2000-9000 ppm	9000 ppm
Jet A	<25 ppm	25-250 ppm	250-800 ppm	800-2000 ppm	2000 ppm

OR

COLOR CARD

Match the color on the T side of the cup assembly to the BTEX Color Card.
Use the conversion table below to determine the TPH concentration for the appropriate fuel.

	Value from BTEX Color Card (ppm in soil)			
	2.5	10	20	35
Gasoline	80 ppm	350 ppm	1100 ppm	3000 ppm
Diesel	40 ppm	1100 ppm	3500 ppm	5000 ppm
Kerosene	60 ppm	1000 ppm	4000 ppm	9000 ppm
JP-4	80 ppm	350 ppm	850 ppm	2000 ppm
JP-5	100 ppm	1100 ppm	3500 ppm	5000 ppm
Jet A	25 ppm	450 ppm	1200 ppm	2000 ppm

Weathering effects, fuel manufacturer, and soil type may effect the reactivity profile of each fuel contaminant.

Questions regarding D TECH kit sensitivities or crossreactivities to petroleum fuels or other contaminants should be directed to SDI Technical Services at 1-800-544-8881.

D TECH BTEX TEST KIT INSTRUCTION GUIDE

TK-1003-1
800-544-8881

TPH Correlation of the BTEX Test Kit

USING THE BTEX TEST KIT TO TEST FOR TPH CONTAMINATION IN SOIL

The D TECH BTEX Test Kit can be used to test for TPH Contamination in Soil. The test kit can be used to detect gasoline, diesel, kerosene and aviation fuels. Knowledge of the contaminating fuel type is necessary to obtain the highest level of accuracy for semi-quantitative testing.

SENSITIVITY

FUEL TYPE	MDL (Minimum Detection Level)
Gasoline	80 ppm
Diesel	40 ppm
Kerosene	60 ppm
JP-4	80 ppm
JP-5	100 ppm
Jet A	25 ppm

PRINCIPLE

The D TECH BTEX Test Kit detects a subset of the chemical components (primarily aromatic) in the petroleum fuels listed above. The composition of the fuel type will determine the reactivity profile, and the MDL (minimum detection level), for the petroleum product. All chemical components detectable by the test in a single sample are summed as one result.

TEST PROCEDURES

Perform the D TECH BTEX Test utilizing the BTEX Soil Extraction Pac (TK-1003S-1) and BTEX Test Kit (TK-1003-1) as outlined in their respective Instruction Guides. At the conclusion of the test, use the DTECHTOR Meter (TK-1001M-1) or Color Card and the corresponding tables on the next page for result interpretation.

PAH TEST KIT INSTRUCTION GUIDE

TK-1006-1
800-544-8881

IMPORTANT

Read all instructions and handling procedures before using this kit. For assistance call the TECHNICAL SERVICE HOT LINE **800-544-8881**

INTENDED USE

The D TECH™ PAH (Polycyclic Aromatic Hydrocarbons) on-site and laboratory test kit is designed to provide quick, semiquantitative and reliable test results for making environmental decisions. The D TECH PAH Test Kit can be used on-site for identifying "hot spots", site mapping, monitoring of remediation processes and selecting site samples for laboratory analysis. In the laboratory, the D TECH PAH Test can screen highly contaminated samples that require pre-dilution prior to instrumental analysis. The D TECH PAH Test Kit has a working range of 0.6 to 25 ppm in soil and 8 to 250 ppb in water.

PRINCIPLE

The D TECH™ system for analyzing trace amounts of PAH utilizes immunoassay technology. This proven technique uses an antibody as an analytical reagent. Antibodies are biological molecules with the ability to specifically bind only the target compound amidst a complex sample matrix, thus eliminating the need for extensive sample cleanup. By linking the exquisite antibody selectivity with a sensitive color indicator system, very low concentrations (ppm, ppb) of target compound can be determined. The color formed is inversely related to PAH concentration. In this assay the antibody recognizes all PAH compounds as a class. See the D TECH brochure "Immunoassay Comes To Environmental Testing" for a detailed explanation of the unique immunoassay format used.

TEST KIT DESCRIPTION

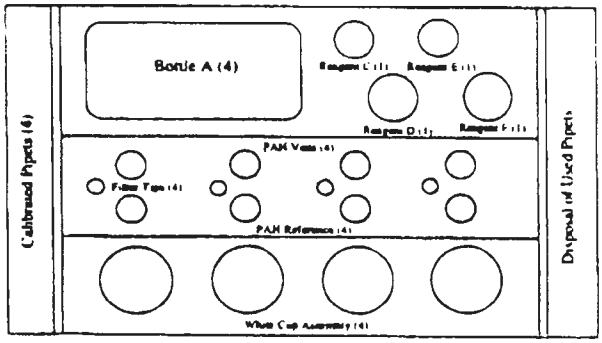
The D TECH™ PAH Test Kit, Item #TK-1006-1, contains sufficient materials to perform four tests. This kit can test water samples or be used with the D TECH PAH Soil Extraction Pac, Item #TK-1006S-1, to test soil samples. The PAH Soil Extraction Pac contains only the materials needed to extract PAH from soil for semi-quantitation with this D TECH PAH Test Kit. The results can be obtained by using the enclosed Color Card or the DTECHTOR Meter, Item #TK-1001M-1.

STORAGE AND STABILITY

This kit has a working temperature range from 45° to 100°F (7° to 38°C). For optimal stability, the kit should be stored from 40° to 100°F (4° to 38°C). Do not freeze the kit or store it in direct sunlight . The expiration date varies with storage temperature. For expiration dating under various storage conditions, see the package label.

MATERIALS PROVIDED

See the tray diagram below. This diagram includes the kit component names and quantity of each item.



Not shown in diagram

Used Kit Label (1)
Instruction Guide (1)
Color Card (1)
Data Labels (4) for Cup Assembly
Red Dot Labels (4) for identifying used Bottle A components

ACCESSORIES SUPPLIED BY USER

- Timing Device (minutes)
- D TECH PAH Soil Extraction Pac, Item #TK-1006S-1 (if testing soil samples)
- *the* DTECHTOR Meter, Item #TK-1001M-1 (optional)

PAH TEST KIT INSTRUCTION GUIDE

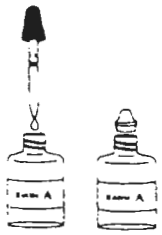
TK-1006-1
800-544-8881

Important: Once the test is initiated, all steps must be executed sequentially without stopping. Please read all the Health and Safety Comments on page 7 prior to use.

Note: This package is designed to serve as a WORK STATION. At the conclusion of the test, the components can be left in the package for proper disposal.

Step 1: Choose corresponding sample source to determine the first step.

WATER SAMPLE: Using a clean calibrated pipet, transfer **1.0 ml** of a water sample to **Bottle A**. Snap a filter tip on **Bottle A** and gently mix by inverting three (3) times.



SOIL SAMPLE: Using a clean calibrated pipet, transfer **1.0 ml** of **Bottle 2** (soil extract) solution from the D TECH PAH Soil Extraction Pac, (Item TK-1006S-1) to **Bottle A**. Snap a filter tip on **Bottle A** and gently mix by inverting three (3) times. Re-cap **Bottle 2** and set aside.

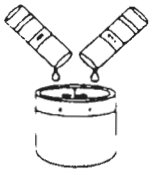
Note: The vials in the next two steps need to stand 5 minutes (+/- 30 seconds) after liquid is dispensed into them. The solutions in these vials will remain hazy.

Step 2: Squeeze **Bottle A** filling the **PAH Test Vial** to a level between the two lines (approximately 13-14 drops). Gently mix by shaking the vial in a back and forth motion. Immediately proceed to step 3.

Step 3: Squeeze the contents of **Reagent C** (white cap) to fill the **PAH Reference** vial to a level between the 2 lines. Gently mix by shaking the vial in a back and forth motion.

Note: Reconstitute the REFERENCE VIAL IMMEDIATELY after sample addition to the test vial. If analyzing several samples simultaneously, reconstitute a reference vial at the same time each test (sample) vial is filled.

Step 4: After 5 minutes (+/- 30 seconds), pour contents of the **PAH Test Vial** into the **T** (test) side of the cup assembly. Immediately pour the contents of the **Reference** vial into the **R** side of the cup assembly. Allow the liquid to drain completely on both sides.



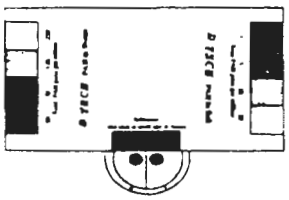
Note: The next four (4) steps use dropper-tipped bottles. When dispensing these reagents, do not allow any dropper tip to contact any solution(s) or surface in the device. To assure uniform color development across the device, dispense the drop onto the sloped side of the well to lessen its impact. Do not allow the drop to fall into the middle of the well.

Step 5: Add 10 drops (+/- 2 drops) of **Reagent D** solution (yellow cap) into each side of the cup assembly. Allow the liquid to drain completely.

Step 6: Add 5 drops (+/- 1 drop) of **Reagent E** solution (blue cap) to each side of the cup assembly. Be sure to add this solution immediately to the second well after addition to the first well. Allow the wells to drain completely.

Step 7: Compare the color of the **R** (left) side of the cup assembly to the reference bar of the **Color Card**. When the color of the **R Side** matches the reference bar, the color development process should be stopped. Proceed to **step 8.**

Note: Color development time is temperature dependent and takes approximately 10 minutes at 75°F. More time is required at lower temperatures and less time is required at higher temperatures. For example, this reaction may take 7 minutes at 85°F or it may take 20 minutes at 60°F.



Step 8: Add 8 drops (+/- 2 drops) of **Reagent F** solution (red cap) into each side of the cup assembly. Allow to drain completely. Now determine the PAH concentration of the sample.

