Air Force Center for Environmental Excellence

US Army Corps of Engineers

Seneca Army Depot Activity
Romulus, New York

CONSTRUCTION COMPLETION REPORT
FOR SEAD-16 AND SEAD-17
SENECA ARMY DEPOT ACTIVITY

FINAL

PARSONS

SEPTEMBER 2008

US Army Corps of Engineers

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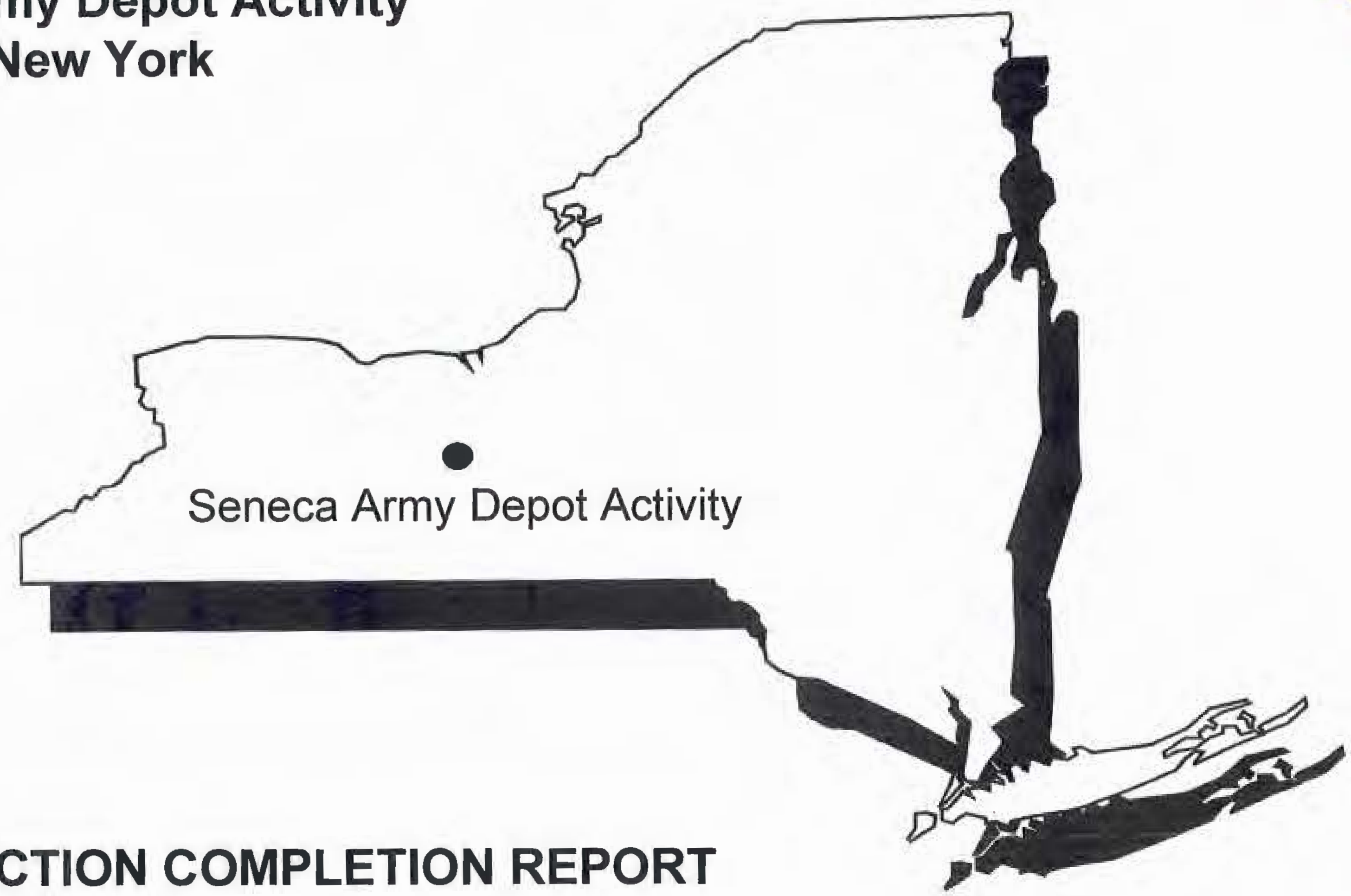
Seneca Army Depot Activity
Romulus, New York



FINAL
CONSTRUCTION COMPLETION REPORT

FOR THE ABANDONED DEACTIVATION FURNACE (SEAD-16)
AND THE ACTIVE DEACTIVATION FURNACE (SEAD-17)
SENECA ARMY DEPOT ACTIVITY

AFCEE CONTRACT NO. FA8903-04-D-8675
TASK ORDER NO. 0031
CDRL A001D

EPA SITE ID# NY0213820830
NY SITE ID# 8-50-006

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SEPTEMBER 2008

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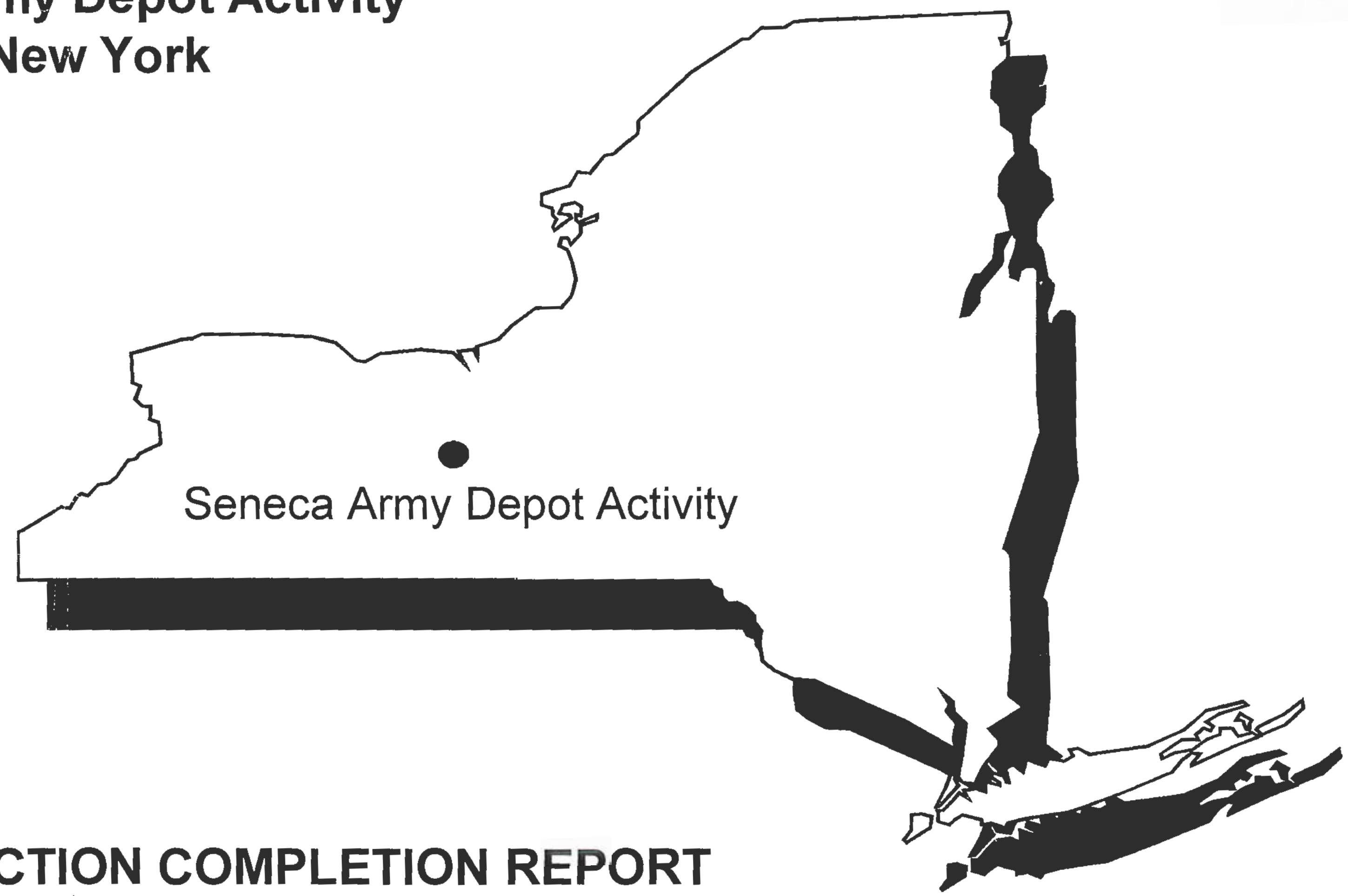

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CONSTRUCTION COMPLETION REPORT

FOR THE ABANDONED DEACTIVATION FURNACE (SEAD-16) AND THE ACTIVE DEACTIVATION FURNACE (SEAD-17) SENECA ARMY DEPOT ACTIVITY, ROMULUS, NY

Prepared for:

AIR FORCE CENTER FOR ENGINEERING AND THE ENVIRONMENT

BROOKS CITY-BASE, TEXAS

and

SENECA ARMY DEPOT ACTIVITY

ROMULUS, NY

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Contract Number FA8903-04-D-8675
Task Order 0031, CDRL A001D
EPA Site ID# NY0213820830
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September 2008

3.0 CONSTRUCTION ACTIVITIES

This section documents construction-phase activities associated with the RA at SEAD-16 and SEAD-17. Construction activities began with mobilization of personnel and equipment by Parsons and the selected earthwork subcontractor, S. St. George Enterprises, Inc of Fredonia, New York, on July 9, 2007. All construction activities were completed by August 15, 2007, at which time Parsons and S. St. George demobilized from the sites. All construction activities that took place at SEDA were documented in daily reports (**Appendix A**).

3.1 SITE PREPARATION

The field crew and equipment were mobilized to the site on July 9, 2007. Site preparation included the following activities:

- Mobilization; and
- Removal of the fence along the north and west side of SEAD-17.

3.1.1 Mobilization

The field crew and the equipment were mobilized to the site on July 9, 2007. Equipment included one dozer, two excavators, a mini excavator, a Bobcat, a skid steer, a water truck, a fuel truck, and a mechanics truck.

3.1.2 Removal of SEAD-17 Fencing

To facilitate access by the excavators to the SEAD-17 excavation area, 150 linear feet of fence was removed along the west side of SEAD-17. In addition, 30 linear feet of fence was removed on the north side of the access road to facilitate truck access to SEAD-17. The fence posts were pulled from the ground. The fence fabric was rolled back and secured.

3.2 HEALTH AND SAFETY DURING CONSTRUCTION

At the start of each work day, all on-site workers attended a daily health and safety briefing conducted by the SHSO. Site visitors were required to review the project Health and Safety Plan (Parsons, 2005; 2006b) and attend a site-specific health and safety briefing. These "tailgate" meetings were mandatory for all subcontractors and Parsons personnel working at the site. At each meeting, the SHSO discussed personal protective equipment (PPE) needs for that day and any potential hazards associated with the day's scheduled activities. The topics covered and all attendees at each daily briefing were documented, and the records were stored by the SHSO in the project files.

Dust monitoring for lead was conducted during the work at SEAD-16 and SEAD-17 in accordance with the project Health and Safety Plan (Parsons, 2006b), which included a Lead Monitoring Plan. An IOM personal sampler was used to monitor for lead, and samples were submitted to Galson Laboratories in East Syracuse, New York for subsequent analysis. All personal lead monitoring sample results indicated that lead levels were well below action levels.

3.3 DUST MONITORING

Dust monitoring was conducted during the work using two Thermo Anderson DR-4000 dust monitors. Perimeter air monitoring of the work area for dust was conducted during the excavations. The dust monitor provided real time perimeter measurements. The air monitoring equipment was positioned downwind of the work areas. The dust monitors were set up from July 9 through July 18, 2007, during which time the majority of the excavation work at SEAD-16 and SEAD-17 was completed. It was determined that dust was not a problem at the sites based on the low air monitoring readings. Therefore, air monitoring was discontinued during the additional excavation activities performed during August.

The dust monitoring record is included in **Appendix C**.

3.4 SEAD-16

3.4.1 Excavation and Confirmatory Sampling

Phase I Excavation

The initial excavation areas were delineated based on concentrations of lead and other metals observed in the soil during previous investigations and pre-excavation perimeter sampling performed in April and May 2007. The soil was excavated to a depth of 1 foot, except for two areas, Grids E5 and D8, which were planned to be excavated to depths of 2 feet and 3 feet, respectively, based on RI subsurface soil data. Excavation began on July 10, 2007 and the initial excavation, referred to as the Phase I excavation, was completed on July 18, 2007. **Drawing C-4** shows the excavation area at SEAD-16. Bedrock was encountered at 2 feet at the subsurface excavation located between the tracks in Grid E5, shown in **Drawing C-4**. Excavated soil was temporarily staged at the southern end of the excavation area at the southwest corner of Building S-311, as shown in **Drawing C-2**. Excavated material was loaded and transported off-site by Riccelli Enterprises, Inc. on a daily basis and was not staged for extended periods of time. Soil excavated during Phase I activities at SEAD-16 totaled 1,626 cy, and is summarized in **Table 3-1**. Photographs of the excavation activity are included in **Appendix D**.

General Confirmatory Sampling Collection Details

As general requirements at both SEAD-16 and SEAD-17, confirmatory samples were collected from the base ("floor") and perimeter of the excavation to confirm that soil with concentrations above the cleanup goals was excavated and removed from the sites. Floor and perimeter samples were collected at a frequency of 1 sample every 2,500 sf or less of excavation floor and 1 sample every 50 lf or less of excavation perimeter, respectively. In the event that an excavation extended 2 or more feet below the original ground surface, sidewall samples were collected instead of perimeter samples.

Field duplicates were collected to meet the quality assurance/quality control (QA/QC) requirements established in the Final Work Plan. Samples were analyzed for specific metals (antimony, arsenic, cadmium, copper, lead, thallium, and zinc) identified in the ROD based on metals that contribute potential human health risk to the site; and samples collected from Grids G4 and G5 were also analyzed for cPAHs since they were detected at that location during the RI (as discussed in **Section 1.3**). Samples were submitted to TestAmerica Laboratories, Inc., Amherst, NY for analysis of selected metals (antimony,

arsenic, cadmium, copper, lead, thallium, and zinc) by USEPA SW846 Method 6010B and mercury by USEPA SW846 Method 7471A. Samples collected from Grids G4 and G5 at SEAD-16 were also submitted for analysis of cPAHs by USEPA SW846 Method 8270C. The cleanup goals (listed in **Table 2-1**) for cPAHs and metals at SEAD-16 are as follows:

Compound	Units	Cleanup Goal
cPAHs		
Benzo(a)pyrene Toxicity Equivalence	mg/kg	10
Metals		
Antimony	mg/kg	41
Arsenic	mg/kg	21.5
Cadmium	mg/kg	60
Copper	mg/kg	10,000
Lead	mg/kg	1,250
Mercury	mg/kg	5.7
Thallium	mg/kg	6.7
Zinc	mg/kg	10,000

All samples were collected following procedures outlined in the Revised Final Sampling and Analysis Plan for Seneca Army Depot Activity (Parsons, 2006a). A 50-foot by 50-foot grid matrix was laid out over the excavation area as a means of tracking the locations of confirmatory samples; the grids are shown in **Drawing C-4**. Floor and perimeter samples were collected as grab samples from unique locations, at a depth between 0 and 2 inches below ground surface. Floor samples were collected from the center of each grid, unless biased by field observations or site features. Sidewalls were collected as grab samples from a depth halfway between the ground surface and the base of excavation.

The analytical results of each field duplicate pair were averaged to produce a single result to represent the level at the sample location. This approach is consistent with the USEPA protocol. As an example, in its Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category (USEPA, 2004), USEPA states that: *"Because the analytical data from each duplicate pair characterize the same conditions at the same time at a single sample point, EPA aggregated the data to obtain one data value for those conditions by calculating the arithmetic average of the duplicate pair."*

Analytical data for all confirmatory samples are provided in **Appendix E**. The chain-of-custodies for the confirmatory samples are included in **Appendix F** and the case narratives for laboratory sample delivery groups are presented in **Appendix G**. All of the analytical results were validated in a manner that is consistent with procedures defined in the USEPA's National Functional Guidelines for Organic Data Review and consistent with USEPA Region 2's Standard Operating Procedures (SOPs). A data validation report is provided in **Appendix H**.

Phase I Sampling

After the Phase I excavation, seven perimeter samples (plus one field duplicate), 33 floor samples (plus two field duplicates), and eight sidewall samples (plus one field duplicate) were collected between July 18, 2007 and July 20, 2007. Analytical results from five Phase I samples (three floor samples and two

sidewall samples) exceeded the cleanup goal for antimony (41 mg/kg), and four samples (three floor samples and one sidewall sample) exceeded the lead cleanup goal (1,250 mg/kg). The failed sample locations are shown in **Figure 3-1** and listed below.

Summary of Phase I Confirmatory Soil Samples with Exceedances of Cleanup Goals		
Sample ID	Antimony (CUG = 41 mg/kg)	Lead (CUG = 1,250 mg/kg)
16EXFL-B8-02	67.3	1370
16EXFL-C9-01	230	6410
16EXFL-D8-01	95.2	4090
16EXSW-D8-05	68.1	3380
16EXSW-D8-02	191	*

* The lead concentration at 16EXSW-D8-02 did not exceed 1,250 mg/kg.

Floor sample 16EXFL-B8-02 was collected from Ditch #1; a floor sample collected upgradient of the failed 16EXFL-B8-02 met the cleanup goals. Floor sample 16EXFL-C9-01 was collected from the center of Grid C9. Samples 16EXFL-D8-01, 16EXSW-D8-01, and 16EXSW-D8-05 were collected from the subsurface excavation area in Grid D8 located southeast of Building S-311 next to the ramp. Floor sample 16EXFL-D8-01 was collected from the center of the 2-foot excavation area. Sidewall sample 16EXSW-D8-05 was collected at sample location 16EXSW-D8-01 (duplicate of sample ID 16EXSW-D8-01) located on the northwest side of the deep excavation close to Building S-311 at a depth approximately 1 below ground surface; sidewall sample 16EXSW-D8-02 was collected on the east side of the deep excavation at a depth 1 below ground surface.

All confirmatory samples met the cleanup goals for the other metals, and all samples analyzed for cPAHs achieved the cPAH cleanup goal.

On July 18, 2007, five split soil samples (plus one field duplicate) were collected by USEPA representatives at the same locations as five of the confirmatory samples submitted to TestAmerica Laboratories, Inc. by Parsons and the Army. The USEPA samples were analyzed by the USEPA and are not part of the Army's dataset. The analytical results for the samples collected and analyzed by the USEPA varied from the analytical results for the split samples analyzed by TestAmerica. The analytical results for the split samples analyzed by USEPA are provided in **Appendix I**. To be conservative, the Army accepted the higher of the pair of analytical results for each split sample location. The higher value for samples 16EXPR-C10-02 and 16EXPR-F9-02 was greater than 1,250 mg/kg for lead (1,360 mg/kg and 2,940 mg/kg, respectively). The Army agreed to excavate additional soil surrounding those sample locations in Grids C10 and F9, to a depth of 1 foot.

Phase II Excavation

A Phase II excavation was completed at SEAD-16 between July 30, 2007 and August 2, 2007 to remove soil associated with the five failed samples and two USEPA split samples, shown in **Drawing C-4**. The details of the Phase II excavation were as follows:

(1) Ditch #1, running through Grids B8, C7, and C8, was excavated to bedrock so that the total depth of excavation in Ditch #1 extended approximately 2 feet below the original ground surface, to remove the soil associated with high levels of antimony and lead found in floor sample 16EXFL-B8-02;

(2) An additional foot of soil was excavated from the entire Grid C9 area, so that the total depth of excavation in this grid extended to 2 feet below ground surface, due to the results of floor sample 16EXFL-C9-01, which exceeded the cleanup goals for antimony and lead;

(3) The limits of excavation extended laterally to include a 1-foot excavation in a portion of Grid C10 and a portion of Grid F9 due to the higher of the two sample results from the split samples (16EXPR-C10-02 and 16EXPR-F9-02) exceeding the cleanup goal for lead;

(4) The subsurface excavation in Grid D8 was expanded vertically and horizontally due to the failure of soil at two sidewall sample locations (16EXSW-D8-01 and 16EXSW-D8-02) and the floor sample (16EXFL-D8-01) to meet the cleanup goals. The excavation extended northeast of the original area up to the building ramp, and 1-foot of soil was scraped off the bottom of the deep excavation and bedrock was encountered. Any residual soil in the excavation area was removed from the area along the building ramp or Building S-311 until both of those surfaces were scraped clean and exposed. The total depth of excavation in this area reached 3 feet.

An additional 235 cy of soil was removed from SEAD-16 during the Phase II excavation activities. All excavation activities were completed by August 2, 2007. A total of 1,862 cy of soil was excavated from SEAD-16, as is summarized in **Table 3-1**. **Drawing C-4** shows the final excavation areas and the final depths of excavations. Phase II confirmatory samples were collected after the completion of the Phase II excavation.

Phase II Sampling

Following the Phase II excavation, additional confirmatory samples were collected on July 30, 2007 and August 2, 2007 to confirm that soil remaining on-site met the cleanup goals for metals. Four floor samples (plus one field duplicate), two perimeter samples, and one sidewall sample (plus one field duplicate) were collected and analyzed by TestAmerica for targeted metals (antimony, arsenic, cadmium, copper, lead, thallium, zinc, and mercury) to confirm that the removal action was complete. The four floor samples were collected to confirm that the base of newly excavated areas met the cleanup goals. Phase II confirmatory samples were collected in the following locations, shown in **Drawing C-4**:

- Floor sample 16EXFL-C9-02 was collected in the center of Grid C9 after the excavation of an additional foot of soil;
- Floor sample 16EXFL-C10-01 was collected from the base of Grid C10 after the removal of 1 foot excavation wedge;
- Perimeter sample 16EXPR-C10-03 was collected outside the limits of excavation of the expanded excavation wedge in Grid C10;

- Floor samples 16EXFL-F9-01 and field duplicate 16EXFL-F9-02 were collected at the base of Grid F9 after the removal of 1 foot excavation wedge;
- Perimeter sample 16EXPR-F9-03 was collected outside the limits of excavation of the expanded excavation wedge in Grid F9;
- Floor sample 16EXFL-D8-02 was collected from the base of the expanded excavation in Grid D8 adjacent to the Building S-311 ramp, and the original excavation around SB16-5 in Grid D8 was excavated to bedrock; and
- Sidewall sample 16EXSW-D8-06 (along with field duplicate 16EXSW-D8-07) was collected at a location along the southern wall of the excavation close to the building ramp; a sample was collected at this location rather than along the ramp (where the failed sample 16EXSW-D8-02 was collected) since the ramp was scraped clean during the Phase II excavation and no soil remained to sample.

Phase II samples were not collected from the sidewall of Building S-311, since the foundation of the building was exposed and no soil remained to be sampled. A floor sample was not collected from the base of Ditch #1 since the Phase II excavation removed the soil in the ditch to bedrock, and no soil remained in the ditch to sample.

All Phase II samples met the cleanup goals.

This discussion above details the field activities and the removal of soil associated with samples that failed to meet the antimony and/or lead cleanup goals. Therefore, the data for the samples that have been excavated are no longer representative of soil remaining at the site. The removed sample data are included in **Appendix E** for completeness, and are not included in the final confirmatory dataset, presented in **Table 3-2**. The locations of all final confirmatory samples are shown in **Drawing C-4**, and the locations and concentrations of samples that were located in soil excavated from the site are presented in **Figure 3-1**.

A comparison of the number of soil samples required to the actual number of samples collected is presented in the following table, showing that the required sampling frequency was achieved.

	Perimeter/Sidewall Length of Excavation Area	Frequency Requirement	No. of Samples Required	No. of Final Samples Collected	No. of QA/QC Samples Collected [1]
Floor Samples	41,616 sf	1 per 2,500 sf	17	34 [2]	3
Perimeter Samples	1,366 lf	1 per 50 lf	28	35	3
Sidewall Samples	152 lf	1 per 50 lf	3	7	1

1. QA/QC samples included collection of a field duplicate.
2. The number of final floor samples collected includes the collection of ditch samples and floor samples in partial grids.

All excavation activities were completed on August 14, 2007. A total of 1,862 cy of soil were excavated from SEAD-16, as is summarized in **Table 3-1**. **Drawing C-4** shows the extent and depths of excavations. Photographs of the excavation activity are shown in **Appendix D**.

3.4.2 Water Removal

The basement of Building S-311 contained approximately 2 to 3 feet of standing water at the time field work began. One sample of the water (16WWT16-0703) was collected on July 3, 2007 prior to the start of field activities. The sample was submitted to TestAmerica Laboratories, Inc. for analysis of volatile organic compounds (VOCs) by USEPA SW846 Method 8260B, semivolatile organic compounds (SVOCs) by USEPA SW846 Method 8270C, metals by USEPA SW846 Method 6010B, and mercury by USEPA SW846 Method 7470A. Metals were the only analytes detected in the sample; analytical results are provided in **Appendix J**. Visual observations of the water indicated that the water sample contained suspended solids resulting from the historic accumulation of dirt and debris in the basement of the abandoned building; analysis of water with a high level of turbidity can result in reporting falsely elevated metals concentrations. A large part of the accumulated dirt and debris was removed with the water when the basement was pumped. Building S-311's cellar was broken up and filled with hard fill (concrete) generated from demolition activities at SEDA. If any dirt and debris did remain in the basement of the building, it was buried underneath the concrete fill.

The water in the basement of Building S-311 was pumped into the on-site water truck on July 12, 2007 for use as dust suppression water for soils that were excavated from SEAD-16 and loaded onto trucks for transport off-site and disposal at licensed landfills on that day. The excavated soils were sprayed to suppress dust and were not saturated with water. Erosion controls were in place and were effective in preventing runoff from the work area.

3.4.3 Unexploded Ordnance

SEAD-16, the Abandoned Deactivation Furnace, was historically used for the demilitarization of various small arms munitions via a heated rotating steel kiln. SEAD-16 has been inactive and abandoned since the 1960s and the presence of materials presenting potential explosive hazard (MPPEH) and propellant residue in pipes/equipment at the site was considered possible. An Unexploded Ordnance (UXO) technician was on-site to provide construction support as a safety measure during excavation activities.

Small arms munitions scrap removed from the basement of Building S-311 was spread out for visual inspection and classification by the UXO technician prior to transport off-site for disposal; no MPPEH was found as only small arms casing and bullets were discovered in material recovered from and inside the building. Pipes (approximately 200 linear feet) and equipment (cyclone, bag filter, and vacuum pump) potentially contaminated with propellant were removed from SEAD-16 and transported to the Open Burn Ground in the northwest portion of SEDA for heat treatment in a burn tray.

3.4.4 Building Demolition

Debris was removed from inside Building S-311, the Abandoned Deactivation Furnace, and Building 366, the Process Support Building, and the floors were swept to reduce potential dust mobilization during demolition activities. As part of a separate effort completed under a different contract, both of these buildings were demolished and removed from the site due to safety concerns.

3.4.5 Transportation and Off-Site Disposal

Parsons subcontracted with Riccelli Enterprises, Inc. to transport and dispose of the excavated non-

hazardous soil at Ontario County Landfill in Flint, NY. A decontamination area was setup adjacent to the stockpile location to facilitate the loading and exiting of haul trucks from the site. Truck load out was completed by August 2, 2007. A total of 2,532 tons (101 loads) of soil were hauled off-site and disposed at Ontario County Landfill. A log of the waste manifests and copies of the non-hazardous waste manifests are provided in **Appendix K**.

3.4.6 Site Restoration

The excavated areas that extended to 2-feet below ground surface or greater and the areas between the railroad tracks were backfilled with clean bank-run gravel provided by Riccelli. One sample (16FM-SPX-01) was collected from the off-site borrow source material (clean bank-run gravel) and submitted to TestAmerica for analysis of VOCs by USEPA SW846 Method 8260B, cPAHs by USEPA SW846 Method 8270C, selected metals (antimony, arsenic, cadmium, copper, lead, thallium, and zinc) by USEPA SW846 Method 6010B, and mercury by USEPA SW846 Method 7471A. The analytical results met the acceptance criteria for borrow source material detailed in the Final Work Plan.

- VOCs below NYSDEC Unrestricted Soil Cleanup Objectives (Table 375-6.8(a));
- cPAHs below site cleanup goals; and
- Metals below site cleanup goals.

Analytical results of the clean bank-run gravel are presented in **Appendix L**.

The entire site was graded to promote positive drainage. Re-seeding was not required since the area was not originally vegetated. The crew demobilized from the site on August 13, 2007.

3.5 SEAD-17

3.5.1 Excavation and Confirmatory Sampling

Phase I Excavation

The initial excavation area was delineated based on concentrations of lead and other metals observed in the soil during previous investigations and pre-excavation perimeter sampling performed in April and May 2007. Excavation began on July 10, 2007 and the initial excavation to a depth of 1 foot, referred to as the Phase I excavation, was completed on July 17, 2007. **Drawing C-5** shows the final excavation area at SEAD-17. Excavated soil was temporarily staged at the northern edge of the excavation area adjacent to the gravel access road entering the site northeast of Building 367. Excavated soil was loaded and transported off-site by Riccelli Enterprises, Inc. on a daily basis and was not staged for extended periods of time. All Phase I excavated material totaled 1,995 cy, as is summarized in **Table 3-1**.

As discussed in **Section 2.11**, an area around Grid E6 with high levels of leachable lead was delineated based on the extensive TCLP metals sampling results. The soil in this area was excavated and mixed with 6.8 tons of Portland cement provided by Riccelli Enterprises, Inc on July 13, 2007. The excavator was used to spread and mix the cement with the impacted soil. A sample of the stabilized material, DS-17-18, was collected and submitted to TestAmerica for analysis of TCLP metals. The lead TCLP result for DS-17-18, 14.6 mg/L, exceeded the TCLP limit of 5 mg/L. As a result, on July 18, 2007 an additional 3.4

tons of Portland cement was mixed with the cement/soil mixture using the excavator. A new disposal characterization sample, 17-DS-19, was collected and submitted to TestAmerica for TCLP lead analysis. The analytical results showed that the lead level (0.0468 mg/L) was below the TCLP limit, and the Portland cement had stabilized the lead in the soil to reduce its leachability. The stabilized material was suitable for off-site disposal as non-hazardous waste.

Photographs of the excavation activity are shown in **Appendix D**.

Phase I Sampling

The general sample collection information presented above in **Section 3.4.1** applies to the work completed at SEAD-17.

During the Phase I excavation, seven perimeter samples and 36 floor samples (plus two field duplicates) were collected between July 13 and July 18, 2007 and submitted to TestAmerica for analysis of selected metals. Two Phase I floor samples exceeded the cleanup goal for lead (1,250 mg/kg): lead was detected at 17EXFLE5-01 and 17EXFL-F2-01 with concentrations 1,910 J mg/kg and 1,500 mg/kg, respectively. The failed sample locations are shown in **Figure 3-2**. All other samples met the cleanup goals for metals.

On July 18, 2007 five split soil samples (plus one field duplicate) were collected by USEPA representatives and submitted for analysis by the USEPA. The analytical results for the samples the USEPA collected varied from the analytical results for the split samples analyzed by TestAmerica. The table below summarizes the validated TestAmerica analytical results and the USEPA analytical results for the split samples. The analytical results for the split samples analyzed by USEPA are provided in **Appendix I**. To be conservative, the Army accepted the higher of the pair of analytical results for each split sample location. The higher values for samples 17EXFL-G3-03 and 17EXPR-D2-02 were greater than 1,250 mg/kg for lead (2,210 mg/kg and 2,300 mg/kg, respectively). The Army agreed to excavate additional soil surrounding those sample locations in Grids D2 and G3, to a depth of 1 foot.

Phase II Excavation

A Phase II excavation was completed between July 30, 2007 and August 2, 2007 to remove 1-foot of soil associated with the two failed samples and two of the USEPA split samples. The Phase II excavation consisted of removing soil in the four following areas, shown in **Drawing C-5**:

(1) An additional foot of soil was excavated from the floor of Grids E5 and F2, so that the total depth of excavation in these areas reached 2 feet below the original ground surface. This was due to levels of lead detected in floor samples 17EXFL-E5-01 and 17EXFL-F2-01;

(2) An additional foot of soil located within Grid G3 was excavated so that the total depth of excavation in this area reached 2 feet below the original ground surface. The additional excavation was conducted due to the higher of the pair of sample results from the split sample 17EXFL-G3-03 (USEPA Sample ID 17EXFL-G3-02) exceeding the lead cleanup goal; and

(3) The excavation area was expanded laterally in Grids D2 and E2 beyond the original excavation boundary to a depth of 1 foot of soil due to the higher of the pair of sample results from the split sample 17EXPR-D2-02 exceeding the lead cleanup goal.

An additional 570 cy of soil was removed from SEAD-17 during the Phase II excavation. A total of 2,565 cy of soil were excavated from SEAD-17, summarized in **Table 3-1**. **Drawing C-5** shows the final excavation areas and the final depths of excavations.

Phase II Sampling

Phase II confirmatory sampling was completed between July 30, 2007 and August 2, 2007 at the areas excavated during Phase II. Five floor samples and one perimeter sample were collected at the following locations:

- Floor sample 17EXFL-D2-01 was collected at Grid D2 at the same location (northing and easting) as excavated sample 17EXPR-D2-01;
- Perimeter sample 17EXPR-D2-03 was collected outside of the new excavation area in Grid D2;
- Floor sample 17EXFL-D6-02 was collected at Grid D6 under the location of the former stockpile of stabilized soil to confirm that all lead contamination was removed;
- Floor sample 17EXFL-E5-02 was collected at the center of Grid E5;
- Floor sample 17EXFL-F2-02 was collected at the center of Grid F2; and
- Floor sample 17EXFL-G3-04 was collected at Grid G3 at the same location (northing and easting) as excavated sample 17EXFL-G3-01.

All Phase II samples met the cleanup goals. All final samples representative of soil remaining on-site met the cleanup goals, shown in **Table 3-3**.

The discussion above details the field activities and the removal of soil associated with samples that failed to meet the lead cleanup goal. Therefore, the data for samples that have been excavated are no longer representative of soil remaining at the site. The removed sample data are included in **Appendix E** for completeness, but are not included in the final confirmatory dataset, presented in **Table 3-3**. The locations of all final confirmatory samples are shown in **Drawing C-5**, and the locations and concentrations of samples that were located in soil excavated from the site are presented in **Figure 3-2**.

A comparison of the number of soil samples required to the actual number of samples collected is presented in the following table, showing that the required sampling frequency was achieved.

	Perimeter Length of Excavation Area	Frequency Requirement	No. of Samples Required	No. of Final Samples Collected	No. of QA/QC Samples Collected [1]
Floor Samples	69,560	1 per 2,500 sf	28	37	1
Perimeter Samples	1396 ft	1 per 50 lf	28	34 [2]	1

1. QA/QC samples included collection of a field duplicate.
2. The number of final perimeter samples includes nine historic RI samples (listed in **Section 2.1**) to define the limits of excavation.

All excavation activities were completed on August 14, 2007. A total of 2,565 cy of soil were excavated from SEAD-17, summarized in **Table 3-1**. **Drawing C-5** shows the phases and depths of excavations. Photographs of the excavation activity are shown in **Appendix D**.

3.5.2 Building Demolition

As part of a separate effort performed under a different contract, both buildings (Building 367 and 311) were demolished. The Army elected to remove these buildings since it was more cost effective to remove them rather than decontaminating the buildings in order to comply with RCRA requirements. The detailed discussion of the building demolition actions can be found in the Building Demolition and Cleaning Report (Parsons, 2008).

3.5.3 Transportation and Off-Site Disposal

Parsons subcontracted with Riccelli Enterprises, Inc. to transport and dispose of the excavated material at Ontario County Landfill in Flint, NY. A decontamination area was setup at the gate entering SEAD-17 from the north, and a stockpile staging area was setup within the excavation area adjacent to the decontamination area. A total of 10.2 tons of Portland cement was provided by Riccelli Enterprises, Inc. to stabilize the lead contaminated soil prior to disposal as non-hazardous waste off-site. Truck load out was completed by August 2, 2007. A total of 3,540 tons (143 loads) were hauled off-site and disposed at Ontario County Landfill. A log of the waste manifests and copies of the non-hazardous waste manifests are provided in **Appendix K**.

3.5.4 Site Restoration

The excavation areas that extended to 2 feet or more bgs. were backfilled with clean bank-run gravel provided by Riccelli. Details of the borrow source material sampling are discussed in **Section 3.4.6**. The rest of the site was graded to promote positive drainage. The areas at SEAD-17 that were vegetated prior to the remedial action were seeded to restore the vegetation. The selected seed mixture consisted of the following:

30% Timothy
30% Perennial Ryegrass
15% Alfalfa
10% Red Clover
10% While Clover
5% Ladino Clover

The crew demobilized from the site on August 13, 2007.

3.6 CONSTRUCTION COSTS

The total construction costs for the Remedial Actions at SEAD-16 and SEAD-17 were approximately \$717,300. The cost break down is as follows:

Engineering/Oversight	\$94,000
Construction	\$600,000
Analytical Laboratory	\$23,300

7.0 REFERENCES

Army, United States Environmental Protection Agency (USEPA) Region 2, New York State Department of Environmental Conservation (NYSDEC). 1993. Federal Facilities Agreement (FFA).

NYSDEC. 2006. Remedial Program Soil Cleanup Objectives. 6 NYCRR Subpart 375-6.

NYSDEC. 1998 with 2000 and 2004 Addendum. Ambient Water Quality Standard and Guidance Values and Groundwater Effluent Limitations.

Parsons, 2005. Project Safety Plan and Site-Specific Health and Safety Plan for Remediation of the Seneca Army Depot Activity. Revised Final. October 2005.

Parsons, 2006a. Generic Site-Wide Sampling and Analysis Plan for the Seneca Army Depot Activity. Revised Final. July 2006.

Parsons, 2006b. Project Safety Plan and Site-Specific Health and Safety Plan for Seneca Army Depot Activity PBC II. August 2006.

Parsons, 2006c. Record of Decision for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17). March 2006.

Parsons, 2007. Remedial Design Work Plan and Design Report for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), Final, July 2007.

Parsons, 2008. Building Demolition and Cleaning Report. August, 2008.

SEDA, 2006. Land Use Control Remedial Design (LUC RD) Plan for SEADs 27, 66, and 64A. December 2006.

United States Environmental Protection Agency (USEPA), 2004. Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category.

United States Environmental Protection Agency (USEPA), 1999. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review. October 1999.

United States Environmental Protection Agency (USEPA) Region 2. Region 2 RCRA and CERCLA Data Validation Standard Operating Procedures (SOPs). On-line resources at http://www.epa.gov/region02/desa/hsw/sops.htm.

United States Environmental Protection Agency (USEPA) Region 9. 2004. Preliminary Remediation Goals. On-line resources available at http://www.epa.gov/region09/waste/sfund/prg/index.htm, last updated December.

Army's Response to Comments from the United States Environmental Protection Agency

Subject: Response to USEPA Comments dated 021208
Draft Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot
Romulus, New York

Comments Dated: July 10, 2008 (email)

Date of Comment Response: September 09, 2008

Army's Response to Comments

SPECIFIC COMMENTS

Comment 1: The Army's response to EPA Comment 3 is inadequate. Based on the issues identified in EPA's previous Comment 3 (i.e., concerns over potential low bias in the metals results as well as in the precision and representativeness of the metal results) and the data validation in Appendix H, concerns remain over how accurately the results document that the Record of Decision (ROD) dictated remedial goals have been achieved with the desired certainty. While, the Data Validation Memorandum provides an overview of the data validation, the level of detail is insufficient to ensure the data were properly validated and assessed. Please provide a complete electronic copy of the data package(s) received from the laboratory used by the Army in addition to the information included in Appendix H. Alternatively, please revise the Report to provide a validation memorandum which presents the actual values for each of the QC exceedances observed, a table of all results including those that were rejected and subsequently reanalyzed (e.g., the initial analysis of 16EXPR-G5-01 and 16EXPR-G5-02), a discussion on the differences between the EPA method and the facility's procedures, and a thorough assessment of the impact of the observed QC exceedances on the data.

Response 1: All data collected by Parsons have been validated by chemists according to the EPA Region 2 SOPs (on-line resources available at http://www.epa.gov/region02/qa/documents.htm). The qualifiers were added according to the Region 2 SOPs. The detailed data validation results and discussions including QC exceedance details are presented in Appendix H of the CCR. More specifically:

- Noncompliance matrix spike results are presented in Table H-3.
- LCS exceedance results are presented in Table H-4.
- Noncompliance blank results are presented in Table H-5.
- Duplicate analysis (including field duplicate and laboratory duplicate) %RPD exceedance results are presented in Table H-7.
- Calibration noncompliance results are presented in Table H-8.
- CRDL standard check noncompliance results are listed in Table H-9.
- Serial dilution noncompliance results are summarized in Table H-10.
- Percentage of solids noncompliance results are presented in Table H-11.

All the affected results (also shown in the above tables) were qualified in accordance with the Region 2 SOPs and Table H-2 summarizes all non-usable results due to the QC exceedances. Although QC non-compliances were observed for the project, the data have all been validated accordingly and non-usable results were not used for project management decision. In other words, all the results used in the CCR for the project management decision are usable according to the Region 2 SOPs, although some are considered "estimated" values. Further, there is no indication of consistent low bias based on the review of the QC data.

In summary, it is the Army's position that there is no evidence the data produced for the project are biased low and the rationales are summarized below:

- The laboratory used for this project (Test American Laboratories, Inc., Amherst, NY) is a certified laboratory for New York State's Contract Laboratory Program, Analytical Services Protocol (administered by NYSDOH).
- The QC data that support the sample results do not suggest that there is a biased low trend.
- The data have been validated in accordance with the EPA Region 2 SOPs.