Note: The color in both wells is stable for approximately four (4) hours. For the best results, sample concentrations should be determined within four (4) hours of the addition of Reagent F.

D TECH™

PAH TEST KIT INSTRUCTION GUIDE

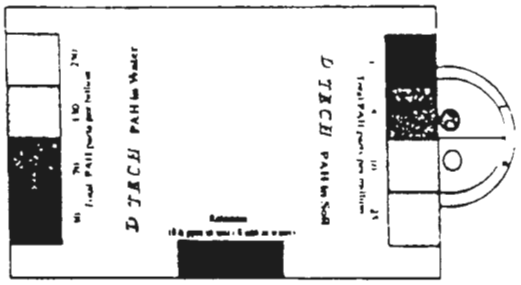
TK-1006-1

800-544-8881

DETERMINING PAH CONCENTRATION

The results from the D TECH PAH Test Kit can be determined using either the **Color Card** supplied with the kit or ***the* DTECHTOR** and the table provided below. If the color of the test does not exactly match a panel of the color card, user interpretation is required.

COLOR CARD: Match the color on the **T** side of the cup assembly to the **Color Card**.



and/or

the DTECHTOR: Determine the % relative reflectance using *the* DTECHTOR (see Instrument Operator's Guide for complete instructions).

Use the conversion table below to determine the concentration range of total PAH in the sample. Record the result on a **Cup Assembly** label and apply the label to the cup.

the DTECHTOR TABLE

Sample	*the* DTECHTOR Reading	Total PAH
Water (ppb)	LO	< 8
	1 - 10	8.0 - 30
	10 - 25	30 - 70
	25 - 50	70 - 130
	50 - 75	130 - 250
	75 - HI	> 250
Soil (ppm)	LO	< 0.6
	1 - 20	0.6 - 1
	20 - 45	1 - 5
	45 - 60	5 - 10
	60 - 75	10 - 25
	75 - HI	> 25

the DTECHTOR Meter Set Up

the DTECHTOR must be calibrated each time the meter is turned on. Calibrators are provided with the meter for this purpose. The **Calibrator** must be clean and white to insure valid results.

Note: To obtain the best results, do not take DTECHTOR readings in direct sunlight.

Step 1: Insert **Calibrator** into the **Meter Head** and hold firmly in place. (ZERO)

Step 2: Press the Square Button 1 time. When calibration is complete the meter will display. . . . (SET)

Step 3: Remove the **Calibrator** and return it to its protective cannister. The display remains . . . . (SET)

Step 4: Press the Square Button 2 times to select meter program #2 (the Program to be used for this D TECH PAH test). (SET#2)

Step 5: Insert the Cup Assembly (test) into the Meter Head and firmly hold in place. (TEST#2)

Note: The #2 in the upper right corner of the display window in Steps 4 & 5 corresponds to the meter program number being used to obtain the meter reading.

Step 6: Press the Square Button 1 time. (------)

Obtain the meter reading. For example . . (46%)

Note: If the meter displays "WAIT", remove the Cup Assembly. Allow the reference color to develop further and try again.

Step 7: Record result then press the Square Button 1 time while holding the Cup Assembly in place. (------)

Step 8: (Optional) Key in a 4 digit sample ID code number. (This feature can be used for sample identification if the data is to be downloaded to a computer.)

Step 9: Remove the **Cup Assembly**. (SET#2)

Step 10: Insert the next **Cup Assembly** (test) and repeat Steps 5 - 9.

DTECH™

PAH TEST KIT INSTRUCTION GUIDE

TK-1006-1
800-544-8881

PRECAUTIONS AND PROCEDURAL NOTES

- The test should be run at a temperature range of 45° to 100° F (7° to 38°C).
- The kit may be stored at a temperature range of 40° to 100°F (4° to 38°C). Storage at higher temperatures may irreversibly damage the reagents. Do not store the kit in direct sunlight. See the lot number label for additional storage information.
- The diluted sample extract and the reference reconstitution diluent should be at approximately the same temperature prior to adding either to their respective test or reference vial.
- Check the expiration date on the bottom of the kit prior to use. The expiration date is dependent on the storage temperature of the kits.
- Reagents from different kits CANNOT be mixed.
- Once initiated, the test should be run as quickly as possible. DO NOT STOP BETWEEN STEPS.
- This test is temperature dependent. The reference serves as an incubation time indicator. DO NOT stop the test (Step 8) until the color intensity produced in the reference well matches the color spot on the PAH Color Card. At 75°F, this reaction will take approximately ten (10) minutes. The warmer the temperature, the quicker the development occurs. For example, at 85°F this reaction may take seven (7) minutes and at 60°F this reaction may take twenty (20) minutes.
- The color produced by the test is stable for approximately four (4) hours. For best results, all sample results should be determined within four (4) hours of the addition of Reagent F (STEP 8).
- PAH compounds are semivolatile. Use special care during sample collection, handling, storage and transportation to insure accurate results.
- Avoid splashing any isopropanol from Bottle 1 when adding the soil plug. The rate at which the soil is expelled from the sampling tool can be controlled by squeezing the barrel of the sampling tool when depressing the plunger.
- The extraction is easier to perform if the soil is broken into sections during its addition to Bottle 1.
- Some soils, especially clays, may require extremely rigorous shaking during extraction. If after three (3) minutes the soil plug is not uniformly dispersed, continue shaking with a rigorous top to bottom motion until the sample disperses. This may take up to five (5) minutes.
- Allow ample time for the soil to settle in Bottle 1. An isopropanol layer should form on the top of the soil. Certain clays and other soils may require up to thirty (30) minutes to cleanly separate.
- Used kits should be disposed of in accordance with applicable federal and local regulations.
- A quality control program should be included in the sampling protocol. The type of program necessary may vary by state, compound of interest and site.

INTERPRETATION OF THE TEST

The D TECH PAH test kit reports results of total PAH in a soil or water sample. To provide total PAH concentrations, the assay is standardized with a mixture of PAHs. The PAH mixture consists of individual PAHs blended together at ratios similar to those found at sites of both petrogenic and pyrolytic contamination.

A positive test result may be due to the presence of PAH, cross reactants or mixtures of these compounds. For best results, pre-characterize the site by analyzing a small number of representative samples. Compare the pre-characterization results to the cross reactivity table on page 6 of the users guide. If the PAH contamination consists primarily of PAHs with low cross reactivities, then the test will slightly underestimate PAH concentrations. If the PAH contamination consists primarily of PAHs with high cross reactivity the test will slightly overestimate PAH concentrations.

When PAH contamination is to be remediated or assessed on the basis that a single PAH compound is prevalent (i.e. Benzo(a)pyrene), the analyst should assume the single PAH compound is the major constituent of the D TECH PAH result. This approach is more reasonable because it biases the assay toward overestimation rather than underestimation.

Sample heterogeneity, sampling technique, the semivolatile nature of PAHs, extraction efficiency, and soil/water matrix effects all contribute to the variability in the D TECH PAH immunoassay. To obtain a 96% level of confidence in the results, the user must allow an interval of +/-25% of the indicated concentration. If you have any questions about the 96% confidence level around an action concentration please call our technical service hotline at 1-800-544-8881 for more information.

RELIABILITY

Studies have shown the D TECH PAH Test Kit to yield less than 1% false negatives and less than 8 % false positives throughout the working range of the kit.

SENSITIVITY

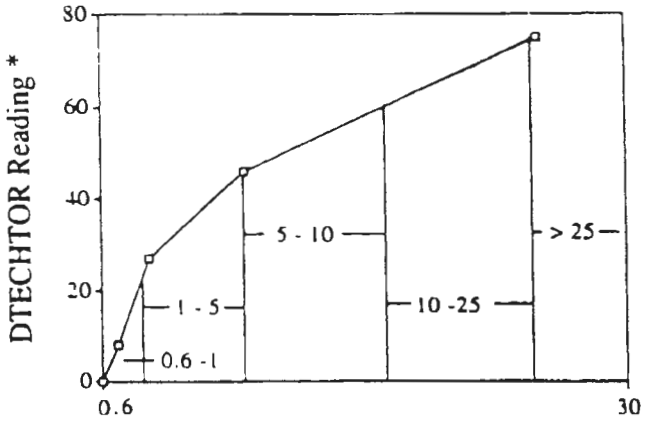
The D TECH PAH Test Kit can be used to measure PAH in the following ranges:

Sample	*the* DTECHTOR	Color Card
Water (ppb)	8 - 250	30 - 250
Soil (ppm)	0.6 - 25	1 - 25

The Minimum Detection Limit (MDL) of the test for PAH in a water sample is 8 ppb and in soil is 0.6 ppm. A 96% confidence level occurs at a water sample concentration of 12 ppb and a soil sample concentration of 0.9 ppm.

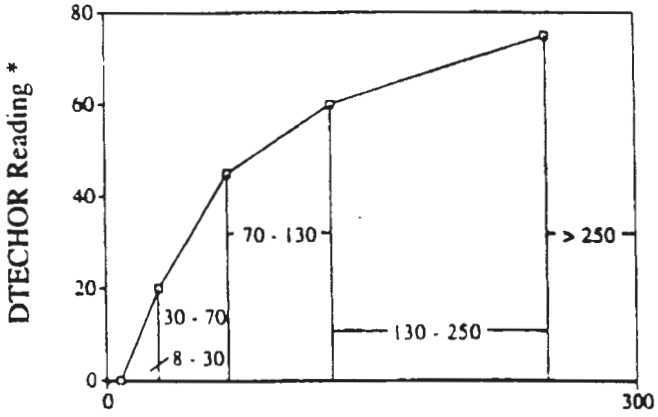
PAH STANDARD CURVES

D TECH PAH Test Kit
Soil Standard Curve



TOTAL PAH Ranges (ppm equivalents) in Soil

D TECH PAH Test Kit
Water Standard Curve



TOTAL PAH Ranges (ppb equivalents) in Water

*Percent Reflectance Relative to Reference

PERFORMANCE CHARACTERISTICS

SPECIFICITY

The D TECH PAH Test Kit has been tested for cross-reactivity with structurally similar compounds and other priority pollutants. The table below summarizes the cross reactivity of these compounds in samples using *the* DTECHTOR. A positive test result may be due to the presence of PAH, cross reactants or mixtures of these compounds. Samples testing positive for PAH should be confirmed by standard methods. The D TECH PAH Test Kit has been designed to minimize the effect of environmental interferences.

Compound	MDL[a] (ppb)	% Cross reactivity[b]
Naphthalene	1766	0.3
Acenaphthylene	311	1.7
Acenaphthene	311	1.7
Fluorene	106	5.0
Phenanthrene	421	2.5
Anthracene	10	50.5
Fluoranthene	5	100
Pyrene	10	55.6
Benzo(a)Anthracene	42	12.5
Chrysene	8	62.5
Benzo(b)fluoranthene	53	10.0
Benzo(a)pyrene	10	50.0
Dibenz(a,h)anthracene	1060	0.5
Benzo(g,h,i)perylene	42	12.5
Indeno(123-cd)pyrene	8	62.5

a The Minimum Detection Limit (MDL) is defined as the lowest concentration of compound that yields a positive test result.

b The % cross-reactivity is 100 times the individual MDLs divided by the by the MDL of fluoranthene.

INTERFERING SUBSTANCES

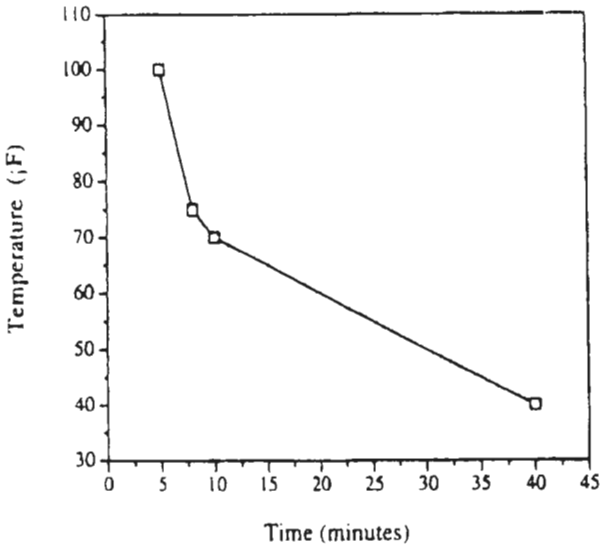
The D TECH PAH Test Kit has been tested for results interference by other priority pollutants. A negative interference indicates the target compound, spiked into a PAH sample at 100 ppm, did not affect the PAH result. The table below summarizes the data.

Compound	% Cross-reactivity[b]	Interference
BTEX	< 0.1	Neg.
Aroclor 1254	< 0.1	Neg.
Pentachlorophenol	< 0.2	Neg.

TIME-TEMPERATURE RELATIONSHIP

All enzyme immunoassays are temperature dependent. At cooler temperatures, the color development step of the D TECH PAH test will take longer than 10 minutes. A time -temperature graph has been provided to illustrate this point. This graph should not be used to determine the time for a test at a given temperature, but rather as a guide to indicate the approximate time necessary to complete the development step. All tests should be run until the color produced by the reference matches the spot on the color card.

D TECH" PAH TIME-TEMPERATURE GRAPH



TEST VARIATION

The PAH Test Coefficient of Variation (CV), also known as the Relative Standard Deviation (RSD), has been evaluated at various concentrations. The data indicate the average test RSD, based on the concentration, is 12%.

TESTING HIGHER PAH CONCENTRATIONS

For further information, please call our technical service hotline **1-800-544-8881**

QUALITY CONTROL

1. Read the test instructions completely before use to assure familiarity with the test procedure.
2. Monitor the storage conditions of the tests. Expiration dates are dependent on storage temperature.
3. To insure test reproducibility, investigators should confirm that all samples analyzed are homogeneous and representative of the site of interest.
4. A reference must be run with each test. The reference serves as a positive control to ensure the performance of the test and to verify that test procedures were properly followed.
5. Prior to analysis, the user should incorporate a quality assurance and quality control plan into the field testing procedure. We recommend adherence to US EPA data quality guidelines and suggest including the following steps in your QA/QC plan:
    a. Record the operator's name, the date, time of collection, and location of each sample.
    b. Record any raw data, calculations and final results for each sample.
    c. Document matrix and background effects by testing an uncontaminated sample taken on site.
    d. Run a duplicate analysis on one of every 20 samples.
    e. Confirm field sample analysis by submitting at least 10% of the samples for quantitation by an EPA approved method that is different from the field method. Representative samples should include 2 samples above and 2 samples below the minimum detection limit of the field assay.
6. Additional options:
    a. Use performance evaluation standards daily for assay validation.
    b. Document the method blank by completing the assay without introducing sample.
    c. Perform field analysis on a matrix spike to document any matrix effect on the analyte measured.

HEALTH/SAFETY

Material Safety Data Sheets (MSDS) have been supplied with the purchase of this product. The MSDS should be read before using this test. During the execution of the test, any excess PAH is absorbed into the **Cup Assembly** absorbent plug. It is not retained on the surface of the **Cup Assembly**.

PROTECT EYES WITH SAFETY GLASSES AND PROTECT SKIN WITH PROTECTIVE GLOVES

Associated Hazards: May be irritating to skin, eyes, and mucous membranes.

Symptoms of Exposure: May be irritating on contact with skin, eyes, and mucous membranes.

First Aid Measures: GET MEDICAL ASSISTANCE FOR ALL CASES OF OVEREXPOSURE

Skin: Wash thoroughly with soap and water.

Eyes: Immediately flush with water for at least 15 minutes.

Inhalation: Remove to fresh air. Give artificial respiration if breathing has stopped.

Ingestion: Get immediate medical attention. If conscious, give water freely.

Strategic Diagnostics Inc.
111 Pencader Drive
Newark, Delaware 19702 - 3322

Determining TPH Concentration for Various Fuels

the DTECHTOR

Determine the % relative reflectance using the DTECHTOR meter.
Use the conversion table below to determine the concentration range of TPH for the appropriate fuel.

	DTECHTOR Meter Reading				
	LO	0% - 25%	25% - 50%	50% - 75%	HI
Fuel Oil #6	<40 ppm	40-150 ppm	150-250 ppm	250-700 ppm	>700 ppm
Fuel Oil #2/ Home Heating Oil	<30 ppm	30-150 ppm	150-300 ppm	300-700 ppm	>700 ppm

OR

COLOR CARD

Match the color on the T side of the cup assembly to the PAH Color Card.
Use the conversion table below to determine the TPH concentration for the appropriate fuel.

	Value from PAH Color Card (ppm in soil)			
	1	5	10	25
Fuel Oil #6	100 ppm	200 ppm	350 ppm	700 ppm
Fuel Oil #2/ Home Heating Oil	100 ppm	300 ppm	400 ppm	700 ppm

Weathering effects, fuel manufacturer, and soil type may effect the reactivity profile of each fuel contaminant.

Questions regarding D TECH kit sensitivities or crossreactivities to petroleum fuels or other contaminants should be directed to your local D TECH technical sales representative, EM Science technical service, or the product manager.
Please call our technical service hotline 1-800-222-0342.

D TECH®
Environmental Detection Systems

EM SCIENCE / Strategic Diagnostics Inc.

480 S Democrat Road
Gibbstown, NJ 08027-1297
800-222-0342

APPENDIX F
RESPONSE TO COMMENTS

RESPONSE TO COMMENTS
from
New York State Department of Environmental Conservation
Division of Environmental Remediation

Draft Phase I Remedial Investigation (RI)
Fill Area West of Building 135 (SEAD-59) and the Alleged Paint Disposal Area (SEAD-71)
Seneca Army Depot, Site ID No. 850006

Comments Dated October 2, 1998

General Comments

Comment 1: SEDA asked the regulatory agencies at the August, 1998 meeting of the BRAC Cleanup Team (BCT) to review the Draft Phase I RI to determine whether we concur that an Interim Remedial Measure (IRM) is appropriate based upon the Phase I RI data. (In general an IRM is performed when there is a well defined environmental condition which is an imminent threat to human health or the environment, or which will become significantly worse through the time required to complete the RI process.) The conditions at both SEAD-59 and SEAD-71 may indicate that some type of IRM is appropriate. However, it is not clear from the report that the extent of the contamination requiring remediation (either ultimately or as an IRM) has been determined. It is therefore possible that an IRM at these locations may or may not be the best approach for this site at this time, depending upon the proposal. The NYSDEC suggests a discussion of the details at a BCT meeting as soon as it is appropriate.

Response 1: Acknowledged. Based on the geophysical, soil gas, and sampling activities performed to date at SEADs-59 and 71, there is a reasonable understanding of the contamination at both sites. The horizontal and vertical extent of contamination will be further defined during the confirmatory sampling performed during the removal action, which is outlined in the Draft Action Memorandum/Decision Document issued on June 29, 2001.

As discussed at the BCT meeting held on March 21, 2000, the NYSDEC and EPA agreed to allow the Army to proceed with an EE/CA and Removal Action. The Army proposed to find the limits of the excavation based upon confirmatory sampling.

Since that time, the portions of the depot have been released to private sectors for reuse under the BRAC process. As a result, increased access to all portions of the depot is now available resulting in an increased potential for exposure to any residual chemicals that are present at sites such as SEADs-59 and 71. Therefore, a time-critical removal action has been proposed in the Action Memorandum/Decision Document in order to eliminate a potential threat to the surrounding populations.