Although the results for soil confirmation samples reported by the Army's laboratory were generally lower than the EPA split sample results, relative percent difference (RPD) values computed for these paired analyses, exclusive of the results reported by the two laboratories for 16EXPR-F9-02, were less than 120%, which is Region 2's limit for judging whether the duplicate pair data reported by a single laboratory are usable or not. Therefore, with the exception of the results for the questionable sample 16EXPR-F9-02, the noted differences between split sample results obtained would not result in rejection of any of the data. The Army further believes that it is necessary to remind the EPA commenter that the 120% threshold is for duplicate samples that are handled in the same manner and sent to one laboratory for analysis via identical methods; there is no threshold guidance value defined for RPD for inter-laboratory comparisons. As such, achieving agreement within the single laboratory duplicate pair RPD threshold value (120%) is a very conservative demonstration of the data acceptability as there are differences between the split pairs regarding analytical operations due to the different laboratories used.

Ultimately, soil associated with questionable sample 16EXPR-F9-02 was excavated and disposed off-site in accordance with the agreement made between the EPA and the Army due to the noted data variation, which called for the larger of the split sample results to be used as the basis of the decision, so the failure of this single sample is no longer of importance. Subsequent to the excavation of soil at location 16EXPR-F9-02, three new samples (a floor sample/duplicate pair, 16EXFL-F9-01/16EXFL-F9-02, 13.5 mg/Kg/10.1 mg/Kg; perimeter sample 16EXPR-F9-03, 8.3 mg/Kg) were collected from the area and analyzed for lead. As is shown above, all lead results surrounding the former location of questionable sample 16EXPR-F9-02 are below the defined cleanup goal for lead.

Further, it is important to note that while the Army's data have been validated, we have not received information from the EPA that indicates that their data were validated beyond the level that is normally done in the laboratory. Without this independent verification of the EPA laboratory results, Parsons and

the Army believe that it is inappropriate to use the split sample results produced by the EPA lab to criticize the results provided by the Army's laboratory. Parsons and the Army were unable to evaluate the differences between the split sample results because we were not provided the detailed report of the EPA split sample results.

The Army would be glad to submit the original hardcopy data package for your review if requested.

Comment 2: The Army's response to EPA Comment 4 is inadequate. The comment response indicates that the standing water removed from the basement of Building S-311 was pumped into the on-site water truck and used for dust control of soils within the excavation areas at SEAD-16. The analytical results obtained from the analysis of the basement water indicate that it contained concentrations of metals above Maximum Contaminant Levels (MCLs). The described use of the pumped out water was not an EPA authorized use; please revise the Report to indicate this. Once a material considered a waste is removed from its original location, current RCRA regulations require that it be managed as a waste. If reuse/recycling options are to be considered, analytical results need to be available to support the option.

Response 2: The EPA's original comment on the Draft SEAD-16 and SEAD-17 Construction Completion Report is presented below.

> "Comment 4: Section 3.4.2, Water Removal, discusses standing water in the basement of Building S-311 at the time removal construction activities began. The water was sampled and the analytical results are provided as Appendix I. The results should be compared to water disposal criteria to identify any elevated concentrations in the water. Revise the text to include the final destination (i.e., local waste water treatment plant, disposal onto ground surface) of the standing water and how it got there. If documentation of the water removal is presented in a different report, provide a brief summary of activities and reference the document."

The revision to Section 3.4.2 provided the location where the analytical results for the water were presented within the Draft Final Construction Completion Report (Appendix J) and the response included a comparison to New York State GA Groundwater standards, which indicates that several metals in the standing water were observed at concentrations in excess of GA groundwater standards.

Language incorporated into the Draft Final Completion Report indicating this will be modified to read as follows (Reference last paragraph of Section 3.4.2 of Completion Report):

> The water in the basement of Building S-311 was pumped into the on-site water truck on July 12, 2007 for use as dust suppression water for soils that were excavated from SEAD-16 and loaded onto trucks for transport off-site and disposal at licensed landfills on that day. The excavated soils were sprayed to suppress dust and were not saturated with water. Erosion controls were in place and were effective in preventing runoff from the work area.

As is indicated in the proposed revised text for the Construction Completion Report, the soil upon which the Building 311 water was used for dust suppression was subsequently excavated and removed from the

site. The water was not allowed to pond or puddle on the site, and controls were in place to prevent the water from running onto other areas of the greater site.

Confirmatory soil sample results for samples collected from beneath the areas where soils were sprayed and then excavated indicate that there were no exceedances of cleanup goals, so it is not likely that metals entrained or dissolved in the water impacted the underlying soils. Groundwater sampling data collected from SEAD-16 after the completion of the removal action, further suggests that the groundwater underlying the site has not been impacted as a result of this water's use as groundwater concentrations are generally lower now than previously reported during the RI.

As Section 3.4.2 is currently written, there is no claim or representation that the EPA approved of the use of the water for dust suppression. **Comment 3:** The Army's response to EPA Comment 8 is inadequate. The Army has indicated that when EPA split sample data and the Army's split sample data were compared, it was agreed that the higher of the two values would be used to determine when the ROD required remedial levels had been obtained. However, when Army duplicate data was compared, the two values were averaged, and an EPA citation that is found in the Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category, USEPA, 2004 is used as reference for this approach. This stance is inconsistent and unsubstantiated, as EPA guidance for liquid media is not transferable to solids, and National Pollutant Discharge Elimination System (NPDES) data is intended to be averaged over a typical 24-hour discharge period, which is not similar to the remedial conditions at Seneca. Further, the stated Report objectives indicate that data will be compared to the ROD clean-up levels to determine if the remedy is complete, without any reference to averaging the data. Revise the Report so that whenever two data points are available to define site conditions, the higher of the two values is used. If this impacts the determination that the remedial action is complete, revise the Report to indicate where additional excavation and sampling is warranted. It may be necessary to present the results and associated sampling points visually to clearly make this assessment.

Response 3: As has been discussed with all parties (i.e., EPA, NYSDEC, NYSDOH) repeatedly during the course of the CERCLA-related activities at the Seneca Army Depot, it is the Army position that decisions relative to completion of work are based on site-wide assessments and determinations, and not on the basis of individual sample results. This has been, and will continue to be, the Army's process and basis of action, and it is our belief that this approach and process is reasonable and appropriate, and compliant with the requirements of CERCLA.

The lead in soil cleanup goal for SEAD-17 was 1250 mg/Kg. Sixty-four soil samples were collected, characterized, and qualified as appropriate during the confirmation sampling, and these samples were used as the basis of the Army's decisions made at SEAD-17. These samples were collected from 62 locations, with sample/duplicate pairs being collected at two locations. After reflecting on the EPA's comment, the Army believes that there are four alternative ways that the available data could have been evaluated and presented. These are summarized below:

1. All 64 data points used;
2. Data from all 62 locations considered, with the maximum result from sample/duplicate pairs being used as the value that is most representative of that sample/duplicate sampling locations (i.e., the approach specified in the EPA's comment);
3. Data from all 62 locations considered, with the minimum result from sample/duplicate pairs being used as the value that is most representative of that sample/duplicate sampling locations;
4. Data from all 62 locations considered, with the average result from sample/duplicate pairs being used as the value that is most representative of that sample/duplicate sampling locations (i.e., the approach used by the Army).

Summary results for each of these alternative approaches are presented below:

Description	Minimum Lead Concentration Detected at SEAD-17 (mg/Kg)	Maximum Lead Concentration Detected at SEAD-17 (mg/Kg)	Average Lead Concentration Detected at SEAD-17 (mg/Kg)	95th UCL Concentration of Lead Detected at SEAD-17 (mg/Kg)
Approach 1: 64 samples collected, all data points considered	4.8	1540	350.5	643.7
Approach 2: 62 data points (use MAXIMUM value for sample/duplicate pairs) EPA approach	4.8	1540	350	648.9
Approach 3: 62 data points (use MINIMUM value for sample/duplicate pairs) EPA approach	4.8	1120	336.5	611.9
Approach 4: 62 data points (use AVERAGE value for sample/duplicate pairs) Army approach	4.8	1121	343.2	627.5

Regardless of the data analysis and assessment approach that was used for the identified dataset, it is the Army's contention that the lead cleanup goal has been achieved on a site-wide basis. In each case, the 95th UCL value for lead in soil is roughly half of the cleanup goal specified. Under two approaches, the maximum value reported exceeds the cleanup goal. Examination of the full confirmatory soil data set for SEAD-17 shows that the highest value is 1,540 "J" mg/Kg, and the next highest value is 1,120 mg/Kg. The presence of this lone value above the cleanup goal suggests that there is no wide-spread problem at the site, and in fact, the duplicate associated with the sample value of concern further supports this belief, as the value of lead reported for it was 702 "J" mg/Kg. Both of the reported values reported for this

location are equally likely to be correct, and as such, the best one can do within reason is to presume that the real level of lead lies somewhere in the middle (e.g., at the average concentration). In the Army's opinion, the degree of variation shown at this one location is more suggestive of soil heterogeneity rather than an indication of a possible wide-spread contaminated zone at the site. Simply put, data from the other sixty-one locations does not support this fear, as they are all lower than the cleanup goal.

The EPA's approach (see Approach 2 above) which uses only the maximum value from sample/duplicate pairs skews the assessment of what is presented on a site-wide and a location-by-location basis. Approach 3 also skews the site-wide and location-by-location assessment of the data, but in this case to the opposite pole. Approach 1 gives more credence to the results found at two locations than to the other 60 locations that are within the site's dataset, and as such, one could argue that this approach also skews the analysis. The approach selected by the Army gives equal weight to all sample locations within the dataset, and in our opinion, produces a fair representation of what is present on a site-wide basis. Under the Army's approach, results from each individual location (i.e., 62 locations) in the SEAD-17 area affected were compared to the cleanup value, and data from all of the locations were found to be lower than the goal.

As is currently documented in the Construction Completion Report, the lead cleanup goal was achieved in accordance with common practices that have been used by the Army throughout all investigative and remedial actions at the Depot since the late 1990s, which includes averaging the results of sample/duplicate pairs in data presentations. Parsons and the Army adopted the practice of averaging the results of samples and sample duplicates and have reported and analyzed data presented to the agency in this manner since that time. This is referenced in several of the reports that have been issued to the EPA since that time. The EPA has not previously commented on this approach in any of this other work. This procedure is also consistent with the Army and EPA's approach that has been used at other Army installations as is documented in the EPA Superfund Record of Decision for Fort Devens Operable Unit 03 (Refer to Tables 13 – 15 and footnotes of ROD found at http://www.epa.gov/superfund/sites/rods/fulltext/r0196119.pdf).

Finally, the Army believes that it is appropriate to note that the lead in soil cleanup value established for SEAD-17 (i.e., 1250 mg/Kg) is itself an average, based on the range defined (750 – 1750 mg/Kg) in the document "*Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil*" (USEPA, December 1996) for an acceptable residual risk under an industrial use scenario

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September 17, 2008

Mr. John Hill
U.S. Air Force Center for Engineering and the Environment
HQ AFCEE/IWP
3300 Sidney Brooks
Brooks City-Base, TX 78235-5112

SUBJECT: Final Construction Completion Report for SEAD-16 and SEAD-17 at Seneca Army Depot Activity; Contract FA8903-04-D-8675, Delivery Order 0031, CDRL A001D

Dear Mr. Hill:

Parsons Infrastructure & Technology Group Inc. (Parsons) is pleased to submit the Final Construction Completion Report for SEAD-16 and SEAD-17 at the Seneca Army Depot Activity (SEDA) in Romulus, New York. Please find enclosed the replacement pages to update the Draft Final Construction Complete Report. Instructions are provided.

This work was performed in accordance with the Scope of Work (SOW) for Contract No. FA8903-04-D-8674, Task Order No. 0031.

Parsons appreciates the opportunity to provide you with the report for this work. Should you have any questions concerning these replacements to the document, please do not hesitate to call me at (617) 449-1405 to discuss them.

Sincerely,

Todd Heino, P.E.
Project Manager

Enclosure

cc: S. Absolom, SEDA (3 copies)
K. Hoddinott, USACHPPM (2 copies)
R. Walton, USAEC (1 copy)
R. Battaglia, USACE - NY District (1 paper copy)
T. Battaglia, USACE - NY District (1 paper copy)
AFCEE Contact Data Library (letter only via email)

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September 17, 2008

Mr. Julio Vazquez
USEPA Region II
Superfund Federal Facilities Section
290 Broadway, 18th Floor
New York, NY 10007-1866

Mr. Kuldeep K. Gupta, P.E.
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation
Remedial Bureau A, Section C
625 Broadway
Albany, NY 12233-7015

Mr. Mark Sergott
Bureau of Environmental Exposure Investigation
Flanigan Square, Room 300
547 River Street
Troy, New York 12180

SUBJECT: Final Construction Completion Report for SEAD-16 and SEAD-17 at Seneca Army Depot Activity; EPA Site ID# NY0213820830 and NY Site ID# 8-50-006

Dear Mr. Vazquez/Mr. Gupta/Mr. Sergott:

Parsons Infrastructure & Technology Group Inc. (Parsons) is pleased to submit the Final Construction Completion Report for SEAD-16 and SEAD-17 at the Seneca Army Depot Activity (SEDA) in Romulus, New York (USEPA Site ID# NY0213820830 and NY Site ID# 8-50-006). Please find enclosed the replacement pages to update the Draft Final Construction Complete Report. Instructions are provided.

Parsons appreciates the opportunity to provide you with this report for this work. Should you have any questions concerning these replacements to the document, please do not hesitate to call me at (617) 449-1405 to discuss them.

Sincerely,

Todd Heino, P.E.
Program Manager

Enclosures

cc:	J. Hill, AFCEE	AFCEE CDL (letter only)	M. Heaney, TechLaw
	S. Absolom, SEDA	K. Hoddinott, USACHPPM	R. Walton, USAEC
	R. Battaglia, USACE - NY	T. Battaglia, USACE - NY	

SENECA ARMY DEPOT ACTIVITY
FINAL CONSTRUCTION COMPLETION REPORT FOR SEAD-16 AND SEAD-17
SEPTEMBER 2008

Instructions to Complete Edit/Update to Final Document

Please find enclosed the following items to update the May 2008 draft final document to the September 2008 final document.

1. Update report cover and spine for the Construction Completion Report.
2. Replace title page (first page of the report).
3. Section 3: Reissued the entire section to replace the previous section.
4. Section 7: Reissued the entire section (1 page) to replace the previous section.
5. Appendix N: Please add the Response to USEPA Comments to the end of the report.

If you have any questions, please contact Todd Heino at (617) 449-1405.

..

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September 17, 2008

Mr. John Hill
U.S. Air Force Center for Engineering and the Environment
HQ AFCEE/IWP
3300 Sidney Brooks
Brooks City-Base, TX 78235-5112

SUBJECT: Final Construction Completion Report for SEAD-16 and SEAD-17 at Seneca Army Depot Activity; Contract FA8903-04-D-8675, Delivery Order 0031, CDRL A001D

Dear Mr. Hill:

Parsons Infrastructure & Technology Group Inc. (Parsons) is pleased to submit the Final Construction Completion Report for SEAD-16 and SEAD-17 at the Seneca Army Depot Activity (SEDA) in Romulus, New York. Please find enclosed the replacement pages to update the Draft Final Construction Complete Report. Instructions are provided.

This work was performed in accordance with the Scope of Work (SOW) for Contract No. FA8903-04-D-8674, Task Order No. 0031.

Parsons appreciates the opportunity to provide you with the report for this work. Should you have any questions concerning these replacements to the document, please do not hesitate to call me at (617) 449-1405 to discuss them.

Sincerely,

Todd Heino, P.E.
Project Manager

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September 17, 2008

Mr. Julio Vazquez
USEPA Region II
Superfund Federal Facilities Section
290 Broadway, 18th Floor
New York, NY 10007-1866

Mr. Kuldeep K. Gupta, P.E.
New York State Department of Environmental Conservation (NYSDEC)
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Remedial Bureau A, Section C
625 Broadway
Albany, NY 12233-7015

Mr. Mark Sergott
Bureau of Environmental Exposure Investigation
Flanigan Square, Room 300
547 River Street
Troy, New York 12180

SUBJECT: Final Construction Completion Report for SEAD-16 and SEAD-17 at Seneca Army Depot Activity; EPA Site ID# NY0213820830 and NY Site ID# 8-50-006

Dear Mr. Vazquez/Mr. Gupta/Mr. Sergott:

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R. Walton, USAEC

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May 27, 2008

Mr. John Hill
U.S. Air Force Center for Engineering and the Environment
HQ AFCEE/IWP
3300 Sidney Brooks
Brooks City-Base, TX 78235-5112

SUBJECT: Draft Final Construction Completion Report for SEAD-16 and SEAD-17 at Seneca Army Depot Activity; Contract FA8903-04-D-8675, Delivery Order 0031, CDRL A001D

Dear Mr. Hill:

Parsons Infrastructure & Technology Group Inc. (Parsons) is pleased to submit the Draft Final Construction Completion Report for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17) at the Seneca Army Depot Activity (SEDA) in Romulus, New York. This Construction Completion Report describes the removal action construction activities completed at SEAD-16 and SEAD-17 between July 9, 2007 and August 13, 2007.

Responses to USEPA comments received on February 12, 2008 and to NYSDEC comments received on April 7, 2008, are included as Appendix N.

This work was performed in accordance with the Scope of Work (SOW) for Contract No. FA8903-04-D-8674, Task Order No. 0031.

Parsons appreciates the opportunity to provide you with the Construction Completion Report for this work. Should you have any questions, please do not hesitate to call me at (617) 449-1405 to discuss them.

Sincerely,

Todd Heino, P.E.
Project Manager

Enclosure

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T. Battaglia, USACE - NY District (1 copy)
J. Fallo, USACE - NY District (1 copy)
P. O'Connor, Portage (1 electronic copy)
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May 27, 2008

Mr. Julio Vazquez
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Mr. Kuldeep K. Gupta, P.E.
New York State Department of Environmental Conservation (NYSDEC)
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Mr. Mark Sergott
Bureau of Environmental Exposure Investigation
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SUBJECT: Draft Final Construction Completion Report for SEAD-16 and SEAD-17 at Seneca Army Depot Activity; Contract FA8903-04-D-8675; DO# 0031
EPA Site ID# NY0213820830 and NY Site ID# 8-50-006

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Parsons appreciates the opportunity to provide you with the Construction Completion Report for this work. Should you have any questions, please do not hesitate to call me at (617) 449-1405 to discuss them.

Sincerely,

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FINAL

CONSTRUCTION COMPLETION REPORT

FOR THE ABANDONED DEACTIVATION FURNACE (SEAD-16) AND THE ACTIVE DEACTIVATION FURNACE (SEAD-17) SENECA ARMY DEPOT ACTIVITY, ROMULUS, NY

Prepared for:

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES AND DRAWINGS

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

AFCEE	Air Force Center for Engineering and the Environment
ARAR	Applicable or Relevant and Appropriate Requirement
AWQS	Ambient Water Quality Criteria
bgs	below ground surface
BRAC	Base Realignment and Closure
CCR	Construction Completion Report
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	Contaminant of Concern
cPAH	Carcinogenic Polycyclic Aromatic Hydrocarbon
CQP	Construction Quality Plan
cy	cubic yards
DDESB	Department of Defense Explosive Safety Board
FFA	Federal Facility Agreement
FSP	Field Sampling Plan
IAG	Interagency Agreement
LUC	Land Use Control
lf	linear feet
LTM	Long-Term Monitoring
mg/kg	Milligram per kilogram
MPPEH	Materials Presenting Potential Explosive Hazard
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NPL	National Priorities List
NY	New York
NYSDEC	New York State Department of Environmental Conservation
NYSEG	New York State Electric and Gas
ORP	Oxidation-Reduction Potential
PAH	Polycyclic Aromatic Hydrocarbon
PM	Project Manager
PPE	Personal Protective Equipment
PRG	Preliminary Remediation Goal
QC	Quality Control
QA/QC	Quality Assurance/Quality Control
RA	Remedial Action
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
SAP	Sampling and Analysis Plan
SDG	Sample Delivery Group
SEDA	Seneca Army Depot Activity

sf	square feet
SHSO	Site Health and Safety Officer
SM	Site Manager
SOP	Standard Operating Procedure
SVOC	Semivolatile Organic Compound
SWMU	Solid Waste Management Unit
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
USACE	United States Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

This Construction Completion Report for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), located at the Seneca Army Depot Activity (SEDA or the Depot) in Romulus, New York is intended to provide record documentation of the removal action construction activities completed at the two historic solid waste management units (SWMUs). In addition, post-remediation groundwater sampling results indicate that groundwater has not been significantly impacted by site activities, and recommends annual groundwater monitoring and reevaluate as part of the 5-year review. This document provides documentation that all soil exceeding cleanup goals were removed and no further action is required for soil at the SWMUs.

SEAD-16

During April and May 2007, prior to the commencement of the remedial action (RA), pre-excavation soil samples were collected outside of the planned excavation area to supplement the existing analytical data from the remedial investigation (RI) and to delineate the full extent of the excavation area. Once the analytical results from the pre-excavation samples were reviewed and assessed, Parsons and the selected earthwork contractor, S. St George Enterprises, Inc., (St. George) mobilized to SEDA on July 9, 2007 to conduct necessary construction activities.

The initial (Phase I) excavation area at SEAD-16, which was delineated based on metal and carcinogenic polycyclic aromatic hydrocarbon (cPAH) concentrations measured in the pre-construction activity soil samples, was excavated to a depth ranging from 1 foot to 3 feet below ground surface (bgs) as specified in the Final Work Plan. Once the Phase I excavation was completed, floor, perimeter, and sidewall confirmatory soil samples were collected and analyzed for selected metals and cPAH compounds. Confirmatory soil samples were collected at a frequency of one sample for every 2,500 square feet (sf) or less of excavation floor, and at a frequency of one perimeter or sidewall sample for every 50 linear feet (lf) or less of excavation perimeter. Sidewall samples were collected instead of perimeter samples when the completed excavation extended deeper than 2 feet bgs. The soil samples were analyzed for metals (antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc), while selected samples were also analyzed for cPAHs. The resulting metal and cPAH concentrations for confirmatory samples were compared to the cleanup goals defined in the Final Work Plan.

The Phase I excavation soil sample results indicated that samples collected from eight locations failed to meet the established cleanup goals. As such, Parsons and St. George returned to SEAD-16 and completed additional excavations (i.e., the Phase II excavations) to ensure that all soil left at the SWMU met the cleanup goals established in the Final Work Plan for metals and cPAHs. The Phase II excavation at SEAD-16 was completed on August 2, 2007. When Phase II confirmatory samples were collected and analyzed, analytical results indicated that all Phase II samples met the cleanup goals.

The extent of excavations completed at SEAD-16 is documented and verified by the analytical results obtained for 34 (plus three field duplicates) floor samples, 35 (plus three field duplicates) perimeter samples, and seven (plus one field duplicate) sidewall samples, which were collected in accordance with

the frequency requirement identified in the Final Work Plan. The final depth of excavation completed at SEAD-16 varied from 1 foot to 3 feet.

During remedial action construction activities, the excavated soil was temporarily staged within the limits of the excavation area before it was loaded out, transported off-site, and disposed at a licensed landfill by Riccelli Enterprises, Inc. A total of 2,532 tons, or approximately 1,862 cubic yards (cy), of soil were excavated from SEAD-16 and disposed at Ontario County Landfill in Flint, New York (NY).

SEAD-17

Pre-construction activity soil samples were also collected from the area of the planned excavation at SEAD-17 prior to the commencement of the remedial action. The resulting analytical results were used to supplement the available RI data from SEAD-17 and to delineate the extent of the excavation area. Parsons and St. George initiated excavations at SEAD-17 during the week of July 9, 2007. The Phase I excavation performed at SEAD-17 extended to a depth of approximately 1 foot bgs as specified in the Final Work Plan, and was delineated laterally using metal concentrations observed in soil samples obtained during the RI and pre-construction activity sampling and analysis sequences. Once the Phase I excavation was completed at SEAD-17, floor and perimeter confirmatory soil samples were collected and analyzed for designated metals of interest. Confirmatory soil samples were collected at the frequency specified in the Final Work Plan (i.e., one excavation floor soil sample for every 2,500 sf or less of area, and one perimeter sample for every 50 lf or less of excavation perimeter). Each of the soil samples was analyzed for metals (antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc). The reported concentrations for the confirmatory samples were compared to the cleanup goals, and the SEAD-17 Phase I excavation results indicated that samples collected from 16 locations failed to meet the cleanup goals. Additional Phase II excavations were subsequently completed in the areas where confirmatory soil sample concentrations exceeded cleanup goals to ensure that all soil left at the SWMU met the cleanup goals for metals. The Phase II excavation was completed on August 2, 2007. Phase II confirmatory soil samples were subsequently collected and analyzed and the analytical results indicate that all Phase II samples met the established cleanup goals.

The extent of excavation completed at SEAD-17 is documented and verified by the analytical results for 37 (plus one field duplicate) floor samples and 25 (plus one field duplicate) perimeter samples, which were collected in accordance with the frequency requirement identified in the Final Work Plan. The final depth of excavation after all of the phases were completed varied from 1 foot to 2 feet.

During each excavation phase performed at SEAD-17, the excavated soil was temporarily staged within the excavation area, prior to load out, transport and disposal at a licensed landfill by Riccelli Enterprises, Inc. A total of 3,540 tons (approximately 2,565 cy) of soil were excavated from SEAD-17 and disposed at Ontario County Landfill in Flint, NY.

Once the excavations and confirmatory sampling were completed at both SEAD-16 and SEAD-17, areas that were excavated to a depth of 2 feet or greater, as well as the excavation areas surrounding railroad tracks, were backfilled with clean bank-run gravel. SEAD-16 and SEAD-17 were graded to promote

positive drainage. SEAD-16 was not seeded since it was not previously vegetated. Areas of SEAD-17 that were vegetated prior to construction were seeded to promote re-vegetation.

The cleanup objectives for SEAD-16 and SEAD-17 have been achieved and no further action is required for soil at either of the SWMUs. Post-remediation groundwater sampling conducted in 2007 at SEAD-16 and SEAD-17 confirms that groundwater has not been impacted by site activities, though some metals were detected above their respective New York State Department of Environmental Conservation (NYSDEC; 1998 with addendum) Class GA groundwater standards. Therefore, the Army will continue to monitor the groundwater at SEAD-16 and SEAD-17 annually and reevaluate during the 5-year review.

1.0 INTRODUCTION

This Construction Completion Report (CCR) has been prepared for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), located at the Seneca Army Depot Activity (SEDA or the Depot) in Romulus, New York. It is intended to provide record documentation of the removal action construction activities completed for SEAD-16 and SEAD-17 and to provide documentation that all soil exceeding cleanup goals was removed and that no further action is required for soil at the historic SWMUs. In addition, the report will confirm that groundwater has not been impacted by site activities. Additional groundwater monitoring is not required at this time.

This Construction Completion Report describes the removal action activities at SEAD-16 and SEAD-17 and presents sample collection and laboratory test results, record survey data, record (as-built) drawings, and photo documentation to demonstrate compliance with the requirements set forth by the Remedial Design Work Plan/Design Report for SEAD-16 and SEAD-17 (Parsons, 2007), hereafter referred to as the Final Work Plan. The report also documents the post-remediation groundwater monitoring, which demonstrate that groundwater has not been impacted by site activities.

1.1 PURPOSE OF THE CONSTRUCTION COMPLETION REPORT

The purpose of this CCR is to document that all construction activities associated with the removal action at SEAD-16 and SEAD-17 were completed in accordance with the Final Work Plan unless otherwise noted and that no further action for soil remaining at SEAD-16 and SEAD-17 is required. The removal action involved the removal and off-site disposal of impacted soil at a licensed facility.

This CCR documents that the main elements of the remedy established in the Record of Decision (ROD) (Parsons, 2006c), listed below, were completed during the Remedial Action (RA) or are scheduled as part of post-construction activities:

- Conduct additional sampling as part of the pre-design sampling program to further delineate the areas of excavation;
- Remove, test, and dispose of the SEAD-16 building debris off-site;
- Excavate ditch soil to a depth of 1 foot with lead concentrations greater than 1250 mg/kg until cleanup standards are achieved;
- Excavate surface soils to a depth of 1 foot at SEAD-16 with lead concentrations greater than 1250 mg/kg, and polycyclic aromatic hydrocarbon (PAH) and metal concentrations greater than cleanup standards;
- Excavate subsurface soils to a depth of 2 feet to 3 feet at SEAD-16 (areas around SB16-2, SB16-4, and SB16-5) with lead concentrations greater than 1250 mg/kg, and PAH and metal concentrations greater than cleanup standards;
- Excavate surface soils to a depth of 1 foot at SEAD-17 with lead concentrations greater than 1250 mg/kg and metal concentrations greater than cleanup standards;
- Stabilize excavated soils from SEAD-16 and SEAD-17 and building debris from SEAD-16 exceeding the toxicity characteristic leaching procedure (TCLP) criteria in order to attain Land Disposal Restrictions (LDR);

- Dispose of the excavated material in an off-site landfill;
- Backfill the excavated areas with clean backfill;
- Conduct groundwater monitoring at SEAD-16 and SEAD-17 until concentrations are below the GA criteria;
- Remediate material potentially presenting an explosive hazard and munitions and explosives of concern to meet the Department of Defense Explosive Safety Board (DDESB) requirements for unrestricted use or to put into place land use restrictions as may be required by DDESB;
- Complete Resource Conservation and Recovery Act (RCRA) closure of the deactivation furnace at SEAD-17 by either further decontaminating or demolishing and disposing off-site the structures that failed to meet closure standards during the interim closure (i.e., concrete slabs and block walls).
- Submit a Completion Report following the remedial action;
- Establish and maintain land use controls (LUCs) to prevent access to or use of the groundwater and to prevent residential use until cleanup standards are met; and
- Complete a review of the selected remedy every 5 years (at minimum), in accordance with Section 121(c) of the CERCLA.

Construction activities documented within this report were performed in accordance with the Final Work Plan, which included a Field Sampling Plan (FSP) and a Construction Quality Plan (CQP). This CCR will document that all required construction activities were completed in an appropriate and satisfactory manner. This document has been prepared for the Air Force Center for Engineering and the Environment (AFCEE) and the U.S. Army under Contract No. FA8903-04-D-8675, Task Order No. 0031.

1.2 SITE LOCATION AND HISTORY

Since its inception in 1941, SEDA's primary mission was the receipt, storage, maintenance, and supply of military items. SEDA was proposed for the National Priorities List (NPL) in July 1989. In August 1990, SEDA was formally listed under Group 14 on the Federal Section of the NPL. To facilitate resolution of contamination issues at SEDA, the United States Environmental Protection Agency (USEPA), the New York State Department of Environmental Conservation (NYSDEC), and the Army entered into a Federal Facility Agreement (FFA), also known as the Interagency Agreement (IAG). This agreement stated that future investigations would be based on Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) guidelines, and that the RCRA was considered an Applicable or Relevant and Appropriate Requirement (ARAR) pursuant to Section 121 of CERCLA. In October 1995, SEDA was designated by the Department of Defense for closure under provisions of the 1995 Base Realignment and Closure (BRAC) process.

SEDA is a 10,587-acre former military facility located in Seneca County in the towns of Romulus and Varick, New York, which has been owned by the United States Government and operated by the Department of the Army since 1941. A location map for SEDA is shown in **Drawing C-1**.

SEAD-16 and SEAD-17, the Abandoned Deactivation Furnace and the Active Deactivation Furnace, are retained by the Army pending the completion and close out of their environmental obligations at these historic SWMUs. SEAD-16 and SEAD-17 are located in the east-central portion of the former Depot, within the Depot's former ammunition storage area where vehicular and pedestrian access is restricted.

Both SEAD-16 and SEAD-17 were used for the demilitarization of various small arms munitions. The process of deactivation of munitions involved heating the munitions within a rotating steel kiln. The heat would cause the munitions to detonate once the detonation temperature was reached. The byproducts produced during this detonation were then either swept out of the kiln through the stack or were expelled from the kiln as bottom ash or debris.

SEAD-16 consists of 2.6 acres of fenced land with grasslands in the north, east, and west, a storage area for empty boxes and wooden debris, and an unpaved roadway in the south. Also on-site is the building which housed the deactivation furnace (Building S-311), a smaller abandoned building known as the Process Support Building (Building 366), two sets of SEDA railroad tracks, and utilities. A site plan for SEAD-16 is included as **Drawing C-2**.

SEAD-17 consists of a deactivation furnace building (Building 367) that is surrounded by a crushed shale road. Beyond the perimeter of the crushed shale road is grassland. Two small sheds are located in the eastern portion of SEAD-17, and there is vehicular access to SEAD-17 from an unpaved road to the north. A map of SEAD-17 is included as **Drawing C-3**.

SEAD-16 has been inactive and abandoned since the 1960s. SEAD-17 was constructed to replace the deactivation furnace at SEAD-16. However, SEAD-17 has been inactive since 1989 as a result of RCRA permitting issues.

1.3 CONTAMINANTS OF CONCERN

SEAD-16

Soil

The primary constituents of concern in SEAD-16 soil include arsenic, copper, lead, and zinc. Additionally, cPAHs were detected in soils found at discrete locations. The highest concentrations of soil contamination resulted from the operations that were performed within and in close proximity to the Abandoned Deactivation Furnace Building and the Process Support Building.

Metals (antimony, copper, lead, mercury, and zinc) were found at concentrations greater than the site-specific cleanup goals in soils located in portions of the drainage ditches that were investigated at SEAD-16. CPAHs were detected in the surface soil along the railroad tracks located immediately to the northwest of Building S-311. Polycyclic aromatic hydrocarbons (PAHs) are commonly associated with the historic "creosote" preservatives used on railroad track ties, and are common components and byproducts of the combustion of railroad fuels (coal and diesel) and the spillage of rolling stock lubricants. The fact that cPAHs were only found in a discrete location near the tracks leads the Army to believe that their presence at SEAD-16 is not connected to site activities.

Groundwater

Groundwater is not considered a medium of concern at SEAD-16. Metals were detected at concentrations that exceeded the NYSDEC Class GA Ambient Water Quality Standard (AWQS) levels. All of the exceedances were less than or close to SEDA background groundwater quality concentrations, except for

sodium. Therefore, groundwater at SEAD-16 is not considered impacted and contaminants of concern (COCs) were not identified for SEAD-16 groundwater.

SEAD-17

Soil

The primary constituents of concern in SEAD-17 soil are the metals including antimony, arsenic, copper, lead, mercury, and zinc. In all instances, the detected concentrations of metals were found to be highest in those samples collected closest to the Active Deactivation Furnace Building, particularly near the southwestern area near the building. None of the ditch soil samples exceeded the site-specific cleanup goals.

Groundwater

Groundwater is not considered a medium of concern at SEAD-17. Metals were detected at concentrations that exceeded their respective NYSDEC Class GA AWQS. However, the levels detected were less than SEDA background concentrations, except for sodium. Therefore, groundwater at SEAD-17 is not considered impacted and COCs were not identified for SEAD-17 groundwater.

1.4 REPORT ORGANIZATION

The first section of this report serves as an introduction to the CCR and provides site history. **Section 2** details the pre-construction activities completed at SEAD-16 and SEAD-17. **Section 3** summarizes the construction activities, including the earthwork and confirmatory sample collection and analysis. **Section 4** addresses differences from the Final Work Plan. **Section 5** presents a summary of the post-construction activities. **Section 6** presents the conclusions and recommendations. References are provided in **Section** 7.

Appendix A includes the daily reports; **Appendix B** includes the waste disposal characterization data; **Appendix C** presents the dust monitoring record; **Appendix D** provides photo documentation of the field work; **Appendix E** presents the complete analytical results of the confirmatory samples: the chain of custodies for the confirmatory soil samples are provided in **Appendix F**, and the Sample Delivery Group (SDG) case narratives from the laboratory are included as **Appendix G**; **Appendix H** includes the data validation report; USEPA's analytical results for split soil samples are provided in **Appendix I**; the sump water analytical results are presented in **Appendix J**; **Appendix K** includes a summary of the non-hazardous solid waste manifests and a CD of the manifest; the analytical results for the bank-run gravel are listed in **Appendix L**; the post-remediation groundwater monitoring results are presented in **Appendix M;** and the comment and response are shown in **Appendix N**.

2.0 PRE-CONSTRUCTION ACTIVITIES

This section discusses the activities performed in preparation for RA implementation at SEAD-16 and SEAD-17. These activities included pre-excavation perimeter sampling and analysis; a health and safety kick-off meeting; establishment of site access and security, such as access roads, fencing, and signage; clearing requirements; utility clearance; establishment of work and staging areas; control of run-on and run-off waters; water management; establishment of erosion and sedimentation controls; well protection; disposal characterization and approval; and a pre-construction meeting.

2.1 PRE-EXCAVATION PERIMETER SAMPLING

RI data did not adequately define the southeastern boundaries of soil contamination at SEAD-16 and SEAD-17; therefore, pre-excavation perimeter samples were collected and analyzed to address these identified data gaps. The horizontal limits of excavation at both SEAD-16 and SEAD-17 were verified by collecting perimeter samples between April 4, 2007 and May 3, 2007 prior to the initiation of the RA. This is fully discussed in the Final Work Plan (Parsons, 2007). Additional soil samples were collected and characterized so that analytical results for samples were available for each 50-foot length of the perimeter at each site. All of the pre-excavation soil samples were collected using disposable sampling scoops and following procedures outlined in the Sampling and Analysis Plan (SAP) (Parsons, 2006a). Quality control (QC) samples were collected in accordance with Section 16.7 of the SAP. Pre-excavation perimeter samples were collected at 28 new locations at SEAD-16 and 19 new locations at SEAD-17. All perimeter confirmatory soil samples collected from SEAD-16 were analyzed for metals by USEPA SW846 Method 6010B and for mercury by USEPA SW846 Method 7471A. Three confirmatory samples, 16EXPR-G4-01 and a field duplicate pair 16EXPR-G5-01 and 16EXPR-G5-02 (located in areas where elevated cPAH concentrations were observed) were also analyzed for cPAHs by USEPA SW846 Method 8270C. The confirmatory samples collected at SEAD-17 were analyzed for metals by USEPA SW846 Method 6010B and for mercury by USEPA SW846 Method 7471A. All results were compared to the cleanup goals listed in **Table 2-1**.

Pre-excavation soil samples exhibiting soil concentrations that were less than established site cleanup goals were merged with similar data collected during the RI, and this merged dataset was used to establish the limits of the excavations planned at both SWMUs. Three historic samples collected during the RI (SS16-25, SS16-13, and SS16-28) at SEAD-16 and nine historic RI samples (SS17-16, SS17-20, SS17-19, SS17-28, SS17-12, SS17-24, SS17-26, SS17-31, and SS17-34) at SEAD-17 were used as part of this perimeter confirmatory sample set. All of the sample results used to bound the extent of the planned excavations at SEAD-16 and at SEAD-17 met the cleanup goals listed in **Table 2-1**. These samples are also shown in **Drawings C-4** and **C-5**. Analytical results for the pre-excavation samples used to bound the limits of the excavations are presented in **Tables 3-2** and **3-3** for SEAD-16 and SEAD-17, respectively, in combination with the post-excavation confirmatory soil sampling results. The historic samples collected during the RI are not included in **Table 3-2** or **3-3**.

Perimeter samples were not collected along the boundary of Building S-311 and 366 at SEAD-16 or along the boundary of Building 367, since the excavation extended to the base of the buildings.

Soil samples were also collected in drainage ditches as part of the pre-excavation sampling effort to determine the downgradient endpoint of each ditch excavation. A sample was not collected from a ditch end if (1) the ditch end is encapsulated by a soil excavation area (e.g., northwestern edge of drainage ditch 1 and 2) in which case it would be removed as part of the main excavation area regardless of the presence or absence of contaminants or (2) it is the upgradient end of the ditch (e.g., north end of drainage ditch 4 or west end of drainage ditch 3) since there is no surface water flow to transport sediments beyond this end. Additionally, perimeter soil samples were not collected around the sides of drainage ditches since the entire width of the ditch was excavated.

2.2 HEALTH AND SAFETY MEETING

A health and safety indoctrination meeting was held at SEDA on July 9, 2007 prior to the commencement of construction at SEAD-16 and SEAD-17. Parsons employees, SEDA personnel, and personnel of the earthwork subcontractor, S St. George Enterprises, Inc., attended the health and safety meeting. A review of the project health and safety requirements and procedures outlined in the Project Safety Plan and Site-Specific Health and Safety Plan for Seneca Army Depot Activity PBCII (Parsons, 2006b) was performed. Project coordination and communication and the scope of work were discussed. Additionally, due to the fact that the work at SEAD-16, SEAD-17, and SEAD-121C (which was completed simultaneously) involved excavation of lead contaminated soils, lead awareness training was also provided to all personnel.

2.3 SITE SECURITY

SEAD-16 and SEAD-17 are located within the former Munitions Storage Area of the Depot, and as such, they are surrounded by security fences, and access into the area is controlled by one gate that is normally locked closed. Additionally, prior to the construction activity, both SWMUs were surrounded by secondary locked security fences that identified the bounds of the land at each SWMU that was retained by the Army pending completion of necessary RAs. The Army provided site access to the field team prior to, and during the performance of, construction activities at SEAD-16 and SEAD-17. The area immediately surrounding the work area was clearly marked through the use of signs, barrier rope, tape, and fencing.

All visitors to the work sites reported to the Site Manager (SM) and/or the Site Health and Safety Officer (SHSO) when they arrived on-site. Necessary site-specific information and training was provided to all visitors, as needed, prior to their entry into any of the active work zones.

Construction activities were coordinated with the United States Army Corps of Engineers (USACE) point-of-contact in advance of their implementation. Additionally, daily reports were prepared and provided to the Army and Parsons' home-office personnel summarizing location of activity, equipment on the job site, site personnel present, visitors present, work performed, and estimated quantities of materials excavated, loaded, or disposed. Copies of the daily reports prepared for the work performed at SEAD-16 and at SEAD-17 are provided in **Appendix A**.

2.4 CLEARING

Trees are not present within the work areas at either SEAD-16 or at SEAD-17. The SWMUs were covered with low lying brush, which was cleared. A brush hog was used to mulch the brush, which was then left in place on-site.

2.5 IDENTIFICATION OF OBSTRUCTIONS AND UTILITIES

Personnel and equipment of New York State Electric and Gas (NYSEG) were on-site on July 11, 2007 to disconnect the main overhead electrical power feeders at SEAD-16 and at SEAD-17.