The test pitting investigations at both sites confirmed the presence of 55-gallon drums and other containers. The uncertainty of the contents of the buried items that may remain at the sites and the contamination in the soil and groundwater are considered justification for performing removal actions at SEADs-59 and 71.

Additional groundwater monitoring wells will be installed after the remedial action is conducted in order to conduct long term groundwater monitoring.

Comment 2: With a reference to EPA presumptive remedy policy directives, the Phase I RI report utilizes the phrase "presumptive remedy" in discussing both SEDA's general approach to their remedial projects and in the recommendations for further action at SEAD-59 and SEAD-71. According to a recent review of information available on EPA internet pages, presumptive remedies (as defined in EPA guidance) exist or will soon exist for five specific site and/or contaminant types: municipal landfills; wood treaters; VOC contaminated soil; metals in soil; and contaminated groundwater. From the statement in Section 2.1 of the Phase I RI that, "(p)resumptive remedies for landfills, such as the fill areas at these sites, have been recognized by EPA...," the NYSDEC assumes that SEDA believes that the appropriate "presumptive remedy" available for both SEAD-59 and SEAD-71 would be the municipal landfill presumptive remedy. Although SEAD-59 and SEAD-71 contain buried debris, the NYSDEC is not certain that these areas are so similar to a municipal landfill that they qualify as the "specific site type".

Response 2: According to the EPA OSWER Directive 9355.-67FS, "Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills" (EPA/540/F-96/020, December 1996), the materials uncovered during the test pitting program at SEAD-59 did not include military-specific wastes, but municipal-type wastes. Therefore, a presumptive remedy for a municipal landfill could be considered for SEAD-59.

However, since a time-critical removal action has been proposed for both sites, excavation of fill area and geophysical anomalies will be conducted and the presumptive remedy is no longer being considered.

Comment 3: The review of the above mentioned EPA information shows that a presumptive remedy is the remedy of choice at the very beginning of an investigation based upon fairly reliable prior knowledge of site conditions and contaminant types. If the data collection confirm that a specific site type exists, and the presumptive remedy is therefore applicable, it is then proposed for implementation. Although the BCT has had many discussions regarding ways to streamline the remedial process at SEDA, the NYSDEC remains uncertain of what a "presumptive remedy analysis" would consist.

Response 3: As discussed in Response 2, the presumptive remedy is no longer being considered. The Action Memorandum/Decision Document proposes excavation of selected areas at both sites as the time-critical removal action.

Comment 4: With consideration of the above General Comments and with reference to Section 5 of the Phase I RI Report (Conclusions and Recommendations), the NYSDEC feels that the requests made of the regulatory agencies by SEDA personnel at the BCT meeting and by the Phase I RI are potentially different and therefore unclear to us. Although an IRM may be appropriate for these sites, a presumptive remedy (as currently defined by the EPA) may not be applicable. If SEDA feels that the evidence indicates that an IRM at SEAD-59 and/or SEAD-71 is appropriate before completing the RI, then further discussion of specific measures should be held- If SEDA believes that these areas qualify for a "municipal landfill" (or another) presumptive remedy, then that should be more clearly stated and supported.

Response 4: As discussed at the BCT meeting held on March 21, 2000, the NYSDEC and EPA agreed to allow the Army to proceed with an EE/CA. In the Action Memorandum/Decision Document submitted on June 29, 2001, the justification for a time-critical removal action at both sites is presented.

Comment 5:
While SEDA implemented a phased approach to the investigation at SEAD-59 and SEAD-71, certain investigatory work at SEAD-59 and SEAD-71 was performed differently than by the methods detailed in the approved work plan. The specific differences should be clearly detailed and discussed in the report. Any investigatory work of specific media (e.g.; sediment sampling) contained in the approved work plan that was omitted from this phase of the investigation should be listed with a rationale provided for the omission and a explanation of what may trigger performance of the omitted activities.

Response 5: Agreed. The attached table (Summary of the Work Proposed and Performed During the Phase I RI at SEADs-59 and 71) presents the differences between the work plan and the Phase I investigation.

Comment 6: Having expressed some confusion in the above comments regarding SEDA's proposals, it is NYSDEC's impression from the recommendations offered that SEDA believes the extent of contamination has been adequately defined. If this is SEDA's belief then the NYSDEC disagrees. As examples: the contamination profile to the north of SEAD-59 is undefined; there is an apparent lack of down-gradient groundwater samples at each site; and the prevalence of surficial contamination at SEAD-71 requires further delineation and an investigation of contaminant migration via drainage channels. Perhaps if information from the investigation of SEAD-59 and SEAD-71 is combined with information gathered from the investigations of nearby SEADs then adequate information will be available, but the NYSDEC believes adequate information regarding the extent of contamination is not evident in this report.

Response 6: Acknowledged. During the Removal Actions, confirmatory sampling will be conducted. Additional groundwater monitoring wells will be installed after completion of the Removal Actions and groundwater from all the monitoring wells associated with each site will be sampled and analyzed for five years.

Comment 7: It is unclear if any monitoring wells other than MW59-4 and MW59-6 were installed during the field activities. The monitoring well logs for each well installed during the field activities should be included in the Phase I RI report.

Response 7: Two monitoring wells were installed as part of the field activities during the Phase I RI. Monitoring wells MW59-1 through MW59-3 were installed during the ESI. Monitoring wells MW59-4 and MW59-6 were installed during the Phase I RI. The figures have been revised to indicate the well locations as MW59-4/SB59-6 and MW59-6/SB59-12. Boring logs for MW59-4/SB59-6 and MW59-6/SB59-12 are presented in Appendix C.

Specific Comments:

Comment Section 1.1: In light of the reports ultimate *recommendation* that a "presumptive remedy analysis" be performed for each of these sites, it is premature for the introduction of the report to state that, "(t)his information *will be used* to perform a presumptive remedy analysis as described in Section 2.0 of this report." Also, as we have

discussed previously, the NYSDEC is in some disagreement with SEDA as to whether the performance of this Phase I work adhered to certain requirements of the IAG.

Response Section 1.1: Acknowledged. The phrase has been removed from Section 1.1.

Comment Section 2.1: The NYSDEC appreciates SEDA's motivation for the text included as Section 2.1. Although we have various concerns and disagreements with the discussion, we suggest that the rationale for a phased approach is simply to limit to the extent possible expenditures which, in retrospect, were unnecessary. In this technical presentation of the Phase I field program, Section 2.0 would better begin with the text currently included as Section 2.2.

Response Section 2.1: Acknowledged. The rationale for the phased approach needed to be presented somewhere in the report. The text has been changed to remove specific reference to a presumptive remedy.

Comment Section 2.6: In the fourth sentence, SEDA probably wishes to express that the purpose of field screening tests is to minimize analytical costs, or perhaps to maximize the effect of analytical costs. With reference, for example, to the iron staining noted in the test pits TP59-18 and TP71-4, how did the strict use of PAH and BTEX immunoassay kits to dictate sample locations allow for an adequate investigation of concerns regarding metal contamination?

Response Section 2.6: Agreed. The sentence has been reworded. The primary compounds of potential concern at SEADs-59 and 71 were volatile and semivolatile organics and it was expected that any metal contamination would be associated with those sources.

Comment Figure 3-1: Part 1: According to this figure, there are no soil gas survey locations to the north of the shown grid which would allow the "closure" of the elevated soil gas areas on the northern grid line. Therefore, this figure incorrectly indicates that the areas of elevated soil gas levels in this area have been defined.

Part 2: This figure, or one similar, should indicate which geophysical anomalies are known and what these known anomalies are. It is possible, but not clear, that the anomalies labeled "metal" are the known anomalies. Regardless, the identity of the "known anomalies" should be included in the report.

Part 3: The extent of the geophysical investigation should be shown.

Response Figure 3-1:

Part 1: Disagree. The soil gas survey was conducted within the boundary of SEAD-59. Note that the northern boundary is approximately the edge of the fill area and is defined by railroad tracks. It is unlikely that the fill area extends beyond the limits of the railroad tracks.

Part 2: Agreed. Changes have been made to Figure 3-1 to indicate which anomalies are known and unknown.

Part 3: Agreed. This information is shown in Figure 3-1.

Comment Section 3-3: In the last sentence of the first paragraph, the word "above" should be "below." In the third paragraph, soil sample TP59-4-1 is incorrectly labeled TP59-4. (As this test pit is discussed in the report, the test pit log should also be included, or a reference for the reader to its location.).

Response Section 3-3: Agreed. Text has been modified. Test pit log for TP59-4 has been added to the Appendix.

Comment Figure 3-2: The information shown here is too crowded, with numerous identification labels illegible due to overlapping information. The resulting confusion makes the reader uncertain, as to what is identified with each label (see, for example, the location containing the labels TP59-1 and TP59-12A through C.)

Response Figure 3-2: Agreed. Figure 3-2 has been modified.

Comment Table 3-2: It should be noted that the TAGM number for PCBs in surface soil is 1,000 ug/kg. Why is the "maximum value" column for the "other analyses" items "NA?"

Response Table 3-2: Agreed. Table 3-2 has been updated.

Comment Figure 3-3: Numerous identification labels are illegible due to overlapping information. Also, a different symbol should be used for soil borings versus test pits. Again, there are no soil gas survey locations to the north of the shown grid which would allow the "closure" of the elevated soil gas areas on the northern grid line.

Response Figure 3-3: Agreed. Figure 3-3 has been modified.

Comment Figure 3-4: The overcrowding and northern border soil gas issues mentioned above are applicable to this figure, also.

Response Figure 3-4: Agreed. Changes have been made to Figure 3-4. The soil gas comment has been addressed in the earlier response for Figure 3-1.

Comment Figure 4-1: The symbol adjacent to the label MW71-1 is not identified in the base map key. Should there be an MW71-7 on this figure?