No other underground utilities were identified within any of the work zones prior to the commencement of construction activities.

2.6 ESTABLISHMENT OF WORK AND STAGING AREAS

The perimeter of the initial excavations planned at each of the areas was defined and staked prior to the initiation of construction activities. Entry/exit ways to the construction areas were placed as required to support needed traffic flow. The support area for SEAD-16 was established at the southwestern edge of the excavation, to the south and west of Building S-311 (see **Drawing C-2**). The work support zone was arranged to facilitate free and logical equipment movement to and from the site of the excavation work within the area, which enhanced safety and security. Excavated soil was temporarily stockpiled at the southwestern end, but within the footprint of the planned excavation area over material that was to be excavated last pending load out and transport off-site. Equipment leaving the work area was decontaminated in an area adjacent to the stockpile area. Erosion control measures were taken to prevent sediment transport.

The support area for SEAD-17 was established at the northeastern edge of the excavation. The work support zone was arranged to facilitate free and logical equipment movement to and from the site of the excavation work within the area, which enhanced safety and security. Excavated soil was temporarily stockpiled at the northeastern edge of the planned excavation pending load out and transport off-site. The stockpiles were sited within the footprint of the planned excavation, above material that was excavated last, shown in **Drawing C-3**. Equipment leaving the work area was decontaminated in an area adjacent to the stockpile area. Erosion control measures were taken to prevent sediment transport.

Equipment leaving the work area was inspected prior to departure to ensure that loads were covered, and to ensure site contaminants were not transported away from work zone. Site vehicles and equipment were inspected to ensure that clods of dirt and debris were not trapped between wheels and that the exterior of the vehicles were not covered with excavated soil and debris. No soil/debris clods were observed on or in any of the vehicle tires during this work, as the soil was generally dry and well compacted in all of the construction zones. Evidence of excavated soil was occasionally found on other exterior portions of the vehicles, and it was removed by brushing prior to the departure of the vehicle from the work or loading area. Vehicle washing operations were not performed during any of the construction activity.

2.7 CONTROL OF RUN-ON AND RUN-OFF WATERS

The subcontractor provided silt fencing along the downgradient edges of the excavation areas at SEAD-16 and SEAD-17 to prevent sediment transport to clean areas, shown in **Drawings C-2** and **C-3**, respectively. Hay bales were installed in the drainages swales downgradient of the work areas. The silt fencing was left in place after all construction activities were completed.

2.8 WATER MANAGEMENT

Significant rain events did not occur during the construction activities performed at SEAD-16 and SEAD-17. There was no significant accumulation of water in any of the work zones during construction, and no water collection was necessary.

2.9 ESTABLISHMENT OF EROSION AND SEDIMENTATION CONTROLS

Temporary erosion and sedimentation controls, such as silt fencing and hay bales, were installed in downgradient areas during operations to prevent migration of sediments and erosion. Prior to beginning any excavation work, temporary silt fencing was erected, which surrounded the downgradient sides of disturbed areas to prevent contaminated sediment transport. The temporary silt fencing was maintained throughout the project and will not be removed until permanent vegetation has been re-established. Any temporary erosion control measures were removed following remediation so as to return drainage patterns to their general conditions prior to remediation.

2.10 WELL PROTECTION

Monitoring wells located within the areas of excavation were protected. Of the seven monitoring wells present at SEAD-16, four of them are located within the excavation area. MW16-3, MW16-4, MW16-6 and MW16-7 were protected during remediation activities by placing visible barriers around them. All four monitoring wells present at SEAD-17 were outside of the limits of excavation and were protected during remediation activities by placing visible barriers around them. All wells at both SEAD-16 and SEAD-17 are included in post-construction long-term groundwater monitoring.

2.11 DISPOSAL CHARACTERIZATION AND APPROVAL

Pre-approval from the disposal facility that accepted the material from SEAD-16 and SEAD-17 was obtained. The disposal facility, Ontario County Landfill in Flint, New York, required the analysis of one sample per 700 cy of material from the areas anticipated to be excavated at SEAD-16 and SEAD-17. This sampling requirement was based on the disposal facility's review of the historic sampling results at SEAD-16 and SEAD-17 and their specific sampling requirements.

At SEAD-16, three samples were collected, and each sample was a composite of multiple grabs. The samples were submitted to TestAmerica Laboratories, Inc. (formerly Severn Trent Laboratories, Inc.), Amherst, NY. The disposal facility required that all samples be tested for hazardous waste characteristics (reactivity, ignitability, corrosivity, and Toxicity Characteristic Leaching Procedure [TCLP] metals). Based on the analytical results, shown in **Appendix B**, all results for the SEAD-16 samples met the RCRA requirements for non-hazardous material, and the disposal facility approved acceptance of the material at SEAD-16 as non-hazardous material suitable for daily cover.

Initially, four disposal characterization samples were collected at SEAD-17, and each sample was a composite of multiple grabs. The samples were submitted to TestAmerica Laboratories, Inc., Amherst, NY for analysis of hazardous waste characteristics (i.e., reactivity, ignitability, and corrosivity and TCLP metals). Lead was detected above the TCLP limit of 5 mg/L in one composite sample collected from locations within Grid E6. As a result, 15 additional disposal characterization samples were collected and analyzed for TCLP metals from locations surrounding the area where the hazardous lead was identified in Grid E6. The 15 samples were collected on five different sampling dates as part of the effort to delineate the extent of the soil with hazardous concentrations of lead. The analytical data for these samples are provided in **Appendix B**.

Parsons and the disposal facility agreed that the area surrounding the high lead TCLP levels would be isolated from the rest of the material excavated and addressed during construction activities through stabilization. Based on the historic data and the waste characterization sampling results, the disposal facility pre-approved acceptance of the other material from SEAD-17, excluding the area surrounding Grid E6, as non-hazardous material suitable for daily cover.

2.12 PRE-CONSTRUCTION MEETING

A project kick-off meeting was held at SEDA on July 9, 2007. Attendees included Parsons' Project Manager (PM), SM, SEDA personnel, and personnel of the earthwork subcontractor, S St. George Enterprises, Inc. The meeting included a review of health and safety issues, construction quality management requirements, and a site walk at SEAD-16, SEAD-17, and SEAD-121C. SEDA, Parsons, and the earthwork subcontractor coordinated administrative issues related to the project to ensure that the remedial action would be executed smoothly.

3.0 CONSTRUCTION ACTIVITIES

This section documents construction-phase activities associated with the RA at SEAD-16 and SEAD-17. Construction activities began with mobilization of personnel and equipment by Parsons and the selected earthwork subcontractor, S. St. George Enterprises, Inc of Fredonia, New York, on July 9, 2007. All construction activities were completed by August 15, 2007, at which time Parsons and S. St. George demobilized from the sites. All construction activities that took place at SEDA were documented in daily reports (**Appendix A**).

3.1 SITE PREPARATION

The field crew and equipment were mobilized to the site on July 9, 2007. Site preparation included the following activities:

- Mobilization; and
- Removal of the fence along the north and west side of SEAD-17.

3.1.1 Mobilization

The field crew and the equipment were mobilized to the site on July 9, 2007. Equipment included one dozer, two excavators, a mini excavator, a Bobcat, a skid steer, a water truck, a fuel truck, and a mechanics truck.

3.1.2 Removal of SEAD-17 Fencing

To facilitate access by the excavators to the SEAD-17 excavation area, 150 linear feet of fence was removed along the west side of SEAD-17. In addition, 30 linear feet of fence was removed on the north side of the access road to facilitate truck access to SEAD-17. The fence posts were pulled from the ground. The fence fabric was rolled back and secured.

3.2 HEALTH AND SAFETY DURING CONSTRUCTION

At the start of each work day, all on-site workers attended a daily health and safety briefing conducted by the SHSO. Site visitors were required to review the project Health and Safety Plan (Parsons, 2005; 2006b) and attend a site-specific health and safety briefing. These "tailgate" meetings were mandatory for all subcontractors and Parsons personnel working at the site. At each meeting, the SHSO discussed personal protective equipment (PPE) needs for that day and any potential hazards associated with the day's scheduled activities. The topics covered and all attendees at each daily briefing were documented, and the records were stored by the SHSO in the project files.

Dust monitoring for lead was conducted during the work at SEAD-16 and SEAD-17 in accordance with the project Health and Safety Plan (Parsons, 2006b), which included a Lead Monitoring Plan. An IOM personal sampler was used to monitor for lead, and samples were submitted to Galson Laboratories in East Syracuse, New York for subsequent analysis. All personal lead monitoring sample results indicated that lead levels were well below action levels.

3.3 DUST MONITORING

Dust monitoring was conducted during the work using two Thermo Anderson DR-4000 dust monitors. Perimeter air monitoring of the work area for dust was conducted during the excavations. The dust monitor provided real time perimeter measurements. The air monitoring equipment was positioned downwind of the work areas. The dust monitors were set up from July 9 through July 18, 2007, during which time the majority of the excavation work at SEAD-16 and SEAD-17 was completed. It was determined that dust was not a problem at the sites based on the low air monitoring readings. Therefore, air monitoring was discontinued during the additional excavation activities performed during August.

The dust monitoring record is included in **Appendix C**.

3.4 SEAD-16

3.4.1 Excavation and Confirmatory Sampling

Phase I Excavation

The initial excavation areas were delineated based on concentrations of lead and other metals observed in the soil during previous investigations and pre-excavation perimeter sampling performed in April and May 2007. The soil was excavated to a depth of 1 foot, except for two areas, Grids E5 and D8, which were planned to be excavated to depths of 2 feet and 3 feet, respectively, based on RI subsurface soil data. Excavation began on July 10, 2007 and the initial excavation, referred to as the Phase I excavation, was completed on July 18, 2007. **Drawing C-4** shows the excavation area at SEAD-16. Bedrock was encountered at 2 feet at the subsurface excavation located between the tracks in Grid E5, shown in **Drawing C-4**. Excavated soil was temporarily staged at the southern end of the excavation area at the southwest corner of Building S-311, as shown in **Drawing C-2**. Excavated material was loaded and transported off-site by Riccelli Enterprises, Inc. on a daily basis and was not staged for extended periods of time. Soil excavated during Phase I activities at SEAD-16 totaled 1,626 cy, and is summarized in **Table 3-1**. Photographs of the excavation activity are included in **Appendix D**.

General Confirmatory Sampling Collection Details

As general requirements at both SEAD-16 and SEAD-17, confirmatory samples were collected from the base ("floor") and perimeter of the excavation to confirm that soil with concentrations above the cleanup goals was excavated and removed from the sites. Floor and perimeter samples were collected at a frequency of 1 sample every 2,500 sf or less of excavation floor and 1 sample every 50 lf or less of excavation perimeter, respectively. In the event that an excavation extended 2 or more feet below the original ground surface, sidewall samples were collected instead of perimeter samples.

Field duplicates were collected to meet the quality assurance/quality control (QA/QC) requirements established in the Final Work Plan. Samples were analyzed for specific metals (antimony, arsenic, cadmium, copper, lead, thallium, and zinc) identified in the ROD based on metals that contribute potential human health risk to the site; and samples collected from Grids G4 and G5 were also analyzed for cPAHs since they were detected at that location during the RI (as discussed in **Section 1.3**). Samples were submitted to TestAmerica Laboratories, Inc., Amherst, NY for analysis of selected metals (antimony,

arsenic, cadmium, copper, lead, thallium, and zinc) by USEPA SW846 Method 6010B and mercury by USEPA SW846 Method 7471A. Samples collected from Grids G4 and G5 at SEAD-16 were also submitted for analysis of cPAHs by USEPA SW846 Method 8270C. The cleanup goals (listed in **Table 2-1**) for cPAHs and metals at SEAD-16 are as follows:

Compound	Units	Cleanup Goal
cPAHs		
Benzo(a)pyrene Toxicity Equivalence	mg/kg	10
Metals		
Antimony	mg/kg	41
Arsenic	mg/kg	21.5
Cadmium	mg/kg	60
Copper	mg/kg	10,000
Lead	mg/kg	1,250
Mercury	mg/kg	5.7
Thallium	mg/kg	6.7
Zinc	mg/kg	10,000

All samples were collected following procedures outlined in the Revised Final Sampling and Analysis Plan for Seneca Army Depot Activity (Parsons, 2006a). A 50-foot by 50-foot grid matrix was laid out over the excavation area as a means of tracking the locations of confirmatory samples; the grids are shown in **Drawing C-4**. Floor and perimeter samples were collected as grab samples from unique locations, at a depth between 0 and 2 inches below ground surface. Floor samples were collected from the center of each grid, unless biased by field observations or site features. Sidewalls were collected as grab samples from a depth halfway between the ground surface and the base of excavation.

The analytical results of each field duplicate pair were averaged to produce a single result to represent the level at the sample location. This approach is consistent with the USEPA protocol. As an example, in its Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category (USEPA, 2004), USEPA states that: *"Because the analytical data from each duplicate pair characterize the same conditions at the same time at a single sample point, EPA aggregated the data to obtain one data value for those conditions by calculating the arithmetic average of the duplicate pair."*

Analytical data for all confirmatory samples are provided in **Appendix E**. The chain-of-custodies for the confirmatory samples are included in **Appendix F** and the case narratives for laboratory sample delivery groups are presented in **Appendix G**. All of the analytical results were validated in a manner that is consistent with procedures defined in the USEPA's National Functional Guidelines for Organic Data Review and consistent with USEPA Region 2's Standard Operating Procedures (SOPs). A data validation report is provided in **Appendix H**.

Phase I Sampling

After the Phase I excavation, seven perimeter samples (plus one field duplicate), 33 floor samples (plus two field duplicates), and eight sidewall samples (plus one field duplicate) were collected between July 18, 2007 and July 20, 2007. Analytical results from five Phase I samples (three floor samples and two

sidewall samples) exceeded the cleanup goal for antimony (41 mg/kg), and four samples (three floor samples and one sidewall sample) exceeded the lead cleanup goal (1,250 mg/kg). The failed sample locations are shown in **Figure 3-1** and listed below.

Summary of Phase I Confirmatory Soil Samples with Exceedances of Cleanup Goals		
Sample ID	Antimony (CUG = 41 mg/kg)	Lead (CUG = 1,250 mg/kg)
16EXFL-B8-02	67.3	1370
16EXFL-C9-01	230	6410
16EXFL-D8-01	95.2	4090
16EXSW-D8-05	68.1	3380
16EXSW-D8-02	191	*

* The lead concentration at 16EXSW-D8-02 did not exceed 1,250 mg/kg.

Floor sample 16EXFL-B8-02 was collected from Ditch #1; a floor sample collected upgradient of the failed 16EXFL-B8-02 met the cleanup goals. Floor sample 16EXFL-C9-01 was collected from the center of Grid C9. Samples 16EXFL-D8-01, 16EXSW-D8-01, and 16EXSW-D8-05 were collected from the subsurface excavation area in Grid D8 located southeast of Building S-311 next to the ramp. Floor sample 16EXFL-D8-01 was collected from the center of the 2-foot excavation area. Sidewall sample 16EXSW-D8-05 was collected at sample location 16EXSW-D8-01 (duplicate of sample ID 16EXSW-D8-01) located on the northwest side of the deep excavation close to Building S-311 at a depth approximately 1 below ground surface; sidewall sample 16EXSW-D8-02 was collected on the east side of the deep excavation at a depth 1 below ground surface.

All confirmatory samples met the cleanup goals for the other metals, and all samples analyzed for cPAHs achieved the cPAH cleanup goal.

On July 18, 2007, five split soil samples (plus one field duplicate) were collected by USEPA representatives at the same locations as five of the confirmatory samples submitted to TestAmerica Laboratories, Inc. by Parsons and the Army. The USEPA samples were analyzed by the USEPA and are not part of the Army's dataset. The analytical results for the samples collected and analyzed by the USEPA varied from the analytical results for the split samples analyzed by TestAmerica. The analytical results for the split samples analyzed by USEPA are provided in **Appendix I**. To be conservative, the Army accepted the higher of the pair of analytical results for each split sample location. The higher value for samples 16EXPR-C10-02 and 16EXPR-F9-02 was greater than 1,250 mg/kg for lead (1,360 mg/kg and 2,940 mg/kg, respectively). The Army agreed to excavate additional soil surrounding those sample locations in Grids C10 and F9, to a depth of 1 foot.

Phase II Excavation

A Phase II excavation was completed at SEAD-16 between July 30, 2007 and August 2, 2007 to remove soil associated with the five failed samples and two USEPA split samples, shown in **Drawing C-4**. The details of the Phase II excavation were as follows:

(1) Ditch #1, running through Grids B8, C7, and C8, was excavated to bedrock so that the total depth of excavation in Ditch #1 extended approximately 2 feet below the original ground surface, to remove the soil associated with high levels of antimony and lead found in floor sample 16EXFL-B8-02;

(2) An additional foot of soil was excavated from the entire Grid C9 area, so that the total depth of excavation in this grid extended to 2 feet below ground surface, due to the results of floor sample 16EXFL-C9-01, which exceeded the cleanup goals for antimony and lead;

(3) The limits of excavation extended laterally to include a 1-foot excavation in a portion of Grid C10 and a portion of Grid F9 due to the higher of the two sample results from the split samples (16EXPR-C10-02 and 16EXPR-F9-02) exceeding the cleanup goal for lead;

(4) The subsurface excavation in Grid D8 was expanded vertically and horizontally due to the failure of soil at two sidewall sample locations (16EXSW-D8-01 and 16EXSW-D8-02) and the floor sample (16EXFL-D8-01) to meet the cleanup goals. The excavation extended northeast of the original area up to the building ramp, and 1-foot of soil was scraped off the bottom of the deep excavation and bedrock was encountered. Any residual soil in the excavation area was removed from the area along the building ramp or Building S-311 until both of those surfaces were scraped clean and exposed. The total depth of excavation in this area reached 3 feet.

An additional 235 cy of soil was removed from SEAD-16 during the Phase II excavation activities. All excavation activities were completed by August 2, 2007. A total of 1,862 cy of soil was excavated from SEAD-16, as is summarized in **Table 3-1**. **Drawing C-4** shows the final excavation areas and the final depths of excavations. Phase II confirmatory samples were collected after the completion of the Phase II excavation.

Phase II Sampling

Following the Phase II excavation, additional confirmatory samples were collected on July 30, 2007 and August 2, 2007 to confirm that soil remaining on-site met the cleanup goals for metals. Four floor samples (plus one field duplicate), two perimeter samples, and one sidewall sample (plus one field duplicate) were collected and analyzed by TestAmerica for targeted metals (antimony, arsenic, cadmium, copper, lead, thallium, zinc, and mercury) to confirm that the removal action was complete. The four floor samples were collected to confirm that the base of newly excavated areas met the cleanup goals. Phase II confirmatory samples were collected in the following locations, shown in **Drawing C-4**:

- Floor sample 16EXFL-C9-02 was collected in the center of Grid C9 after the excavation of an additional foot of soil;
- Floor sample 16EXFL-C10-01 was collected from the base of Grid C10 after the removal of 1 foot excavation wedge;
- Perimeter sample 16EXPR-C10-03 was collected outside the limits of excavation of the expanded excavation wedge in Grid C10;

- Floor samples 16EXFL-F9-01 and field duplicate 16EXFL-F9-02 were collected at the base of Grid F9 after the removal of 1 foot excavation wedge;
- Perimeter sample 16EXPR-F9-03 was collected outside the limits of excavation of the expanded excavation wedge in Grid F9;
- Floor sample 16EXFL-D8-02 was collected from the base of the expanded excavation in Grid D8 adjacent to the Building S-311 ramp, and the original excavation around SB16-5 in Grid D8 was excavated to bedrock; and
- Sidewall sample 16EXSW-D8-06 (along with field duplicate 16EXSW-D8-07) was collected at a location along the southern wall of the excavation close to the building ramp; a sample was collected at this location rather than along the ramp (where the failed sample 16EXSW-D8-02 was collected) since the ramp was scraped clean during the Phase II excavation and no soil remained to sample.

Phase II samples were not collected from the sidewall of Building S-311, since the foundation of the building was exposed and no soil remained to be sampled. A floor sample was not collected from the base of Ditch #1 since the Phase II excavation removed the soil in the ditch to bedrock, and no soil remained in the ditch to sample.

All Phase II samples met the cleanup goals.

This discussion above details the field activities and the removal of soil associated with samples that failed to meet the antimony and/or lead cleanup goals. Therefore, the data for the samples that have been excavated are no longer representative of soil remaining at the site. The removed sample data are included in **Appendix E** for completeness, and are not included in the final confirmatory dataset, presented in **Table 3-2**. The locations of all final confirmatory samples are shown in **Drawing C-4**, and the locations and concentrations of samples that were located in soil excavated from the site are presented in **Figure 3-1**.

A comparison of the number of soil samples required to the actual number of samples collected is presented in the following table, showing that the required sampling frequency was achieved.

	Perimeter/Sidewall Length of Excavation Area	Frequency Requirement	No. of Samples Required	No. of Final Samples Collected	No. of QA/QC Samples Collected [1]
Floor Samples	41,616 sf	1 per 2,500 sf	17	34 [2]	3
Perimeter Samples	1,366 lf	1 per 50 lf	28	35	3
Sidewall Samples	152 lf	1 per 50 lf	3	7	1

1. QA/QC samples included collection of a field duplicate.
2. The number of final floor samples collected includes the collection of ditch samples and floor samples in partial grids.

All excavation activities were completed on August 14, 2007. A total of 1,862 cy of soil were excavated from SEAD-16, as is summarized in **Table 3-1**. **Drawing C-4** shows the extent and depths of excavations. Photographs of the excavation activity are shown in **Appendix D**.

3.4.2 Water Removal

The basement of Building S-311 contained approximately 2 to 3 feet of standing water at the time field work began. One sample of the water (16WWT16-0703) was collected on July 3, 2007 prior to the start of field activities. The sample was submitted to TestAmerica Laboratories, Inc. for analysis of volatile organic compounds (VOCs) by USEPA SW846 Method 8260B, semivolatile organic compounds (SVOCs) by USEPA SW846 Method 8270C, metals by USEPA SW846 Method 6010B, and mercury by USEPA SW846 Method 7470A. Metals were the only analytes detected in the sample; analytical results are provided in **Appendix J**. Visual observations of the water indicated that the water sample contained suspended solids resulting from the historic accumulation of dirt and debris in the basement of the abandoned building; analysis of water with a high level of turbidity can result in reporting falsely elevated metals concentrations. A large part of the accumulated dirt and debris was removed with the water when the basement was pumped. Building S-311's cellar was broken up and filled with hard fill (concrete) generated from demolition activities at SEDA. If any dirt and debris did remain in the basement of the building, it was buried underneath the concrete fill.

The water in the basement of Building S-311 was pumped into the on-site water truck on July 12, 2007 for use as dust suppression water for soils that were excavated from SEAD-16 and loaded onto trucks for transport off-site and disposal at licensed landfills on that day. The excavated soils were sprayed to suppress dust and were not saturated with water. Erosion controls were in place and were effective in preventing runoff from the work area.

3.4.3 Unexploded Ordnance

SEAD-16, the Abandoned Deactivation Furnace, was historically used for the demilitarization of various small arms munitions via a heated rotating steel kiln. SEAD-16 has been inactive and abandoned since the 1960s and the presence of materials presenting potential explosive hazard (MPPEH) and propellant residue in pipes/equipment at the site was considered possible. An Unexploded Ordnance (UXO) technician was on-site to provide construction support as a safety measure during excavation activities.

Small arms munitions scrap removed from the basement of Building S-311 was spread out for visual inspection and classification by the UXO technician prior to transport off-site for disposal; no MPPEH was found as only small arms casing and bullets were discovered in material recovered from and inside the building. Pipes (approximately 200 linear feet) and equipment (cyclone, bag filter, and vacuum pump) potentially contaminated with propellant were removed from SEAD-16 and transported to the Open Burn Ground in the northwest portion of SEDA for heat treatment in a burn tray.

3.4.4 Building Demolition

Debris was removed from inside Building S-311, the Abandoned Deactivation Furnace, and Building 366, the Process Support Building, and the floors were swept to reduce potential dust mobilization during demolition activities. As part of a separate effort completed under a different contract, both of these buildings were demolished and removed from the site due to safety concerns.

3.4.5 Transportation and Off-Site Disposal

Parsons subcontracted with Riccelli Enterprises, Inc. to transport and dispose of the excavated non-

hazardous soil at Ontario County Landfill in Flint, NY. A decontamination area was setup adjacent to the stockpile location to facilitate the loading and exiting of haul trucks from the site. Truck load out was completed by August 2, 2007. A total of 2,532 tons (101 loads) of soil were hauled off-site and disposed at Ontario County Landfill. A log of the waste manifests and copies of the non-hazardous waste manifests are provided in **Appendix K**.

3.4.6 Site Restoration

The excavated areas that extended to 2-feet below ground surface or greater and the areas between the railroad tracks were backfilled with clean bank-run gravel provided by Riccelli. One sample (16FM-SPX-01) was collected from the off-site borrow source material (clean bank-run gravel) and submitted to TestAmerica for analysis of VOCs by USEPA SW846 Method 8260B, cPAHs by USEPA SW846 Method 8270C, selected metals (antimony, arsenic, cadmium, copper, lead, thallium, and zinc) by USEPA SW846 Method 6010B, and mercury by USEPA SW846 Method 7471A. The analytical results met the acceptance criteria for borrow source material detailed in the Final Work Plan.

- VOCs below NYSDEC Unrestricted Soil Cleanup Objectives (Table 375-6.8(a));
- cPAHs below site cleanup goals; and
- Metals below site cleanup goals.

Analytical results of the clean bank-run gravel are presented in **Appendix L**.

The entire site was graded to promote positive drainage. Re-seeding was not required since the area was not originally vegetated. The crew demobilized from the site on August 13, 2007.

3.5 SEAD-17

3.5.1 Excavation and Confirmatory Sampling

Phase I Excavation

The initial excavation area was delineated based on concentrations of lead and other metals observed in the soil during previous investigations and pre-excavation perimeter sampling performed in April and May 2007. Excavation began on July 10, 2007 and the initial excavation to a depth of 1 foot, referred to as the Phase I excavation, was completed on July 17, 2007. **Drawing C-5** shows the final excavation area at SEAD-17. Excavated soil was temporarily staged at the northern edge of the excavation area adjacent to the gravel access road entering the site northeast of Building 367. Excavated soil was loaded and transported off-site by Riccelli Enterprises, Inc. on a daily basis and was not staged for extended periods of time. All Phase I excavated material totaled 1,995 cy, as is summarized in **Table 3-1**.

As discussed in **Section 2.11**, an area around Grid E6 with high levels of leachable lead was delineated based on the extensive TCLP metals sampling results. The soil in this area was excavated and mixed with 6.8 tons of Portland cement provided by Riccelli Enterprises, Inc on July 13, 2007. The excavator was used to spread and mix the cement with the impacted soil. A sample of the stabilized material, DS-17-18, was collected and submitted to TestAmerica for analysis of TCLP metals. The lead TCLP result for DS-17-18, 14.6 mg/L, exceeded the TCLP limit of 5 mg/L. As a result, on July 18, 2007 an additional 3.4

tons of Portland cement was mixed with the cement/soil mixture using the excavator. A new disposal characterization sample, 17-DS-19, was collected and submitted to TestAmerica for TCLP lead analysis. The analytical results showed that the lead level (0.0468 mg/L) was below the TCLP limit, and the Portland cement had stabilized the lead in the soil to reduce its leachability. The stabilized material was suitable for off-site disposal as non-hazardous waste.

Photographs of the excavation activity are shown in **Appendix D**.

Phase I Sampling

The general sample collection information presented above in **Section 3.4.1** applies to the work completed at SEAD-17.

During the Phase I excavation, seven perimeter samples and 36 floor samples (plus two field duplicates) were collected between July 13 and July 18, 2007 and submitted to TestAmerica for analysis of selected metals. Two Phase I floor samples exceeded the cleanup goal for lead (1,250 mg/kg): lead was detected at 17EXFLE5-01 and 17EXFL-F2-01 with concentrations 1,910 J mg/kg and 1,500 mg/kg, respectively. The failed sample locations are shown in **Figure 3-2**. All other samples met the cleanup goals for metals.

On July 18, 2007 five split soil samples (plus one field duplicate) were collected by USEPA representatives and submitted for analysis by the USEPA. The analytical results for the samples the USEPA collected varied from the analytical results for the split samples analyzed by TestAmerica. The table below summarizes the validated TestAmerica analytical results and the USEPA analytical results for the split samples. The analytical results for the split samples analyzed by USEPA are provided in **Appendix I**. To be conservative, the Army accepted the higher of the pair of analytical results for each split sample location. The higher values for samples 17EXFL-G3-03 and 17EXPR-D2-02 were greater than 1,250 mg/kg for lead (2,210 mg/kg and 2,300 mg/kg, respectively). The Army agreed to excavate additional soil surrounding those sample locations in Grids D2 and G3, to a depth of 1 foot.

Phase II Excavation

A Phase II excavation was completed between July 30, 2007 and August 2, 2007 to remove 1-foot of soil associated with the two failed samples and two of the USEPA split samples. The Phase II excavation consisted of removing soil in the four following areas, shown in **Drawing C-5**:

(1) An additional foot of soil was excavated from the floor of Grids E5 and F2, so that the total depth of excavation in these areas reached 2 feet below the original ground surface. This was due to levels of lead detected in floor samples 17EXFL-E5-01 and 17EXFL-F2-01;

(2) An additional foot of soil located within Grid G3 was excavated so that the total depth of excavation in this area reached 2 feet below the original ground surface. The additional excavation was conducted due to the higher of the pair of sample results from the split sample 17EXFL-G3-03 (USEPA Sample ID 17EXFL-G3-02) exceeding the lead cleanup goal; and

(3) The excavation area was expanded laterally in Grids D2 and E2 beyond the original excavation boundary to a depth of 1 foot of soil due to the higher of the pair of sample results from the split sample 17EXPR-D2-02 exceeding the lead cleanup goal.

An additional 570 cy of soil was removed from SEAD-17 during the Phase II excavation. A total of 2,565 cy of soil were excavated from SEAD-17, summarized in **Table 3-1**. **Drawing C-5** shows the final excavation areas and the final depths of excavations.

Phase II Sampling

Phase II confirmatory sampling was completed between July 30, 2007 and August 2, 2007 at the areas excavated during Phase II. Five floor samples and one perimeter sample were collected at the following locations:

- Floor sample 17EXFL-D2-01 was collected at Grid D2 at the same location (northing and easting) as excavated sample 17EXPR-D2-01;
- Perimeter sample 17EXPR-D2-03 was collected outside of the new excavation area in Grid D2;
- Floor sample 17EXFL-D6-02 was collected at Grid D6 under the location of the former stockpile of stabilized soil to confirm that all lead contamination was removed;
- Floor sample 17EXFL-E5-02 was collected at the center of Grid E5;
- Floor sample 17EXFL-F2-02 was collected at the center of Grid F2; and
- Floor sample 17EXFL-G3-04 was collected at Grid G3 at the same location (northing and easting) as excavated sample 17EXFL-G3-01.

All Phase II samples met the cleanup goals. All final samples representative of soil remaining on-site met the cleanup goals, shown in **Table 3-3**.

The discussion above details the field activities and the removal of soil associated with samples that failed to meet the lead cleanup goal. Therefore, the data for samples that have been excavated are no longer representative of soil remaining at the site. The removed sample data are included in **Appendix E** for completeness, but are not included in the final confirmatory dataset, presented in **Table 3-3**. The locations of all final confirmatory samples are shown in **Drawing C-5**, and the locations and concentrations of samples that were located in soil excavated from the site are presented in **Figure 3-2**.

A comparison of the number of soil samples required to the actual number of samples collected is presented in the following table, showing that the required sampling frequency was achieved.

	Perimeter Length of Excavation Area	Frequency Requirement	No. of Samples Required	No. of Final Samples Collected	No. of QA/QC Samples Collected [1]
Floor Samples	69,560	1 per 2,500 sf	28	37	1
Perimeter Samples	1396 ft	1 per 50 lf	28	34 [2]	1

1. QA/QC samples included collection of a field duplicate.
2. The number of final perimeter samples includes nine historic RI samples (listed in **Section 2.1**) to define the limits of excavation.

All excavation activities were completed on August 14, 2007. A total of 2,565 cy of soil were excavated from SEAD-17, summarized in **Table 3-1**. **Drawing C-5** shows the phases and depths of excavations. Photographs of the excavation activity are shown in **Appendix D**.

3.5.2 Building Demolition

As part of a separate effort performed under a different contract, both buildings (Building 367 and 311) were demolished. The Army elected to remove these buildings since it was more cost effective to remove them rather than decontaminating the buildings in order to comply with RCRA requirements. The detailed discussion of the building demolition actions can be found in the Building Demolition and Cleaning Report (Parsons, 2008).

3.5.3 Transportation and Off-Site Disposal

Parsons subcontracted with Riccelli Enterprises, Inc. to transport and dispose of the excavated material at Ontario County Landfill in Flint, NY. A decontamination area was setup at the gate entering SEAD-17 from the north, and a stockpile staging area was setup within the excavation area adjacent to the decontamination area. A total of 10.2 tons of Portland cement was provided by Riccelli Enterprises, Inc. to stabilize the lead contaminated soil prior to disposal as non-hazardous waste off-site. Truck load out was completed by August 2, 2007. A total of 3,540 tons (143 loads) were hauled off-site and disposed at Ontario County Landfill. A log of the waste manifests and copies of the non-hazardous waste manifests are provided in **Appendix K**.

3.5.4 Site Restoration

The excavation areas that extended to 2 feet or more bgs. were backfilled with clean bank-run gravel provided by Riccelli. Details of the borrow source material sampling are discussed in **Section 3.4.6**. The rest of the site was graded to promote positive drainage. The areas at SEAD-17 that were vegetated prior to the remedial action were seeded to restore the vegetation. The selected seed mixture consisted of the following:

30% Timothy
30% Perennial Ryegrass
15% Alfalfa
10% Red Clover
10% While Clover
5% Ladino Clover

The crew demobilized from the site on August 13, 2007.

3.6 CONSTRUCTION COSTS

The total construction costs for the Remedial Actions at SEAD-16 and SEAD-17 were approximately $717,300. The cost break down is as follows:

Engineering/Oversight	$94,000
Construction	$600,000
Analytical Laboratory	$23,300

4.0 SUMMARY OF DIFFERENCES FROM THE FINAL WORK PLAN

In general, there were no substantive changes between what was proposed in the Final Work Plan and the work completed during the construction activities in the field. This section summarizes the deviations from the Final Work Plan. Noncompliance of the sample quality control limits from the project limits are discussed in detail in the data validation report (**Appendix H**).

4.1 TEMPORARY STAGING AREAS

For SEAD-16, the Final Work Plan designates an area within the excavation area to the north of Building S-311 as the temporary staging area. During the excavation, an area within the excavation area that is adjacent to Building S-311's southwest corner was used as the temporary staging area based on site conditions and professional judgment.

For SEAD-17, the temporary staging area assigned in the Final Work Plan was used during the excavation.

The temporary staging areas used during the excavation are shown in **Drawings C-2** and **C-3**, respectively, for SEAD-16 and SEAD-17.

4.2 POST-EXCAVATION CONFIRMATORY SAMPLE COLLECTION

The post-excavation confirmatory samples were collected in accordance with the frequency requirement proposed in the Final Work Plan. According to the Final Work Plan, confirmatory samples will be collected from the floor of the excavation at a frequency of one sample per 2,500 square feet, or one sample per 50-foot by 50-foot grid. Floor samples were collected for all the excavated grids after the final excavation except when bedrock was encountered, which occurred at Grid E5 and at Ditch #1 in Grid B8.

4.3 EXCAVATION VOLUME

According to the Final Work Plan, 2,102 cy of soil were expected to be excavated from SEAD-16 and 2,590 cy of soil was expected to be excavated from SEAD-17. The estimates in the Final Work Plan were volume estimates from the ROD. The cleanup goals presented in the Final Work Plan differ from the cleanup goals in the ROD, as they reflect new NYSDEC cleanup soil guidance. As such, the limits of excavation were modified in the Final Work Plan based on the updated cleanup goals, which resulted in adjustments to the limits of excavation from those presented in the ROD. As a result, the excavation volume was different from those estimates presented in the Final Work Plan.

Based on the actual tonnage of soil removed, the estimated ex-situ excavation volumes from SEAD-16 and SEAD-17 are presented in **Table 3-1**. A total of 1,862 cy of soil was excavated from SEAD-16 and a total of 2,565 cy of soil was excavated from SEAD-17.

5.0 POST-CONSTRUCTION ACTIVITIES

5.1 Groundwater Monitoring Activities

Groundwater monitoring of the six existing wells (MW16-1 through MW16-7, with the exception of MW16-3, which was destroyed during the construction activities) shown in **Drawing C-2** at SEAD-16 was completed on December 20 and 21, 2007; and groundwater monitoring of five existing wells, MW17-1 through MW17-5) shown in **Drawing C-3** at SEAD-17 was completed on December 19 and 20, 2007. Prior to the remedial action, the soils had been impacted by heavy metals. The Remedial Design Report (Parsons, 2007) summarized that although metals had been detected in groundwater during previous sampling events, the groundwater was not impacted by site activities based on a comparison to groundwater data collected from unaffected parts of the Depot. This post-excavation sampling event was performed to confirm that the groundwater has not been impacted since prior sampling events, and to check the groundwater concentrations compared to the GA standards, and to determine whether further action is needed for groundwater at SEAD-16 and SEAD-17.

Groundwater samples were collected using low flow sampling techniques at SEAD-16 and SEAD-17 in December 2007. A bladder pump was used to collect the samples at the 11 wells. Sampling procedures, sample handling and custody, holding times, and collection of field parameters were conducted in accordance with the "Revised Final Sampling and Analysis Plan for Seneca Army Depot Activity (SAP)" (Parsons, 2006c). Samples were collected from the 11 wells and submitted to TestAmerica for analysis of antimony and thallium by USEPA SW846 Method 6020, mercury by USEPA SW846 7470A, and all other target analyte list (TAL) metals by USEPA SW846 Method 6010B. One duplicate and one matrix spike/matrix spike duplicate (MS/MSD) were collected at MW16-1. In the field, pH, oxidation-reduction potential (ORP), dissolved oxygen, conductivity, and temperature were measured with a Horiba water quality meter. The turbidity was measured using a Lamotte turbidity meter.

SEAD-16 Data and Analysis

Groundwater elevation data collected during previous investigations indicate that groundwater generally flows in a southwesterly direction at SEAD-16; however, groundwater elevation data also indicate that there may be a regional high southwest of the Building 311, which could create local fluctuations in groundwater flow direction. As a result, it is difficult to determine which wells are upgradient or downgradient of the site. Instead, wells are identified relative to their proximity to the soil excavation areas. Three wells, MW16-1, MW16-2, and MW16-5, monitor the quality of the groundwater outside the areas that were excavated. Monitoring wells MW16-4, MW16-6, and MW16-7 monitor the groundwater quality at locations within the excavated area. The soils that required excavation were impacted by heavy metals and the soils in the areas outside of the excavated areas were not impacted by historic site conditions.

A summary of the post-remediation groundwater data for SEAD-16 is presented in **Table 5-1**. At SEAD-16, five metals (antimony, iron, lead, manganese, and sodium) were detected above their respective NYSDEC Class GA groundwater standards. The maximum detections of four of the five metals (antimony, lead, manganese, and sodium) were observed at MW16-7, located within the historically soil-impacted area. At MW16-7, antimony was detected at 9.58 µg/L compared to its NYSDEC Class GA

groundwater standard of 3 µg/L, and lead was detected at 26.5 µg/L compared to its respective NYSDEC Class GA groundwater standard of 25 µg/L. The maximum detections of manganese and sodium (631 µg/L and 68,400 µg/L, respectively) were also found at MW16-7. Antimony and sodium were both detected in one other well located inside the excavated area, MW16-4, at concentrations of 5.11 µg/L and 40,800 J µg/L, respectively. The sole exceedance of iron was detected within the excavated area at MW16-6 with a concentration of 418 µg/L, compared to the GA standard of 300 µg/L.

To a lesser extent, antimony, iron, and sodium were detected in the wells located outside of the excavated area (MW16-1, MW16-2, and MW16-5). Antimony was detected in one of the wells located outside the excavated area, MW16-2, at a concentration barely above the GA standard (3 µg/L) of 3.36 µg/L. Iron exceeded its GA standard of 300 µg/L at MW16-6, with a concentration of 418 µg/L. Sodium was detected in each of these three wells at estimated concentrations ranging from 24,200 µg/L to 49,600 µg/L. A review of the data indicate metals were detected at the monitoring wells located on all sides of the site and at wells located both within and outside of the excavated area; the concentrations of metals detected at the monitoring wells do not vary significantly based on the location of the wells at SEAD-16.

The table below shows the maximum concentrations of antimony, iron, lead, manganese, and sodium in the groundwater at SEAD-16 compared to the maximum concentrations observed in the SEDA site-wide background dataset.

Parameter	**Max. Detection (µg/L)**	**Max. SEDA Background (µg/L)**
Antimony	9.58	52.7
Iron	1200	69,400
Lead	26.5	34.8
Manganese	631	1120
Sodium	68,400	59,400

The table above shows that, with the exception of sodium, the metals detected at SEAD-16 were detected at concentrations below SEDA background levels.

Thallium was detected in the groundwater during the RI sampling event in one sample but not in its associated duplicate. Thallium was detected at one of the six wells (MW16-7) at an estimated concentration of 0.03 µg/L, which was below the Class GA groundwater standard of 2 µg/L. This post-remediation monitoring event confirms that thallium is not a chemical of concern in the groundwater at SEAD-16.

It is noted that none of the concentrations detected in the groundwater exceeded the USEPA Region IX Preliminary Remediation Goals (PRGs) for tap water. As discussed above, groundwater concentrations detected during the post-remediation sampling event are less than the maximum concentrations of metals observed in groundwater in unaffected portions of the Depot. Post-remediation groundwater sampling confirms that groundwater has not been impacted by site activities, though some metals were detected above their respective NYSDEC Class GA groundwater standards. Therefore, the Army will continue to monitor the groundwater at SEAD-16 annually and reevaluate during the 5-year review.