Response Figure 4-1: Agreed. The symbol for monitoring well has been revised in Figure 4-1. Three monitoring wells have been installed at SEAD-71. The figure has been revised to show monitoring wells MW71-1 through MW71-3.

Comment Section 4.3: The second paragraph incorrectly states that groundwater chemistry was analyzed during this investigation. Although the TAGM numbers are guidance, the significance should be noted that they are TBC (To Be Considered) values.

Response Section 4.3: Agreed. The text has been revised.

Comment Section 5.0: As discussed in the General Comments, it is unclear to the NYSDEC what is being proposed in this section. Also, definite conclusions should be offered as to whether the extent of contamination has been adequately defined. If the

extent of contamination has not been adequately defined, proposals should be made for further field investigations.

Response Section 5.0: Acknowledged. The text has been revised.

Comment Section 5-2: The third sentence apparently needs correction. In the penultimate sentence "SEAD-59" should be "SEAD-71."

Response Section 5-2: Agreed. The text has been revised.

Comment Appendix B: In order to assist the evaluation of the immunoassay methods, a comparison table should be offered showing the immunoassay screening results along with the laboratory analysis.

Response Appendix B: Agreed. A comparison table has been added to Appendix B.

SUMMARY OF WORK PROPOSED AND PERFORMED DURING THE PHASE I RI AT SEADS-59 AND 71

SENECA ARMY DEPOT ACTIVITY

Tasks Outlined in RI Work Plan	Tasks Completed under Phase I Field Effort	Rationale for Deviations from Work Plan	Possible Tasks Under Future Efforts
SEAD-59			
Geophysical Investigation			
Electromagnetic (EM-31)	Electromagnetic (EM-61)	NA	
Ground Penetrating Radar (over each EM-31anomaly)	Ground Penetrating Radar (over each EM-61anomaly)	NA	
Soil Gas Survey			
Soil Gas Survey	Soil gas survey (241 points sampled)	NA	
Soil Investigation			
14 Soil Borings (4 completed as monitoring wells)	16 Soil Borings	Based on soil gas and geophysical results, more soil borings than stated in work plan were necessary.	
13 Test Pits	19 Test Pits	Based on soil gas and geophysical results, more test pits than stated in work plan were necessary.	
1 Surface Soil and 2 Subsurface Soil samples from each boring, 2 samples from each test pit (27 surface soil samples and 41 subsurface soil samples)	105 samples collected for field screening. 34 samples sent to laboratory for confirmatory analysis.	Recommendations by the peer review process to use field screening test kits to guide selection of sample that represents worst case conditions.	Additional sampling during the implementation of the removal action.
Surface Water and Sediment Investigation			
13 Surface Water and Sediment samples (9 from on-site, 2 from off-site)	No surface water or sediment samples collected.	Investigation will be implemented in phases. Sampling will be completed following implementation of removal action/presumptive remedy to evaluate if migration of pollutants require any action.	
Groundwater Investigation			
Installation of monitoring wells (6 overburden wells, 3 shallow bedrock wells)	2 existing monitoring wells replaced. 2 new monitoring wells installed.	Investigation was to be implemented in phases.	Installation of additional monitoring wells following the implementation of the removal action.
Two rounds of groundwater sampling at 12 wells on-site and 3 off-site (30 samples)	Not performed	Investigation was to be implemented in phases.	Sampling may be completed following implementation of removal action.
Three rounds of water level measurements at 12 wells on-site and 3 off-site	Not performed	Investigation was to be implemented in phases.	
Slug Testing at 12 wells on-site and 3 off-site	Not performed	Investigation was to be implemented in phases.	
Vertical Connection testing at the 3 overburden/bedrock well pairs	Not performed	Investigation was to be implemented in phases.	
Air Monitoring			
Monitor air at 3 areas of the site with highest soil gas concentrations	Not performed	Investigation was to be implemented in phases.	
Ecological Investigation			
Site description	Not performed	Investigation was to be implemented in phases.	
Contaminant-specific impact analysis	Not performed	Investigation was to be implemented in phases.	
Surveying			
Site survey	Site survey	NA	

SUMMARY OF WORK PROPOSED AND PERFORMED DURING THE PHASE I RI AT SEADS-59 AND 71

SENECA ARMY DEPOT ACTIVITY

Tasks Outlined in RI Work Plan	Tasks Completed under Phase I Field Effort	Rationale for Deviations from Work Plan	Possible Tasks Under Future Efforts
SEAD-71			
Geophysical Investigation			
Electromagnetic (in eastern portion of site)	Not performed	Interferences due to metallic surface debris prevented a meaningful survey from being conducted.	
Ground Penetrating Radar (in eastern and western portions of site)	Ground Penetrating Radar	NA	
Soil Investigation			
11 Soil Borings (4 completed as monitoring wells)	Not performed	Investigation was to be implemented in phases.	
8 Test Pits	4 Test Pits		
1 Surface Soil and 2 Subsurface soil samples from each boring, 2 samples from each test pit (49 samples)	9 samples collected from test pits for field screening. 4 samples from test pits sent to laboratory for confirmatory analysis.	Recommendations by the peer review process to use field screening test kits to guide selection of sample that represents worst case conditions.	Additional sampling during the implementation of the removal action.
6 Subsurface samples from 2 soil borings for physical testing and limited chemical testing	Not performed	No soil borings were performed.	
20 Surface Soil samples	20 Surface Soil samples collected	NA	
Groundwater Investigation			
Installation of 6 monitoring wells (4 overburden wells, 2 shallow bedrock wells)	Not performed	Investigation was to be implemented in phases.	Installation of additional monitoring wells following the implementation of the removal action.
Two rounds of groundwater sampling at 9 wells (18 samples)	Not performed	Investigation was to be implemented in phases.	Sampling may be completed following implementation of removal action.
Three rounds of water level measurements	Not performed	Investigation was to be implemented in phases.	
Slug testing at 9 wells	Not performed	Investigation was to be implemented in phases.	
Vertical Connection testing at the 1 overburden/bedrock well pair	Not performed	Investigation was to be implemented in phases.	
Ecological Investigation			
Site description	Not performed	Investigation was to be implemented in phases.	
Contaminant-specific impact analysis	Not performed	Investigation was to be implemented in phases.	
Surveying			
Site survey	Site survey	NA	

Response to Comments
From
United States Environmental Protection Agency (US EPA)

Draft Phase I Remedial Investigation (RI)
Fill Area West of Building 135 (SEAD-59) and the Alleged Paint Disposal Area (SEAD-71)
Seneca Army Depot Activity, Romulus, NY

SEAD-59 Oversight and Split Sampling

Draft Engineering Evaluation/Cost Analysis (EE/CA) Approval Memorandum for the Fill Area West of Building 135 (SEAD-59) and the Alleged Paint Disposal Area (SEAD-71)

Comments Dated April 16, 1999

This is regarding the above referenced Draft Phase I RI at SEAD-59 and SEAD-71 and Draft EE/CA Approval Memorandum for SEAD-59 and SEAD-71 prepared by Parsons Engineering-Science (Parsons ES) for SEDA through the U.S. Army Corps of Engineers New York District and Huntsville Division. This is also regarding EPA's field oversight of SEAD-59 sampling.

Draft Phase I RI

EPA General Comment: The introduction to this report states that the work performed follows the requirements of the U.S. EPA. This statement is not entirely true. The *Project Scoping Plan for Performing a CERCLA Remedial Investigation/Feasibility Study at the Fill Area West of Building 135 (SEAD-59), and the Alleged Paint Disposal Area (SEAD-71), Seneca Army Depot Activity* (Scoping Plan) had been final to perform a complete study. In response to recommendations submitted by the Army's Technical Peer Review Team, SEDA has taken a phased approach in implementing the field program at these locations. Without proper prior notification to EPA and without requesting our concurrence or comments, SEDA had completed phase 1 and initiated phase 2 of this effort. Phase 1 consisted of the soil gas and geophysical surveys. The subsequent phase included soil sampling tasks (test pits, surface soils and soil borings). Samples produced from Phase 2 were screened in the field for BTEX and PAH through the use of immunoassay techniques, with a portion them sent to the off-site lab for confirmatory analysis. SEDA's October 9, 1997 letter states that the next phase of field efforts, installation of groundwater monitoring wells, would commence if the soil data suggests groundwater impact. However, criteria for evaluating the soil data (as it relates to the impact to groundwater) has not been provided. See SEDA's correspondence dated July 22, 1997 and October 9, 1997 and EPA's October 23, 1997 and February 5, 1998 letters to SEDA.

Response: Acknowledged. As discussed at the BCT meeting held on March 21, 2000, the NYSDEC and EPA agreed to allow the Army to proceed with an EE/CA and Removal Action at these sites. The Army proposed to conduct confirmatory sampling and this data combined with relevant soil data collected earlier will be used to evaluate any impact on groundwater.

Since that time, the portions of the depot have been released to private sectors for reuse under the BRAC process. As a result, increased access to all portions of the depot is now available resulting in an increased potential for exposure to any residual chemicals that are present at sites such as SEADs-59 and 71. Therefore, a time-critical removal action has been proposed in order

to eliminate a potential threat to the surrounding populations. The removal action is outlined in the Draft Action Memorandum/Decision Document issued on June 29, 2001.

Furthermore, the test pitting investigations at both sites confirmed the presence of 55-gallon drums and other containers. The uncertainty of the contents of the buried items that may remain at the sites and the contamination in the soil are considered justification for performing removal actions at SEADs-59 and 71.

Additional groundwater monitoring wells will be installed after the remedial action is completed in order to evaluate groundwater.

EPA General Comment: The draft Phase I RI does not include a comparison of field screening results for soil samples to their corresponding confirmatory laboratory samples. As stated in EPA's letter dated October 23, 1997, "comparability criteria must be provided for acceptance between the results obtained in the field and those from the laboratory". The attached table shows a comparison of field screening results for BTEX with the corresponding laboratory samples for the samples collected at SEAD-59. The table shows that there is very little or no correspondence between the field sample results and the confirmatory laboratory sample results. Unverified field screening results should not be used as a basis for removal actions.