SEAD-17 Data and Analysis

Results of groundwater contour mapping in the RI indicate that groundwater flows to the southwest. A summary of the post-remediation groundwater data for SEAD-17 is presented in **Table 5-2**. Two metals, antimony and sodium, were each detected once at concentrations above their NYSDEC Class GA groundwater standards. All other detected metals were observed at concentrations below their respective groundwater standards. Antimony was detected at a concentration of 3.44 μg/L at MW17-2, above the GA standard of 3 μg/L, which was less than the concentrations of antimony detected in the groundwater at upgradient locations at SEAD-16. Sodium was detected at monitoring well MW17-4 at an estimated concentration of 28,500 μg/L, compared to the GA standard of 20,000 μg/L. The table below shows a comparison of the maximum concentrations of antimony and sodium detected at SEAD-17 compared to the maximum concentrations observed in the SEDA site-wide background dataset.

Parameter	**Maximum Detection at SEAD-17 (μg/L)**	**Maximum SEDA Background (μg/L)**
Antimony	3.44	52.7
Sodium	28,500	59,400

The comparison shows that the concentrations detected at SEAD-17 are well below the SEDA background concentrations. It is noted that none of the concentrations detected in the groundwater exceeded the USEPA Region IX PRGs for tap water. The concentrations of sodium and antimony found in the groundwater do not appear to be related to historic site activities. Therefore, the recent groundwater data confirms that site activities have not impacted the groundwater, though some metals were detected above their respective NYSDEC Class GA groundwater standards. The Army will continue to monitor the groundwater at SEAD-17 annually and reevaluate during the 5-year review.

Complete groundwater data for SEAD-16 and SEAD-17 are presented in **Appendix M**.

5.2 Routine Inspections

The condition of the existing groundwater monitoring wells at SEAD-16 and SEAD-17 was examined during the December 2007 monitoring event and reported to be in good condition. As noted above, MW16-3 was destroyed during the construction activities. This well was not replaced as groundwater concentrations on the southwest side of Building S-311 are well characterized by two other monitoring wells, MW16-2 and MW16-5. No well maintenance is needed at this time.

Site restoration activities at SEAD-17 included seeding of areas that were previously vegetated. The condition of vegetation at SEAD-17 was inspected in May 2008. A small amount of growth was observed, though most of the seeded area has not yet re-vegetated. The Army will monitor the vegetative growth and will reseed if the area does not vegetate over the summer.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analytical results from the final confirmatory sampling, no further action for soil is required at SEAD-16 and SEAD-17.

Based on the construction work at SEAD-16 and SEAD-17, the Army has conducted the following:

- At SEAD-16, 2,532 tons (1,862 cy) of metals and cPAHs impacted soil was excavated and disposed as non-hazardous waste at Ontario County Landfill in Flint, NY.
- At SEAD-17, 3,540 tons (2,565 cy) of metal-impacted soil was excavated and disposed as non-hazardous waste at Ontario County Landfill in Flint, NY.
- A total of 76 final confirmatory samples (including pre-excavation perimeter samples, post-excavation floor samples, sidewall samples, and perimeter samples) plus seven field duplicates were collected from the SEAD-16 excavation area and analyzed for antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc. Four of these samples plus two of these field duplicates were also submitted for cPAH analyses. All final confirmatory samples were collected in accordance with the frequency requirement identified in the Final Work Plan. All final confirmatory samples met the cleanup goals for antimony, arsenic, cadmium, copper, lead, mercury, thallium, zinc, and cPAHs.
- A total of 62 final confirmatory samples (including pre-excavation perimeter samples and post-excavation floor samples and perimeter samples) plus two field duplicates were collected from the SEAD-17 excavation area and analyzed for antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc. All final confirmatory samples were collected in accordance with the frequency requirement identified in the Final Work Plan. All final confirmatory samples met the cleanup goal for antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc.
- Post-remediation groundwater sampling was completed in December 2007, and results indicate that although the groundwater has not been impacted by site activities, concentrations were observed above the NYSDEC GA standard. Therefore, the Army will continue to monitor the groundwater at SEAD-16 and SEAD-17 annually and reevaluate as part of the 5-year review.
- The Land Use Control Remedial Design (LUC RD) for SEAD-16 and SEAD-17 will be prepared as an amendment to the LUC RD prepared for SEADs 27, 66, and 64A at SEDA. The LUC will be established and maintained to prohibit access to or use of the groundwater and to prohibit residential use until cleanup standards or goals are met in the future by a future owner.

The soil cleanup objectives for SEAD-16 and SEAD-17 have been achieved and no further action is required for soil at SEAD-16 or SEAD-17. Groundwater monitoring will be conducted annually and will be reassessed as part of the five-year review.

7.0 REFERENCES

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Table 2-1
CLEANUP GOALS
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Compounds	Units	Cleanup Goal
Carcinogenic PAHs[1]		
BTE	mg/Kg	10
Metals [2]		
Antimony [5]	mg/Kg	41
Arsenic [3]	mg/Kg	21.5
Cadmium	mg/Kg	60
Copper	mg/Kg	10,000
Lead [4]	mg/Kg	1,250
Mercury	mg/Kg	5.7
Thallium [5]	mg/Kg	6.7
Zinc	mg/Kg	10,000

Notes:
BTE = Benzo(a)pyrene Toxicity Equivalence
1. The cleanup goal for cPAHs is the 10 ppm BTE value. The cPAH cleanup goal only applies to SEAD-16.
2. The cleanup goals for metals are the NYSDEC Restricted Use Soil Cleanup Objective for Industrial Use (Table 375-6.8(b)).
3. The cleanup goal for arsenic was replaced with the SEDA maximum background value since the NYSDEC restricted industrial value for arsenic was lower than the maximum SEDA site-wide background value.
4. The lead cleanup goal was derived in accordance with the publication "Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil" (USEPA, December 1996) and in concurrence with NYSDEC and USEPA.
5. Since no NYSDEC Soil Cleanup Objective for Industrial use exists, 1/10th the USEPA Region IX PRG Industrial value was used.

Table 3-1
Summary of Excavation and Disposal Quantities
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

	SEAD-16		SEAD-17	
	tons	cy[1]	tons	cy[1]
Phase I	2,212	1,626	2,753	1,995
Phase II	321	236	787	570
Total	**2,532**	**1,862**	**3,540**	**2,565**

Note:

1. The quantities were provided in tons by the weigh tickets from Ontario County Landfill. The volume was calculated based on a site-specific density. The density values were calculated in the field by weighing three 5-gallon buckets of soil from each site. The density for SEAD-16 was calculated to be 1.36 tons/cy and the density for SEAD-17 was calculated as 1.38 tons/cy, respectively.

Table 3-2
SEAD-16 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								A8	A8	A8	A9	B5	B6	B6	B6
LOCATION ID								16EXFL-A8-01	16EXPR-A8-01	16EXPR-A8-02	16EXPR-A9-01	16EXPR-B5-01	16EXFL-B6-01	16EXPR-B6-01	16EXPR-B6-02
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXFL-A8-01	16EXPR-A8-01	16EXPR-A8-02	16EXPR-A9-01	16EXPR-B5-01	16EXFL-B6-01	16EXPR-B6-01	16EXPR-B6-02
TOP OF SAMPLE								0	0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/19/2007	5/3/2007	5/3/2007	5/3/2007	5/3/2007	7/19/2007	4/4/2007	7/19/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs															
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4								
Benzo(a)pyrene	UG/KG	3800	50%		0	2	4								
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4								
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4								
Chrysene	UG/KG	2400	50%		0	2	4								
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4								
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4								
BAP Toxicity Equivalence [4]	MG/KG	9.013	100%	10	0	4	4								
Metals															
Antimony	MG/KG	24.2	80%	41	0	60	76	3 J	12.9 J	4.7 J	3.4 J	14.6 J	17 U	6.9 J	9.8 J
Arsenic	MG/KG	8.9	100%	21.5	0	76	76	2.9 J	5.4	5.5	4.6	6.2	5.7	5.7	3 J
Cadmium	MG/KG	5.7	100%	60	0	76	76	0.08 J	0.44 J	0.29 J	0.18 J	0.6 J	0.27	0.8	0.3 J
Copper	MG/KG	2390	100%	10000	0	76	76	15.8 J	119	52.2	51.5	169	9.8 J	99	61.6
Lead	MG/KG	1150	100%	1250	0	76	76	54.7 J	676	239	179	884	16.6 J	424	302 J
Mercury	MG/KG	4.3	100%	5.7	0	76	76	0.945	4.3	0.342	0.344	0.207	0.03 J	0.313	0.194
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	76	0.86 UJ	1.2 U	0.98 U	1 U	0.95 U	0.75 U	1 U	0.9 UJ
Zinc	MG/KG	711	100%	10000	0	76	76	49.4 J	163	104	84.2	224	50	127 J	151 J

Notes
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) The maximum detected concentration was obtained from the average of the sample and its duplicate
(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by substituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value
The toxicity equivalent factors (TEF) for the NYSDEC BTF guidelines were as follows

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate

Table 3-2
SEAD-16 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								B7	B7	B8	B8	B9	B9	B10	B10
LOCATION ID								16EXFL-B7-01	16EXPR-B7-01	16EXFL-B8-01	16EXFL-B8-03	16EXFL-B9-01	16EXPR-B9-01	16EXPR-B9-02	16EXFL-B10-01
MATRIX								SOIL	SOIL	SOIL	DITCH SOIL	SOIL	DITCH SOIL	DITCH SOIL	DITCH SOIL
SAMPLE ID								16EXFL-B7-01	16EXPR-B7-01	16EXFL-B8-01	16EXFL-B8-03	16EXFL-B9-01	16EXPR-B9-01	16EXPR-B9-02	16EXFL-B10-02
TOP OF SAMPLE								0	0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/19/2007	4/4/2007	7/19/2007	7/19/2007	7/19/2007	4/4/2007	4/4/2007	7/19/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA	DU
STUDY ID								RA	RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs															
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4								
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4								
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4								
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4								
Chrysene	UG/KG	2300	50%		0	2	4								
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4								
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4								
BAP Toxicity Equivalence [4]	MG/KG	9.013	100%	10	0	4	4								
Metals															
Antimony	MG/KG	24.2	80%	41	0	60	76	19.9 U	4.3 J	18.4 U	12.2 J	18.1 U	20.8 J	14.8 J	6.7 J
Arsenic	MG/KG	8.9	100%	21.5	0	76	76	1.7	5.4	5.2	4.2 J	5.8	5.9	7.7	3.5 J
Cadmium	MG/KG	5.7	100%	60	0	76	76	0.15 J	0.62	0.25	0.57 J	0.63	0.69	2.2	0.17 J
Copper	MG/KG	2306	100%	10000	0	76	76	12.3	67.6	36.6 J	77.7 J	80.4 J	209 J	160 J	34.5 J
Lead	MG/KG	1160	100%	1250	0	76	76	35.4 J	363	200 J	230 J	342 J	791 J	1050 J	147 J
Mercury	MG/KG	4.3	100%	5.7	0	76	76	0.075	0.345	0.222	1.9	0.904	0.449	0.613	0.222
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	76	0.88 U	1.1 U	0.81 U	0.81 UJ	0.8 U	0.94 U	0.93 U	0.89 UJ
Zinc	MG/KG	711	100%	10000	0	76	76	44.8	112 J	60.1	146 J	111	194	222	62.9 J

Notes
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) The maximum detected concentration was obtained from the average of the sample and its duplicate
(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by substituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value
The toxicity equivalent factors (TEF) for the NYSDEC BTF guidelines were as follows

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate

Table 3-2
SEAD-16 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								B10	B10	B10	C4	C5	C6	C7	C8
LOCATION ID								16EXFL-B10-01	16EXPR-B10-01	16EXPR-B10-02	16EXPR-C4-01	16EXFL-C5-01	16EXFL-C6-01	16EXFL-C7-01	16EXFL-C8-01
MATRIX								DITCH SOIL	DITCH SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXFL-B10-01	16EXPR-B10-01	16EXPR-B10-02	16EXPR-C4-01	16EXFL-C5-01	16EXFL-C6-01	16EXFL-C7-01	16EXFL-C8-01
TOP OF SAMPLE								0	0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/19/2007	4/4/2007	4/4/2007	4/4/2007	7/19/2007	7/19/2007	7/19/2007	7/19/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs															
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4								
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4								
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4								
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4								
Chrysene	UG/KG	2300	50%		0	2	4								
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4								
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4								
BAP Toxicity Equivalence [4]	MG/KG	9.013	100%	10	0	4	4								
Metals															
Antimony	MG/KG	24.2	80%	41	0	60	76	6 J	9.9 J	2.1 J	3.6 J	20.1 U	0.68 U	24.2	0.63 U
Arsenic	MG/KG	8.9	100%	21.5	0	76	76	2.6 J	5.3	4.8	3.3	6.7	5.1	7.2	2.5
Cadmium	MG/KG	5.7	100%	60	0	76	76	0.14 J	0.8	0.42	0.29	0.3	0.19 J	0.61	0.15 J
Copper	MG/KG	2390	100%	10000	0	76	76	32.1 J	142	44.3	68.5	20.4 J	13 J	389 J	14 J
Lead	MG/KG	1160	100%	1250	0	76	76	139 J	786	137	589	23.5 J	32.6 J	1160 J	11.9 J
Mercury	MG/KG	4.3	100%	5.7	0	76	76	0.173	0.385	0.357	0.026	1.3	0.062	0.016 J	0.53
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	76	0.82 UJ	1.1 U	0.92 U	0.68 U	0.88 U	0.84 U	0.76 U	0.77 U
Zinc	MG/KG	711	100%	10000	0	76	76	51.5 J	143 J	81.5 J	62.6 J	64.7	50.4	697	48.3

Notes
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) The maximum detected concentration was obtained from the average of the sample and its duplicate
(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by substituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value
The toxicity equivalent factors (TEFs) for the NYSDEC BTF guidelines were as follow:

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate

Table 3-2
SEAD-16 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								C9	C10	C10	C10	D4	D4	D4	D5
LOCATION ID								16EXFL-C9-02	16EXFL-C10-01	16EXPR-C10-01	16EXPR-C10-03	16EXFL-D4-01	16EXPR-D4-01	16EXPR-D4-02	16EXFL-D5-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXFL-C9-02	16EXFL-C10-01	16EXPR-C10-01	16EXPR-C10-03	16EXFL-D4-01	16EXPR-D4-01	16EXPR-D4-02	16EXFL-D5-01
TOP OF SAMPLE								0	0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/2/2007	8/2/2007	4/4/2007	8/2/2007	7/19/2007	4/4/2007	4/4/2007	7/19/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs															
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4								
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4								
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4								
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4								
Chrysene	UG/KG	2300	50%		0	2	4								
Dibenz(a,h)anthracene	UG/KG	1500	25%		0	1	4								
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4								
BAP Toxicity Equivalence [4]	MG/KG	3013	100%	10	0	4	4								
Metals															
Antimony	MG/KG	24.2	80%	41	0	60	76	1.2 J	3.6 J	7.2 J	19.4 J	10.5 J	16.3 J	11 J	0.65 UJ
Arsenic	MG/KG	8.9	100%	21.5	0	76	76	7.3	3.2	5.2	4.5	4.5 J	8.5	5.1	3.8 J
Cadmium	MG/KG	5.7	100%	60	0	76	76	0.5	0.39	0.93	0.65	0.22 J	0.74	0.93	0.22 J
Copper	MG/KG	2390	100%	10000	0	76	76	25.3	25.6	109	128	57	196	154	16.1
Lead	MG/KG	1160	100%	1250	0	76	76	27.3	79.2	530	659	229 J	1070	887	9.1 J
Mercury	MG/KG	4.3	100%	5.7	0	76	76	0.163	0.234	0.331	1.5	0.505	0.126	0.104	0.047
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	76	0.75 U	0.69 U	1 U	0.71 U	0.74 UJ	0.74 U	0.87 U	0.8 UJ
Zinc	MG/KG	711	100%	10000	0	76	76	54.3	81.9	140 J	109	89.7 J	153 J	176 J	48.7 J

Notes:

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table

(3) The maximum detected concentration was obtained from the average of the sample and its duplicate

(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by substituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value

The toxicity equivalent factors (TEF) for the NYSDEC RTE guidelines were as follows

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

U = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected; the associated reporting limit is approximate

Table 3-2
SEAD-16 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								D6	D7	D8	D8	D8	D8	D8	D9
LOCATION ID								16EXFL-D6-01	16EXFL-D7-01	16EXFL-D8-02	16EXSW-D8-03	16EXSW-D8-04	16EXSW-D8-06	16EXSW-D8-06	16EXFL-D9-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXFL-D6-01	16EXFL-D7-01	16EXFL-D8-02	16EXSW-D8-03	16EXSW-D8-04	16EXSW-D8-07	16EXSW-D8-06	16EXFL-D9-01
TOP OF SAMPLE								0	0	0	0.5	0.5	1	1	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	1.5	1.5	2	2	0.2
SAMPLE DATE								7/19/2007	7/19/2007	7/30/2007	7/19/2007	7/19/2007	7/30/2007	7/30/2007	7/19/2007
QC CODE								SA	SA	SA	SA	SA	DU	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs															
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4								
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4								
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4								
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4								
Chrysene	UG/KG	2300	50%		0	2	4								
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4								
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4								
BAP Toxicity Equivalence [4]	MG/KG	9.013	100%	10	0	4	4								
Metals															
Antimony	MG/KG	24.2	80%	41	0	60	76	0.75 UJ	0.64 UJ	16.3 J	1 J	2.6 J	2 J	2.3 J	7.8 J
Arsenic	MG/KG	8.9	100%	21.5	0	76	76	3.2 J	3.1 J	3.2	4.6	4.6	4.8	3.6	3.2 J
Cadmium	MG/KG	5.7	100%	60	0	76	76	0.09 J	0.1 J	0.22	0.26	0.23 J	0.2 J	0.05 U	0.13 J
Copper	MG/KG	2390	100%	10000	0	76	76	21.9	19.4	25.2	20 J	23.3 J	24.1	19.6	37.1
Lead	MG/KG	1160	100%	1250	0	76	76	17.4 J	16.6 J	206 J	13.7 J	50.4 J	54.8 J	47.2 J	221 J
Mercury	MG/KG	4.3	100%	5.7	0	76	76	0.062	0.035	1.6 J	0.025 J	0.046	0.074 J	0.087 J	0.436
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	76	0.92 UJ	0.79 UJ	0.82 J	0.82 U	0.78 U	0.75 U	0.76 U	0.76 UJ
Zinc	MG/KG	711	100%	10000	0	76	76	80 J	97 J	55.2 J	48.3	49.6	54.3 J	44.4 J	70.5 J

Notes:
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) The maximum detected concentration was obtained from the average of the sample and its duplicate
(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by substituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value
The toxicity equivalent factors (TEF) for the NYSDEC TEF guidelines were as follow

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate

Table 3-2
SEAD-16 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								E3	E4	E4	E5	E5	E5	E5	E5
LOCATION ID								16EXPR-E3-01	16EXFL-E4-01	16EXPR-E4-01	16EXFL-E5-01	16EXSW-E5-01	16EXSW-E5-02	16EXSW-E5-03	16EXSW-E5-04
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXPR-E3-01	16EXFL-E4-01	16EXPR-E4-01	16EXFL-E5-01	16EXSW-E5-01	16EXSW-E5-02	16EXSW-E5-03	16EXSW-E5-04
TOP OF SAMPLE								0	0	0	0	0.5	0.5	0.5	0.5
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	1.5	1.5	1.5	1.5
SAMPLE DATE								4/4/2007	7/19/2007	7/19/2007	7/19/2007	7/19/2007	7/19/2007	7/19/2007	7/19/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs															
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4								
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4								
Benzo(b)fluoranthene	UG/KG	7500	75%		0	1	4								
Benzo(k)fluoranthene	UG/KG	82.5 [3]	25%		0	1	4								
Chrysene	UG/KG	2300	50%		0	2	4								
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4								
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4								
BAP Toxicity Equivalence [4]	MG/KG	9.013	100%	10	0	4	4								
Metals															
Antimony	MG/KG	24.2	80%	41	0	60	76	5.6 J	1.4 J	7.9 J	2.8 J	18.2	5.6 J	3.1 J	14.6 J
Arsenic	MG/KG	8.9	100%	21.5	0	76	76	4.3	2.5 J	4.5 J	4.7 J	8.9	5.3	5.5	7.1
Cadmium	MG/KG	5.7	100%	60	0	76	76	0.76	0.12 J	0.19 J	0.13 J	0.54	0.23	0.23 J	0.39
Copper	MG/KG	2330	100%	10000	0	76	76	83.5 J	21.9	59.8	47.2	125 J	47 J	33.8 J	75 J
Lead	MG/KG	1160	100%	1250	0	76	76	444 J	22.2 J	233 J	53.8 J	449 J	234 J	64.6 J	281 J
Mercury	MG/KG	4.3	100%	5.7	0	76	76	0.409	1.2	0.315	0.148	1.5	0.122	0.149	0.987
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	76	1.3 U	0.79 UJ	0.82 UJ	0.71 UJ	0.78 U	0.72 U	0.78 U	0.79 U
Zinc	MG/KG	711	100%	10000	0	76	76	122	53.4 J	108 J	62 J	146	87.9	81.7	118

Notes:
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) The maximum detected concentration was obtained from the average of the sample and its duplicate
(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by substituting the detection limit with the method detection limit for non-detect results and taking non-detects values at half value
The toxicity equivalent factors (TEF) for the NYSDEC PIP guidelines were as follow:

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate.

Table 3-2
SEAD-16 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								E6	E8	E9	E9	E12	E13	E13	F3
LOCATION ID								16EXFL-E6-01	16EXFL-E8-01	16EXFL-E9-01	16EXPR-E9-01	16EXFL-E12-01	16EXFL-E13-01	16EXPR-E13-01	16EXFL-F3-01
MATRIX								SOIL	SOIL	SOIL	SOIL	DITCH SOIL	DITCH SOIL	DITCH SOIL	SOIL
SAMPLE ID								16EXFL-E6-01	16EXFL-E8-01	16EXFL-E9-01	16EXPR-E9-01	16EXFL-E12-01	16EXFL-E13-01	16EXPR-E13-01	16EXFL-F3-02
TOP OF SAMPLE								0	0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/19/2007	7/19/2007	7/19/2007	4/4/2007	7/19/2007	7/19/2007	4/4/2007	7/19/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA	DU
STUDY ID								RA	RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs															
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4								
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4								
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4								
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4								
Chrysene	UG/KG	2300	50%		0	2	4								
Dibenz(a,h)anthracene	UG/KG	1300	25%		0	1	4								
Indeno(1,2,3-cd)pyrene	UG/KG	6300	50%		0	2	4								
BAP Toxicity Equivalence [4]	MG/KG	9.013	100%	10	0	4	4								
Metals															
Antimony	MG/KG	24.2	80%	41	0	60	76	3.7 J	0.77 J	3.6 J	0.65 UJ	6.6 J	0.66 UJ	3.2 J	1.1 J
Arsenic	MG/KG	8.2	100%	21.5	0	76	76	5 J	3.1 J	3.2 J	4.2	3.9 J	4.9 J	7.8	3.3 J
Cadmium	MG/KG	5.7	100%	60	0	76	76	0.17 J	0.14 J	0.11 J	0.38	0.23 J	0.07 J	1	0.1 J
Copper	MG/KG	2390	100%	10000	0	76	76	28.6	14.4 J	31.6 J	14.1	48.4 J	20.1 J	50.6 J	14.1 J
Lead	MG/KG	1160	100%	1250	0	76	76	61.3 J	7.3 J	112 J	70.3	461 J	18.6 J	187 J	38.6 J
Mercury	MG/KG	4.3	100%	5.7	0	76	76	0.041	0.011	0.471	0.01 J	0.097	0.021 J	0.042	0.134 J
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	76	0.78 UJ	0.75 UJ	0.79 UJ	0.8 U	0.81 UJ	0.8 UJ	0.82 J	0.87 UJ
Zinc	MG/KG	711	100%	10000	0	76	76	71 J	33.7 J	46.2 J	36.2 J	59.4 J	52.9 J	141	58.2 J

Notes:

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample/duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.

(3) The maximum detected concentration was obtained from the average of the sample and its duplicate

(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by substituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value.
The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follows.

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

U = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected; the associated reporting limit is approximate

Table 3-2
SEAD-16 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								F3	F3	F3	F4	F8	F9	F9	F9
LOCATION ID								16EXFL-F3-01	16EXPR-F3-01	16EXPR-F3-01	16EXFL-F4-01	16EXPR-F8-01	16EXFL-F9-01	16EXFL-F9-01	16EXPR-F9-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXFL-F3-01	16EXPR-F3-02	16EXPR-F3-01	16EXFL-F4-01	16EXPR-F8-01	16EXFL-F9-02	16EXFL-F9-01	16EXPR-F9-01
TOP OF SAMPLE								0	0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/19/2007	4/4/2007	4/4/2007	7/19/2007	4/4/2007	8/2/2007	8/2/2007	4/4/2007
QC CODE								SA	DU	SA	SA	SA	DU	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs															
Benzo(a)anthracene	UG/KG	2300	75%		0	3	4								
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4								
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4								
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4								
Chrysene	UG/KG	2300	50%		0	2	4								
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4								
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4								
BAP Toxicity Equivalence [4]	MG/KG	9.413	100%	10	0	4	4								
Metals															
Antimony	MG/KG	24.2	80%	41	0	60	76	1.2 J	3.2 J	3.2 J	7.7 J	2.6 J	0.61 UJ	0.63 UJ	5 J
Arsenic	MG/KG	8.9	100%	21.5	0	76	76	4.1 J	4.6	4.9	2.5 J	5.7	4.8	6.4	5
Cadmium	MG/KG	5.7	100%	60	0	76	76	0.26 J	0.4	0.52	0.21 J	0.28	0.33	0.45	0.85
Copper	MG/KG	2390	100%	10000	0	76	76	13.4 J	68.9	73.8	59.9 J	29.7	12.2	15.3	172
Lead	MG/KG	1160	100%	1250	0	76	76	43.3 J	498 J	170 J	247 J	205	10.1	13.5	643
Mercury	MG/KG	1.3	100%	5.7	0	76	76	0.088 J	0.035	0.023	0.051	0.022	0.025	0.031	0.021
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	76	0.82 UJ	0.73 U	0.78 U	0.74 UJ	0.65 U	0.74 U	2.4 J	0.7 U
Zinc	MG/KG	711	100%	10000	0	76	76	57.5 J	74.6 J	91.9 J	49 J	36.8 J	40.8	47.5	144 J

Notes:
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) The maximum detected concentration was obtained from the average of the sample and its duplicate
(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by substituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value
The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow:

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate

Table 3-2
SEAD-16 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]								
SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								F9	G2	G3	G3	G3	G4	G5	G5
LOCATION ID								16EXPR-F9-03	16EXPR-G2-01	16EXFL-G3-01	16EXPR-G3-01	16EXPR-G3-02	16EXPR-G4-01	16EXFL-G5-01	16EXPR-G5-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXPR-F9-03	16EXPR-G2-01	16EXFL-G3-01	16EXPR-G3-01	16EXPR-G3-02	16EXPR-G4-01	16EXFL-G5-01	16EXPR-G5-02
TOP OF SAMPLE								0	0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/2/2007	4/4/2007	7/19/2007	4/4/2007	7/19/2007	4/4/2007	7/18/2007	4/4/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA	DU
STUDY ID								RA	RA	RA	RA	RA	RA	RA	RA
								Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs															
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4						2400 J	1900 U	160 J
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4						5800	1900 U	230 J
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4						7500 J	1900 U	170 J
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4						3600 UJ	1900 U	95 J
Chrysene	UG/KG	2300	50%		0	2	4						2300 J	1900 U	4600 U
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4						1600 J	1900 U	4600 U
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4						6000	1900 U	190 J
BAP Toxicity Equivalence [4]	MG/KG	9.013	100%	10	0	4	4						9.01	0.04	0.29
Metals															
Antimony	MG/KG	24.2	80%	41	0	60	76	0.59 UJ	0.56 UJ	4.9 J	3.1 J	0.59 UJ	5 J	1.6 J	0.77 UJ
Arsenic	MG/KG	8.9	100%	21.5	0	76	76	3.9	2.2	3.7 J	1.5 J	3.1 J	1.8	5.7 J	3.3
Cadmium	MG/KG	5.7	100%	60	0	76	76	0.29	0.33	0.23 J	0.25	0.1 J	0.52	0.28 J	1.4 J
Copper	MG/KG	2390	100%	10000	0	76	76	10	9.5 J	46.5 J	36.4 J	17	72.7 J	33	27.9
Lead	MG/KG	1160	100%	1250	0	76	76	8.3	12.4 J	166 J	285 J	11.4 J	302 J	86.1 J	88.6 J
Mercury	MG/KG	1.3	100%	5.7	0	76	76	0.03	0.102	0.117	0.147	0.01 J	0.263	0.036	0.02 J
Thallium	MG/KG	0.385 [3]	4%	6.7	0	3	76	0.72 U	0.68 U	0.83 UJ	0.71 U	0.72 UJ	0.7 U	0.78 UJ	0.94 U
Zinc	MG/KG	711	100%	10000	0	76	76	33.3	24	91.2 J	45	40 J	109	84.8 J	186 J

Notes:

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample/duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.

(3) The maximum detected concentration was obtained from the average of the sample and its duplicate

(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by substituting the detection limit with the method detection limit for non-detect results and taking nondetect values at half value.
The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

U = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected; the associated reporting limit is approximate

Table 3-2
SEAD-16 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								G5	G5	G5	H3	H3	H3	I2	I3
LOCATION ID								16EXPR-G5-01	16EXPR-G5-03	16EXPR-G5-03	16EXFL-H3-01	16EXPR-H3-01	16EXPR-H3-02	16EXPR-I2-01	16EXPR-I3-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXPR-G5-01	16EXPR-G5-04	16EXPR-G5-03	16EXFL-H3-01	16EXPR-H3-01	16EXPR-H3-02	16EXPR-I2-01	16EXPR-I3-01
TOP OF SAMPLE								0	0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								4/4/2007	7/20/2007	7/20/2007	7/19/2007	4/4/2007	4/4/2007	7/20/2007	4/4/2007
QC CODE								SA	DU	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs															
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4	180 J	1400 J	1600 J					
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4	250 J	19000 U	20000 U					
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4	450 J	1100 J	1300 J					
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4	6600 UJ	19000 U	20000 U					
Chrysene	UG/KG	2300	50%		0	2	4	210 J	19000 U	20000 U					
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4	6600 U	19000 U	20000 U					
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4	220 J	19000 U	20000 U					
BAP Toxicity Equivalence [4]	MG/KG	9.013	100%	10	0	4	4	0.35	0.28	0.32					
Metals															
Antimony	MG/KG	24.2	80%	41	0	60	76	1.8 J	20.6 J	19.1 J	2.3 J	7.7 J	15.8 J	1.2 J	10.9 J
Arsenic	MG/KG	8.9	100%	21.5	0	76	76	6.5	5.8 J	4.6 J	6.6 J	5.3	5.5	3.9	5.1
Cadmium	MG/KG	5.7	100%	60	0	76	76	2.7 J	3.2 J	3.5 J	0.32 J	2.5	5.7	0.24 J	4.7
Copper	MG/KG	2390	100%	10000	0	76	76	39 J	268 J	230 J	55.3	209 J	362 J	20.3 J	2390 J
Lead	MG/KG	1160	100%	1250	0	76	76	132 J	958 J	930 J	87.5 J	822 J	1010 J	49.7 J	765 J
Mercury	MG/KG	4.3	100%	5.7	0	76	76	0.069	0.137	0.121	0.009 J	0.169	0.14	0.045	0.153
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	76	3.3 U	0.75 UJ	0.8 UJ	0.71 UJ	0.99 U	0.79 U	0.82 U	0.87 U
Zinc	MG/KG	711	100%	10000	0	76	76	377 J	275 J	298 J	88 J	211	398	53	512

Notes
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) The maximum detected concentration was obtained from the average of the sample and its duplicate
(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by substituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value.
The toxicity equivalent factors (TEF) for the NYSDEC RTL guidelines were as follow

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate

Table 3-2
SEAD-16 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16
GRID ID								I3	J1	K1
LOCATION ID								16EXPR-I3-02	16EXFL-J1-01	16EXFL-K1-01
MATRIX								SOIL	DITCH SOIL	DITCH SOIL
SAMPLE ID								16EXPR-I3-02	16EXFL-J1-01	16EXFL-K1-01
TOP OF SAMPLE								0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2
SAMPLE DATE								4/4/2007	7/19/2007	7/19/2007
QC CODE								SA	SA	SA
STUDY ID								RA	RA	RA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Analyzes [2]**	**Value (Q)**	**Value (Q)**	**Value (Q)**
Carcinogenic PAHs										
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4			
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4			
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4			
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4			
Chrysene	UG/KG	2400	50%		0	2	4			
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4			
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4			
BAP Toxicity Equivalence [4]	MG/KG	9.013	100%	10	0	4	4			
Metals										
Antimony	MG/KG	24.2	80%	41	0	60	76	1.1 J	2.3 J	1.2 J
Arsenic	MG/KG	8.9	100%	21.5	0	76	76	4.7	5.6 J	4.2 J
Cadmium	MG/KG	5.7	100%	60	0	76	76	1.9	0.21 J	0.21 J
Copper	MG/KG	2390	100%	10000	0	76	76	223 J	31.5 J	31.1 J
Lead	MG/KG	1160	100%	1250	0	76	76	533 J	57.5 J	56.3 J
Mercury	MG/KG	4.3	100%	5.7	0	76	76	0.061	0.019 J	0.065
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	76	0.71 U	0.84 UJ	0.79 UJ
Zinc	MG/KG	711	100%	10000	0	76	76	711	48.2 J	66.2 J

Notes

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table

(3) The maximum detected concentration was obtained from the average of the sample and its duplicate

(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by substituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value

The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

U = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected; the associated reporting limit is approximate

Table 3-3
SEAD-17 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								A3	A3	A4	A4	A4
LOCATION ID								17EXPR-A3-01	17EXPR-A3-02	17EXFL-A4-01	17EXFL-A4-02	17EXPR-A4-03
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXPR-A3-01	17EXPR-A3-02	17EXFL-A4-01	17EXFL-A4-02	17EXPR-A4-03
TOP OF SAMPLE								0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								5/3/2007	5/3/2007	7/13/2007	7/18/2007	7/13/2007
QC CODE								SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Analyzes [3]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals												
Antimony	MG/KG	21.9	68%	41	0	42	62	25.1 UJ	27.8 UJ	0.6 U	0.66 UJ	13.2 J
Arsenic	MG/KG	8.2	100%	21.5	0	62	62	4.9	5.7	5.3	5.3 J	4.9
Cadmium	MG/KG	16.2	79%	60	0	49	62	3.2 J	5.9 J	0.04 U	0.15 J	3.2
Copper	MG/KG	162.5	100%	10000	0	62	62	74.5	92.8	11.1	11.6 J	72.7
Lead	MG/KG	1121	100%	1250	0	62	62	736	1020	12.6	21.5 J	751
Mercury	MG/KG	0.094	97%	5.7	0	60	62	0.073	0.073	0.019 J	0.04	0.077
Thallium	MG/KG	0	0%	6.7	0	0	62	1.1 U	1.2 U	0.73 U	0.8 UJ	0.78 U
Zinc	MG/KG	493	100%	10000	0	62	62	314	493	51.5	45.3 J	289

Notes
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs
(4) Confirmatory samples collected as part of the remedial action effort are included in this table. Historic RI sample results that are used to define the perimeter of excavation are not included in this table

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate

Table 3-3
SEAD-17 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								A5	A5	A7	B3	B4
LOCATION ID								17EXFL-A5-01	17EXPR-A5-01	17EXPR-A7-01	17EXFL-B3-01	17EXFL-B4-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXFL-A5-01	17EXPR-A5-01	17EXPR-A7-01	17EXFL-B3-01	17EXFL-B4-01
TOP OF SAMPLE								0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/13/2007	4/4/2007	5/3/2007	7/13/2007	7/13/2007
QC CODE								SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [3]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals												
Antimony	MG/KG	21.9	68%	41	0	42	62	3.9 J	10.5 J	21.4 UJ	2.3 J	0.66 J
Arsenic	MG/KG	8.2	100%	21.5	0	62	62	6.3	5.2	4.9	4.7	4.3
Cadmium	MG/KG	16.2	79%	60	0	49	62	0.47	3.6 J	1.7 J	0.04 U	0.04 U
Copper	MG/KG	162.5	100%	10000	0	62	62	28.1	94.8 J	49.6	20.2	13.3
Lead	MG/KG	1121	100%	1250	0	62	62	205	1050 J	304	25.8	19.5
Mercury	MG/KG	0.094	97%	5.7	0	60	62	0.038	0.084	0.067	0.051	0.038
Thallium	MG/KG	0	0%	6.7	0	0	62	0.73 U	1.1 U	0.94 U	0.74 U	0.74 U
Zinc	MG/KG	493	100%	10000	0	62	62	112	343 J	145	62.9	54.9

Notes
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs
(4) Confirmatory samples collected as part of the remedial action effort are included in this table. Historic RI sample results that are used to define the perimeter of excavation are not included in this table

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate

Table 3-3
SEAD-17 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								B5	B6	B7	B7	B7
LOCATION ID								17EXFL-B5-01	17EXFL-B6-01	17EXFL-B7-01	17EXFL-B7-01	17EXPR-B7-02
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXFL-B5-01	17EXFL-B6-01	17EXFL-B7-02	17EXFL-B7-01	17EXPR-B7-02
TOP OF SAMPLE								0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/13/2007	7/17/2007	7/17/2007	7/17/2007	5/3/2007
QC CODE								SA	SA	DU	SA	SA
STUDY ID								RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [3]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals												
Antimony	MG/KG	21.9	68%	41	0	42	62	0.64 J	21.1 J	0.58 UJ	0.58 UJ	21.2 UJ
Arsenic	MG/KG	8.2	100%	21.5	0	62	62	4.4	5 J	7.1 J	6.4 J	4.7
Cadmium	MG/KG	16.2	79%	60	0	49	62	0.05 U	3.5 J	0.71 J	0.26 J	1.6 J
Copper	MG/KG	162.5	100%	10000	0	62	62	17.2	136 J	12.2 J	11.3 J	121
Lead	MG/KG	1121	100%	1250	0	62	62	29.1	1120 J	31.7 J	30.7 J	717
Mercury	MG/KG	0.094	97%	5.7	0	60	62	0.051	0.075	0.037	0.041	0.043 J
Thallium	MG/KG	0	0%	6.7	0	0	62	0.77 U	0.67 UJ	0.71 UJ	0.71 UJ	0.93 U
Zinc	MG/KG	493	100%	10000	0	62	62	76.7	418 J	73.5 J	58.4 J	259

Notes
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs
(4) Confirmatory samples collected as part of the remedial action effort are included in this table Historic RI sample results that are used to define the perimeter of excavation are not included in this table

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected, the associated reporting limit is approximate

Table 3-3
SEAD-17 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								B8	C3	C3	C4	C5
LOCATION ID								17EXPR-B8-01	17EXPR-C3-01	17EXPR-C3-02	17EXFL-C4-01	17EXFL-C5-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXPR-B8-01	17EXPR-C3-01	17EXPR-C3-02	17EXFL-C4-01	17EXFL-C5-01
TOP OF SAMPLE								0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0 2	0 2
SAMPLE DATE								4/4/2007	4/4/2007	5/3/2007	7/13/2007	7/13/2007
QC CODE								SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [3]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals												
Antimony	MG/KG	21 9	68%	41	0	42	62	2 4 J	13 9 J	24 3 UJ	0.64 U	0 62 UJ
Arsenic	MG/KG	8 2	100%	21 5	0	62	62	4.2	8.2	4.4	6	5.3
Cadmium	MG/KG	16 2	79%	60	0	49	62	0.97 J	16.2	6 J	0.05 U	0.05 U
Copper	MG/KG	162 5	100%	10000	0	62	62	45 5 J	118	158	15 6	11 9
Lead	MG/KG	1121	100%	1250	0	62	62	208 J	909 J	1040	25 1	16 2
Mercury	MG/KG	0 094	97%	5.7	0	60	62	0.045	0 046	0 047 J	0.07	0.047
Thallium	MG/KG	0	0%	6 7	0	0	62	0 88 U	0.87 U	1 1 U	0.78 U	0 76 U
Zinc	MG/KG	493	100%	10000	0	62	62	74 8 J	227 J	493	78 5	57 6 J

Notes

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table

(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

(4) Confirmatory samples collected as part of the remedial action effort are included in this table Historic RI sample results that are used to define the perimeter of excavation are not included in this table

U = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected the associated reporting limit is approximate

Table 3-3
SEAD-17 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [3]					
SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								C6	C7	C7	C8	C8
LOCATION ID								17EXFL-C6-01	17EXFL-C7-01	17EXPR-C7-02	17EXPR-C8-01	17EXPR-C8-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXFL-C6-01	17EXFL-C7-01	17EXPR-C7-02	17EXPR-C8-01	17EXPR-C8-02
TOP OF SAMPLE								0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/17/2007	7/13/2007	4/4/2007	7/13/2007	7/18/2007
QC CODE								SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA
								Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals												
Antimony	MG/KG	21.9	68%	41	0	42	62	0.63 UJ	5.6 J	11.8 J	6.3 J	4.3 J
Arsenic	MG/KG	8.2	100%	21.5	0	62	62	4.4 J	4.7	7.9	4.6	2.8 J
Cadmium	MG/KG	16.2	79%	60	0	49	62	0.07 J	0.64	3.1 J	1	1.2 J
Copper	MG/KG	162.5	100%	10000	0	62	62	8.8 J	48.8	149 J	48.3	25 J
Lead	MG/KG	1121	100%	1250	0	62	62	12.5 J	190	912 J	367	239 J
Mercury	MG/KG	0.094	97%	5.7	0	60	62	0.03	0.058	0.057	0.045	0.041
Thallium	MG/KG	0	0%	6.7	0	0	62	0.77 UJ	0.77 U	1.1 U	0.73 U	0.81 UJ
Zinc	MG/KG	493	100%	10000	0	62	62	39.5 J	93.8 J	210 J	150	93.3 J