Response: Tables B-1, B-2, and B-3 in Appendix B have been revised and now include the corresponding lab results for the soil samples. Unverified field screening data will not be used as a basis for removal actions. Confirmatory soil sampling will be conducted during the removal actions at both sites.

EPA General Comment: EPA's letter dated February 5, 1998 states that additional information regarding the immunoassay methods must be provided concurrent with the resultant data. This additional information includes: each method, QA/QC information, SOP, precision and accuracy performance results, detection limit determination, and evaluation criteria. This information was not provided in the Draft Phase I RI.

Response: Agreed. The SOP for the immunoassay field screening analyses that was used for this project has been added in the Appendix.

SEAD-59

EPA Comment on Figure 3-1: The 10 ppm iscontour for the large area of soil gas detection in the northeast portion of SEAD-59 is drawn incorrectly. There are several soil gas points within the 10-20 ppm zone which have soil gas concentrations less than 10 ppm.

Response: Agreed. Changes have been made on Figure 3-1.

EPA Comment on Soils: Test pit and soil boring locations were based on the concurrence of elevated soil gas concentrations and geophysical anomalies. Additional soil borings were drilled adjacent to test pit areas to confirm that the pits had characterized the entire soil column. In areas where direct evidence of contamination was encountered (i.e., paint cans, drums, stained solids, etc.) and/or where analytical results indicated the presence of contamination, further investigation (i.e. additional test pits or soil borings) is required to define the horizontal extent of contamination. For example, south of the fill area, paint cans, paint-stained soils, and BTEX

concentrations in excess of 2,000 parts per million (ppm) were encountered in test pit TP59-1. Paint cans and paint-stained soils were also encountered in test pits TP59-12B and TP59-12C. Removal actions should not be attempted until the horizontal extent of contamination has been determined.

As mentioned in the comments above, the validity of the immunoassay test results is questionable. Given this, it is probable that the vertical extent of soil contamination has not been defined in the areas where soil borings were completed. For example, as shown in the table below for soil boring SB59-19, screening values for PAHs were greater than 25 ppm for all depths. Since the sample with the highest PAH results could not be determined, the sample with the highest screening result for BTEX was submitted to the analytical laboratory to TCL/TAL analysis (sample SB59-19). The laboratory results for this sample confirmed the presence of BTEX compounds (toluene and xylenes) and reported more than 1,000 ppm of SVOCs, of which benzo(a)anthracene, benzo (g,h,i)perylene, chrysene, dibenz(a,h)anthracene, dibenzofuran, fluoranthene, ideno(1,2,3)perylene, naphthalene, phenanthrene, and pyrene exceeded the corresponding TAGM value. Since all of the screening values exceeded the calibration range of the test, it is not possible to predict whether deeper samples may contain analytes which exceed the TAGM values.

Immunoassay Result			Laboratory Results	
	BTEX	PAH	Total VOCs	Total SVOCs
Sample	(ppm)	(ppm)	(mg/kg)	(mg/Kg)
SB59-19-01	< 2.5	> 25	---	---
SB59-19-02	15	> 25	0.11	1,022.7
SB59-19-03	5.8	> 25	---	---
SB59-19-04	9.5	> 25	---	---
SB59-19-05	< 2.5	> 25	---	---

Given this, removal actions should not be attempted until the vertical extent of contamination has been defined.

Response: Acknowledged. Vertical and horizontal extent of contamination will be determined by using confirmatory sampling during the proposed removal action. The proposed removal action is outlined in the Draft Action Memorandum/Decision Document (Parsons, June 2001).
As a further note, several of the soil borings are located in the Fill Area, which is proposed to be removed in the Draft Action Memorandum/Decision Document.

SEAD-71

EPA Comment on Soils: Surface soil samples collected from SEAD-71 show impacts from PAHs and TPH, however, outside of the four test pits, there is little or no information regarding subsurface contamination. This is particularly true in the eastern portion of the site, where high PAH concentrations were found in surface soils and where limited subsurface sampling was performed as part of the ESI.

Hydrocarbon odors, staining, and a "brown" oily liquid were encountered in test pit TP71-3. Soil samples from TP71-3 show high PAH and TPH concentrations. Removal actions should not be attempted until the vertical and horizontal extend of contamination has been defined.

Response: Acknowledged. Confirmatory sampling conducted as part of the proposed removal action will be used to determine the horizontal and vertical extent of contamination.

EPA Comment on Groundwater: There are no groundwater wells located immediately down-gradient from test pit TP71-3, where high concentrations of PAHs and TPH were detected in the subsurface.

Response: Agreed. Additional monitoring wells will be installed after the time-critical removal action.

Hazardous Waste Support Section

EPA Comment: In our responses, details of SEDAs proposal were requested and unresolved issues stated prior to EPA acceptance. As yet, SEDA has not provided the following QA information (in the Draft RI not under separate cover):

1) Compatibility criteria for acceptance between the results obtained in the field and those from the off-site laboratory: Correlation of VOC results presented in the Draft RI indicate variations ranging from detected in the low ppm range by immunoassay to non-detect at the CRQL (low ppb) of the off-site fixed lab by the CLP method. In addition, sample results from the USACE divisional laboratory may yield a similar correlation to the varying results presented in the Draft RI. This would provide additional substantiation of method incompatibility leading to questionable results.

Response: Acknowledged. As stated in the Draft Phase I RI Report, the immunoassay field screening test kits were used in an effort to guide the selection of the sample that represents the worst case conditions. The field screening data will not be used to evaluate the conditions at the sites.

2) Immunoassay method information including SOPs, QA/QC information, precision and accuracy performance results, detection limit determination, data deliverables and validation/assessment criteria: Submission of these items was requested concurrent with the resultant data (in the Draft RI) in order to facilitate interpretation and fulfillment of the data quality objectives as stated in the Scoping Plan.

   In addition, it cannot be deduced from the information presented in the Draft RI, whether the off-site confirmatory sample data was validated per the methods specified in the Generic Work Plan, Appendix C, Chemical Data Acquisition Plan, Section 9.

Response: Agreed. The SOP for the immunoassay field screening analyses that was used for this project has been added in the Appendix. The off-site confirmatory sample data have been validated by the methods specified in the Generic Work Plan.

SEAD 59

EPA Comment 1.: The following comments are based upon EPA oversight activities conducted from October 23, 1997, through October 24, 1997. Activities conducted by Parsons ES as observed by EPA's contractor deviate from the approve Scoping Plan and Generic Work Plan. The validity of the data produced with these sampling practices is highly questionable.

A. At soil boring location SB-16, sample volume was collected from the 0-2 ft depth below land surface, the drill rig was re-mobilized to an adjacent location additional sample volume was collected from the same depth interval and subsequently homogenized and placed into sample containers for shipment to the off-site lab. This procedure is compositing two different samples, in effect diluting the contaminant concentrations and causing the quantitation limits for each analyte to double. This practice is not per the approved Scoping Plan/Generic Work Plan, nor are the doubling effects of the CRQLs presented in the Draft RI.

B. At soil boring location SB-17, immunoassay screening of all samples was begun on October 23, 1997 and completed the next day. Subsequently, samples were selected for off-site analysis based on the immunoassay results. In addition to letting the samples sit overnight, precluding the same day shipping requirements for those samples to be sent off-site, Parsons ES performed the same composite practice noted above without discussion of the effects in the Draft RI.

C. For both borings non-VOC soil aliquots for potential lab analyses were collected in double zip-lock bags and placed into coolers with ice pending selection of the samples interval to be submitted for off-site analyses. Storage of organic samples in plastic bags is prohibited.

Response to A: Agreed. Re-mobilizing a drill rig is not usually done. The reason for re-mobilizing was to collect sufficient volume of sample for analysis. The area is often covered with crushed shale and this makes it difficult to obtain sufficient volumes of soil samples for analysis.

Response to B: Acknowledged. Parsons ES makes every effort to ship samples on the same day as collected. If not, samples are shipped the following day and the lab is able to received the samples within the required holding time for each analysis.

Response to C: Agreed. Storage of soil samples in plastic bags is not usual procedure. The results for phthalates may be affected by the storage of non VOC soil samples in the plastic bags.

EPA Comment 2.: The October 9, 1997 letter from Parsons ES states that the sample most significantly impacted as determined through the immunoassay techniques will be sent for off site analysis. However, the following samples listed on Table B-1 of the Draft RI contradict this statement:

TP59-6, TP59-7, TP59-11, TP59-14, TP59-17, all BTEX and
SB59-15, TP59-13 for PAH.

Response: The sample most significantly impacted was determined by looking at the combination of the PAH and BTEX field screening results. The sample most significantly

impacted as determined by the overall results of the PAH and BTEX screening was sent to the laboratory for analysis.

EPA Comment 3.: Confirmatory sample results could not be found in the Draft RI for the following:

SB59-11, SB59-9, SB59-20, all BTEX and SB59-17, SB59-20 for PAH.

Response: Confirmatory sample results for locations SB59-9, SB59-20, SB59-17, and SB59-20 are presented in the tables in Appendix D. As discussed in the footnote in Table B-2, sample SB59-11 (59132) came from the same depth interval as SB59-11 (59087). The confirmatory results for 59132 are presented in Appendix D; this sample was not screened in the field.

EPA Comment 4.: Soil boring SB59-19 immunoassay results indicate PAHs > 25 ppm at all depths collected. Since all depths exceeded the calibration range of the immunoassay method (with one sample confirmed at the off-site lab), the vertical extent of contamination cannot be assessed without additional sample data.

Response: SB59-19 was located at NW corner of the fill area near SG-11-6. The soil sample sent to lab was from 2-4`. This material will removed in the proposed removal action. Confirmatory sampling will be conducted to determine that all contaminated material has been removed.

EPA Comment 5.: Although sample results for SB59-11 (field id 59132) are presented in Appendix D, Table D-1, no field screening data for this sample is listed on Table B-1.

Response: As the footnote on Table B-1 explains, this sample was not screened in the field. The original screening sample at SB59-11 did not have sufficient volume for a laboratory sample therefore, a new boring was drilled adjacent to the original boring to obtain a laboratory sample from the same depth. The new sample was not re-screened.

EPA Comment: In summary, deviation from the approved Scoping Plan Work Plan without providing requested supporting information yields data of questionable validity and limited use.

Response: Acknowledged.

<u>Program Support Branch</u>

The following comments regarding the remedial investigation protocol and its relationship to the risk assessment process are offered. Rather than provide a full baseline risk assessment, the document details a phased approach that consists of a comparison of soil sampling data to health-based benchmarks, to be followed by an impact-to-groundwater analysis. The intent of the phased approach described in this document is to characterize the extent of soil contamination in a streamlined fashion. This approach seems generally consistent with the concept of dividing sites into "operable units." However, one caveat about such an approach is that it does not allow for the collective assessment of multimedia exposure pathways (e.g., soil exposure and groundwater ingestion). In addition, by comparing the concentrations of individual soil

contaminants to health-based criteria (NYS TAGMs) the ability to collectively assess the impact of multiple chemicals within a particular exposure pathway is also sacrificed.

Response: A mini-risk assessment was conducted for the Decision Document, which was submitted in June 2001.

The map of SEAD 71 displays a suspected location of ground penetrating radar anomalies without any accompanying soil borings.

Response: Agreed. All the anomalies were not investigated. These anomalies will be removed as part of the proposed removal action outlined in the Action Memorandum/Decision Document. Confirmatory sampling will be conducted to insure that any contaminated material surrounding the anomalies is removed.

Freshwater Protection Branch

Comment 1.: A discrepancy existed between the value reported in the text and that recorded in the table in Appendix D.

TPH measurement:
SB59-20
p-3-15 34.8 mg/kg
Table D-1 24.8 mg/kg

Response: Agreed. Correction has been made.

Comment 2.: Why were there no field screening for PAHs at SEAD-71?

Response: Four test pits were excavated at SEAD-71 and five soil samples were collected from these test pits. Soil samples TP71-3-1 and TP71-3-2 were selected for laboratory analysis based on odor, OVM readings, soil staining, and the presence of brown oil liquid in the test pit. Soil sample TP71-4-2 was selected for analysis based on high OVM readings. Soil sample, TP71-5-1 was collected from soil having black iron staining located just below the geophysical anomalies (i.e., railroad ties). Soil sample, TP71-6-1, was collected from a soil stratum within the water table. Field screening was not required for selection of these samples.

Comment 3.: Several additional wells (MW59-4, MW59-5, MW59-6, MW71-4, MW71-5, MW71-6, MW71-8D, MW71-9D) are present on the site maps of the RI document, however few were actually installed and none were sampled. This figure should clearly identify which wells are existing vs. which were only proposed in the approved Scoping Plan, but not installed.

Response: Agreed. The figures in the Phase I RI Report have been updated to show only those monitoring wells which were installed.

Comment 4.: The report does not indicate if the standing water found in some the test pits was sampled. For example, at TP59-13A, A "fuel oil type odor" was recorded at 3.5 ft. and the log states, "Shale bedrock at 4' (water observed-top of shale –water contained a sheen)." At tp59-13c, the log states, water on top of bedrock, contains a silty sheen, no odor." Sampling of the water in these test pits should have been conducted and possible sources of the water should have been conducted and possible sources of the water should have been identified.

Response: Groundwater is usually found in the weathered shale stratum located below the till overburden. Although groundwater is observed, this does not imply that there is enough volume for sampling.

Comment 5.: Installation of additional monitoring wells is recommended in order to determine the extent of groundwater contamination.

Response: Agreed. Additional monitoring wells will be installed following the proposed removal action.

Comment 6.: Sampling of the waterways on SEAD-59, specifically the drainage swales on the borders of the site, should be conducted.

Response: Acknowledged. However, surface water is generally not present in the drainage swales at SEAD-59. Because of that, the nature of the habitat in the drainage swales may be predominantly non-aquatic and therefore, the material found in the drainage swales may not be considered to be sediment, but soil.

Comment 7.: Groundwater sampling, testing, or results are not mentioned in this report. Therefore, it is not possible to determine the impact site activity has had on the groundwater.

Response: Groundwater samples were collected during the ESI. No groundwater samples collected during the Phase I RI field program. The groundwater data from the ESI indicate that groundwater at SEAD-59 has been moderately impacted by total petroleum hydrocarbons, and, to a lesser extent, by metals and semivolatile organic compounds. Refer to the groundwater discussion in the ESI Report (Parsons, 1995) for more information. Groundwater will be collected and analyzed as part of the proposed removal action.

Comment 8.: Several labels for test pits mentioned in the text do not match those used in the figures (ex. see text mentioning test pits on pp. 3-3 and 3-5 and Figure 3-2)

Response: Agreed. The figures have been modified.

RCRA Program Branch

Due to the fact that this is only a preliminary review, more information, such as remediation alternatives, is needed to identify the proper ARARs for this site. Based on the information provided and our review of this document the following determinations were made.

Comment 1.: Lead based paint or lead contaminated soil must be removed and disposed of following New York State Department of Environmental Conservation (NYSDEC) regulations, Parts 371-373.

Response: Agreed. This regulation will be included in the Action Memorandum.

Comment 2.: In the event the contaminated material has PCB concentrations greater than 50 ppm then the Toxic Substances Contaminated Act (TSCA) regulations 40 C.F.R- Part 761.60-761.79 would be applicable.

Response: Groundwater is usually found in the weathered shale stratum located below the till overburden. Although groundwater is observed, this does not imply that there is enough volume for sampling.

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Comment 2.: In the event the contaminated material has PCB concentrations greater than 50 ppm then the Toxic Substances Contaminated Act (TSCA) regulations 40 C.F.R- Part 761.60-761.79 would be applicable.

Response: Agreed. This regulation will be included in the Action Memorandum if applicable.

Comment 3.: Organic Air Emissions, 40 C.F.R. Subparts AA and BB would be applicable if soil vapor extraction is used for removal of Volatile Organic Compounds (VOCs).

Response: Agreed. This regulation will be included in the Action Memorandum if applicable.

Comment 4.: 40 C.F.R- Part 262 (Standards Applicable to Generators of Hazardous Waste) would be applicable for any removal, management, and disposal of source area materials. In addition, if excavated material is removed off-site for treatment or disposal, 40 C.F.R. Part 263 (Standards Applicable to Transporters of Hazardous Waste) would be applicable. 40 C.F.R. Part 264 (Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities) would pertain to any on-site disposal of source area materials.

Response: Agreed. These regulations have been included in the Action Memorandum.

Comment 5.: Groundwater monitoring regulations under 40 C-F.R. Part 264, Subpart F standards may be relevant and appropriate to long term monitoring of the site.

Response: Agreed. This regulation has been included in the Action Memorandum.

Comment 6.: Please note that the final rule, for Land Disposal Restrictions Phase IV, promulgating treatment standards for metal bearing wastes and mineral processing wastes-mineral processing secondary materials and Bevill exclusion issues; treatment standards for hazardous soils, and exclusions of recycled wood preserving waste waters, should also be reviewed for applicability as this recent rule changes the universal treatment standards for certain wastes and further defines treatment for contaminated soil.

Response: Agreed. This regulation will be reviewed.

Environmental Analysis Section

Comment 1.: Although only a limited amount of information is presented concerning natural and man-made environmental resources in these areas, it does not appear that remedial actions would be likely to adversely affect any significant resources. To confirm this, the potential applicability of location-specific ARARs related to wetlands and floodplains, the Endangered Species Act, and the National Historic Preservation Act should be specifically addressed in any remedy/removal analyses.

Response: Agreed. These ARARs will be reviewed.

Comment 2.: This facility is on the Base realignment and Closure Act (BRAC) list. In previous comments related to other RIs for this facility, we recommended that the Army specifically address the applicability of the requirements of the National Historic Preservation Act (NHPA) as a potential ARAR. The Army's Environmental Impact Statement on disposal and reuse of the property stated that appropriate cultural resources surveys were being conducted and that the Army had initiated consultation with the State Historic Preservation Officer concerning the measures necessary to avoid and/or mitigate adverse effects to significant historic resources.

Thus, we recommend that, as appropriate, the results of the NHPA consultation process be factored into the planning of remedies at these sites.

Response: Agreed. The NHPA has been listed as an ARAR in the Action Memorandum.

SEAD-59 EPA Field Oversight

This report summarizes the oversight activities that Malcolm Pirnie, Inc. (Malcolm Pirnie) performed for the U.S. EPA at SEDA for the period of October 23 through October 24, 1997.

Malcolm Pirnie- conducted oversight of Parsons Engineering Science, Inc. (Parsons ES) and their drilling subcontractor, American Auger & Ditching Co., Inc. (American Auger).

General.- Malcolm Pirnie provided oversight of field activities conducted by Parsons Es during the periods listed above. During Malcolm Pirnie's oversight of field activities staff noted variances from the approved RI/FS Work Plan. The following paragraphs describe the variances that were noted and other pertinent observations that were made.