Notes
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs
(4) Confirmatory samples collected as part of the remedial action effort are included in this table. Historic RI sample results that are used to define the perimeter of excavation are not included in this table

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate

Table 3-3
SEAD-17 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								D2	D2	D3	D4	D5
LOCATION ID								17EXFL-D2-01	17EXPR-D2-03	17EXFL-D3-01	17EXFL-D4-01	17EXFL-D5-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXFL-D2-01	17EXPR-D2-03	17EXFL-D3-01	17EXFL-D4-01	17EXFL-D5-01
TOP OF SAMPLE								0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/2/2007	8/2/2007	7/13/2007	7/13/2007	7/17/2007
QC CODE								SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [3]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals												
Antimony	MG/KG	21.9	68%	41	0	42	62	0.73 J	1.8 J	0.82 J	2.9 J	0.68 J
Arsenic	MG/KG	8.2	100%	21.5	0	62	62	3.9	4.3	5.3	5	3.3 J
Cadmium	MG/KG	16.2	79%	60	0	49	62	0.57	0.69	0.05 U	0.62	0.22 J
Copper	MG/KG	162.5	100%	10000	0	62	62	15.6	22.7	17.7	83.9	18.4 J
Lead	MG/KG	1121	100%	1250	0	62	62	32.8	92.2	16.6	217	77.4 J
Mercury	MG/KG	0.094	97%	5.7	0	60	62	0.062	0.059	0.074	0.006 U	0.024
Thallium	MG/KG	0	0%	6.7	0	0	62	0.74 U	0.7 U	0.76 U	0.73 U	0.74 UJ
Zinc	MG/KG	493	100%	10000	0	62	62	58.6	67.8	54.8 J	348	58.4 J

Notes
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs
(4) Confirmatory samples collected as part of the remedial action effort are included in this table. Historic RI sample results that are used to define the perimeter of excavation are not included in this table

U - compound was not detected
J - the reported value is an estimated concentration
UJ - the compound was not detected; the associated reporting limit is approximate

Table 3-3
SEAD-17 Final Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								D6	D6	D7	D7	D8
LOCATION ID								17EXFL-D6-01	17EXFL-D6-02	17EXFL-D7-01	17EXPR-D7-02	17EXFL-D8-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXFL-D6-01	17EXFL-D6-02	17EXFL-D7-01	17EXPR-D7-02	17EXFL-D8-01
TOP OF SAMPLE								0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/17/2007	8/2/2007	7/13/2007	4/4/2007	7/13/2007
QC CODE								SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Analyzes [3]**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**
Metals												
Antimony	MG/KG	21.9	68%	41	0	42	62	0.61 UJ	0.55 UJ	6.9 J	6 J	0.64 UJ
Arsenic	MG/KG	8.2	100%	21.5	0	62	62	3.7 J	2.1	4	5.4	4.5
Cadmium	MG/KG	16.2	79%	60	0	49	62	0.28 J	0.24	0.38	2.4	0.05 U
Copper	MG/KG	162.5	100%	10000	0	62	62	12 J	10.4	88.5	72.8	12
Lead	MG/KG	1121	100%	1250	0	62	62	30.3 J	4.8	332	528 J	15.3
Mercury	MG/KG	0.094	97%	5.7	0	60	62	0.054	0.005 U	0.026	0.048	0.045
Thallium	MG/KG	0	0%	6.7	0	0	62	0.75 UJ	0.67 U	0.69 U	1.1 U	0.79 U
Zinc	MG/KG	493	100%	10000	0	62	62	46.6 J	37.3	72.6 J	199 J	49.3 J

Notes

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table

(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

(4) Confirmatory samples collected as part of the remedial action effort are included in this table. Historic RI sample results that are used to define the perimeter of excavation are not included in this table

U = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected; the associated reporting limit is approximate

Table 5-1
SEAD-16 Post-RA Groundwater Monitoring Results
SEAD-16 and SEAD-17 Construction Completion Report
Seneca Army Depot Activity

SITE LOCATION									SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
LOCATION ID									MW16-1	MW16-1	MW16-2	MW16-4	MW16-5	MW16-6	MW16-7
MATRIX									GW	GW	GW	GW	GW	GW	GW
SAMPLE ID									16LM20001	16LM20000	16LM20002	16LM20003	16LM20004	16LM20005	16LM20006
SAMPLE DATE									12/20/2007	12/20/2007	12/20/2007	12/20/2007	12/20/2007	12/20/2007	12/20/2007
QC CODE									DU	SA	SA	SA	SA	SA	SA
STUDY ID									LTM	LTM	LTM	LTM	LTM	LTM	LTM
									1	1	1	1	1	1	1
Parameter[1]	Units	Maximum Value	Frequency of Detection	Criteria[2]	Action Level	Number of Exceedances	Number of Times Detected	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Aluminum	UG/L	168	100%			0	7	7	91.6 J	61.4 J	98.8 J	167 J	160 J	168 J	45.9 J
Antimony	UG/L	9.58	71%	GA	3	3	5	7	1.02	1 U	[illegible]	[illegible]	1.82	1 U	[illegible]
Barium	UG/L	170	100%	GA	1000	0	7	7	59	60.4	64.6	44.5	38.9	31.8	170
Cadmium	UG/L	0.46	14%	GA	5	0	1	7	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.46 J
Calcium	UG/L	194000	100%			0	7	7	105000 J	107000 J	143000 J	87100 J	89000 J	80400 J	194000
Chromium	UG/L	1.1	29%	GA	50	0	2	7	0.84 U	0.84 U	0.84 U	1 J	1.1 J	0.84 U	0.84 U
Cobalt	UG/L	1.6	14%			0	1	7	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	1.6 J
Copper	UG/L	34.7	71%	GA	200	0	5	7	1.3 U	1.3 U	4.5 J	5.4 J	3.1 J	3.4 J	34.7
Iron	UG/L	1200	100%	GA	300	2	7	7	68.3	35.8 J	49.5 J	95.4	1200	418	29.2 J
Iron+Manganese	UG/L	1238	100%	GA	500	2	7	7	73	39 J	53 J	127	1238	441	660 J
Lead	UG/L	26.5	14%	GA	25	1	1	7	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	26.5
Magnesium	UG/L	32000	100%			0	4	4	15900 J	16100 J	15600 J	9440 R	9380 R	7100 R	32000 J
Manganese	UG/L	631	100%	GA	300	1	7	7	5	3.3	3.4	31.2	37.6	23.3	631
Mercury	UG/L	0.507	14%	GA	0.7	0	1	7	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.507
Nickel	UG/L	5.5	14%	GA	100	0	1	7	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	5.5 J
Potassium	UG/L	5480	100%			0	1	1	907 R	886 R	2050 R	1300 R	4420 R	2690 R	5480 J
Sodium	UG/L	68400	100%	GA	20000	5	5	5	25300 J	24200 J	49600 J	40800 J	8410 R	6110 R	68400 J
Thallium	UG/L	0.03	14%	MCL	2	0	1	7	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 J
Vanadium	UG/L	1.2	29%			0	2	7	0.78 U	0.78 U	0.78 U	0.78 U	1.2 J	0.86 J	0.78 U
Zinc	UG/L	34.4	86%	MCL	5000	0	6	7	7.8 J	4.4 J	8.2 J	5.3 J	34.4	5.5 J	3.6 U

Note
1. Only detected metals are included in this summary table
2. The criteria values are NYSDEC Class GA Groundwater Standards (TOGS 1.1.1, June 1998) and EPA Maximum Contamination Limit (MCL), Source http://www.epa.gov/safewater/mcl.html#inorganic.html
3. Shading indicates a concentration above groundwater standard

U = compound was not detected
J = the reported value is and estimated concentration
R = the compound was rejected

Table 5-2
SEAD-17 Post-RA Groundwater Monitoring Results
SEAD-16 and SEAD-17 Construction Completion Report
Seneca Army Depot Activity

SITE LOCATION									SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
LOCATION ID									MW17-1	MW17-2	MW17-3	MW17-4	MW17-5
MATRIX									GW	GW	GW	GW	GW
SAMPLE ID									17LM20000	17LM20001	17LM20002	17LM20003	17LM20004
SAMPLE DATE									12/20/2007	12/20/2007	12/20/2007	12/20/2007	12/20/2007
QC CODE									SA	SA	SA	SA	SA
STUDY ID									LTM	LTM	LTM	LTM	LTM
									1	1	1	1	1
Parameter[1]	Units	Maximum Value	Frequency of Detection	Criteria[2]	Action Level	Number of Exceedances	Number of Times Detected	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Aluminum	UG/L	204	100%			0	5	5	204	110 J	106 J	50.2 J	98.5 J
Antimony	UG/L	3.44	20%	GA	3	1	1	5	1 U	3.44	1 U	1 U	1 U
Barium	UG/L	86.7	100%	GA	1000	0	5	5	70	58.8	39	32.5	86.7
Calcium	UG/L	110000	100%			0	5	5	98300 J	110000 J	69000 J	74900 J	97100 J
Chromium	UG/L	1	20%	GA	50	0	1	5	0.84 U	0.84 U	0.84 U	1 J	0.84 U
Copper	UG/L	6.2	60%	GA	200	0	3	5	1.3 U	6.2 J	2.6 J	1.8 J	1.3 U
Iron	UG/L	140	100%	GA	300	0	5	5	106	140	133	45.4 J	91.7
Iron+Manganese	UG/L	170	100%	GA	500	0	5	5	119	160	170	59 J	128
Magnesium	UG/L	21800	100%			0	2	2	21800 J	11000 R	7560 R	10400 R	15800 J
Manganese	UG/L	36.7	100%	GA	300	0	5	5	13.2	20.5	36.7	13.7	36.5
Sodium	UG/L	28500	100%	GA	20000	1	1	1	7790 R	6620 R	4550 R	28500 J	7950 R
Zinc	UG/L	72	100%	MCL	5000	0	5	5	4.7 J	72 J	27 J	5.1 J	4.7 J

Note
1 Only detected metals are included in this summary table
2 The criteria values are NYSDEC Class GA Groundwater Standards (TOGS 1.1.1, June 1998) and EPA Maximum Contamination Limit (MCL). Source http://www.epa.gov/safewater/mcl.html#inorganic.html
3 Shading indicates a concentration above groundwater standard.

U = compound was not detected
J = the reported value is and estimated concentration
R = the compound was rejected

APPENDIX A

DAILY REPORTS

Daily Field Report

Date: 7/9/2007 **Day:** Monday

Job # 745172

Weather Conditions:
Clear/ 90's

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Excavation and sampling

Parsons:	Position	S. St. George	Position
Thomas C Andrews	CM	Steve St George	Owner
Ben Mcallister	SSO	Richard Laumoun	Operator
Dave Hurtle	UXO Tech	Jason Muscasella	Teamster
Visitors	**Representing**	Jason Micael	Oper/Supt

Equipment Utilized:

Dozer	1	Mechanics Truck	1	
Off rd Truck	1	Water Truck	1	
Fuel Truck	1	Chemical Toilets	1	
Excavator 3 cy	1	Hand wash Station	1	
Excavator 1.5 cy				
Mini-excavator	1	(used to collect disposal characterization samples at SEAD-17.)		

PPE Level(s):
D

Health and Safety:
H&S job safety plan reviewed with personnel.
Conducted lead awareness training with personnel.

Work Performed:
Mobilized personnel and equipment to job site.
The SEAD-121C excavation to a depth of 1-foot is 90% complete, and the excavated soil is staged at the south end of SEAD-121C.
Confirmatory sampling began in the excavated areas. 20 floor and perimeter (plus two field duplicates) samples were collected at SEAD-121C and FedExed to STL for lead analysis. One disposal characterization sample was collected at SEAD-121C.

Four small test pits were dug at SEAD-17 in order to collect 4 disposal characterization samples for TCLP analysis.
The two sections of fence that cut into the excavation area were removed at SEAD-17: 150 linear feet from the west side and 30 linear feet from the north side of the access gate.
The excavation area at SEAD-17 was staked out.

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest No's.
Non-haz	None				SEAD Soil	Riccelli	

Sampling:
# of samples collected today:
4 disp. characterization samples were collected at SEAD-17.
20 samples (plus 2 dups and 1 rinse blank) were collected at SEAD-121C.
1 disp. characterization sample was collected at SEAD-121C.

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
None			

Notes:

Prepared by:
Thomas C Andrews

Daily Field Report

Date: 7/10/2007 **Day:** Tuesday

Job # 745172

Weather Conditions:
Cloudy 95 degrees

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Excavation and stockpiling soil

Parsons:	**Position**	**S. St. George**	**Position**
Thomas C Andrews	CM	Richard Laumoun	Operator
Ben Mcallister	SSO	Jason Muscasella	Teamster
Dave Hurtle	UXO Tech	Jason Micael	Oper/Supt
Visitors	**Representing**	Bill Caldwell	Operator

Equipment Utilized:

Dozer	1	Mechanics Truck	1
Off rd Truck	2	Water Truck	1
Fuel Truck	1	Chemical Toilets	1
Excavator 3 cy	1	Hand wash Station	1
Excavator 1.5 cy	1	Bobcat	
Mini-excavator	1	Mower	
		Grapple Bucket	1

PPE Level(s):
D

Health and Safety:

Performed personal and perimeter air monitoring at SEAD-17.
Trained new operator in lead awareness.
Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls.

Work Performed:

NYSE&G was contacted about overhead power lines at SEAD-16 & SEAD-17. They will be on site tomorrow morning to look at the overhead lines.
S. St. George delivered Bobcat with mower and grapple bucket to SEAD-17.

Excavation at SEAD-17 commenced. The excavation on the south side of SEAD-17 is completed, the excavation east of Bldg 367 is 50% complete, and the west side is 10% complete. These areas were excavated to a depth of 1-foot.
Visual inspection of the SEAD-17 excavation revealed that material had little if any scrap metal, shell casings, or bullets.
Excavated soil was stockpiled at the north end of the SEAD-17 excavation area near the access gate.
Regular dust suppression was performed by wetting roads and load out area at SEAD-121C and SEAD-17.
The density of soil excavated at SEAD-17 was calculated by measuring the weight of three 5-gallon buckets of excavated soil. The calculated density is 1.38 tons/cy.
13 loads (277.43 tons) of SEAD-17 excavation material was sent off-site.
Three loads (80.3 tons) of SEAD-121C excavation material was sent off-site.
The density of the soil excavated at SEAD-121C was measured in the field for density of 1.75 tons/cy.
Both SEAD-17 and SEAD-121C excavation material density need to be discussed and agreed to by Steve St. George.

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest No's.
Non-haz	16	16	358	358	SEAD Soil	Riccelli	11290 to 11305

Also see attached truck and disposal log

Sampling:

# of samples collected today:
none

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
None			

Notes:

Prepared by:
Thomas C Andrews

Daily Field Report

Date: 7/11/2007 **Day:** Wed

Job # 745172

Weather Conditions:
Cloudy- thunderstorm late afternoon 80 degrees

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Excavation and stockpiling soil

Parsons:	**Position**	**S. St. George**	**Position**
Thomas C Andrews	CM	Steve St George	Owner
Ben Mcallister	SSO	Richard Laumoun	Operator
Dave Hurtle	UXO Tech	Jason Muscasella	Teamster
Visitors	**Representing**	Jason Micael	Oper/Supt
Tim Baily	NYSE&G	Bill Caldwell	Oper
		Kevin Lindmann	Oper
		Josh Stelmack	Oper

Equipment Utilized:

Dozer	1	Mechanics Truck	1	
Off rd Truck	2	Water Truck	1	
Fuel Truck	1	Chemical Toilets	1	
Excavator 3 cy	1	Hand wash Station	1	
Excavator 1.5 cy	1	Skid Steer		
Mini-excavator	1	Mower		
	1	Grapple Bucket		

PPE Level(s):
D

Health and Safety:

Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls.

Two new S. St. George personnel underwent Safety Training.

Performed personal and perimeter dust monitoring at SEAD-17.

Work Performed:

NYSE&G came on-site at SEAD-16 and SEAD-17 to disconnect the main overhead power feeders. The overhead lines at SEAD-16 and SEAD-17 have been de-powered.

The areas east, west, and north of Building 367 were completely excavated to 1-foot.

Regular dust suppression was performed by wetting roads and load out areas at SEAD-121C and SEAD-17.

8 loads (161.58 tons) of excavated soil from SEAD-17 was hauled off-site.

Brush was cleared and surface debris was gathered at SEAD-16.

Pipes located at SEAD-16 potentially contaminated with propellant were removed and transported to OB Grounds for future disposal under the supervision and guidance of the UXO Tech, D. Hurtle.

The 1-foot excavation at SEAD-121C was completed. 29 loads (689.70 tons) of excavated soil from SEAD-121 C was hauled off-site.

Material Loaded

	Loads	**Total to date**	**Estimated tons**	**To. Tons to date**	**Mat'l Type**	**Hauler**	**Manifest No's.**
Non-haz	37	53	851	1209	SEAD Soil	Riccelli	11306 to 11342

Also see attached truck and disposal log

Sampling:
# of samples collected today:
none

Other Materials brought on or off-site

Mat'l Type	**Loads**	**CY**	**Tons**
None			

Notes:

Prepared by:
Thomas C Andrews

P:\PIT\Projects\Seneca PBC II\SEAD-16_17\Construction Completion Report\Draft Final\Appendices\Appendix A - Daily Reports\Edited SEAD 16 17 & 121C Dly Rpt 121007.xls Edited SEAD 16 17 & 121C Dly Rpt 121007.xls 5/21/2008

Daily Field Report

Date: 7/12/2007 **Day:** Thursday

Job # 745172

Weather Conditions:
90 and sunny

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Excavation and stockpiling soil

Parsons:	**Position**	**S. St. George**	**Position**
Thomas C Andrews	CM	Steve St George	Owner
Ben Mcallister	SSO	Richard Laumoun	Operator
Dave Hurtle	UXO Tech	Jason Muscasella	Teamster
Visitors	**Representing**	Jason Micael	Oper/Supt
		Bill Caldwell	Oper
		Kevin Lindmann	Oper
		Josh Stelmack	Oper

Equipment Utilized:				**PPE Level(s):**
Dozer	1	Mechanics Truck	1	D
Off rd Truck	2	Water Truck	1	
Fuel Truck	1	Chemical Toilets	1	
Excavator 3 cy	1	Hand wash Station	1	
Excavator 1.5 cy	1	Skid Steer		
Mini-excavator	1	Mower		
	1	Grapple Bucket		

Health and Safety:

Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls.

Performed personal and perimeter dust monitoring at SEAD-16 and SEAD-17.

Work Performed:

Load out at SEAD-17 continued. 57 loads (1,538 tons) of excavated soil from SEAD-17 were hauled off-site.

St. George delivered 6.8 tons of Portland cement to stabilize soil with high lead concentrations at SEAD-17 prior to off-site disposal.

The brush clearing at SEAD-16 was completed. The interior and exterior ramps of SEAD-16 Building S-311 were cleaned to minimize dust mobilization.

Excavation at SEAD-16 commenced. Excavation activities began in the area east of Building 366 at SEAD-16.

The water inside Building S-311 at SEAD-16 was pumped out; no debris was found in the basement of the building after water removal.

Regular dust suppression was performed by wetting roads and load out areas at SEAD-16 and SEAD-17.

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest No's.
Non-haz	57	110	1,538	2,747	SEAD Soil	Riccelli	11343 to 11399

Also see attached truck and disposal log

Sampling:

# of samples collected today:
none

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
Cement	1		6.8

Notes:

Prepared by:
Thomas C Andrews

Daily Field Report

Date: 7/13/2002 **Day:** Friday

Job # 745172

Weather Conditions:
75 degrees and cloudy

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Excavation and T&D non haz soil

Parsons:	**Position**	**S. St. George**	**Position**
Thomas C Andrews	CM	Jason Muscasella	Teamster
Ben Mcallister	SSO	Jason Micael	Oper/Supt
Dave Hurtle	UXO Tech	Bill Caldwell	Oper
Visitors	**Representing**	Josh Stelmack	Oper
Steve Absolom	Army		

Equipment Utilized:

Dozer	1	Mechanics Truck	1
Off rd Truck	2	Water Truck	1
Fuel Truck	1	Chemical Toilets	1
Excavator 3 cy	1	Hand wash Station	1
Excavator 1.5 cy	1	Skid Steer	1
Mini-excavator	1	Mower	1
	1	Grapple Bucket	1

PPE Level(s):
D

Health and Safety:

Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls.
Performed personal and perimeter dust monitoring at SEAD-16 and SEAD-17.

Work Performed:

Excavation activities at SEAD-16 continued in the area north/east of Building S-311.
Load out began at SEAD-16. 22 loads (509.9 tons) of soil excavated from SEAD-16 was hauled off-site.
Regular dust suppression was performed by wetting roads and load out areas at SEAD-16 and SEAD-17.

11 loads (338 tons) of soil excavated from SEAD-17 was hauled off-site.
The soil at SEAD-17 with high lead was stabilized with Portland cement. This stabilized soil and the area adjacent to the access road have not been hauled off-site yet. Four disposal characterization samples were collected at SEAD-17 from the cement stabilized soil.
30 samples (plus a field duplicate) were collected at the SEAD-17 excavation area.

Confirmatory sample collection continued at SEAD-121C. 4 confirmatory samples were collected at SEAD-121C.

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest No's.
Non-haz	33	143	848	3,596	SEAD Soil	Riccelli	11400 to 11432

Also see attached truck and disposal log

Sampling:
# of samples collected today:

4 samples were collected at SEAD-121C.
30 samples (plus 1 dup) were collected at SEAD-17.
4 dis. characterization samples were collected at SEAD 17, but only 1 requested for analysis.

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
None			

Prepared by:
Thomas C Andrews

Daily Field Report

Date: 7/16/2007 **Day:** Monday

Job # 745172

Weather Conditions:
75 degrees and cloudy

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Excavation and load out

Parsons:	**Position**	**S. St. George**	**Position**
Ben Mcallister	SSO	Jason Micael	Oper/Supt
Dave Hurtle	UXO Tech	Bill Caldwell	Oper
Thomas C Andrews	CM	Kevin Lindmann	Oper

Visitors	**Representing**
Steve Absolom	SEDA

Equipment Utilized:

Dozer	1	Mechanics Truck	1	
Off rd Truck	1	Water Truck	1	
Fuel Truck	1	Chemical Toilets	1	
Excavator 3 cy	1	Hand wash Station	1	
Excavator 1.5 cy	1	Skid Steer		
Mini-excavator	1	Mower		
	1	Grapple Bucket		

PPE Level(s): D

Health and Safety:

Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls.
Performed perimeter dust monitoring at SEAD-16.
Lab results of personal air samples were below detection limit for lead; discontinued personal air monitoring.

Work Performed:

The area north/east of Building S-311 and Ditch #3 between RR tracks at SEAD-16 were excavated.
28 loads (579.6 tons) of excavated soil from SEAD-16 were hauled off-site.
Regular dust suppression was performed by wetting roads and load out areas at SEAD-16.
Steve Absolom toured job and seemed satisfied with progress
The project engineer communicated to the field that samples at 121C failed to meet the cleanup goal. Two hot spots for additional excavation of 1-foot of soil were marked out.
S. St. George began to de-mobilize equipment that is no longer needed.

Material Loaded

	Loads	**Total to date**	**Estimated tons**	**To. Ton to date**	**Mat'l Type**	**Hauler**	**Manifest No's.**
Non-haz	28	171	580	4,175	SEAD Soil	Riccelli	

Also see attached truck and disposal log

Sampling:
# of samples collected today:
none

Other Materials brought on or off-site

Mat'l Type	**Loads**	**CY**	**Tons**
None			

Notes:

Prepared by:
Thomas C Andrews

Daily Field Report

Date: 7/17/2007 **Day:** Tuesday

Job # 745172

Weather Conditions:
Clear and 80's

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Excavation and T&D

Parsons:	**Position**	**S. St. George**	**Position**
Ben Mcallister	SSO	Jason Micael	Oper/Supt
Dave Hurtle	UXO Tech	Bill Caldwell	Oper
Dan Douglas	Tech	Kevin Lindmann	Oper
Thomas C Andrews	CM		

Visitors	**Representing**

Equipment Utilized:

Dozer	1	Mechanics Truck	1	
Off rd Truck	1	Water Truck	1	
Fuel Truck	1	Chemical Toilets	1	
Excavator 3 cy	1	Hand wash Station	1	
Excavator 1.5 cy	1	Skid Steer		
Mini-excavator	1	Mower		
	1	Grapple Bucket		

PPE Level(s): D

Health and Safety:

Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls.

Performed perimeter dust monitoring at SEAD-16.

Work Performed:

The excavation at SEAD-16 was completed.

Regular dust suppression was performed by wetting roads and load out areas at SEAD-16, 17 and 121C.

39 loads (1,122 tons) of the remaining soil staged at SEAD-16 was hauled off-site.

The additional excavation at SEAD-121C is 80% complete. 1-foot is being excavated from the two hot spot areas. The hot spot located within the original excavation is resulting in a total depth of 2 feet in that area.

8 loads (182 tons) of SEAD-121C excavated soil was hauled off-site.

1-foot of soil from the area on the southeast side of Building 367 at SEAD-17 was excavated and staged next to the access road. The stabilized lead material is stockpiled, awaiting analytical data prior to off-site disposal.

8 confirmatory samples (plus 1 dup) were collected at SEAD-17.

Visual assessment of depth of excavation

Additional excavation at SEAD-121C is approx 1' bgs in northeast corner and approx. 2' bgs near the center of the site.

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest No's.
Non-haz	47	218	1,304	5,480	SEAD Soil	Riccelli	11461 to 11497 11499 to 11500
							16730 to 16737

Also see attached truck and disposal log

Sampling:

# of samples collected today:

8 samples (plus 1 dup) were collected at SEAD-17.

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
None			

Notes:

Prepared by:

Thomas C Andrews

Daily Field Report

Date:	7/18/2007	**Day:**	Wednesday
Job #	745172		

Weather Conditions:
Overcast intermittent rain 70's

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Excavation, sampling, and T&D

Parsons:	**Position**	**S. St. George**	**Position**
Ben Mcallister	SSO	Bill Caldwell	Oper
Dave Hurtle	UXO Tech	Kevin Lindmann	Oper
Thomas C Andrews	CM		

Visitors	**Representing**
Joelle Saliba	EPA Lab
Cristina Lung	EPA Lab

Equipment Utilized:

Dozer	1	Mechanics Truck	1	
Off rd Truck	1	Water Truck	1	
Fuel Truck	1	Chemical Toilets	1	
Excavator 3 cy	1	Hand wash Station	1	
Excavator 1.5 cy	1	Skid Steer	1	
Mini-excavator	1	Mower		
		Grapple Bucket	1	

PPE Level(s): D

Health and Safety:

Conducted tool box meeting; topics included air monitoring, site traffic awareness, and slips/trips/falls.
Performed perimeter dust monitoring at SEAD-16.

Work Performed:

TCLP sample results of stabilized material at SEAD-17 did not meet TCLP criteria for disposal. Additional cement is required to stabilize the material. An order of 85 bags (3.4 tons) of Portland cement was placed and delivered by Riccelli.
The stabilized soil at SEAD-17 was mixed with an additional 3.4 tons of Portland cement in order to met TCLP disposal criteria.
Regular dust suppression was performed by wetting roads and load out areas at SEAD-17 and SEAD-121C.
22 loads (437.61 tons) of the remaining SEAD-17 excavation material was sent off-site except for the lead stabilization stockpile.
The lead stabilization stockpile at SEAD-17 was covered with poly.
All cleared brush will remain on-site per Steve Absolom's instructions.
5 split samples were collected at SEAD-16 by Parsons and EPA.
5 split samples were collected at SEAD-17 by Parsons and EPA.
The additional excavation at SEAD-121C was completed.
6 loads (119.63 tons) of the remaining soil excavated at SEAD-121C was hauled off-site.
S. St George de-mobilized more equipment from the sites.
All work is completed until sample results return.

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest No's.
Non-haz	28	246	557	6,037	SEAD Soil	Riccelli	11501 to 11522
							16738 to 16743

Also see attached truck and disposal log

Sampling:

# of samples collected today:
5 split samples were collected at SEAD-17 (EPA rep collected splits).
5 split samples were collected at SEAD-16 (EPA rep collected splits).

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
Cement	1		3.4

Notes:

Prepared by:
Thomas C Andrews

Daily Field Report

Date: 7/19/2007 **Day:** Thursday

Job # 745172

Weather Conditions:
Cloudy- Showers 70's

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Sampling

Parsons:	**Position**	**S. St. George**	**Position**
Thomas C Andrews	CM		
Ben Mcallister	SSO		
Dave Hurtle	UXO Tech		
Visitors	**Representing**		

Equipment Utilized:

		PPE Level(s):
Dozer	Mechanics Truck	D
Off rd Truck	Water Truck	
Fuel Truck	Chemical Toilets	
Excavator 3 cy	Hand wash Station	
Excavator 1.5 cy	Skid Steer	
Mini-excavator	Mower	
	Grapple Bucket	

Health and Safety:

Work Performed:

Confirmatory samples were collected at SEAD-16 (44 samples + 3 dups) and SEAD-121C (7 samples + 1 dup).
S. St. George personnel were not on-site; awaiting lab results before resuming intrusive work.

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest No's.
Non-haz		246		6,037	SEAD Soil	Riccelli	

Sampling:

# of samples collected today:
44 samples (plus 3 dups) were collected at SEAD-16.
7 samples (plus 1 dup) were collected at SEAD-121C.

Notes:

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
None			

Prepared by:
Thomas C Andrews

Daily Field Report

Date: 7/20/2007 **Day:** Friday

Job # 745172

Weather Conditions:
Cloudy 70's

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Sampling and demobilization

Parsons:	**Position**	**S. St. George**	**Position**
Ben Mcallister	SSO		

Visitors	**Representing**

Equipment Utilized:

Dozer	Mechanics Truck	
Off rd Truck	Water Truck	
Fuel Truck	Chemical Toilets	
Excavator 3 cy	Hand wash Station	
Excavator 1.5 cy	Skid Steer	
Mini-excavator	Mower	
	Grapple Bucket	

PPE Level(s):
D

Health and Safety:

Work Performed:

The final as-built conditions at SEAD-121C and SEAD-16 were surveyed.
Perimeter samples were collected at SEAD-16 (1 sample + 1 dup from Grid G5 and 1 sample from Grid I2).
S. St. George's water truck was de-mobilized from the site.
The surveying and air monitoring equipment were sent off-site.

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest No's.
Non-haz		246		6,037	SEAD Soil	Riccelli	

Sampling:
# of samples collected today:
2 samples (plus 1 dup) were collected at SEAD-16.

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons

Notes:
Ben M. departed site at the close of day; all work is complete pending sample results.

Prepared by:
Thomas C Andrews

Daily Field Report

Date: 7/30/2007 **Day:** Monday

Job # 745172

Weather Conditions:
Cloudy 70's

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Sampling, load-out and grading

Parsons:	Position	S. St. George	Position
Thomas C Andrews	CM	Paul St George	Oper/Supt
Ben Mcallister	SSO	Jason Micael	Oper/Supt
		Bill Caldwell	Oper
Visitors	**Representing**	Kevin Lindmann	Oper

Equipment Utilized:

			PPE Level(s):
Dozer	1	Mechanics Truck	D
Off rd Truck		Water Truck	
Fuel Truck		Chemical Toilets	
Excavator 3 cy	1	Hand wash Station	
Excavator 1.5 cy		Skid Steer	
Mini-excavator		Mower	
		Grapple Bucket	

Health and Safety:

Work Performed:

The TCLP sample from the lead stabilized material met the TCLP requirement. The lead stabilized material was loaded out from SEAD-17 for off-site non-hazardous disposal. Hot spots at SEAD-16 were excavated: Ditch #1 in Grids C7, B8, and C8, and SB16-5 area in Grid D8 were taken to bedrock. Samples were collected at SEAD-16 in Grid D8 (1 floor sample and 1 sidewall sample with a duplicate). One foot excavation area north of Building S-311 was graded at SEAD-16.

The hot spots at SEAD-17 were excavated and loaded out: Grids E5 and F2 due to differences in split sample results.
Two floor samples were collected at SEAD-17 (1 sample from Grid E5 and 1 sample from Grid F2).
At SEAD-17, areas excavated to a depth of 2 feet or greater were backfilled; the entire site was graded.
The propellant pipes and tanks stored at OB Grounds were transported to burning trays for flashing.

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest No's.
Non-haz	26	272	646	6,682	SEAD Soil	Riccelli	11523 to 11548

Also see attached truck and disposal log

Sampling:
# of samples collected today:
2 samples (plus 1 dup) were collected at SEAD 16.
2 samples were collected at SEAD-17.

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
Bank-run gravel	14		331.41

Notes:

Prepared by:
Thomas C Andrews

Daily Field Report

Date: 7/31/2007 **Day:** Tuesday

Job # 745172

Weather Conditions:
Cloudy 70's

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Excavation and T&D

Parsons:	**Position**	**S. St. George**	**Position**
Thomas C Andrews	CM	Steve St George	Owner
Ben Mcallister	SSO	Paul St George	Oper/Supt
Dan Douglas	Tech	Jason Micael	Oper/Supt
Visitors	**Representing**	Bill Caldwell	Oper
		Kevin Lindmann	Oper

Equipment Utilized:

Dozer		Mechanics Truck
Off rd Truck		Water Truck
Fuel Truck		Chemical Toilets
Excavator 3 cy	1	Hand wash Station
Excavator 1.5 cy		Skid Steer
Mini-excavator		Mower
		Grapple Bucket

PPE Level(s):
D

Health and Safety:

Work Performed:

The soil excavated at Grids C7, B8, C8, and D8 at SEAD-16 yesterday (7/30) was loaded out.

The bounds of two new hot spots were marked out at SEAD-121C. A rectangular area in the northeast part of the excavation will be excavated to 1-foot, for a total depth of 2 feet below the original ground surface; a second area marked out is a circular area adjacent to the first hotspot, which will be excavated to 2-feet so that the total depth extends 3 feet below the original ground surface.

Excavation began in the northeast part of the hot spot.

Material Loaded

	Loads	Total to date	Estimated tons	To. Tons to date	Mat'l Type	Hauler	Manifest No's.
Non-haz	6	278	159	6,841	SEAD Soil	Riccelli	11590 to 11595

Also see attached truck and disposal log

Sampling:

# of samples collected today:
None

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
Bank-run gravel			448.48

Notes:

Prepared by:
Thomas C Andrews

Daily Field Report

Date: 8/1/2007 **Day:** Wednesday

Job # 745172

Weather Conditions:
Clear 90's

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Excavation and T&D

Parsons:	**Position**	**S. St. George**	**Position**
Thomas C Andrews	CM	Steve St George	Owner
Ben Mcallister	SSO	Jason Micael	Oper/Supt
		Bill Caldwell	Oper
Visitors	**Representing**	Kevin Lindmann	Oper

Equipment Utilized:

Dozer	1	Mechanics Truck	1
Off rd Truck		Water Truck	
Fuel Truck	1	Chemical Toilets	1
Excavator 3 cy	1	Hand wash Station	1
Excavator 1.5 cy	1	Skid Steer	1
Mini-excavator		Mower	1
		Grapple Bucket	

PPE Level(s):
D

Health and Safety:
Tool Box meeting in morning

Work Performed:

The hot spot in Grid C9 at SEAD-16 was excavated to 2-ft bgs and 3 loads were sent off-site.
The excavation of the hotspots in the northeast corner of SEAD-121C continued; 5 loads were hauled off-site.

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest No's.
Non-haz	8	286	229	7,070	SEAD Soil	Riccelli	11596 to 11599
							11626 to 11629

Also see attached truck and disposal log

Sampling:
# of samples collected today:
none

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons

Notes:

Prepared by:
Thomas C Andrews

Daily Field Report

Date:	8/2/2007	**Day:**	Thursday
Job #	745172		

Weather Conditions:
Clear 90's

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Excavation, sampling, and load-out

Parsons:	**Position**	**S. St. George**	**Position**
Thomas C Andrews	CM	Paul St George	Oper/Supt
Ben Mcallister	SSO	Josh Stelmack	Oper
		Bill Caldwell	Oper

Visitors	**Representing**

Equipment Utilized:

Dozer	1	Mechanics Truck	1	
Off rd Truck		Water Truck		
Fuel Truck	1	Chemical Toilets	1	
Excavator 3 cy	1	Hand wash Station	1	
Excavator 1.5 cy	1	Skid Steer	1	
Mini-excavator		Mower	1	
		Grapple Bucket		

PPE Level(s):
D

Health and Safety:
A Tool Box meeting was held in the morning.

Work Performed:
At SEAD-16, 1-foot was excavated from hot spots at Grids C10 and F9, and 3 loads were hauled off-site.
Samples were collected at SEAD-16 at Grids C9 (1 floor), C10 (1 floor and 1 perimeter), and F9 (1 floor + dup and 1 perimeter).
At SEAD-17, the hot spots located in Grid G3 (additional 1-foot excavation) and Grid D2 (1 foot excavation) at SEAD-17 were excavated and 6 loads were hauled off-site.
Confirmatory samples were collected at SEAD-17 in Grids D2 (1 floor and 1 perimeter), D6 (1 floor), and G3 (1 floor).
Two floor samples and 2 sidewall samples were collected from hot spots at SEAD-121C.

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest No's.
Non-haz	9	295	209	7,279	SEAD Soil	Riccelli	11720-11728

Also see attached truck and disposal log

Sampling:
# of samples collected today:
4 samples were collected at SEAD-121C.
4 samples were collected at SEAD-17.
5 samples plus 1 duplicate were collected at SEAD-16.

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
Bank-run gravel			775.52

Notes:

Prepared by:
Thomas C Andrews

Daily Field Report

Date: 8/3/2007 **Day:** Friday

Job # 745172

Weather Conditions:
Cloudy 80's

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Backfill Delivery

Parsons:	Position	S. St. George	Position
Ben Mcallister	SSO		

Visitors	Representing

Equipment Utilized:

		PPE Level(s):
Dozer	Mechanics Truck	D
Off rd Truck	Water Truck	
Fuel Truck	Chemical Toilets	
Excavator 3 cy	Hand wash Station	
Excavator 1.5 cy	Skid Steer	
Mini-excavator	Mower	
	Grapple Bucket	

Health and Safety:

Work Performed:

S. St. George delivered bank-run gravel for use as backfill (153 tons).

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest No's.
Non-haz		295		7,279		Riccelli	

Sampling:
None

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
Bank-run gravel	6		153

Notes:

Prepared by:
Thomas C Andrews

Daily Field Report

Date:	8/13/2007	**Day:**	Monday
Job #	745172		

Weather Conditions:
Cloudy 80's

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Excavation and grading

Parsons:	**Position**	**S. St. George**	**Position**
Thomas C Andrews	CM	Steve St George	Owner
Ben Mcallister	SSO	Jason Micael	Oper/Supt
		Bill Caldwell	Oper

Visitors	**Representing**

Equipment Utilized:

Dozer	1	Mechanics Truck	1	
Off rd Truck		Water Truck	1	
Fuel Truck		Chemical Toilets		
Excavator 3 cy	1	Hand wash Station		
Excavator 1.5 cy		Skid Steer	1	
Mini-excavator		Broom		
		Grapple Bucket	1	

PPE Level(s): D

Health and Safety:

Work Performed:

Backfilling of the deep (>2') excavated areas and grading at SEAD-16 was completed.
Backfilling of the deep (>2') excavated areas and grading at SEAD-17 was completed.
An additional foot was excavated at the hot spot located in the circular area at SEAD-121C to bedrock, so that the total depth is approximately 3 feet below original surface. The excavated soil was hauled off-site.

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest No's.
Non-haz	3	298	119	7,398	SEAD Soil	Riccelli	16748 to 16750

Also see attached truck and disposal log

Sampling:
# of samples collected today:
none

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
Bank-run gravel			66.24

Notes:

Prepared by:
Thomas C Andrews

Daily Field Report

Date: 8/14/2007 **Day:** Tuesday

Job # 745172

Weather Conditions:
Cloudy 80's

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Site Restoration Activities

Parsons:	Position	S. St. George	Position
Thomas C Andrews	CM	Jason Micael	Oper/Supt
Ben Mcallister	SSO	Bill Caldwell	Oper

Visitors	Representing

Equipment Utilized:

Dozer	1	Mechanics Truck	1	
Off rd Truck		Water Truck	1	
Fuel Truck		Chemical Toilets		
Excavator 3 cy	1	Hand wash Station		
Excavator 1.5 cy		Skid Steer	1	
Mini-excavator		Broom		
		Grapple Bucket	1	

PPE Level(s): D

Health and Safety:
Tool Box Meeting

Work Performed:

The hot spot excavation to bedrock (approx. 3 ft bgs) in northeast corner of SEAD-121C was completed.
The final load out at SEAD-121C was completed, and the area was graded.

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest No's.
Non-haz	1	299	31	7,429	SEAD Soil	Riccelli	16751

Also see attached truck and disposal log

Sampling:
# of samples collected today:
none

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
Bank-run gravel	2		99.36

Notes:

Prepared by:
Thomas C Andrews

Daily Field Report

Date: 8/15/2007 **Day:** Wednesday

Job # 745172

Weather Conditions:
Cloudy 80's

Site Name:
Seneca Army Depot SEAD 16, 17 & 121 C

Task(s):
Site restoration and demobilization

Parsons:	**Position**	**S. St. George**	**Position**
Thomas C Andrews	CM	Jason Micael	Oper/Supt
Ben Mcallister	SSO	Bill Caldwell	Oper

Visitors	**Representing**
Todd Heino	Parsons
J Travers	Parsons

Equipment Utilized:

Dozer	1	Mechanics Truck	1	
Off rd Truck		Water Truck	1	
Fuel Truck		Chemical Toilets		
Excavator 3 cy	1	Hand wash Station		
Excavator 1.5 cy		Skid Steer	1	
Mini-excavator		Broom		
		Grapple Bucket	1	

PPE Level(s):
D

Health and Safety:
Tool Box Meeting

Work Performed:

Completed backfilling and grading of the excavated areas at SEAD-121C. Only areas greater than 2' were backfilled.
S. St. George's equipment was de-mobilized from the site.

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest No's.
Non-haz		299		7,429	SEAD Soil	Riccelli	

Sampling:
# of samples collected today:
None

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
Bank-run gravel	4		135

Notes:

Prepared by:
Thomas C Andrews

APPENDIX B

DISPOSAL CHARACTERIZATION

Table B-1
SEAD-16 Disposal Characterization Data
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16
LOCATION ID								DS-16-01	DS-16-02	DS-16-04
MATRIX								DCS-SOIL	DCS-SOIL	DCS-SOIL
SAMPLE ID								DS-16-01	DS-16-02	DS-16-04
SAMPLE DATE								6/5/2007	6/5/2007	6/5/2007
QC CODE								SA	SA	SA
STUDY ID								RA	RA	RA
Parameter	**Units**	**Maximum Detect**	**Frequency of Detection**	**Regulatory Limit [2]**	**Number of Exceedances**	**Number of Detects**	**Number of Analyzed**	Value (Q)	Value (Q)	Value (Q)
Wet Chemistry										
Corrosivity [3]	S.U.	7.58	100%		0	3	3	7.48	7.58	7.43
Flashpoint	°F	>200	0%	<140	0	3	3	>200	>200	>200
Reactive Cyanide	MG/KG	0	0%		0	0	3	10 U	10 U	10 U
Reactive Sulfide	MG/KG	0	0%		0	0	3	10 U	10 U	10 U
TCLP Inorganics										
TCLP Arsenic	UG/L	0	0%	5000	0	0	3	4.2 U	4.2 U	4.2 U
TCLP Barium	UG/L	2640	100%	100000	0	3	3	1280	2640	1260
TCLP Cadmium	UG/L	15	100%	1000	0	3	3	6	15	2.4
TCLP Chromium	UG/L	1.3	33%	5000	0	1	3	0.84 U	0.84 U	1.3 B
TCLP Lead	UG/L	2410	100%	5000	0	3	3	783	2410	316
TCLP Mercury	UG/L	0	0%	200	0	0	3	0.12 U	0.12 U	0.12 U
TCLP Selenium	UG/L	0	0%	1000	0	0	3	6.1 U	6.1 U	6.1 U
TCLP Silver	UG/L	0	0%	5000	0	0	3	1 U	1 U	1 U

Notes:
(1) Disposal characterization samples were not validated. Qualifiers were assigned by the laboratory.
(2) TCLP regulatory limits are based on 40CFR 261.23 and 40CFR 261.24.
(3) Wastes may be considered corrosive with a pH < 2 or > 12.5.

U = compound was not detected
B = the reported value is an estimated concentration

Table B-2
SEAD-17 Disposal Characterization Data
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
LOCATION ID								DS-17-01	DS-17-02	DS-17-03	DS-17-04	DS-17-05	DS-17-06	DS-17-07
MATRIX								DCS-SOIL	DCS-SOIL	DCS-SOIL	DCS-SOIL	DCS-SOIL	DCS-SOIL	DCS-SOIL
SAMPLE ID								DS-17-01	DS-17-02	DS-17-03	DS-17-04	DS-17-05	DS-17-06	DS-17-07
SAMPLE DATE								6/4/2007	6/4/2007	6/4/2007	6/4/2007	6/20/2007	6/20/2007	6/20/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Detect	Frequency of Detection	Regulatory Limit [2]	Number of Exceedances	Number of Detects	Number of Analyzed	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Wet Chemistry														
Corrosivity [3]	S.U	7.8	100%		0	5	5	7.8	7.37	7.15	6.34	7.03		
Flashpoint	°F	>200	0%	<140	0	5	5	>200	>200	>200	>200	>176		
Reactive Cyanide	MG/KG	0	0%		0	0	5	10 U	10 U	10 U	10 U	10 U		
Reactive Sulfide	MG/KG	0	0%		0	0	5	10 U	10 U	10 U	10 U	10 U		
TCLP Inorganics														
TCLP Arsenic	UG/L	7.6	16%	5000	0	3	19	4.2 U	4.2 U	7.6 B	4.2 U	4.2 U	4.2 U	4.2 U
TCLP Barium	UG/L	2460	100%	100000	0	19	19	2420	1390	608	2300	2080	2460	2030
TCLP Cadmium	UG/L	693	89%	1000	0	17	19	77.2	104	9.2	385	508	693	449
TCLP Chromium	UG/L	132	53%	5000	0	10	19	0.84 U	0.84 U	36.9	0.84 U	1.3 B	1.4 B	0.84 U
TCLP Lead	UG/L	99700	95%	5000	8	18	19	2060	2350	764	**61600**	**61000**	**99700**	**33500**
TCLP Mercury	UG/L	0	0%	200	0	0	19	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
TCLP Selenium	UG/L	6.5	5%	1000	0	1	19	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U
TCLP Silver	UG/L	1.2	11%	5000	0	2	19	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes
(1) Disposal characterization samples were not validated Qualifiers were assigned by the laboratory
(2) TCLP regulatory limits are based on 40CFR 261 23 and 40CFR 261 24
(3) Wastes may be considered corrosive with a pH < 2 or > 12 5

U compound was not detected
B – the reported value is an estimated concentration
E = a value estimated or not reported due to the presence of interference

Table B-2
SEAD-17 Disposal Characterization Data
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
LOCATION ID								DS-17-08	DS-17-09	DS-17-10	DS-17-11	DS-17-12	DS-17-13	DS-17-14
MATRIX								DCS-SOIL	DCS-SOIL	DCS-SOIL	DCS-SOIL	DCS-SOIL	DCS-SOIL	DCS-SOIL
SAMPLE ID								DS-17-08	DS-17-09	DS-17-10	DS-17-11	DS-17-12	DS-17-13	DS-17-14
SAMPLE DATE								6/20/2007	6/20/2007	6/27/2007	6/27/2007	6/27/2007	6/27/2007	7/9/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Detect	Frequency of Detection	Regulatory Limit [2]	Number of Exceedances	Number of Detects	Number of Analyzed	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Wet Chemistry														
Corrosivity [3]	S U	7.8	100%		0	5	5							
Flashpoint	°F	>200	0%	<140	0	5	5							
Reactive Cyanide	MG/KG	0	0%		0	0	5							
Reactive Sulfide	MG/KG	0	0%		0	0	5							
TCLP Inorganics														
TCLP Arsenic	UG/L	7.6	16%	5000	0	3	19	4.2 U	4.2 U	5.2 B	4.2 U	4.8 B	4.2 U	4.2 U
TCLP Barium	UG/L	2460	100%	100000	0	19	19	1280	1040	1030	1620	2040	2050	1810
TCLP Cadmium	UG/L	693	89%	1000	0	17	19	136	45	36.3	121	615	494	7.2
TCLP Chromium	UG/L	132	53%	5000	0	10	19	4.4	5.7	3.8 B	0.84 U	0.91 B	0.84 U	0.98 B
TCLP Lead	UG/L	99700	95%	5000	8	18	19	2540	1560	1200	**8630**	**20300**	**23700**	191
TCLP Mercury	UG/L	0	0%	200	0	0	19	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
TCLP Selenium	UG/L	6.5	5%	1000	0	1	19	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U
TCLP Silver	UG/L	1.2	11%	5000	0	2	19	1 U	1 U	1 U	1 U	1 U	1 U	1 B

Notes
(1) Disposal characterization samples were not validated Qualifiers were assigned by the laboratory
(2) TCLP regulatory limits are based on 40CFR 261.23 and 40CFR 261.24
(3) Wastes may be considered corrosive with a pH < 2 or > 12.5

U = compound was not detected
B = the reported value is an estimated concentration
E = a value estimated or not reported due to the presence of interference

Table B-2
SEAD-17 Disposal Characterization Data
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
LOCATION ID								DS-17-15	DS-17-16	DS-17-17	DS-17-18	17-DS-19
MATRIX								DCS-SOIL	DCS-SOIL	DCS-SOIL	DCS-SOIL	DCS-SOIL
SAMPLE ID								DS-17-15	DS-17-16	DS-17-17	DS-17-18	17-DS-19
SAMPLE DATE								7/9/2007	7/9/2007	7/9/2007	7/13/2007	7/20/2007
QC CODE								SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA
Parameter	Units	Maximum Detect	Frequency of Detection	Regulatory Limit [2]	Number of Exceedances	Number of Detects	Number of Analyzed	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Wet Chemistry												
Corrosivity [3]	S.U.	7.8	100%		0	5	5					
Flashpoint	°F	>200	0%	<140	0	5	5					
Reactive Cyanide	MG/KG	0	0%		0	0	5					
Reactive Sulfide	MG/KG	0	0%		0	0	5					
TCLP Inorganics												
TCLP Arsenic	UG/L	7.6	16%	5000	0	3	19	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U
TCLP Barium	UG/L	2460	100%	100000	0	19	19	1260	1100	340	724	370 E
TCLP Cadmium	UG/L	693	89%	1000	0	17	19	25.7	2.1	0.36 U	130	0.36 U
TCLP Chromium	UG/L	132	53%	5000	0	10	19	0.84 U	0.84 U	0.84 U	3.6 B	132 E
TCLP Lead	UG/L	99700	95%	5000	8	18	19	931	32.5	2.9 U	$\boxed{14600}$	46.8
TCLP Mercury	UG/L	0	0%	200	0	0	19	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
TCLP Selenium	UG/L	6.5	5%	1000	0	1	19	6.1 U	6.1 U	6.1 U	6.5 B	6.1 U
TCLP Silver	UG/L	1.2	11%	5000	0	2	19	1.2 B	1 U	1 U	1 U	1 U

Notes
(1) Disposal characterization samples were not validated. Qualifiers were assigned by the laboratory.
(2) TCLP regulatory limits are based on 40CFR 261.23 and 40CFR 261.24
(3) Wastes may be considered corrosive with a pH < 2 or > 12.5

U = compound was not detected
B = the reported value is an estimated concentration
E = a value estimated or not reported due to the presence of interference

APPENDIX C

DUST MONITORING RECORDS

Table C-1
Summary of Air Monitoring Data
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Site	Date	Time	D453 (ug/m^3)	D615 (ug/m^3)	Difference
SEAD-17	10-Jul-07	8:20	107.3	101.3	6
		9:35	107	101.3	5.7
		12:45	115.8	103.4	12.4
		15:10	117.5	100	17.5
		16:10	98	115.4	17.4
		17:00	118.4	97.7	20.7
SEAD-17	11-Jul-07	7:00	127.2	133.4	6.2
		7:40	117.74	100.6	17.14
		10:00	117.7	100.6	17.1
		12:00	100.3	114.5	14.2
		14:00	97.6	167.2	69.6
		15:30	182.7	182.7	0
SEAD-17	12-Jul-07	7:00	17.4	46.3	28.9
		7:35	4.56	1.9	2.66
		9:00	--	23.7	
		10:00	61.2	77.8	16.6
SEAD-17	13-Jul-07	6:45	18		18
SEAD-17	17-Jul-07	12:00	13.2	40.53	27.33
SEAD-17	18-Jul-07	15:00	45.8	43.2	2.6
		16:05	54.9	42.8	12.1

Notes:

1. The difference column is the difference between upwind and downwind field readings, which must be below 150 ug/m^3 per NYSDEC CAMP..
2. Field readings were recorded with a Dataram.
3. The Datarams were setup at SEAD-16 and SEAD-17 on July 13, 2007, July 16, 2007, and July 17, 2007. The field personnel checked the Dataram and observed low levels of dust. Data was not recorded in the field.

Date: 7/10/07
Calibration Date:
Zeroed: 7/10/07
Instrument: DR-4000
Model: Thermo
Sampler: Ben McAllister
Signature: Ben McAllister

Time:	Upwind		Downwind 1		Downwind 2	
	Location	Reading	Location	Reading	Location	Reading
			SEAD 17	107.3 µg/m³	SEAD 17	101.3 µg/m³
Comments:	0820 to 0920					
	All Readings TWA					
			MW 17-1	115.8 µg/m³	Stockpile	103.4 µg/m³
Comments:	12:10					
	All Readings TWA					
Comments:	15:01		MW 17-1	100.0 µg/L	Stockpile	117.5 µg/L
	All Readings TWA					
Comments:	16:10		MW 17-1	98.0 µg/L	Stockpile	115.4 µg/m
	All Readings TWA					
Comments:	Stop time.					
	All Readings TWA					
Comments:						
Comments:						
Comments:						

Date: July 71, 2007
Calibration Date: 11/3/06
Zeroed: July 11, 2007
Instrument: DR 4000
Model: thermo
Sampler: McAllister
Signature: Ben McAllister

Time:	Upwind		Downwind 1		Downwind 2	
	Location	Reading	Location	Reading	Location	Reading
0750	SEAD 17		Stockpile	133.4	Excavation	127.2
Comments: Initial Startup						
10:00	SEAD 17		Stockpile	100.6	Excavation	117.7
Comments:						
12:00	SEAD 17		Stockpile	114.5	Excavation	100.3
Comments:						
14:00	SEAD 17		Stockpile	167.2	Excavation	97.6
Comments:						
15:30	SEAD 17		Stockpile	182.7	Excavation	182.7
Comments: Shutdown due to Rain						
Comments:						
Comments:						
Comments:						

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APPENDIX D

PHOTO LOG

Table D-1
Photograph Index
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Photo #	Date	Site	Description
1	7/20/2007	SEAD-16	Looking northwest at SEAD-16 after removal of 1 foot of soil from area.
2	7/21/2007	SEAD-16	Looking northwest at railroad tracks on northeast side of Building S-311. Space between RR tracks after removal of 1 foot of soil.
3	7/21/2007	SEAD-16	Looking northwest at railroad tracks on northeast side of Building S-311. Space on either side of the RR tracks after removal of 1 foot of soil.
4	7/21/2007	SEAD-16	Looking south at Ditch #1 after 1 foot excavation.
5	7/30/2007	SEAD-16	Looking south at Grid E5 excavation to bedrock.
6	7/30/2007	SEAD-16	Looking east at excavator backfilling space between railroad tracks.
7	7/31/2007	SEAD-16	Southern end of Building S-311 looking east at retaining wall, Grid D8, after Phase II excavation.
8	7/30/2007	OB Grounds	Mini-excavator loading pipes into burn tray to eliminate any remaining propellant residue.
9	7/10/2007	SEAD-17	Looking southwest at excavation of 1 foot of soil from Grid F3.
10	7/10/2007	SEAD-17	Looking at 1 foot excavation area southwest of Building 367.
11	7/12/2007	SEAD-17	Erosion control measures.
12	7/12/2007	SEAD-17	Backfilling.
13	7/13/2007	SEAD-17	Truck load out.
14	7/14/2007	SEAD-17	Exterior wall of Building 367 after 1 foot excavation.
15	7/18/2007	SEAD-17	Looking west at excavator mixing cement and lead hot spot soil to stabilize the soil for non-hazardous disposal off-site.
16	8/2/2007	SEAD-17	Looking west at Grid D2 Phase II excavation, removal of 1 foot.
17	8/2/2007	SEAD-17	Phase II excavation at Grid G3, total excavation depth was 2 feet below original ground surface.

SEAD-16 Photo Log

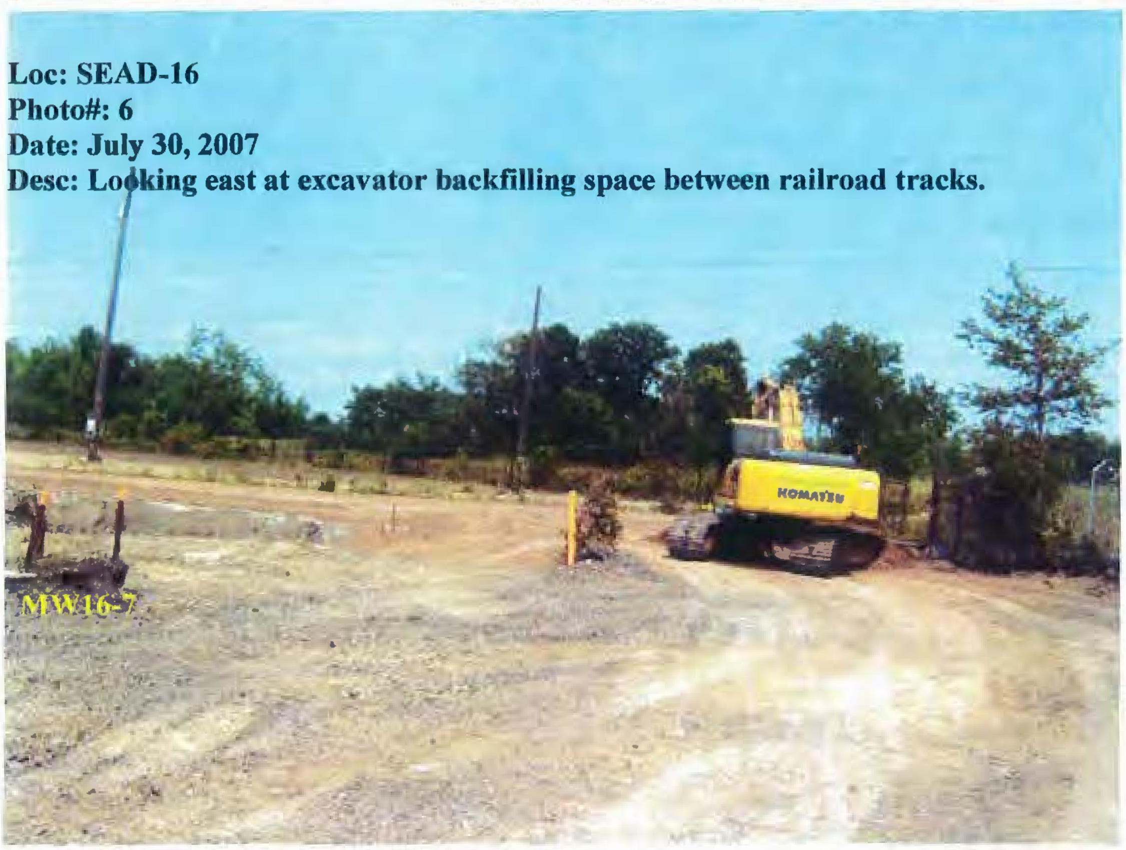

Loc: SEAD-16
Photo#: 1
Date: July 20, 2007
Desc: Looking northwest at SEAD-16 after removal of 1 foot of soil from area.


Loc: SEAD-16
Photo#: 2
Date: July 21, 2007
Desc: Looking northwest at railroad tracks on northeast side of Building S-311.
Space between RR tracks after removal of 1 foot of soil.


Loc: SEAD-16
Photo#: 3
Date: July 21, 2007
Desc: Looking northwest at railroad tracks on northeast side of Building S-311.
Space on either side of the RR tracks after removal of 1 foot of soil.
MW16-4


Loc: SEAD-16
Photo#: 4
Date: July 21, 2007
Desc: Looking south at Ditch #1 after 1 foot excavation.

Loc: SEAD-16
Photo#: 5
Date: July 30, 2007
Desc: Looking south at Grid E5 excavation to bedrock.



Loc: SEAD-16
Photo#: 6
Date: July 30, 2007
Desc: Looking east at excavator backfilling space between railroad tracks.


Loc: SEAD-16
Photo#: 7
Date: July 31, 2007
Desc: Southern end of Building S-311 looking east at retaining wall, Grid D8, after Phase II excavation.


Loc: Open Burn Grounds
Photo#: 8
Date: July 30, 2007
Desc: Mini-excavator loading pipes into burn tray to eliminate any remaining propellant residue.

SEAD-17 Photo Log

Loc: SEAD-17
Photo#: 9
Date: July 10, 2007
Desc: Looking southwest at excavation of 1 foot of soil from Grid F3.

Loc: SEAD-17
Photo#: 10
Date: July 10, 2007
Desc: Looking at 1 foot excavation area southwest of Building 367.

Loc: SEAD-17
Photo#: 11
Date: July 12, 2007
Desc: Erosion control measures.

Loc: SEAD-17
Photo#: 12
Date: July 12, 2007
Desc: Backfilling.

Loc: SEAD-17
Photo#: 13
Date: July 13, 2007
Desc: Truck load out.

Loc: SEAD-17
Photo#: 15
Date: July 18, 2007
Desc: Looking west at excavator mixing cement and lead hot spot soil to stabilize the soil for non-hazardous disposal off-site.

Loc: SEAD-17
Photo#: 16
Date: August 2, 2007
Desc: Looking west at Grid D2 Phase II excavation, removal of 1 foot.


Loc: SEAD-17
Photo#: 17
Date: August 2, 2007
Desc: Phase II excavation at Grid G3, total excavation depth was 2 feet below original ground surface.

APPENDIX E

COMPLETE ANALYTICAL RESEARCH

Table E-1
SEAD-16 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]							
SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								A8	A8	A8	A9	B5	B6	B6
LOCATION ID								16EXFL-A8-01	16EXPR-A8-01	16EXPR-A8-02	16EXPR-A9-01	16EXPR-B5-01	16EXFL-B6-01	16EXPR-B6-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXFL-A8-01	16EXPR-A8-01	16EXPR-A8-02	16EXPR-A9-01	16EXPR-B5-01	16EXFL-B6-01	16EXPR-B6-01
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/19/2007	5/3/2007	5/3/2007	5/3/2007	5/3/2007	7/19/2007	4/4/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
								Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs														
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4							
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4							
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4							
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4							
Chrysene	UG/KG	2300	50%		0	2	4							
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4							
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4							
BAP Toxicity Equivalence [4]	MG/KG	9.01	100%	10	0	4	4							
Metals														
Antimony	MG/KG	230	81%	4	4	67	83	3 J	12.9 J	4.7 J	3.4 J	14.6 J	17 U	6.9 J
Arsenic	MG/KG	11.2	100%	21.5	0	83	83	2.9 J	5.4	5.5	4.6	6.2	5.7	5.7
Cadmium	MG/KG	5.7	100%	60	0	82	82	0.08 J	0.44 J	0.29 J	0.18 J	0.6 J	0.27	0.8
Copper	MG/KG	2390	100%	10000	0	82	82	15.8 J	119	52.2	51.5	169	9.8 J	99
Lead	MG/KG	6410	100%	1250	4	83	83	54.7 J	676	259	179	884	16.6 J	424
Mercury	MG/KG	1.9	100%	5.7	0	82	82	0.945	4.3	0.342	0.344	0.207	0.03 J	0.313
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	83	0.86 UJ	1.2 U	0.98 U	1 U	0.95 U	0.75 U	1 U
Zinc	MG/KG	71	100%	10000	0	82	82	49.4 J	163	104	84.2	224	50	127 J

Notes

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.

(3) The maximum detected concentration was obtained from the average of the sample and its duplicate

(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by substituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value

The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected, the associated reporting limit is approximate

R = the analytical result was rejected during data validation

Table E-1
SEAD-16 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								B6	B7	B7	B8	B8	B8	B9
LOCATION ID								16EXPR-B6-02	16EXFL-B7-01	16EXPR-B7-01	16EXFL-B8-01	16EXFL-B8-02	16EXFL-B8-03	16EXFL-B9-01
MATRIX								SOIL	SOIL	SOIL	SOIL	DITCH SOIL	DITCH SOIL	SOIL
SAMPLE ID								16EXPR-B6-02	16EXFL-B7-01	16EXPR-B7-01	16EXFL-B8-01	16EXFL-B8-02	16EXFL-B8-03	16EXFL-B9-01
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/19/2007	7/19/2007	4/4/2007	7/19/2007	7/19/2007	7/19/2007	7/19/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Carcinogenic PAHs														
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4							
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4							
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4							
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4							
Chrysene	UG/KG	2300	50%		0	2	4							
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4							
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4							
BAP Toxicity Equivalence [4]	MG/KG	9.01	100%	10	0	4	4							
Metals														
Antimony	MG/KG	230	81%	41	4	67	83	9.8 J	19.9 U	4.3 J	18.4 U	**67.3 J**	12.2 J	18.1 U
Arsenic	MG/KG	11.2	100%	21.5	0	83	83	3 J	3.7	5.4	5.2	6.4 J	4.2 J	5.8
Cadmium	MG/KG	5.7	100%	60	0	82	82	0.3 J	0.15 J	0.62	0.25	0.37 J	0.57 J	0.63
Copper	MG/KG	2390	100%	10000	0	82	82	61.6	12 J	67.6	36.6 J	193 J	77.7 J	80.4 J
Lead	MG/KG	6410	100%	1250	4	83	83	302 J	35.4 J	363	200 J	**1370 J**	230 J	342 J
Mercury	MG/KG	4.9	100%	5.7	0	82	82	0.494	0.075	0.345	0.222	4.9	1.9	0.904
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	83	0.9 UJ	0.88 U	1.1 U	0.81 U	0.86 UJ	0.81 UJ	0.8 U
Zinc	MG/KG	711	100%	10000	0	82	82	151 J	44.8	112 J	60.1	209 J	146 J	111

Notes:

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table

(3) The maximum detected concentration was obtained from the average of the sample and its duplicate

(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by subsituting the detection limt with the method detection limit for non-detect results and taking non-detect values at half value. The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow:

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.

(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table E-1
SEAD-16 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								B9	B10	B10	B10	B10	B10	C4
LOCATION ID								16EXPR-B9-01	16EXPR-B9-02	16EXFL-B10-01	16EXFL-B10-01	16EXPR-B10-01	16EXPR-B10-02	16EXPR-C4-01
MATRIX								DITCH SOIL	DITCH SOIL	DITCH SOIL	DITCH SOIL	DITCH SOIL	SOIL	SOIL
SAMPLE ID								16EXPR-B9-01	16EXPR-B9-02	16EXFL-B10-02	16EXFL-B10-01	16EXPR-B10-01	16EXPR-B10-02	16EXPR-C4-01
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								4/4/2007	4/4/2007	7/19/2007	7/19/2007	4/4/2007	4/4/2007	4/4/2007
QC CODE								SA	SA	DU	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs														
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4							
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4							
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4							
Benzo(k)fluoranthene	UG/KG	52.5 J	25%		0	1	4							
Chrysene	UG/KG	2300	50%		0	2	4							
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4							
Indeno(1,2,3-cd)pyrene	UG/KG	6300	50%		0	2	4							
BAP Toxicity Equivalence [4]	MG/KG	9.02	100%	10	0	4	4							
Metals														
Antimony	MG/KG	236	81%	41	4	67	83	20.8 J	14.8 J	6.7 J	5 J	9.9 J	2.1 J	3.6 J
Arsenic	MG/KG	11.2	100%	21.5	0	83	83	5.9	7.7	3.5 J	2.6 J	5.3	4.8	3.3
Cadmium	MG/KG	5.7	100%	60	0	82	82	0.69	2.2	0.17 J	0.14 J	0.8	0.42	0.29
Copper	MG/KG	2390	100%	10000	0	82	82	209 J	160 J	34.5 J	32.1 J	142	44.3	68.5
Lead	MG/KG	6410	100%	1250	4	83	83	791 J	1050 J	147 J	139 J	786	137	589
Mercury	MG/KG	1.9	100%	5.7	0	82	82	0.449	0.613	0.222	0.173	0.385	0.357	0.026
Thallium	MG/KG	1.385	4%	6.7	0	3	83	0.94 U	0.93 U	0.89 UJ	0.82 UJ	1.1 U	0.92 U	0.68 U
Zinc	MG/KG	711	100%	10000	0	82	82	194	222	62.9 J	51.5 J	143 J	81.5 J	62.6 J

Notes

(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table

(3) The maximum detected concentration was obtained from the average of the sample and its duplicate

(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by subsituting the detection limt with the method detection limit for non-detect results and taking non-detect values at half value

The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table E-1
SEAD-16 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]							
SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								C5	C6	C7	C8	C9	C9	C10
LOCATION ID								16EXFL-C5-01	16EXFL-C6-01	16EXFL-C7-01	16EXFL-C8-01	16EXFL-C9-01	16EXFL-C9-02	16EXFL-C10-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXFL-C5-01	16EXFL-C6-01	16EXFL-C7-01	16EXFL-C8-01	16EXFL-C9-01	16EXFL-C9-02	16EXFL-C10-01
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/19/2007	7/19/2007	7/19/2007	7/19/2007	7/19/2007	8/2/2007	8/2/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
								Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs														
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4							
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4							
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4							
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4							
Chrysene	UG/KG	2300	50%		0	2	4							
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4							
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4							
BAP Toxicity Equivalence [4]	MG/KG	9.01	100%	10	0	4	4							
Metals														
Antimony	MG/KG	230	81%	41	4	67	83	20.1 U	0.68 U	24.2	0.63 U	**230**	1.2 J	3.6 J
Arsenic	MG/KG	11.2	100%	21.5	0	83	83	6.7	5.1	7.2	2.5	6.3	7.3	3.2
Cadmium	MG/KG	5.7	100%	60	0	82	82	0.3	0.19 J	0.61	0.15 J	1.7	0.5	0.39
Copper	MG/KG	2390	100%	10000	0	82	82	20.4 J	13 J	389 J	14 J	431 J	25.3	25.6
Lead	MG/KG	6410	100%	1250	4	83	83	23.5 J	32.6 J	1160 J	11.9 J	**6410** J	27.3	79.2
Mercury	MG/KG	4.9	100%	5.7	0	82	82	1.3	0.062	0.016 J	0.53	0.035 J	0.163	0.234
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	83	0.88 U	0.84 U	0.76 U	0.77 U	0.78 U	0.75 U	0.69 U
Zinc	MG/KG	711	100%	10000	0	82	82	64.7	50.4	697	48.3	542	54.3	81.9

Notes:
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan.
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.
(3) The maximum detected concentration was obtained from the average of the sample and its duplicate
(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by subsituting the detection limt with the method detection limit for non-detect results and taking non-detect values at half value.
The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow:

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected, the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table E-1
SEAD-16 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								C10	C10	C10	D4	D4	D4	D5
LOCATION ID								16EXPR-C10-01	16EXPR-C10-02	16EXPR-C10-03	16EXFL-D4-01	16EXPR-D4-01	16EXPR-D4-02	16EXFL-D5-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXPR-C10-01	16EXPR-C10-02	16EXPR-C10-03	16EXFL-D4-01	16EXPR-D4-01	16EXPR-D4-02	16EXFL-D5-01
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								4/4/2007	7/18/2007	8/2/2007	7/19/2007	4/4/2007	4/4/2007	7/19/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs														
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4							
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4							
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4							
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4							
Chrysene	UG/KG	2300	50%		0	2	4							
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4							
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4							
BAP Toxicity Equivalence[4]	MG/KG	9.01	100%	10	0	4	4							
Metals														
Antimony	MG/KG	230	81%	41	4	67	83	7.2 J	[illegible]	19.4 J	10.5 J	16.3 J	11 J	0.65 UJ
Arsenic	MG/KG	11.2	100%	21.5	0	83	83	5.2	[illegible]	4.5	4.5 J	8.5	5.1	3.8 J
Cadmium	MG/KG	5.7	100%	60	0	82	82	0.93	0.78 J	0.65	0.22 J	0.74	0.93	0.22 J
Copper	MG/KG	2390	100%	10000	0	82	82	109	180	128	57	196	154	16.1
Lead	MG/KG	6410	100%	1250	4	83	83	530	776 J	659	229 J	1070	887	9.1 J
Mercury	MG/KG	4.9	100%	5.7	0	82	82	0.331	0.640	1.5	0.505	0.126	0.104	0.047
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	83	1 U	0.88 UJ	0.71 U	0.74 UJ	0.74 U	0.87 U	0.8 UJ
Zinc	MG/KG	711	100%	10000	0	82	82	140 J	170 J	109	89.7 J	153 J	176 J	48.7 J

Notes
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan.
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) The maximum detected concentration was obtained from the average of the sample and its duplicate
(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by subsituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value.
The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected, the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table E-1
SEAD-16 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								D6	D7	D8	D8	D8	D8	D8
LOCATION ID								16EXFL-D6-01	16EXFL-D7-01	16EXFL-D8-01	16EXFL-D8-02	16EXSW-D8-01	16EXSW-D8-01	16EXSW-D8-02
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXFL-D6-01	16EXFL-D7-01	16EXFL-D8-01	16EXFL-D8-02	16EXSW-D8-01	16EXSW-D8-01	16EXSW-D8-02
TOP OF SAMPLE								0	0	0	0	0.5	0.5	0.5
BOTTOM OF SAMPLE								0 2	0 2	0.2	0.2	1.5	1.5	1.5
SAMPLE DATE								7/19/2007	7/19/2007	7/19/2007	7/30/2007	7/19/2007	7/19/2007	7/19/2007
QC CODE								SA	SA	SA	SA	DU	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal[1]	Number of Exceedances	Number of Times Detected	Number of Analyses[2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs														
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4							
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4							
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4							
Benzo(k)fluoranthene	UG/KG	52 5 [3]	25%		0	1	4							
Chrysene	UG/KG	2300	50%		0	2	4							
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4							
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4							
BAP Toxicity Equivalence[4]	MG/KG	9 01	100%	10	0	4	4							
Metals														
Antimony	MG/KG	230	81%	41	4	67	83	0 75 UJ	0.64 UJ	95.2 J	16.3 J	68.1 J	18 J	191
Arsenic	MG/KG	11 2	100%	21.5	0	83	83	3.2 J	3.1 J	11.2 J	3.2	3.5 J	1.1 J	7.9
Cadmium	MG/KG	5 7	100%	60	0	82	82	0.09 J	0.1 J	2.3 J	0.22	1 R	0.09 R	0.16 J
Copper	MG/KG	2390	100%	10000	0	82	82	21 9	19 4	478	25 2	198 R	57.1 R	12.7 J
Lead	MG/KG	6410	100%	1250	4	83	83	17 4 J	16 6 J	4090 J	206 J	3330 J	69.9 R	200 J
Mercury	MG/KG	4.9	100%	5 7	0	82	82	0.062	0.035	1.3	1.6 J	1.5 R	0.064 R	0.028
Thallium	MG/KG	1.385 [3]	4%	6 7	0	3	83	0.92 UJ	0.79 UJ	0.75 UJ	0.82 J	0.75 U	0.81 UJ	0.75 U
Zinc	MG/KG	711	100%	10000	0	82	82	80 J	97 J	647 J	55.2 J	400 R	56.2 R	38 J

Notes:
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.
(3) The maximum detected concentration was obtained from the average of the sample and its duplicate
(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by subsituting the detection limt with the method detection limit for non-detect results and taking non-detect values at half value
The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow:

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0 1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0 1
Benzo(k)fluoranthene	0 01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0 1

(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table E-1
SEAD-16 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								D8	D8	D8	D8	D9	E3	E4
LOCATION ID								16EXSW-D8-03	16EXSW-D8-04	16EXSW-D8-06	16EXSW-D8-06	16EXFL-D9-01	16EXPR-E3-01	16EXFL-E4-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXSW-D8-03	16EXSW-D8-04	16EXSW-D8-07	16EXSW-D8-06	16EXFL-D9-01	16EXPR-E3-01	16EXFL-E4-01
TOP OF SAMPLE								0.5	0.5	1	1	0	0	0
BOTTOM OF SAMPLE								1.5	1.5	2	2	0.2	0.2	0.2
SAMPLE DATE								7/19/2007	7/19/2007	7/30/2007	7/30/2007	7/19/2007	4/4/2007	7/19/2007
QC CODE								SA	SA	DU	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Analyzes [2]**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**
Carcinogenic PAHs														
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4							
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4							
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4							
Benzo(k)fluoranthene	UG/KG	[illegible]	25%		0	1	4							
Chrysene	UG/KG	2300	50%		0	2	4							
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4							
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4							
BAP Toxicity Equivalence [4]	MG/KG	9.01	100%	10	0	4	4							
Metals														
Antimony	MG/KG	230	81%	41	4	67	83	1 J	2.6 J	2 J	2.3 J	7.8 J	5.6 J	1.4 J
Arsenic	MG/KG	11.2	100%	21.5	0	83	83	4.6	4.6	4.8	3.6	3.2 J	4.3	2.5 J
Cadmium	MG/KG	5.7	100%	60	0	82	82	0.26	0.23 J	0.2 J	0.05 U	0.13 J	0.76	0.12 J
Copper	MG/KG	2390	100%	10000	0	82	82	20 J	23.3 J	24.1	19.6	37.1	83.5 J	21.9
Lead	MG/KG	6410	100%	1250	4	83	83	13.7 J	50.4 J	54.8 J	47.2 J	221 J	444 J	22.2 J
Mercury	MG/KG	4.9	100%	5.7	0	82	82	0.025 J	0.046	0.074 J	0.087 J	0.436	0.409	1.2
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	83	0.82 U	0.78 U	0.75 U	0.76 U	0.76 UJ	1.3 U	0.79 UJ
Zinc	MG/KG	711	100%	10000	0	82	82	48.3	49.6	54.3 J	44.4 J	70.5 J	122	53.4 J

Notes
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) The maximum detected concentration was obtained from the average of the sample and its duplicate
(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by subsituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value
The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table E-1
SEAD-16 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								E4	E5	E5	E5	E5	E5	E6
LOCATION ID								16EXPR-E4-01	16EXFL-E5-01	16EXSW-E5-01	16EXSW-E5-02	16EXSW-E5-03	16EXSW-E5-04	16EXFL-E6-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXPR-E4-01	16EXFL-E5-01	16EXSW-E5-01	16EXSW-E5-02	16EXSW-E5-03	16EXSW-E5-04	16EXFL-E6-01
TOP OF SAMPLE								0	0	0.5	0.5	0.5	0.5	0
BOTTOM OF SAMPLE								0.2	0.2	1.5	1.5	1.5	1.5	0.2
SAMPLE DATE								7/19/2007	7/19/2007	7/19/2007	7/19/2007	7/19/2007	7/19/2007	7/19/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Carcinogenic PAHs														
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4							
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4							
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4							
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4							
Chrysene	UG/KG	2300	50%		0	2	4							
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4							
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4							
BAP Toxicity Equivalence[4]	MG/KG	9.01	100%	10	0	4	4							
Metals														
Antimony	MG/KG	230	81%	41	4	67	83	7.9 J	2.8 J	18.2	5.6 J	3.1 J	14.6 J	3.7 J
Arsenic	MG/KG	11.2	100%	21.5	0	83	83	4.5 J	4.7 J	8.9	5.3	5.5	7.1	5 J
Cadmium	MG/KG	5.7	100%	60	0	82	82	0.19 J	0.13 J	0.54	0.23	0.23 J	0.39	0.17 J
Copper	MG/KG	2390	100%	10000	0	82	82	59.8	47.2	125 J	47 J	33.8 J	75 J	28.6
Lead	MG/KG	6410	100%	1250	4	83	83	233 J	53.8 J	449 J	234 J	64.6 J	281 J	61.3 J
Mercury	MG/KG	4.9	100%	5.7	0	82	82	0.315	0.148	1.5	0.122	0.149	0.987	0.041
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	83	0.82 UJ	0.71 UJ	0.78 U	0.72 U	0.78 U	0.79 U	0.78 UJ
Zinc	MG/KG	711	100%	10000	0	82	82	108 J	62 J	146	87.9	81.7	118	71 J

Notes
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan.
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) The maximum detected concentration was obtained from the average of the sample and its duplicate
(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by subsituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value
The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow:

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected, the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table E-1
SEAD-16 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]							
SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								E8	E9	E9	E12	E13	E13	F3
LOCATION ID								16EXFL-E8-01	16EXFL-E9-01	16EXPR-E9-01	16EXFL-E12-01	16EXFL-E13-01	16EXPR-E13-01	16EXFL-F3-01
MATRIX								SOIL	SOIL	SOIL	DITCH SOIL	DITCH SOIL	DITCH SOIL	SOIL
SAMPLE ID								16EXFL-E8-01	16EXFL-E9-01	16EXPR-E9-01	16EXFL-E12-01	16EXFL-E13-01	16EXPR-E13-01	16EXFL-F3-02
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/19/2007	7/19/2007	4/4/2007	7/19/2007	7/19/2007	4/4/2007	7/19/2007
QC CODE								SA	SA	SA	SA	SA	SA	DU
STUDY ID								RA	RA	RA	RA	RA	RA	RA
								Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs														
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4							
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4							
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4							
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4							
Chrysene	UG/KG	2300	50%		0	2	4							
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4							
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4							
BAP Toxicity Equivalence [4]	MG/KG	9.01	100%	10	0	4	4							
Metals														
Antimony	MG/KG	250	81%	41	4	67	83	0.77 J	3.6 J	0.65 UJ	6.6 J	0.66 UJ	3.2 J	1.1 J
Arsenic	MG/KG	11.2	100%	21.5	0	83	83	3.1 J	3.2 J	4.2	3.9 J	4.9 J	7.8	3.1 J
Cadmium	MG/KG	5.7	100%	60	0	82	82	0.14 J	0.11 J	0.38	0.23 J	0.07 J	1	0.1 J
Copper	MG/KG	2390	100%	10000	0	82	82	14.4 J	31.6 J	14.1	48.4 J	20.1 J	50.6 J	14.1 J
Lead	MG/KG	6410	100%	1250	4	83	83	7.3 J	112 J	70.3	461 J	18.6 J	187 J	38.6 J
Mercury	MG/KG	1.9	100%	5.7	0	82	82	0.043	0.471	0.01 J	0.097	0.021 J	0.042	0.134 J
Thallium	MG/KG	1.385	4%	6.7	0	3	83	0.75 UJ	0.79 UJ	0.8 U	0.81 UJ	0.8 UJ	0.82 J	0.87 UJ
Zinc	MG/KG	711	100%	10000	0	82	82	33.7 J	46.2 J	36.2 J	59.4 J	52.9 J	141	58.2 J

Notes
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) The maximum detected concentration was obtained from the average of the sample and its duplicate
(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by substituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value
The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs
(6) A shaded boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected, the associated reporting limit is approximate
R = the analytical result was rejected during data validation