- *October 23, 1997*

Due to the selection process used to determine which sample (one from each boring) were submitted for off-site analyses (i.e., results of immunoassay screening), the boreholes were completed prior to selection of the sample depth interval for laboratory analyses. Prior to the start of October 23-24, 1997 soil boring/sampling activities, Parsons ES indicated to Malcolm Pirnie that during split-spoon sampling, the field staff had been collecting all sample aliquots for potential off-site laboratory analyses directly in laboratory approved bottleware, and storing samples in cooler with ice pending selection for off-site analyses. Parsons ES informed Malcolm Pirnie that they did not have sufficient bottleware on-site to collect potential laboratory samples from each sample interval during the advancement of SB59-16 and SB59-17, Parsons ES also indicated that sample volumes required to split samples with Malcolm Pirnie might necessitate remobilization of the drilling rig to collect additional soil from the selected interval after the determination was made. Parsons ES noted that additional soil sample volume (requiring remobilization of the drilling rig) was not typically required to meet their sample volume requirements.

Soil samples were collected from borings SB59-16 and SB59-17 in the following manner: Sample aliquots for potential VOA analyses were collected directly from the split-spoon sampler in laboratory-approved containers and placed in coolers with ice. Soil aliquots for additional (potential) laboratory analyses were collected in doubled zip-lock bags and placed in coolers with ice pending selection of the sample interval to be submitted for offsite analyses. Following immunoassay screening and laboratory sample selection, Parsons ES directed American Auger to remobilize to the boring location and collect additional sample volume from the selected depth interval, at a location immediately adjacent to the initial boring. -The additional soil volume collected was combined with the sample volume from the initial boring, homogenized and transferred to the appropriate laboratory containers. This variation from the sample methodology required on page A-24 of the RI/FS Work Plan was discussed with Parsons ES. Parsons ES indicated that during subsequent sampling activities, they would collect soil from each sample interval directly in laboratory containers for potential laboratory analyses- Should

additional sample volumes be expected, initial aliquots would be collected in large volume, laboratory-approved containers for temporary storage until the additional volume is collected and the sample aliquot homogenized. Parsons ES indicated that volatile organic aliquots will continue to be collected directly from the. split-spoon sampler and immediately placed in cooler with ice pending selection of the sample interval to be submitted for off-site analyses.

The total sample volume for the non-VOA aliquots from the selected interval at SB59-16 was collected on October 23, 1997. A portion of the non-VOA aliquots from SB59-17 was collected on October 23, 1997, and an additional portion was collected on October 24, 1997. This precluded the shipment of samples on the same day as collection, as required in the approved RI/FS Work Plan. In addition, during sample management activities, Malcolm Pirnie became aware that Parsons ES was shipping samples which had been collected the previous day. When questioned, Parsons ES responded that, due to the time required to conduct immunoassay screening, it could not always be completed the same day the samples were collected. Therefore, the sample interval selected for laboratory submittal could not be selected and shipped until the following day. Malcolm Pirnie reiterated the requirements of the RI/FS Work Plan for "same day shipping" and suggested they terminate drilling activities earlier -in the day in order to complete sample selection and shipment. Malcolm Pirnie did not observe Parsons ES package samples for shipment.

Malcolm Pirnie observed that Parsons ES was collecting VOA aliquots in 4-ouuce septum seal jars instead of 40-ml vials as required on page A-24 of the RI/FS Work Plan. When questioned. Parsons FS responded that the laboratory had supplied the 4-ounce jars and considered them acceptable for soil VOA aliquots.

Response: See response to Hazardous Waste Support Section, SEAD-59, EPA Comment 1 (page 5 of these response to comments)

Since the preparation of the Generic Workplan, the lab has revised the bottleware requirements. Prior to beginning each field program, the sampling program is discussed with the lab and the lab may modify their bottle requirements at that time.

- *October 24, 1997.*

During collection of the equipment rinsate blank, Malcolm Pirnie observed that Parsons ES was collecting the sample in pre-preserved sample containers. When asked why Parsons ES was not preserving the aqueous sample in the field as required on page A- 153 of the RI/FS Work Plan, field personnel indicated that the laboratory supplied pre-preserved bottleware.

Following the collection of the rinsate blank and the non-VOA soil sample aliquots from SB59-17, Malcolm Pirnie completed sample management of the split samples collected and left the site. No further activities at the Seneca Army Depot were observed by Malcolm Pirnie on October 24,1997.

Response: Since the preparation of the Generic Workplan, the lab is now able to provide Parsons ES with pre-preserved bottleware.

Draft EE/CA Approval Memorandum

EPA has determined that soil removal actions at SEAD-59 and SEAD-71 are not appropriate at this time. As discussed in the comments above, the Army's phased sampling approach has not deliniated the extent of soil contamination at either SEAD. In addition, there is little or no correspondence between the field sample results and the confirmatory laboratory sample results for SEAD-59. All the data produced from this phased approached are of questionable validity and limited use, due to the fact that the Army deviated from the approved Scoping Plan without providing the supporting information EPA requested and EPA's field oversight revealed that the Army performed additional activities which deviated from the approved Scoping Plan and SEDA's Generic RI/FS Work Plan. Sediment and surface water samples should be collected and analyzed as described in the Project Scoping Plan to ensure that these media are not affected by the contamination associated with the site, as sampling results could affect the removal action plan. All future samples collected from these SEADs should be analyzed in accordance with the approved Project Scoping Plan and Generic RI/FS Work Plan.

Response: Please see the response to EPA General Comment on Page 1 of these response to comments.

Response to the Comments from the New York State Department of Environmental Protection

Subject: Phase I Remedial Investigation (RI) at the Fill Area West of Building 135 (SEAD-59) and the Alleged Paint Disposal Area (SEAD-71)
Seneca Army Depot
Romulus, New York

Comments Dated: January 9, 2002

Date of Comment Response: July 25, 2002

The New York State Department of Environmental Conservation (NYSDEC) has received the response to comments on the Draft Phase I RI Report for the above referenced site and the replacement pages for a document titled "Final Phase I Remedial Investigation (RI) at the Fill Area West of Building 135 (SEAD-59) and the Alleged Paint Disposal Area (SEAD-71)." The Federal Facilities Agreement considers an RI Report a primary document, which is subject to three iterations: Draft, Draft-Final and Final. The NYSDEC confirmed via a December 3, 2001 letter that this document was titled in error and should be titled "Draft-Final" instead of "Final." Comments on the Draft-Final document are as follow:

General Comments:

In the Army's response to comments, it states that "at the BCT meeting held on March 21, 2000, the NYSDEC and EPA agreed to allow the Army proceed with an EE/CA and Removal Action." The NYSDEC disagrees with this statement. In a March 31, 2000 letter, the NYSDEC requested clarification of the minutes from that meeting. The NYSDEC had questions regarding the "EE/CA, IRM, RI, site categorization (etc.) and how SEDA proposes to address the process." We requested that the Army outline in writing the steps SEDA proposes to take. Therefore, contrary to your statement, the NYSDEC did not agree to allow the Army to proceed because it was not clarified at that time what process the Army was proposing to take.

In your response to comments, it states that "additional groundwater monitoring wells will be installed after the remedial action is conducted in order to conduct long-term groundwater monitoring." However, the groundwater has to date not been sampled as part of the RI. The Army did install 2 of the 15 proposed monitoring wells that were agreed upon in the approved work plan, but then decided to perform the sampling of them as part of Phase II of the RI. Now the Army is proposing to forego Phase II of the RI and instead, install more wells after the proposed removal action, in order to conduct a 5-year monitoring program. What does the Army propose to monitor when there is no baseline survey of the groundwater? How does the Army know that additional wells are needed and if so, how many? The Army should complete implementation of the approved RI work plan to determine the baseline impacts to groundwater, vertical and horizontal extent of soil

contamination existing on-site, sediment and surface water impacts and perform appropriate risk assessments.

The state expressed concern that the extent of contamination present in soil at the northern edge of SEAD-59 has not been fully defined as shown in Figure 3-1. The Army disagreed by stating that the fill area does not extend beneath the train tracks and therefore, the extent has been defined. Although the fill area may not extend beneath or beyond the train tracks, soil gas migration from the fill area may. In order to evaluate potential exposures to site-related contaminants for future users of this property, the extent of soil gas contamination must be adequately defined and therefore additional analytical data is necessary.

Since, the Phase I Remedial Investigation does not include sufficient environmental sampling needed to determine the nature and extent of contamination in soil and groundwater at either SEAD, the Remedial Investigation Report is incomplete for adequate evaluation of potential human health and wildlife exposure to site-related contaminants.

Response: The referenced statement has been removed from the Final Phase I RI Report. In subsequent BCT meetings and through the development of the Final Action Memorandum/Decision Document for Removal Actions at SEAD-59/71, the Army has outlined the steps that will be taken to proceed with the time-critical removal action.

The Army plans to install three additional groundwater monitoring wells at the sites during the performance of the removal actions. Groundwater, sediment, and surface water sampling (Phase II of the RI) will be performed as a separate effort following the removal actions, as required. As stated in other response letters on the Action Memorandum/Decision Document, the Army will assess the remaining contaminant concentrations in both soil and groundwater following the removal actions to determine if additional action or investigation is required at the sites. The Army recognizes that the CERCLA process will need to be completed prior to implementation of the final remedy.

Specific Comments:

Comment 1: Page-2-1. Section 2.1. Rationale for Phased RI Approach: Contrary to what is stated in the text, the NYSDEC did not agree to the performance of an EE/CA and removal action. See general comments above.

Response 1: See the Response to General Comments above. The statement has been removed.

Comment 2: Figure 3-1 through 3-3: Although the requested figure revisions are clearer, the base map features are much more difficult to decipher. For example, the symbol for base map features on the legend of each figure is indiscernible.

Response 2: The figures have been revised to be more legible.

Comment 3: Page 5-1, 5-2. Section 5.0 Conclusions and Recommendations: Contrary to what is stated in the text, the NYSDEC did not agree to the performance of an EE/CA and removal action. See general comments above.

Response 3: See response to General Comments above. The statement has been removed.