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Table E-1
SEAD-16 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								F3	F3	F3	F4	F8	F9	F9
LOCATION ID								16EXFL-F3-01	16EXPR-F3-01	16EXPR-F3-01	16EXFL-F4-01	16EXPR-F8-01	16EXFL-F9-01	16EXFL-F9-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXFL-F3-01	16EXPR-F3-02	16EXPR-F3-01	16EXFL-F4-01	16EXPR-F8-01	16EXFL-F9-02	16EXFL-F9-01
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/19/2007	4/4/2007	4/4/2007	7/19/2007	4/4/2007	8/2/2007	8/2/2007
QC CODE								SA	DU	SA	SA	SA	DU	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs														
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4							
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4							
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4							
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	1							
Chrysene	UG/KG	2300	50%		0	2	4							
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4							
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4							
BAP Toxicity Equivalence [4]	MG/KG	9.01	100%	10	0	4	4							
Metals														
Antimony	MG/KG	230	81%	41	4	67	83	1.2 J	3.2 J	3.2 J	7.7 J	2.6 J	0.61 UJ	0.63 UJ
Arsenic	MG/KG	11.2	100%	21.5	0	83	83	4.1 J	4.6	4.9	2.5 J	5.7	4.8	6.4
Cadmium	MG/KG	5.7	100%	60	0	82	82	0.26 J	0.4	0.52	0.21 J	0.28	0.33	0.45
Copper	MG/KG	2390	100%	10000	0	82	82	13.4 J	68.9	73.8	59.9 J	29.7	12.2	15.3
Lead	MG/KG	6410	100%	1250	4	83	83	43.3 J	498 J	170 J	247 J	205	10.1	13.5
Mercury	MG/KG	4.9	100%	5.7	0	82	82	0.088 J	0.035	0.023	0.051	0.022	0.025	0.031
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	83	0.82 UJ	0.73 U	0.78 U	0.74 UJ	0.65 U	0.74 U	2.4 J
Zinc	MG/KG	711	100%	10000	0	82	82	57.5 J	74.6 J	91.9 J	49 J	36.8 J	40.8	47.5

Notes
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) The maximum detected concentration was obtained from the average of the sample and its duplicate
(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by substituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value.
The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs
(6) A shaded boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table E-1
SEAD-16 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								F9	F9	F9	G2	G3	G3	G3
LOCATION ID								16EXPR-F9-01	16EXPR-F9-02	16EXPR-F9-03	16EXPR-G2-01	16EXFL-G3-01	16EXPR-G3-01	16EXPR-G3-02
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXPR-F9-01	16EXPR-F9-02	16EXPR-F9-03	16EXPR-G2-01	16EXFL-G3-01	16EXPR-G3-01	16EXPR-G3-02
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								4/4/2007	7/1[illegible]/2007	8/2/2007	4/4/2007	7/19/2007	4/4/2007	7/19/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs														
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4							
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4							
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4							
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4							
Chrysene	UG/KG	2300	50%		0	2	4							
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4							
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4							
BAP Toxicity Equivalence [4]	MG/KG	9.01	100%	10	0	4	4							
Metals														
Antimony	MG/KG	230	81%	41	4	67	83	5 J	18.5 J	0.59 UJ	0.56 UJ	4.9 J	3.1 J	0.59 UJ
Arsenic	MG/KG	11.2	100%	21.5	0	83	83	5	2.6 J	3.9	2.2	3.7 J	1.5 J	3.1 J
Cadmium	MG/KG	5.7	100%	60	0	82	82	0.85	0.28 J	0.29	0.33	0.23 J	0.25	0.1 J
Copper	MG/KG	2390	100%	10000	0	82	82	172	46.9	10	9.5 J	46.5 J	36.4 J	17
Lead	MG/KG	6410	100%	1250	4	83	83	643	383 J	8.3	12.4 J	166 J	285 J	11.4 J
Mercury	MG/KG	4.9	100%	5.7	0	82	82	0.021	[illegible]	0.03	0.102	0.147	0.147	0.01 J
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	83	0.7 U	0.67 UJ	0.72 U	0.68 U	0.83 UJ	0.71 U	0.72 UJ
Zinc	MG/KG	711	100%	10000	0	82	82	144 J	78 J	33.3	24	91.2 J	45	40 J

Notes
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan.
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.
(3) The maximum detected concentration was obtained from the average of the sample and its duplicate.
(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by substituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value.
The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table E-1
SEAD-16 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								G4	G5	G5	G5	G5	G5	H3
LOCATION ID								16EXPR-G4-01	16EXFL-G5-01	16EXPR-G5-01	16EXPR-G5-01	16EXPR-G5-03	16EXPR-G5-03	16EXFL-H3-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								16EXPR-G4-01	16EXFL-G5-01	16EXPR-G5-02	16EXPR-G5-01	16EXPR-G5-04	16EXPR-G5-03	16EXFL-H3-01
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0 2	0.2
SAMPLE DATE								4/4/2007	7/18/2007	4/4/2007	4/4/2007	7/20/2007	7/20/2007	7/19/2007
QC CODE								SA	SA	DU	SA	DU	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Carcinogenic PAHs														
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4	2400 J	1900 U	160 J	180 J	1400 J	1600 J	
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4	5800	1900 U	230 J	250 J	19000 U	20000 U	
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4	7500 J	1900 U	170 J	450 J	1100 J	1300 J	
Benzo(k)fluoranthene	UG/KG	52.5 [3]	25%		0	1	4	3600 UJ	1900 U	95 J	6600 UJ	19000 U	20000 U	
Chrysene	UG/KG	2300	50%		0	2	4	2300 J	1900 U	4600 U	210 J	19000 U	20000 U	
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4	1600 J	1900 U	4600 U	6600 U	19000 U	20000 U	
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4	6000	1900 U	190 J	220 J	19000 U	20000 U	
BAP Toxicity Equivalence [4]	MG/KG	9.01	100%	10	0	4	4	9 01	0.04	0.29	0.35	0.28	0.32	
Metals														
Antimony	MG/KG	230	81%	41	4	67	83	5 J	1.6 J	0.77 UJ	1 8 J	20.6 J	19.1 J	2.3 J
Arsenic	MG/KG	11.2	100%	21.5	0	83	83	4 8	5.7 J	3.3	6.5	5.8 J	4.6 J	6.6 J
Cadmium	MG/KG	5 7	100%	60	0	82	82	0.52	0.28 J	1.4 J	2.7 J	3.2 J	3.5 J	0.32 J
Copper	MG/KG	2390	100%	10000	0	82	82	72 7 J	33	27.9	39.1	268 J	230 J	55 3
Lead	MG/KG	6410	100%	1250	4	83	83	302 J	86.1 J	88.6 J	132 J	958 J	930 J	87.5 J
Mercury	MG/KG	4.9	100%	5 7	0	82	82	0 263	0.036	0.02 J	0 069	0 137	0.121	0.009 J
Thallium	MG/KG	1 385 [3]	4%	6 7	0	3	83	0.7 U	0.78 UJ	0.94 U	1.3 U	0.75 UJ	0.8 UJ	0.71 UJ
Zinc	MG/KG	711	100%	10000	0	82	82	109	84.8 J	186 J	377 J	275 J	298 J	88 J

Notes.
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.
(3) The maximum detected concentration was obtained from the average of the sample and its duplicate
(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by substituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value
The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow:

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0 1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0 1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table E-1
SEAD-16 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
GRID ID								H3	H3	I2	I3	I3	J1	K1
LOCATION ID								16EXPR-H3-01	16EXPR-H3-02	16EXPR-I2-01	16EXPR-I3-01	16EXPR-I3-02	16EXFL-J1-01	16EXFL-K1-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	DITCH SOIL	DITCH SOIL
SAMPLE ID								16EXPR-H3-01	16EXPR-H3-02	16EXPR-I2-01	16EXPR-I3-01	16EXPR-I3-02	16EXFL-J1-01	16EXFL-K1-01
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								4/4/2007	4/4/2007	7/20/2007	4/4/2007	4/4/2007	7/19/2007	7/19/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Carcinogenic PAHs														
Benzo(a)anthracene	UG/KG	2400	75%		0	3	4							
Benzo(a)pyrene	UG/KG	5800	50%		0	2	4							
Benzo(b)fluoranthene	UG/KG	7500	75%		0	3	4							
Benzo(k)fluoranthene	UG/KG	52.5	25%		0	1	4							
Chrysene	UG/KG	2300	50%		0	2	4							
Dibenz(a,h)anthracene	UG/KG	1600	25%		0	1	4							
Indeno(1,2,3-cd)pyrene	UG/KG	6000	50%		0	2	4							
BAP Toxicity Equivalence [4]	MG/KG	1.01	100%	10	0	4	4							
Metals														
Antimony	MG/KG	230	81%	41	4	67	83	7.7 J	15.8 J	1.2 J	10.9 J	11 J	2.3 J	1.2 J
Arsenic	MG/KG	11.2	100%	21.5	0	83	83	5.3	5.5	3.9	5.1	4.7	5.6 J	4.2 J
Cadmium	MG/KG	5.7	100%	60	0	82	82	2.5	5.7	0.24 J	4.7	1.9	0.21 J	0.21 J
Copper	MG/KG	2390	100%	10000	0	82	82	209 J	362 J	20.3 J	2390 J	223 J	31.5 J	31.1 J
Lead	MG/KG	6410	100%	1250	4	83	83	822 J	1010 J	49.7 J	765 J	533 J	57.5 J	56.3 J
Mercury	MG/KG	4.9	100%	5.7	0	82	82	0.169	0.14	0.045	0.153	0.061	0.019 J	0.065
Thallium	MG/KG	1.385 [3]	4%	6.7	0	3	83	0.99 U	0.79 U	0.82 U	0.87 U	0.71 U	0.84 UJ	0.79 UJ
Zinc	MG/KG	711	100%	10000	0	82	82	211	398	53	512	711	48.2 J	66.2 J

Notes:
(1) The cleanup goal values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) The maximum detected concentration was obtained from the average of the sample and its duplicate
(4) Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated by substituting the detection limit with the method detection limit for non-detect results and taking non-detect values at half value
The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

(5) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs
(6) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table E-2
SEAD-17 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								A3	A3	A4	A4	A4	A5	A5
LOCATION ID								17EXPR-A3-01	17EXPR-A3-02	17EXFL-A4-01	17EXFL-A4-02	17EXPR-A4-03	17EXFL-A5-01	17EXPR-A5-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXPR-A3-01	17EXPR-A3-02	17EXFL-A4-01	17EXFL-A4-02	17EXPR-A4-03	17EXFL-A5-01	17EXPR-A5-01
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0 2	0 2	0 2	0 2	0 2	0 2	0.2
SAMPLE DATE								5/3/2007	5/3/2007	7/13/2007	7/18/2007	7/13/2007	7/13/2007	4/4/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals														
Antimony	MG/KG	34 6	71%	41	0	48	68	25.1 UJ	27 8 UJ	0.6 U	0.66 UJ	13 2 J	3.9 J	10 5 J
Arsenic	MG/KG	12 3	100%	21.5	0	68	68	4.9	5.7	5.3	5.3 J	4.9	6.3	5.2
Cadmium	MG/KG	16 2	81%	60	0	55	68	3 2 J	5 9 J	0 04 U	0.15 J	3 2	0.47	3.6 J
Copper	MG/KG	402	100%	10000	0	68	68	74 5	92 8	11 1	11.6 J	72 7	28 1	94.8 J
Lead	MG/KG	1910	100%	1250	2	68	68	736	1020	12.6	21.5 J	751	205	1050 J
Mercury	MG/KG	0 094	97%	5 7	0	66	68	0.073	0 073	0.019 J	0 04	0 077	0.038	0.084
Thallium	MG/KG	0	0%	6 7	0	0	68	1 1 U	1 2 U	0.73 U	0.8 UJ	0.78 U	0 73 U	1.1 U
Zinc	MG/KG	634	100%	10,000	0	68	68	314	493	51 5	45.3 J	289	112	343 J

Notes
(1) The cleanup goal (CUG) values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(4) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected, the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table E-2
SEAD-17 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								A7	B3	B4	B5	B6	B7	B7
LOCATION ID								17EXPR-A7-01	17EXFL-B3-01	17EXFL-B4-01	17EXFL-B5-01	17EXFL-B6-01	17EXFL-B7-01	17EXFL-B7-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXPR-A7-01	17EXFL-B3-01	17EXFL-B4-01	17EXFL-B5-01	17EXFL-B6-01	17EXFL-B7-02	17EXFL-B7-01
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								5/3/2007	7/13/2007	7/13/2007	7/13/2007	7/17/2007	7/17/2007	7/17/2007
QC CODE								SA	SA	SA	SA	SA	DU	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals														
Antimony	MG/KG	34.6	71%	41	0	48	68	21.4 UJ	2.3 J	0.66 J	0.64 J	21.1 J	0.58 UJ	0.58 UJ
Arsenic	MG/KG	12.3	100%	21.5	0	68	68	4.9	4.7	4.3	4.4	5 J	7.1 J	6.4 J
Cadmium	MG/KG	16.2	81%	60	0	55	68	1.7 J	0.04 U	0.04 U	0.05 U	3.5 J	0.71 J	0.26 J
Copper	MG/KG	402	100%	10000	0	68	68	49.6	20.2	13.3	17.2	136 J	22.2 J	11.3 J
Lead	MG/KG	1910	100%	1250	2	68	68	304	25.8	19.5	29.1	1120 J	33.7 J	30.7 J
Mercury	MG/KG	0.094	97%	5.7	0	66	68	0.067	0.051	0.038	0.051	0.075	0.037	0.041
Thallium	MG/KG	0	0%	6.7	0	0	68	0.94 U	0.74 U	0.74 U	0.77 U	0.67 UJ	0.71 UJ	0.71 UJ
Zinc	MG/KG	634	100%	10000	0	68	68	145	62.9	54.9	76.7	418 J	73.5 J	58.4 J

Notes
(1) The cleanup goal (CUG) values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs
(4) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table E-2
SEAD-17 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								B7	B8	C3	C3	C4	C5	C6
LOCATION ID								17EXPR-B7-02	17EXPR-B8-01	17EXPR-C3-01	17EXPR-C3-02	17EXFL-C4-01	17EXFL-C5-01	17EXFL-C6-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXPR-B7-02	17EXPR-B8-01	17EXPR-C3-01	17EXPR-C3-02	17EXFL-C4-01	17EXFL-C5-01	17EXFL-C6-01
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0 2	0 2	0 2	0.2	0.2	0 2	0.2
SAMPLE DATE								5/3/2007	4/4/2007	4/4/2007	5/3/2007	7/13/2007	7/13/2007	7/17/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Analyzes [2]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals														
Antimony	MG/KG	34 6	71%	41	0	48	68	21 2 UJ	2.4 J	13.9 J	24.3 UJ	0.64 U	0.62 UJ	0.63 UJ
Arsenic	MG/KG	12 3	100%	21 5	0	68	68	4.7	4 2	8.2	4.4	6	5.3	4.4 J
Cadmium	MG/KG	16 2	81%	60	0	55	68	1 6 J	0.97 J	16.2	6 J	0.05 U	0.05 U	0 07 J
Copper	MG/KG	402	100%	10000	0	68	68	121	45.5 J	118	158	15.6	11 9	8.8 J
Lead	MG/KG	1910	100%	1250	2	68	68	717	208 J	909 J	1040	25.1	16.2	12 5 J
Mercury	MG/KG	0 094	97%	5 7	0	66	68	0.043 J	0.045	0.046	0.047 J	0.07	0.047	0.03
Thallium	MG/KG	0	0%	6.7	0	0	68	0.93 U	0.88 U	0 87 U	1 1 U	0.78 U	0.76 U	0 77 UJ
Zinc	MG/KG	634	100%	10000	0	68	68	259	74.8 J	227 J	493	78.5	57.6 J	39 5 J

Notes
(1) The cleanup goal (CUG) values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan.
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.
(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(4) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected, the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table E-2
SEAD-17 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								C7	C7	C8	C8	D2	D2	D2
LOCATION ID								17EXFL-C7-01	17EXPR-C7-02	17EXPR-C8-01	17EXPR-C8-01	17EXFL-D2-01	17EXPR-D2-01	17EXPR-D2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXFL-C7-01	17EXPR-C7-02	17EXPR-C8-01	17EXPR-C8-02	17EXFL-D2-01	17EXPR-D2-01	17EXPR-D2-02
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0 2	0.2	0.2	0.2
SAMPLE DATE								7/13/2007	4/4/2007	7/13/2007	7/18/2007	8/2/2007	7/13/2007	7/18/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals														
Antimony	MG/KG	34 6	71%	41	0	48	68	5.6 J	11 8 J	6 3 J	4.3 J	0.73 J	17.5 J	21 J
Arsenic	MG/KG	12 3	100%	21 5	0	68	68	4.7	7.9	4.6	2 8 J	3 9	5.4	12.3 J
Cadmium	MG/KG	16.2	81%	60	0	55	68	0.64	3.1 J	1	1.2 J	0.57	5.4	10.2 J
Copper	MG/KG	402	100%	10000	0	68	68	48 8	149 J	48.3	25 J	15.6	133	127 J
Lead	MG/KG	1910	100%	1250	2	68	68	190	912 J	367	239 J	32.8	760	1240 J
Mercury	MG/KG	0 094	97%	5 7	0	66	68	0.058	0.057	0.045	0 041	0.062	0.024	0.039
Thallium	MG/KG	0	0%	6 7	0	0	68	0.77 U	1.1 U	0.73 U	0.81 UJ	0.74 U	0.71 U	0.83 UJ
Zinc	MG/KG	634	100%	10000	0	68	68	93.8 J	210 J	150	93 3 J	58.6	395	471 J

Notes
(1) The cleanup goal (CUG) values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs
(4) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected, the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Table E-2
SEAD-17 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								D2	D3	D4	D5	D6	D6	D7
LOCATION ID								17EXPR-D2-03	17EXFL-D3-01	17EXFL-D4-01	17EXFL-D5-01	17EXFL-D6-01	17EXFL-D6-02	17EXFL-D7-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXPR-D2-03	17EXFL-D3-01	17EXFL-D4-01	17EXFL-D5-01	17EXFL-D6-01	17EXFL-D6-02	17EXFL-D7-01
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0 2	0.2	0.2	0.2	0 2
SAMPLE DATE								8/2/2007	7/13/2007	7/13/2007	7/17/2007	7/17/2007	8/2/2007	7/13/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Analyzes [2]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals														
Antimony	MG/KG	34.6	71%	41	0	48	68	1.8 J	0.82 J	2.9 J	0.68 J	0.61 UJ	0.55 UJ	6.9 J
Arsenic	MG/KG	12.3	100%	21 5	0	68	68	4.3	5.3	5	3.3 J	3.7 J	2.1	4
Cadmium	MG/KG	16.2	81%	60	0	55	68	0.69	0.05 U	0.62	0.22 J	0.28 J	0 24	0.38
Copper	MG/KG	402	100%	10000	0	68	68	22.7	17 7	83 9	18 4 J	12 J	10 4	88 5
Lead	MG/KG	1910	100%	1250	2	68	68	92.2	16.6	217	77.4 J	30.3 J	4.8	332
Mercury	MG/KG	0.094	97%	5.7	0	66	68	0.059	0 074	0.006 U	0.024	0.054	0.005 U	0.026
Thallium	MG/KG	0	0%	6 7	0	0	68	0 7 U	0 76 U	0.73 U	0.74 UJ	0 75 UJ	0 67 U	0.69 U
Zinc	MG/KG	634	100%	10000	0	68	68	67 8	54.8 J	348	58.4 J	46.6 J	37 3	72.6 J

Notes
(1) The cleanup goal (CUG) values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan.
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.
(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(4) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected, the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table E-2
SEAD-17 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								D7	D8	D8	E2	E3	E5	E5
LOCATION ID								17EXPR-D7-02	17EXFL-D8-01	17EXPR-D8-01	17EXFL-E2-01	17EXFL-E3-01	17EXFL-E5-01	17EXFL-E5-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXPR-D7-02	17EXFL-D8-01	17EXPR-D8-01	17EXFL-E2-01	17EXFL-E3-01	17EXFL-E5-01	17EXFL-E5-02
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0 2	0 2	0 2	0.2	0 2	0.2	0 2
SAMPLE DATE								4/4/2007	7/13/2007	4/4/2007	7/13/2007	7/13/2007	7/13/2007	7/30/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals														
Antimony	MG/KG	34.6	71%	41	0	48	68	6 J	0.64 UJ	6.5 J	4 8 J	3.9 J	34.2 J	0.65 UJ
Arsenic	MG/KG	12 3	100%	21 5	0	68	68	5 4	4.5	5 1	4	3.9	14.2 J	4 5
Cadmium	MG/KG	16.2	81%	60	0	55	68	2.4	0.05 U	2	0.04 U	0.04 U	12.6 J	0.26
Copper	MG/KG	402	100%	10000	0	68	68	72 8	12	91 2	33 6	33	402 J	11
Lead	MG/KG	1910	100%	1250	2	68	68	528 J	15.3	542 J	164	172	**1910 J**	14.8 J
Mercury	MG/KG	0 094	97%	5.7	0	66	68	0 048	0.045	0.063	0 041	0 086	0.065	0.056 J
Thallium	MG/KG	0	0%	6.7	0	0	68	1.1 U	0.79 U	0.95 U	0.69 U	0 73 U	0.74 UJ	0.79 U
Zinc	MG/KG	634	100%	10000	0	68	68	199 J	49.3 J	169 J	89 1 J	108 J	155 J	58 J

Notes
(1) The cleanup goal (CUG) values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan.
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(4) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected, the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Table E-2
SEAD-17 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								E6	E7	E8	E8	F2	F2	F2
LOCATION ID								17EXFL-E6-01	17EXFL-E7-01	17EXFL-E8-01	17EXPR-E8-01	17EXFL-F2-01	17EXFL-F2-01	17EXPR-F2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXFL-E6-01	17EXFL-E7-01	17EXFL-E8-01	17EXPR-E8-01	17EXFL-F2-01	17EXFL-F2-02	17EXPR-F2-01
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0 2	0 2	0 2	0 2	0.2	0 2	0 2
SAMPLE DATE								7/17/2007	7/13/2007	7/13/2007	4/4/2007	7/13/2007	7/30/2007	4/4/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals														
Antimony	MG/KG	34 6	71%	41	0	48	68	13.8 J	1.2 J	0.92 J	11 J	34.6 J	0 62 UJ	1.3 J
Arsenic	MG/KG	12.3	100%	21.5	0	68	68	3.9 J	4.6	3 7	4.9	6.3	4.2	6.1
Cadmium	MG/KG	16 2	81%	60	0	55	68	5 3 J	0 06 J	0.07 J	4.1	4.9	0 17 J	0 41
Copper	MG/KG	402	100%	10000	0	68	68	87 J	12.5	14 2	93 7	217	13 7	31
Lead	MG/KG	1910	100%	1250	2	68	68	374 J	44.7	50 2	937 J	**1500**	13.5 J	97.1 J
Mercury	MG/KG	0.094	97%	5.7	0	66	68	0.093	0.046	0.038	0.048	0.022	0.066 J	0.05
Thallium	MG/KG	0	0%	6.7	0	0	68	0.77 UJ	0.72 U	0.68 U	0 98 U	0.68 U	0 76 U	0.99 U
Zinc	MG/KG	634	100%	10000	0	68	68	170 J	52.2 J	53 5 J	258 J	634 J	57 5 J	95.2 J

Notes:
(1) The cleanup goal (CUG) values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.
(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(4) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected, the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Table E-2
SEAD-17 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								F3	F4	F5	F5	F6	F6	F6
LOCATION ID								17EXFL-F3-01	17EXFL-F4-01	17EXFL-F5-01	17EXPR-F5-01	17EXFL-F6-01	17EXPR-F6-01	17EXPR-F6-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXFL-F3-01	17EXFL-F4-01	17EXFL-F5-01	17EXPR-F5-01	17EXFL-F6-01	17EXPR-F6-02	17EXPR-F6-01
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/13/2007	7/13/2007	7/17/2007	4/4/2007	7/13/2007	4/4/2007	4/4/2007
QC CODE								SA	SA	SA	SA	SA	DU	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals														
Antimony	MG/KG	34.6	71%	41	0	48	68	7.1 J	0.58 UJ	21.9 J	1.9 J	12.6 J	19.1 J	10.7 J
Arsenic	MG/KG	12.3	100%	21.5	0	68	68	5.8	4.9	4.9 J	5.7	5.6	5.4	5.7
Cadmium	MG/KG	16.2	81%	60	0	55	68	1.3	0.04 U	9 J	0.85	3.2	7.5 J	4 J
Copper	MG/KG	402	100%	10000	0	68	68	42.7	17.8	146 J	39	98.1	206 J	119 J
Lead	MG/KG	1910	100%	1250	2	68	68	445	20.3	712 J	108 J	513	**1540** J	702 J
Mercury	MG/KG	0.094	97%	5.7	0	66	68	0.056	0.05	0.09	0.027	0.071	0.066	0.073
Thallium	MG/KG	0	0%	6.7	0	0	68	0.71 U	0.71 U	0.79 UJ	0.81 U	0.7 U	0.87 U	0.92 U
Zinc	MG/KG	634	100%	10000	0	68	68	150 J	52.3 J	226 J	107 J	134 J	209 J	141 J

Notes
(1) The cleanup goal (CUG) values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs
(4) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table E-2
SEAD-17 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								F7	F7	F8	F8	G2	G3	G3
LOCATION ID								17EXFL-F7-01	17EXFL-F7-01	17EXFL-F8-01	17EXPR-F8-02	17EXPR-G2-01	17EXFL-G3-01	17EXFL-G3-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXFL-F7-01	17EXFL-F7-02	17EXFL-F8-01	17EXPR-F8-02	17EXPR-G2-01	17EXFL-G3-02	17EXFL-G3-01
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/13/2007	7/18/2007	7/13/2007	5/3/2007	4/4/2007	7/13/2007	7/13/2007
QC CODE								SA	SA	SA	SA	SA	DU	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal [1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Analyzes [2]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals														
Antimony	MG/KG	34.6	71%	41	0	48	68	0.6 UJ	0.64 UJ	0.58 UJ	7.2 J	3.9 J	7.7 J	9.5 J
Arsenic	MG/KG	12.3	100%	21.5	0	68	68	5	4.4 J	4.1	3.5	5.7	4.2	5.9
Cadmium	MG/KG	16.2	81%	60	0	55	68	0.04 U	0.24 J	0.04 U	3.4 J	2.3	1 J	1.9 J
Copper	MG/KG	402	100%	10000	0	68	68	19.1	16.9 J	10.8	65.3	47.9	41.4 J	66.9 J
Lead	MG/KG	1910	100%	1250	2	68	68	16	14.8 J	12.9	798	317 J	373 J	544 J
Mercury	MG/KG	0.094	97%	5.7	0	66	68	0.045	0.046	0.027	0.039 J	0.036	0.048	0.032
Thallium	MG/KG	0	0%	6.7	0	0	68	0.74 U	0.78 UJ	0.71 U	0.99 U	1.1 U	0.7 U	0.68 U
Zinc	MG/KG	634	100%	10000	0	68	68	60.2 J	50.5 J	52 J	170	188 J	102 J	196 J

Notes:
(1) The cleanup goal (CUG) values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan.
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table.
(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(4) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

Table E-2
SEAD-17 Complete Confirmatory Soil Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SITE LOCATION								SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
GRID ID								G3	G3	G3	G4	G4	G5	G5
LOCATION ID								17EXFL-G3-01	17EXFL-G3-04	17EXPR-G3-01	17EXFL-G4-01	17EXPR-G4-01	17EXFL-G5-01	17EXPR-G5-02
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								17EXFL-G3-03	17EXFL-G3-04	17EXPR-G3-01	17EXFL-G4-01	17EXPR-G4-01	17EXFL-G5-01	17EXPR-G5-02
TOP OF SAMPLE								0	0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0 2	0 2	0.2	0 2	0.2	0 2
SAMPLE DATE								7/13/2007	8/2/2007	7/13/2007	7/13/2007	4/4/2007	7/13/2007	5/3/2007
QC CODE								SA	SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [1]	Number of Exceedances	Number of Times Detected	Number of Analyzes [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Metals														
Antimony	MG/KG	34 6	71%	41	0	48	68	9.6 J	0.63 J	14.5 J	13.9 J	5 9 J	10 8 J	5.2 J
Arsenic	MG/KG	12 3	100%	21 5	0	68	68	3.9 J	2.9	7 4	4 7	4.7	6 4	4.6
Cadmium	MG/KG	16.2	81%	60	0	55	68	1.9 J	0.57	3	4.2	1.3	2 9	1.9 J
Copper	MG/KG	402	100%	10000	0	68	68	66.9 J	14	110	96.6	51 2	142	59.3
Lead	MG/KG	1910	100%	1250	2	68	68	606 J	51.5	773	527	386 J	485	403
Mercury	MG/KG	0 094	97%	5.7	0	66	68	0.042	0.044	0.03	0.044	0.055	0 052	0.057 J
Thallium	MG/KG	0	0%	6.7	0	0	68	0.81 UJ	0.71 U	0.72 U	0 7 U	0.97 U	0.72 U	1 U
Zinc	MG/KG	634	100%	10000	0	68	68	244 J	52 8	248	178 J	111 J	170 J	137

Notes
(1) The cleanup goal (CUG) values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan.
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(4) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

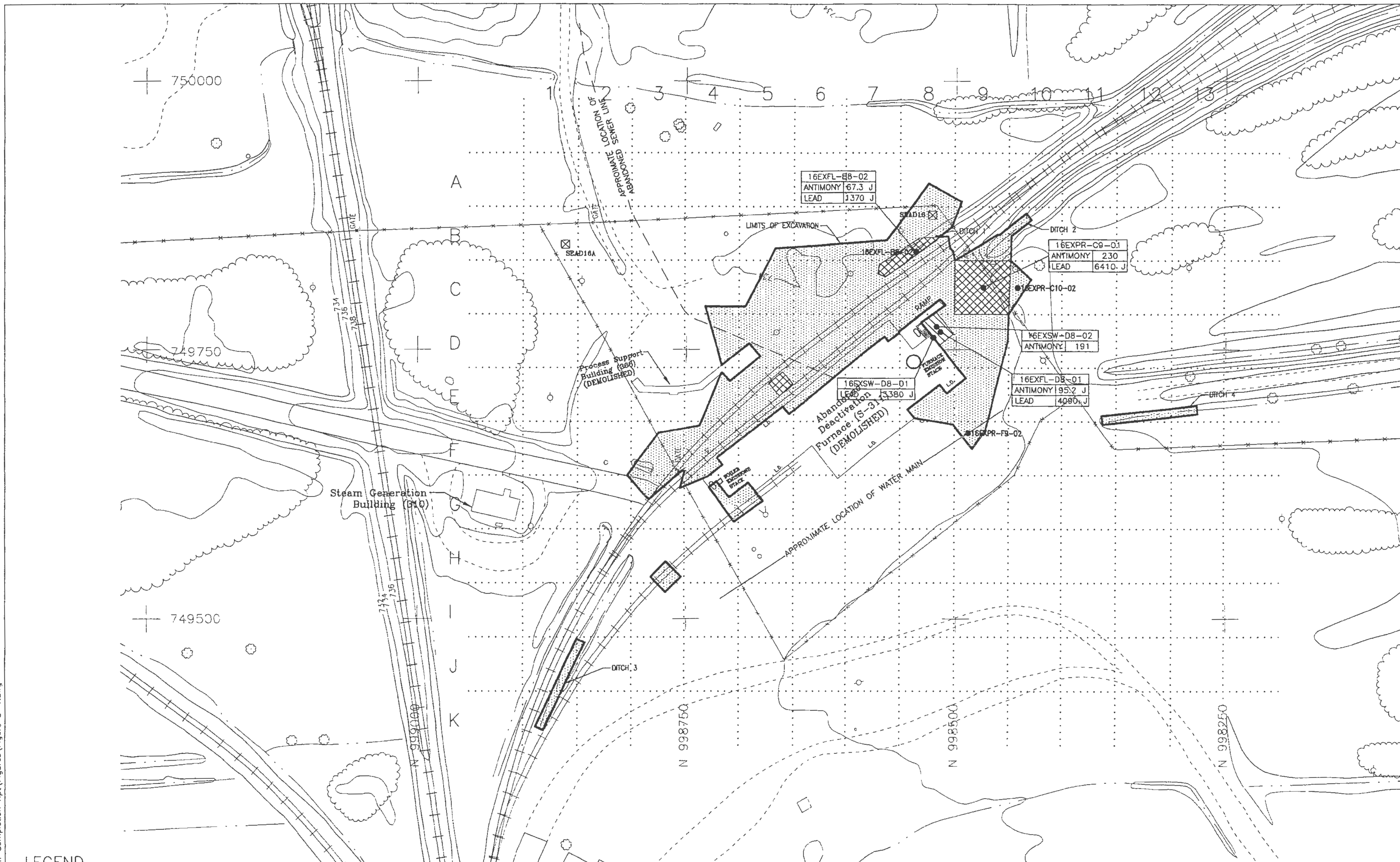
SITE LOCATION								SEAD-17
GRID ID								G7
LOCATION ID								17EXPR-G7-01
MATRIX								SOIL
SAMPLE ID								17EXPR-G7-01
TOP OF SAMPLE								0
BOTTOM OF SAMPLE								0 2
SAMPLE DATE								7/13/2007
QC CODE								SA
STUDY ID								RA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goal** [1]	**Number of Exceedances**	**Number of Times Detected**	**Number of Analyzes** [2]	**Value (Q)**
Metals								
Antimony	MG/KG	34.6	71%	41	0	48	68	15.1 J
Arsenic	MG/KG	12.3	100%	21.5	0	68	68	4.5
Cadmium	MG/KG	16.2	81%	60	0	55	68	3.2
Copper	MG/KG	402	100%	10000	0	68	68	92 3
Lead	MG/KG	1910	100%	1250	2	68	68	860
Mercury	MG/KG	0.094	97%	5.7	0	66	68	0.094
Thallium	MG/KG	0	0%	6.7	0	0	68	0 8 U
Zinc	MG/KG	634	100%	10000	0	68	68	204

Notes:
(1) The cleanup goal (CUG) values are from Table 2-1 of SEAD-16/17 Remedial Design Work Plan.
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table
(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.
(4) A shaded, boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation Therefore, the analytical results for the shaded sample are not characteristic of current site conditions and are not part of the final dataset.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected, the associated reporting limit is approximate
R = the analytical result was rejected during data validation

APPENDIX F

CHAIN OF CUSTODY



N

NOTES:

1. BOUNDARY OF FINAL EXCAVATION AREA IS APPROXIMATE.
2. PARAMETER(S) AND CONCENTRATION(S) THAT EXCEEDED THE SITE CLEANUP GOALS ARE PRESENTED ON THIS FIGURE.
3. THE SOIL ASSOCIATED WITH FAILED SAMPLES HAS BEEN REMOVED, AND SOIL SAMPLES ARE NOT REPRESENTATIVE OF SOIL REMAINING ON-SITE.
4. SAMPLE LOCATIONS (16EXPR-F9-02 AND 16EXPR-C10-02) WERE REMOVED DUE TO CONSERVATIVELY ASSUMING THAT THE HIGHER OF THE TWO ANALYTICAL RESULTS FROM SPLIT SAMPLES, WHICH EXCEEDED THE CLEANUP GOAL, WAS REPRESENTATIVE OF THE SOIL.

50 0 50 100

SCALE IN FEET

LEGEND

MINOR WATERWAY
MAJOR WATERWAY
FENCE
BRUSH LINE
RAILROAD
760 GROUND SURFACE ELEVATION CONTOUR
UNPAVED ROAD
POLE
UTILITY BOX
CORDINATE GRID (250' GRID)
OVERHEAD UTILITY POLE
MAILBOX/RR SIGNAL
SURVEY MONUMENT
L.D. LOADING DOCK
ROAD SIGN
DECIDOUS TREE
FIRE HYDRANT
MANHOLE
GUIDE POST
CONFIRMATORY SAMPLE LOCATION IN SOIL EXCAVATED FROM SITE
LIMITS OF 1-FOOT DEEP EXCAVATION
LIMITS OF 2-FOOT DEEP EXCAVATION
LIMITS OF 3-FOOT DEEP EXCAVATION

16EXFL-D8-01		LOCATION\SAMPLE ID
ANTIMONY	95.2 J	PARAMETER CONCENTRATION (mg\Kg)
LEAD	4090 J	J REPRESENTS AN ESTIMATED VALUE

PARSONS

CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-16 AND SEAD-17

DEPT. ENVIRONMENTAL ENGINEERING
Dwg. No 745172-01200

FIGURE 3-1
SEAD-16 EXCAVATED SAMPLE LOCATIONS & FAILED CONCENTRATIONS

SCALE 1" = 50'-0"
DATE DECEMBER 2007
REV -

P:\PIT\Projects\Seneca PBC II\SEAD-16_17\Construction Completion Rpt\Figures\Figure 3-1.dwg

LEGEND

- MINOR WATERWAY
- MAJOR WATERWAY
- FENCE
- UNPAVED ROAD
- BRUSH LINE
- RAILROAD
- GROUND SURFACE ELEVATION CONTOUR (760)
- SURVEY MONUMENT
- ROAD SIGN
- DECIDOUS TREE
- FIRE HYDRANT
- MANHOLE
- GUIDE POST
- POLE
- UTILITY BOX
- CORDINATE GRID (250' GRID)
- OVERHEAD UTILITY POLE
- MAILBOX/RR SIGNAL
- LIMITS OF 1-FOOT EXCAVATION
- LIMITS OF 2-FOOT EXCAVATION
- CONFIRMATORY SAMPLE LOCATION IN SOIL EXCAVATED FROM SITE

17EXPR-A4-01		—LOCATION\SAMPLE ID
ANTIMONY	95.2 J	—PARAMETER CONCENTRATION (mg\Kg)
LEAD	4090 J	—J REPRESENTS AN ESTIMATED VALUE

NOTES:

1. BOUNDARY OF FINAL EXCAVATION AREA IS APPROXIMATE.
2. PARAMETER(S) AND CONCENTRATION(S) THAT EXCEEDED THE SITE CLEANUP GOALS ARE PRESENTED ON THIS FIGURE.
3. THE SOIL ASSOCIATED WITH FAILED SAMPLES HAS BEEN REMOVED, AND SOIL SAMPLES ARE NOT REPRESENTATIVE OF SOIL REMAINING ON-SITE.
4. SAMPLE LOCATIONS (17EXPR-D2-01 AND 17EXFL-G3-01) WERE REMOVED DUE TO CONSERVATIVELY ASSUMING THAT THE HIGHER OF THE TWO ANALYTICAL RESULTS FROM SPLIT SAMPLES, WHICH EXCEEDED THE CLEANUP GOAL, WAS REPRESENTATIVE OF THE SOIL.

PARSONS

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-16 AND SEAD-17

DEPT. ENVIRONMENTAL ENGINEERING | Dwg. No. 745172-01200

FIGURE 3-2
SEAD-17 EXCAVATED SAMPLE LOCATIONS & FAILED CONCENTRATIONS

SCALE 1" = 50'-0" | DATE DECEMBER 2007 | REV —

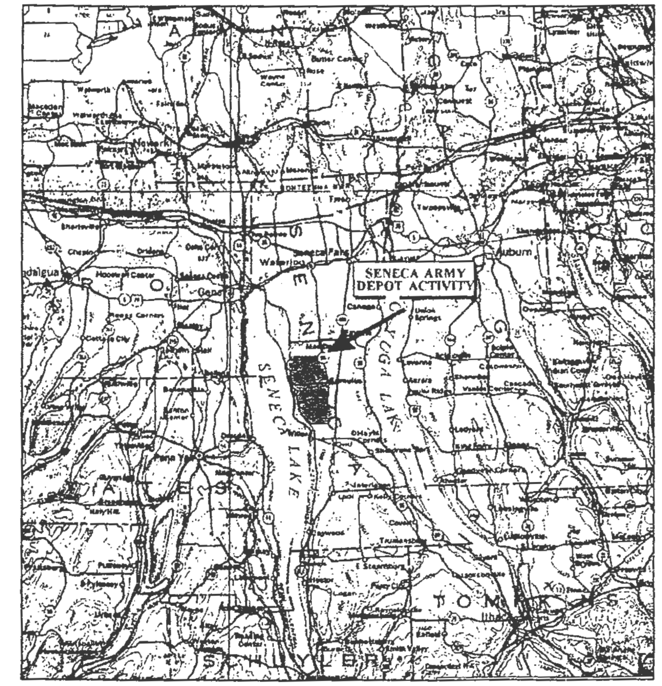
P:\PIT\Projects\Seneca PBS II\SEAD-16_17\Construction Completion Rpt\Draft\Figures\Figure 3-2.dwg

PREPARED FOR:

AIR FORCE CENTER FOR ENGINEERING AND THE ENVIRONMENT
REMEDIATION OF ABANDONED DEACTIVATION FURNACE (SEAD-16) AND THE ACTIVE DEACTIVATION FURNACE (SEAD-17)
SENECA ARMY DEPOT
ROMULUS, NEW YORK

CONSTRUCTION COMPLETION REPORT
(MARCH 2008)

N



LOCATION MAP

DRAWING LIST

SHEET NO.	REVISION NO.	DESCRIPTION
C-1	A	TITLE SHEET
C-2	A	SEAD-16 SITE PLAN
C-3	A	SEAD-17 SITE PLAN
C-4	A	SEAD-16 EXCAVATION AREA & FINAL CONFIRMATORY SAMPLE LOCATIONS
C-5	A	SEAD-17 EXCAVATION AREA & FINAL CONFIRMATORY SAMPLE LOCATIONS

SITE PLAN
NTS

P:\PIT\Projects\Seneca\SEAD-16_17\Construction Completion Rpt\Draft Final\Drawings\C-1.dwg

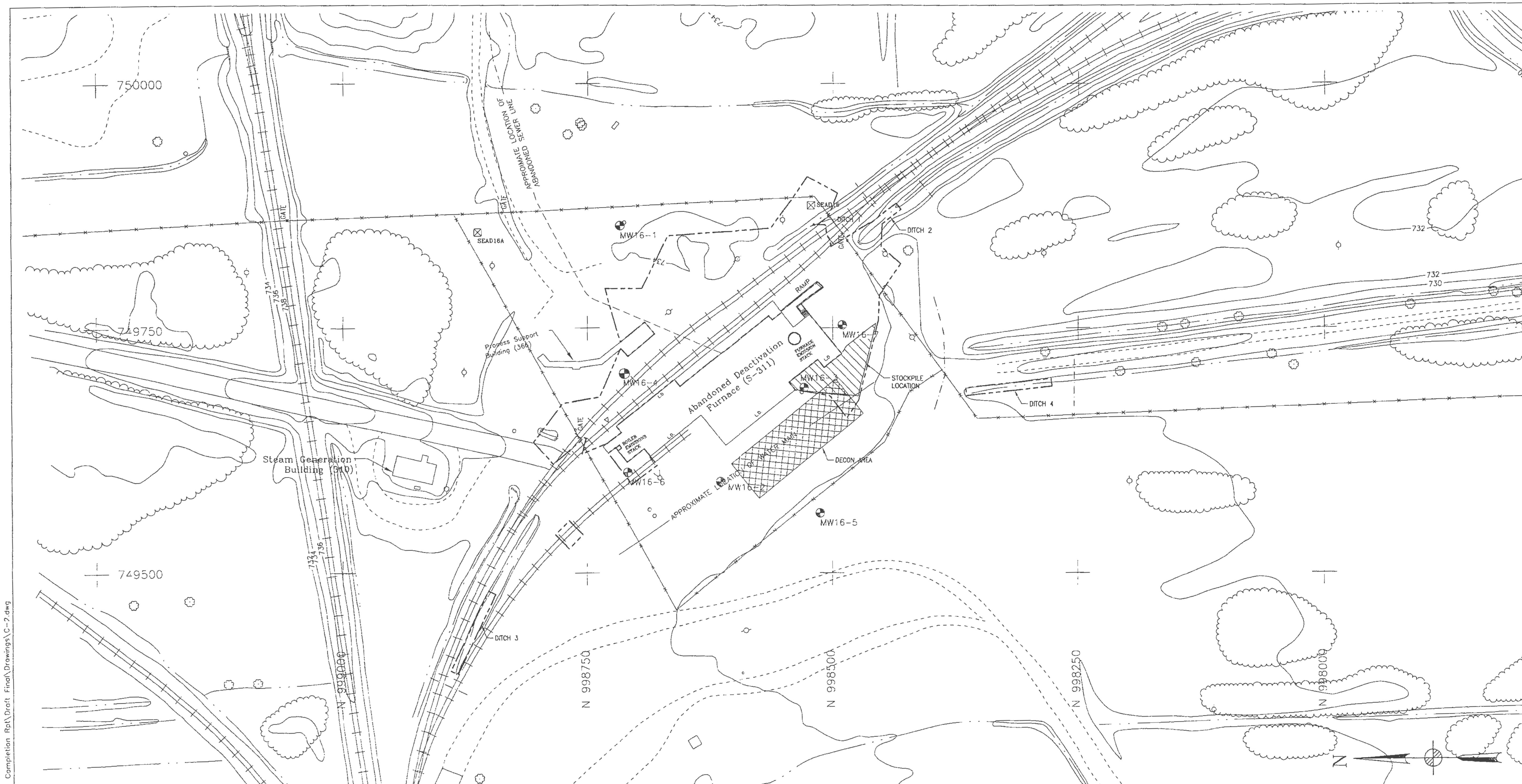
PARSONS

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT
CONSTRUCTION COMPLETION REPORT
SEAD-16 AND SEAD-17

DEPT.	Dwg. No.
ENVIRONMENTAL ENGINEERING	745172-01200

C-1
TITLE SHEET

SCALE	DATE	REV
NA	MARCH 2008	A



LEGEND

MINOR WATERWAY	
MAJOR WATERWAY	
FENCE	
BRUSH LINE	
RAILROAD	
GROUND SURFACE ELEVATION CONTOUR	760
UNPAVED ROAD	
LIMITS OF PROPOSED EXCAVATION	
SILT FENCE/HAYBALES	

SURVEY MONUMENT — L.D. LOADING DOCK — MONITORING WELL LOCATION (MW16-7)

ROAD SIGN — DECIDOUS TREE — STOCKPILE AREA

FIRE HYDRANT — MANHOLE — GUIDE POST — DECON AREA

POLE — UTILITY BOX — CORDINATE GRID (250' GRID)

OVERHEAD UTILITY POLE — MAILBOX/RR SIGNAL

50 0 50 100

SCALE IN FEET

PARSONS

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-16 AND SEAD-17

DEPT: ENVIRONMENTAL ENGINEERING — Dwg No: 745172-01200

C-2
SEAD-16
SITE PLAN

SCALE: 1" = 100'-0" — DATE: MARCH 2008 — REV: A

P:\PIT\Projects\Seneca PBC II\SEAD-16_17\Construction Completion Rpt\Draft Final\Drawings\C-2.dwg

P:\PIT\Projects\Seneca PBS II\SEAD 16_17\Construction Completion Rpt\Draft Final\Drawings\C-3.dwg

PARSONS

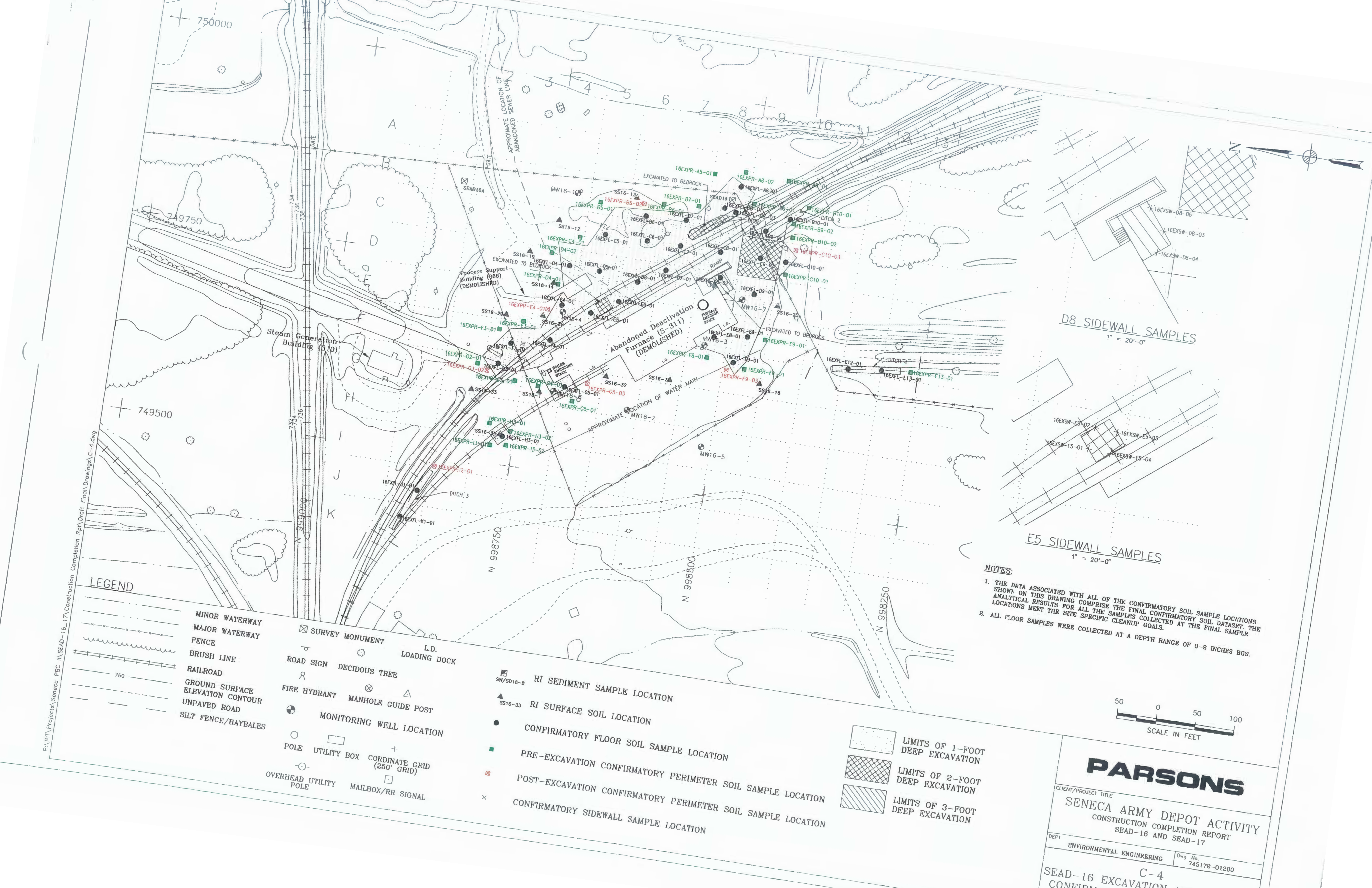
CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-16 AND SEAD-17

DEPT.	Dwg. No.
ENVIRONMENTAL ENGINEERING	745172-01200

C-3
SEAD-17
SITE PLAN

SCALE	DATE	REV
1" = 100'-0"	MARCH 2006	A



Abandoned Deactivation Furnace (S-311) (DEMOLISHED)
Process Support Building (366) (DEMOLISHED)
Steam Generation Building (310)
APPROXIMATE LOCATION OF ABANDONED SEWER LINE
APPROXIMATE LOCATION OF WATER MAIN
EXCAVATED TO BEDROCK
MW16-5
MW16-2
D8 SIDEWALL SAMPLES
1" = 20'-0"
E5 SIDEWALL SAMPLES
1" = 20'-0"
NOTES:
1. THE DATA ASSOCIATED WITH ALL OF THE CONFIRMATORY SOIL SAMPLE LOCATIONS SHOWN ON THIS DRAWING COMPRISE THE FINAL CONFIRMATORY SOIL DATASET. THE ANALYTICAL RESULTS FOR ALL THE SAMPLES COLLECTED AT THE FINAL SAMPLE LOCATIONS MEET THE SITE SPECIFIC CLEANUP GOALS.
2. ALL FLOOR SAMPLES WERE COLLECTED AT A DEPTH RANGE OF 0-2 INCHES BGS.
LEGEND
MINOR WATERWAY
MAJOR WATERWAY
FENCE
BRUSH LINE
RAILROAD
GROUND SURFACE ELEVATION CONTOUR
UNPAVED ROAD
SILT FENCE/HAYBALES
SURVEY MONUMENT
ROAD SIGN
DECIDOUS TREE
L.D. LOADING DOCK
FIRE HYDRANT
MANHOLE
GUIDE POST
MONITORING WELL LOCATION
POLE
UTILITY BOX
CORDINATE GRID (250' GRID)
OVERHEAD UTILITY POLE
MAILBOX/RR SIGNAL
RI SEDIMENT SAMPLE LOCATION
RI SURFACE SOIL LOCATION
CONFIRMATORY FLOOR SOIL SAMPLE LOCATION
PRE-EXCAVATION CONFIRMATORY PERIMETER SOIL SAMPLE LOCATION
POST-EXCAVATION CONFIRMATORY PERIMETER SOIL SAMPLE LOCATION
CONFIRMATORY SIDEWALL SAMPLE LOCATION
LIMITS OF 1-FOOT DEEP EXCAVATION
LIMITS OF 2-FOOT DEEP EXCAVATION
LIMITS OF 3-FOOT DEEP EXCAVATION
SCALE IN FEET
PARSONS
CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-16 AND SEAD-17
DEPT
ENVIRONMENTAL ENGINEERING
Dwg No.
745172-01200
C-4
SEAD-16 EXCAVATION
P:\PIT\Projects\Seneca PBC II\SEAD-16_17\Construction Completion Rpt\Draft Final\Drawings\C-4.dwg

LEGEND

MINOR WATERWAY
MAJOR WATERWAY
FENCE
UNPAVED ROAD
BRUSH LINE
RAILROAD
760 GROUND SURFACE ELEVATION CONTOUR
SILT FENCE/HAYBALES
SURVEY MONUMENT
ROAD SIGN
DECIDOUS TREE
FIRE HYDRANT
MANHOLE
GUIDE POST
POLE
UTILITY BOX
CORDINATE GRID (250' GRID)
OVERHEAD UTILITY POLE
MAILBOX/RR SIGNAL
MW17-5 MONITORING WELL LOCATION
LIMITS OF 1-FOOT EXCAVATION
LIMITS OF 2-FOOT EXCAVATION
CONFIRMATORY FLOOR SOIL SAMPLE LOCATION
PRE-EXCAVATION CONFIRMATORY PERIMETER SOIL SAMPLE LOCATION
POST-EXCAVATION CONFIRMATORY PERIMETER SOIL SAMPLE LOCATION
SS17-40 RI SURFACE SOIL LOCATION
SW/SD17-2 RI SEDIMENT SAMPLE LOCATION

NOTES:

1. THE DATA ASSOCIATED WITH ALL OF THE CONFIRMATORY SOIL SAMPLE LOCATIONS SHOWN ON THIS DRAWING COMPRISE THE FINAL CONFIRMATORY SOIL DATASET. THE ANALYTICAL RESULTS FOR ALL THE SAMPLES COLLECTED AT THE FINAL SAMPLE LOCATIONS MEET THE SITE SPECIFIC CLEANUP GOALS.
2. ALL FLOOR SAMPLES WERE COLLECTED AT A DEPTH RANGE OF 0-2 INCHES BGS.

50 0 50 100
SCALE IN FEET

PARSONS

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-16 AND SEAD-17

DEPT	Dwg. No
ENVIRONMENTAL ENGINEERING	745172-01200

C-5
SEAD-17 EXCAVATION AREA & FINAL CONFIRMATORY SAMPLE LOCATIONS

SCALE	DATE	REV
1" = 50'-0"	MARCH 2008	A

P:\PIT\Projects\Seneca PBS II\SEAD-16_17\Construction Completion Rpt\Draft Final\Drawings\C-5.dwg

20-07-07-03

SEVERN TRENT STL

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Buffalo

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
Ph: 716-691-2600
Fax: 716-691-7991
Website: www.stl-inc.com

Unknown

Lab Disposal

PAGE 1 OF 2

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME: SEAD-16/17 Remedial Action	PROJECT NO.: 745172-01200	NY
STL (LAB) PROJECT MANAGER: Tony Bogolin	P.O. NUMBER: 745172-30000-00	CONTRACT/Quote NO.: 745172-30000-00
CLIENT (SITE) PM: Jacqueline Travers/Chunhua Liu	CLIENT PHONE: 617-449-1567(C. Liu)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: chunhua.liu@parsons.com	
CLIENT ADDRESS: 160 Federal Street, Boston, MA 02110		
Samplers Signature & Initials:		

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/DATE DUE 3 business days Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

Required analyses: Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A; Carcinogenic PAHs - Metod 8270C

Number of containers submitted: 8 | 8 | 8

DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	Sample Type	Field Filtered	Matrix	Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A	Carcinogenic PAHs - Metod 8270C	REMARKS
7/19/2007	17:48	16EXFL-D8-01		Grab	N	S	X		1. Please run a straight sample analysis (without dilution) for every sample.
7/19/2007	12:00	16EXFL-H3-01		Grab	N	S	X		2. Please use 16EXSW-D8-01 for QA/QC analysis.
7/19/2007	15:00	16EXPR-B6-02		Grab	N	S	X		3. Please report only the requested metals and PAHs.
7/18/2007	11:01	16EXPR-C10-02		Grab	N	S	X		
7/19/2007	12:45	16EXPR-E4-01		Grab	N	S	X		
7/18/2007	10:10	16EXPR-F9-02		Grab	N	S	X		
7/19/2007	12:20	16EXPR-G3-02		Grab	N	S	X		
7/18/2007	10:20	16EXFL-G5-01		Grab	N	S	X	X	Preservative
7/19/2007	17:15	16EXSW-D8-01		Grab	N	S	X		8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	7/20/07	16:00						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
	7-21	09:15	YES / NO		

3@4.2°C

50/424

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

20-07-07-04

SEVERN TRENT STL

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Buffalo

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
Ph: 716-691-2600
Fax: 716-691-7991
Website: www.stl-inc.com

Unknown

Lab Disposal

PAGE 1 OF 1

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME: SEAD-16/17 Remedial Action	PROJECT NO.: 745172-01200	NY
STL (LAB) PROJECT MANAGER: Tony Bogolin	P.O. NUMBER: 745172-30000-00	CONTRACT/Quote NO.: 745172-30000-00
CLIENT (SITE) PM: Jacqueline Travers/Chunhua Liu	CLIENT PHONE: 617-449-1567(C. Liu)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: chunhua.liu@parsons.com	
CLIENT ADDRESS: 150 Federal Street, Boston, MA 02110		
Samplers Signature & Initials:		

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 3 business days ____ Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A	EPA 1311 - TCLP Metals		REMARKS
		NUMBER OF CONTAINERS SUBMITTED					8	8	8	
7/18/2007	09:00	17EXFL-A4-02		Grab	N	S	X			1. Please run a straight sample analysis (without dilution) for every sample. 2. Please select one project sample from this SDG for QA/QC analysis.
7/18/2007	09:15	17EXPR-D2-02		Grab	N	S	X			
7/18/2007	09:23	17EXFL-G3-03		Grab	N	S	X			
7/18/2007	09:37	17EXFL-F7-02		Grab	N	S	X			
7/18/2007	10:00	17EXPR-C8-02		Grab	N	S	X			
7/18/2007	11:30	EX00101		OTHER	N	W	X			
7/20/2007	9:00	17-DS-19		Composite	N	S		X		
										Preservative
										8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Bai McAllester	7/20/07	1						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
[signature]	7-21	09:15	YES		

3@4.1°C

49/872

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

Bogolin, Tony

From: Liu, Chunhua [Chunhua.Liu@parsons.com]

Sent: Tuesday, July 17, 2007 12:00 PM

To: Bogolin, Tony

Subject: Sample ID change - A07-7848

Tony:

Would you please rename 17EXFL-G3-01 collected at 7/13 12:30 to 17EXFL-G3-02?

Thanks.

Chunhua Liu, Sc.D.
Project Engineer
Parsons
150 Federal Street
4th Floor
Boston, MA 02110
Tel: (617) 449-1567 (DID), (617) 946-9400
Fax: (617) 946-9777
http://www.parsons.com

SEVERN TRENT STL

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Buffalo

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
Ph: 716-691-2600
Fax: 716-691-7991
Website: www.stl-inc.com

Unknown

Lab Disposal

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-121C Remedial Action	PROJECT NO: 745172-02200	Project State: NY
STL (LAB) PROJECT MANAGER: Tony Bogolin	P.O. NUMBER: 745172-30000-00	CONTRACT/Quote NO.: 745172-30000-00
CLIENT (SITE) PM: Jacqueline Travers/Chunhua Liu	CLIENT PHONE: 617-449-1587(C. Liu)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: chunhua.liu@parsons.com	
CLIENT ADDRESS: 150 Federal Street, Boston, MA 02110		
Samplers Signature & Initials:		

PAGE 2 OF 4

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 BD
TAT/ DATE DUE 3-BD ____ Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSES: Pb - Method 6010B (8)

DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Pb - Method 6010B (Number of containers submitted)
7/13/2007	9:45	17EXFL-E7-01		Grab	N	S	1
7/13/2007	9:40	17EXFL-E8-01		Grab	N	S	1
7/13/2007	12:40	17EXFL-G4-01		Grab	N	S	1
7/13/2007	12:30	17EXFL-G3-01 ¥ 2		Grab	N	S	1
7/13/2007	12:45	17EXFL-G5-01		Grab	N	S	1
7/13/2007	9:50	17EXFL-F6-01		Grab	N	S	1
7/13/2007	9:30	17EXFL-F8-01		Grab	N	S	1
7/13/2007	12:35	17EXFL-F4-01		Grab	N	S	1
7/13/2007	9:55	17EXFL-F7-01		Grab	N	S	1

REMARKS: Please run straight analysis (do not dilute) on all sample. Please use 121CEXFL-10 for all QA/QC analyses (e.g., spike analysis, laboratory duplicate analysis, serial dilution) for this SDG.

Preservative: 8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McNlask	7/13	18:00						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
D. [signature]	7/14/07	0900						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			8		5.0 °C

46/530

Original - Return to Laboratory with Sample(s)

SEVERN TRENT STL

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Buffalo

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
Ph: 716-691-2600
Fax: 716-691-7991
Website: www.stl-inc.com

Unknown

Lab Disposal

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME: SEAD-121C Remedial Action	PROJECT NO.: 745172-02200	NY
STL (LAB) PROJECT MANAGER: Tony Bogolin	P.O. NUMBER: 745172-30000-00	CONTRACT/Quote NO.: 745172-30000-00
CLIENT (SITE) PM: Jacqueline Travers/Chunhua Liu	CLIENT PHONE: 617-449-1567(C. Liu)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: chunhua.liu@parsons.com	
CLIENT ADDRESS: 150 Federal Street, Boston, MA 02110		
Samplers Signature & Initials:		

Sample Information — REQUIRED ANALYSES: Pb - Method 6010B (8)

PAGE 2 OF 4

Final Report Type (Circle at least one): ASP2000
Category B
EDD 15 BD
TAT/ DATE DUE 3-BD ____ Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	NUMBER OF CONTAINERS SUBMITTED: Pb - Method 6010B
7/13/2007	11:00	17EXFL-D3-01		Grab	N	S	1
7/13/2007	7:30	17EXFL-C7-01		Grab	N	S	1
7/13/2007	10:00	17EXFL-C5-01		Grab	N	S	1
7/13/2007	10:05	17EXFL-D7-01		Grab	N	S	1
7/13/2007	7:35	17EXFL-D8-01		Grab	N	S	1
7/13/2007	11:05	17EXFL-E2-01		Grab	N	S	1
7/13/2007	11:20	17EXFL-E3-01		Grab	N	S	1
7/13/2007	11:05	17EXFL-E2-01		Grab	N	S	1
7/13/2007	11:15	17EXFL-~~E2-01~~ F3-01 7/16/07		Grab	N	S	1

REMARKS: Please run straight analysis (do not dilute) on all sample. Please use 121CEXFL-10 for all QA/QC analyses (e.g., spike analysis, laboratory duplicate analysis, serial dilution) for this SDG.

Preservative: 8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	7/13	1800						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
D.	7/14/07	0900						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
			YES NO 8		

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
			YES NO 8		2.0°C

44/530

R

1 of 2

2 [illegible] 7/16/07

Page [illegible]

SEVERN TRENT STL

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Buffalo

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
Ph: 716-691-2600
Fax: 716-691-7991
Website: www.stl-inc.com

Unknown

Lab Disposal

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME: SEAD-121C Remedial Action	PROJECT NO.: 745172-02200	NY
STL (LAB) PROJECT MANAGER: Tony Bogolin	P.O. NUMBER: 745172-30000-00	CONTRACT/Quote NO.: 745172-30000-00
CLIENT (SITE) PM: Jacqueline Travers/Chunhua Liu	CLIENT PHONE: 617-449-1567(C. Liu)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: chunhua.liu@parsons.com	
CLIENT ADDRESS: 150 Federal Street, Boston, MA 02110		
Samplers Signature & Initials:		

PAGE 1 OF 3

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 3 business days For QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSES: TOTAL METALS - Method 6010B (8)

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	NUMBER OF CONTAINERS SUBMITTED: TOTAL METALS - Method 6010B
7/13/2007	10:20	17EXFL-A4-01		Grab	N	S	1
7/13/2007	10:15	17EXFL-A5-01		Grab	N	S	1
7/13/2007	10:30	17EXFL-B4-01		Grab	N	S	1
7/13/2007	10:40	17EXFL-B3-01		Grab	N	S	1
7/13/2007	10:10	17EXFL-B5-01		Grab	N	S	1
7/13/2007	10:45	17EXFL-C4-01		Grab	N	S	1
7/13/2007	10:50	17EXFL-D4-01		Grab	N	S	1

REMARKS

Please run straight analysis (do not dilute) on all sample.
Please use 121CEXFL-10 for all QA/QC analyses (e.g., spike analysis, laboratory duplicate analysis, serial dilution) for this SDG.

Preservative

8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	7/13	1800						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
[illegible]	7/14/07	0900						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			8		2.0 °C

38/468

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

C. Liu 4/9/07

2 of 2

Page ~~4 of 4~~ 04-04-07-1

SEVERN TRENT STL

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Buffalo

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
Ph: 716-691-2600
Fax: 716-691-7991
Website: www.stl-inc.com

Unknown

Lab Disposal

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME: SEAD-16/17 Remedial Action	PROJECT NO.: 745172-01200	NY
STL (LAB) PROJECT MANAGER: Tony Bogolin	P.O. NUMBER: 745172-30000-00	CONTRACT/Quote NO.: 745172-30000-00
CLIENT (SITE) PM: Jacqueline Travers/Chunhua Liu	CLIENT PHONE: 617-449-1567(C. Liu)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: chunhua.liu@parsons.com	
CLIENT ADDRESS: 150 Federal Street, Boston, MA 02110		
Samplers Signature & Initials:		

PAGE 4 OF 4

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 10 business days Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

Sample Information / REQUIRED ANALYSES

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A	Carcinogenic PAHs - Method 8270C						
		NUMBER OF CONTAINERS SUBMITTED					8	8	8					
4/4/2007	1630	16EXPR-G5-02 +		Grab	N	S	X	X						
4/4/2007	1630	16EXPR-G5-01MS +		Grab	N	S	X	X						
4/4/2007	1630	16EXPR-G5-01MSD +		Grab	N	S	X	X						
Last Sample														

REMARKS

1. Please run a straight sample analysis (without dilution) for every sample.
2. Please report only the referenced metals and cPAHs.

+ TCu ADDED by

Preservative

& Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAlister	4/5/07	1800						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
[illegible signature]	4/6/07	1030						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			8		

2.8 °C

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

C. Liu 4/9/07

page 1 of 1

Page ~~3~~ of 3 | 04-04-07-~~2~~ 3

SEVERN TRENT STL

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Buffalo

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
Ph: 716-691-2600
Fax: 716-691-7991
Website: www.stl-inc.com

Unknown

Lab Disposal

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE NAME: SEAD-16/17 Remedial Action	PROJECT NO.: 745172-01200	NY
STL (LAB) PROJECT MANAGER: Tony Bogolin	P.O. NUMBER: 745172-30000-00	CONTRACT/Quote NO.: 745172-30000-00
CLIENT (SITE) PM: Jacqueline Travers/Chunhua Liu	CLIENT PHONE: 617-449-1567(C. Liu)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: chunhua.liu@parsons.com	
CLIENT ADDRESS: 150 Federal Street, Boston, MA 02110		
Samplers Signature & Initials:		

Sample Information

REQUIRED ANALYSES

PAGE 3 OF 3

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 10 business days Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A							
						NUMBER OF CONTAINERS SUBMITTED	8	8	8					
4/4/2007	1437	17EXPR-A4-01		Grab	N	S	X							
4/4/2007	1520	17EXPR-A4-02		Grab	N	S	X							
4/4/2007	1440	17EXPR-A5-01		Grab	N	S	X							
4/4/2007	1433	17EXPR-B7-01		Grab	N	S	X							
4/4/2007	1430	17EXPR-B8-01		Grab	N	S	X							
4/4/2007	1410	17EXPR-C7-01		Grab	N	S	X							
4/4/2007	1510	17EXPR-C7-02		Grab	N	S	X							
4/4/2007	1500	17EXPR-F6-01		Grab	N	S	X							
4/4/2007	1510	17EXPR-F6-02		Grab	N	S	X							
4/4/2007	1500	17EXPR-F6-01MS		Grab	N	S	X							
4/4/2007	1500	17EXPR-F6-01MSD		Grab	N	S	X							
Last Sample														

REMARKS

1. Please run a straight sample analysis (without dilution) for every sample.
2. Please report only the referenced metals and cPAHs.

[illegible]

Preservative

8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben [signature]	4/5/07	1800						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
[signature]	4/6/07	1030						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			8		

2-3°C

FCU036:12.20.00:3

Original - Return to Laboratory with Sample(s)

32/200

C. Liu 4/9/07

2 of 2

Page 4 of 4 04-04-07-1

SEVERN TRENT STL ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Buffalo

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
Ph: 716-691-2600
Fax: 716-691-7991
Website: www.stl-inc.com

Unknown

Lab Disposal

PROJECT & CLIENT INFORMATION | Project State: NY

PROJECT REFERENCE/NAME: SEAD-16/17 Remedial Action	PROJECT NO.: 745172-01200	
STL (LAB) PROJECT MANAGER: Tony Bogolin	P.O. NUMBER: 745172-30000-00	CONTRACT/Quote NO.: 745172-30000-00
CLIENT (SITE) PM: Jacqueline Travers/Chunhua Liu	CLIENT PHONE: 617-449-1557 (C. Liu)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: chunhua.liu@parsons.com	
CLIENT ADDRESS: 150 Federal Street, Boston, MA 02110		
Samplers Signature & Initials:		

PAGE 4 OF 4

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 10 business days Per QAP/Quote
EXPEDITED REPORT (circle one) . FAX EMAIL POST Other
TAT/DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A	Carcinogenic PAHs - Method 8270C						REMARKS
						NUMBER OF CONTAINERS SUBMITTED	8	8	8					
4/4/2007	1630	~~16EXPR-G5-02~~ +		Grab	N	S	X	X						1. Please run a straight sample analysis (without dilution) for every sample. 2. Please report only the referenced metals and cPAHs.
4/4/2007	1630	16EXPR-G5-01MS +		Grab	N	S	X	X						+ TCu ADDED by
4/4/2007	1630	16EXPR-G5-01MSD +		Grab	N	S	X	X						
Last Sample														Preservative: 8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAlish	4/5/07	1800						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
[signature]	4/6/07	1630						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			8		

2.8 °C

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

60/771

Page 1 of 2 05-03-07-1

SEVERN TRENT STL

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Buffalo

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
Ph: 716-691-2600
Fax: 716-691-7991
Website: www.stl-inc.com

Unknown

Lab Disposal

PROJECT & CLIENT INFORMATION | Project State: NY

PROJECT REFERENCE/NAME: SEAD-16/17 Remedial Action	PROJECT NO.: 745172-01200	
STL (LAB) PROJECT MANAGER: Tony Bogolin	P.O. NUMBER: 745172-30000-00	CONTRACT/Quote NO.: 745172-30000-00
CLIENT (SITE) PM: Jacqueline Travers/Chunhua Liu	CLIENT PHONE: 617-449-1567(C. Liu)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: chunhua.liu@parsons.com	
CLIENT ADDRESS: 150 Federal Street, Boston, MA 02110		
Samplers Signature & Initials:		

PAGE 1 OF 2

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 10 business days ____ Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSES: Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A

NUMBER OF CONTAINERS SUBMITTED: 8 | 8 | 8

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A							REMARKS
5/3/2007	1545	16EXPR-I4-01		Grab	N	S	X							1. Please run a straight sample analysis (without dilution) for every sample.
5/3/2007	1600	16EXPR-H4-01		Grab	N	S	X							
5/3/2007	1606	16EXPR-B5-01		Grab	N	S	X							
5/3/2007	1612	16EXPR-A8-01		Grab	N	S	X							
5/3/2007	1615	16EXPR-A8-02		Grab	N	S	X							
5/3/2007	1623	16EXPR-A9-01		Grab	N	S	X							
5/3/2007	1529	17EXPR-G5-02		Grab	N	S	X							
5/3/2007	1534	17EXPR-F7-02		Grab	N	S	X							Preservative
5/3/2007	1539	17EXPR-F8-02		Grab	N	S	X							8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	5/3	1800						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
[signature]	5-4-07	8:35						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			8		

56/771

2.0°C

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

C. Liu 4/9/07

1 of 2

Page 3 ~~of 4~~ 04-04-07-1

SEVERN TRENT STL

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Buffalo

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
Ph: 716-691-2600
Fax: 716-691-7991
Website: www.stl-inc.com

Unknown

Lab Disposal

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME: SEAD-16/17 Remedial Action	PROJECT NO.: 746172-01200	NY
STL (LAB) PROJECT MANAGER: Tony Bogolin	P.O. NUMBER: 746172-30000-00	CONTRACT/Quote NO.: 746172-30000-00
CLIENT (SITE) PM: Jacqueline Travers/Chunhua Liu	CLIENT PHONE: 617-449-1567(C. Liu)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: chunhua.liu@parsons.com	
CLIENT ADDRESS: 150 Federal Street, Boston, MA 02110		
Samplers Signature & Initials:		

Sample Information — REQUIRED ANALYSES: Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A; Carcinogenic PAHs - Method 8270C

PAGE 3 OF 4

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 10 business days Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Metals (8)	cPAHs (8)	(8)							REMARKS
4/4/2007	1600	16EXPR-G2-01 ✓		Grab	N	S	X									
4/4/2007	1545	16EXPR-G3-01 ✓		Grab	N	S	X									
4/4/2007	1547	16EXPR-E3-01 ✓		Grab	N	S	X									
4/4/2007	1545	16EXPR-H3-01 ✓		Grab	N	S	X									1. Please run a straight sample analysis (without dilution) for every sample. 2. Please report only the referenced metals and cPAHs.
4/4/2007	1540	16EXPR-H3-02 ✓		Grab	N	S	X									
4/4/2007	1555	16EXPR-I3-01 ✓		Grab	N	S	X									
4/4/2007	1550	16EXPR-I3-02 ✓		Grab	N	S	X									
4/4/2007	1558	16EXPR-B9-01 ✓		Grab	N	S	X									
4/4/2007	1600	16EXPR-B9-02 ✓		Grab	N	S	X									
4/4/2007	1715	16EXPR-E13-01 ✓		Grab	N	S	X									
4/4/2007	1620	16EXPR-G4-01 ✓		Grab	N	S	X	X								Preservative
4/4/2007	1625	16EXPR-G5-01 ✓		Grab	N	S	X	X								8 Ice

NUMBER OF CONTAINERS SUBMITTED

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	4/4/07	1800						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
[signature]	4/6/07	1030						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			O		

2.8 °C

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

48/472

C. Liu 4/9/07

 ~~04-04-07-1~~ 2

SEVERN TRENT STL

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Buffalo

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
Ph: 716-691-2600
Fax: 716-691-7991
Website: www.stl-inc.com

Unknown

Lab Disposal

PAGE 1 OF 4

PROJECT & CLIENT INFORMATION | Project State: NY

PROJECT REFERENCE/NAME: SEAD-16/17 Remedial Action	PROJECT NO.: 745172-01200	NY
STL (LAB) PROJECT MANAGER: Tony Bogolin	P.O. NUMBER: 745172-30000-00	CONTRACT/Quote NO.: 745172-30000-00
CLIENT (SITE) PM: Jacqueline Travers/Chunhua Liu	CLIENT PHONE: 617-449-1567(C. Liu)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: chunhua.liu@parsons.com	
CLIENT ADDRESS: 150 Federal Street, Boston, MA 02110		
Samplers Signature & Initials:		

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 10 business days Per GAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

Sample Information | REQUIRED ANALYSES

DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A	Carcinogenic PAHs - Method 8270C						REMARKS
		NUMBER OF CONTAINERS SUBMITTED					8	8	8					
4/4/2007	1635	16EXPR-F8-01		Grab	N	S	X							1. Please run a straight sample analysis (without dilution) for every sample. 2. Please report only the referenced metals and cPAHs.
4/4/2007	1637	16EXPR-F9-01		Grab	N	S	X							
4/4/2007	1655	16EXPR-E8-01		Grab	N	S	X							
4/4/2007	1657	16EXPR-B10-01		Grab	N	S	X							
4/4/2007	1639	16EXPR-B10-02		Grab	N	S	X							
4/4/2007	1640	16EXPR-C10-01		Grab	N	S	X							
4/4/2007	1643	16EXPR-B8-01		Grab	N	S	X							
4/4/2007	1705	16EXPR-B6-01		Grab	N	S	X							Preservative
4/4/2007	1650	16EXPR-B7-01		Grab	N	S	X							8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	4/4/07	1800						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
[illegible signature]	4/6/07	1036						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
			YES NO		

2.3°C

FC0036:12.20.00:2

Original - Return to Laboratory with Sample(s)

41/533

C. Liu 4/9/07

2 4

Page 2 of 3 04-04-07-2

SEVERN TRENT STL

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Buffalo

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
Ph: 716-691-2600
Fax: 716-691-7991
Website: www.stl-inc.com

Unknown

Lab Disposal

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME: SEAD-16/17 Remedial Action	PROJECT NO.: 745172-01200	NY
STL (LAB) PROJECT MANAGER: Tony Bogolin	P.O. NUMBER: 745172-30000-00	CONTRACT/Quote NO.: 745172-30000-00
CLIENT (SITE) PM: Jacqueline Travers/Chunhua Liu	CLIENT PHONE: 617-449-1567(C. Liu)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: chunhua.liu@parsons.com	
CLIENT ADDRESS: 150 Federal Street, Boston, MA 02110		
Samplers Signature & Initials:		

PAGE 2 OF 3

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 10 business days Per CAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

Sample Information

REQUIRED ANALYSES: Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A

NUMBER OF CONTAINERS SUBMITTED: 8 8 8

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A
4/4/2007	1451	17EXPR-G2-01		Grab	N	S	X
4/4/2007	1455	17EXPR-F2-01		Grab	N	S	X
4/4/2007	1447	17EXPR-B3-01		Grab	N	S	X
4/4/2007	1442	17EXPR-B3-02		Grab	N	S	X
4/4/2007	1447	17EXPR-B3-01MS		Grab	N	S	X
4/4/2007	1447	17EXPR-B3-01MSD		Grab	N	S	X
4/4/2007	1436	17EXPR-B6-01		Grab	N	S	X
4/4/2007	1450	17EXPR-D3-01		Grab	N	S	X
4/4/2007	1443	17EXPR-C3-01		Grab	N	S	X

REMARKS

1. Please run a straight sample analysis (without dilution) for every sample.
2. Please report only the referenced metals and cPAHs.

Preservative

8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben Mitchell [signature]	4/5/07	1800						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
[signature]	4/6/07	1030						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			8		

2-3 °C

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

30-07-07-01

SEVERN TRENT STL

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Buffalo

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
Ph: 716-691-2600
Fax: 716-691-7991
Website: www.stl-inc.com

Unknown

Lab Disposal

PAGE 1 OF 1

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME: SEAD-16/17 Remedial Action	PROJECT NO.: 745172-01200	NY
STL (LAB) PROJECT MANAGER: Tony Bogolin	P.O. NUMBER: 745172-30000-00	CONTRACT/Quote NO.: 745172-30000-00
CLIENT (SITE) PM: Jacqueline Travers/Chunhua Liu	CLIENT PHONE: 617-449-1567(C. Liu)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: chunhua.liu@parsons.com	
CLIENT ADDRESS: 150 Federal Street, Boston, MA 02110		
Samplers Signature & Initials:		

Sample Information: LABORATORY SAMPLE ID; SAMPLE TYPE; FIELD FILTERED; MATRIX

REQUIRED ANALYSES: Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A

NUMBER OF CONTAINERS SUBMITTED: 8

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A
7/30/2007	13:50	16EXFL-D8-02		Grab	N	S	X
7/30/2007	13:40	16EXSW-D8-06		Grab	N	S	X
7/30/2007	13:45	16EXSW-D8-07		Grab	N	S	X
7/30/2007	13:30	17EXFL-E5-02		Grab	N	S	X
7/30/2007	13:35	17EXFL-F2-02		Grab	N	S	X

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE * business day Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REMARKS

1. Please run a straight sample analysis (without dilution) for every sample.
2. Please use 16EXFL-B8-04 for QA/QC analysis.
3. Please report only the requested metals.

Preservative

8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben Wohlleb	7/30/07	14:20						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
[signature]	07-30-07	14:00						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			8		

4.0°C

FCU038:12.20.00:2

Original - Return to Laboratory with Sample(s)

02-08-07-1

SEVERN TRENT STL

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Buffalo

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
Ph: 716-691-2600
Fax: 716-691-7991
Website: www.stl-inc.com

Unknown

Lab Disposal

PAGE 1 OF 2

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME: SEAD-16/17 Remedial Action	PROJECT NO.: 746172-01300	NY
STL (LAB) PROJECT MANAGER: Tony Bogolin	P.O. NUMBER: 746172-30000-00	CONTRACT/Quote NO.: 746172-30000-00
CLIENT (SITE) PM: Jacqueline Travers/Chunhua Liu	CLIENT PHONE: 617-449-1567(C. Liu)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: chunhua.liu@parsons.com	
CLIENT ADDRESS: 150 Federal Street, Boston, MA 02110		
Samplers Signature & Initials:		

Sample Information

REQUIRED ANALYSES: Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A — 8

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 1 business day ___ Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A
8/2/2007	12:45	16EXFL-C9-02		Grab	N	S	X
8/2/2007	12:50	16EXFL-C10-01		Grab	N	S	X
8/2/2007	13:00	16EXPR-C10-03		Grab	N	S	X
8/2/2007	12:35	16EXFL-F9-01		Grab	N	S	X
8/2/2007	12:40	16EXFL-F9-02		Grab	N	S	X
8/2/2007	12:30	16EXPR-F9-03		Grab	N	S	X
8/2/2007	12:20	17EXFL-D6-02		Grab	N	S	X
8/2/2007	12:15	17EXFL-G3-04		Grab	N	S	X
8/2/2007	12:05	17EXFL-D2-01		Grab	N	S	X

NUMBER OF CONTAINERS SUBMITTED

REMARKS
1. Please run a straight sample analysis (without dilution) for every sample.
2. Please use 16EXFL-F9-01 for QA/QC analysis.
3. Please report only the requested metals.

Preservative
8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	8/2/07	1600						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
[signature]	08-02-07	16:05						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			8		2.0°

37/476

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

20-07-07-01

SEVERN TRENT STL

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Buffalo

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
Ph: 716-691-2600
Fax: 716-691-7991
Website: www.stl-inc.com

Unknown

Lab Disposal

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-16/17 Remedial Action	PROJECT NO.: 745172-01200	Project State: NY
STL (LAB) PROJECT MANAGER: Tony Bogolin	P.O. NUMBER: 745172-30000-00	CONTRACT/Quote NO.: 745172-30000-00
CLIENT (SITE) PM: Jacqueline Travers/Chunhua Liu	CLIENT PHONE: 617-449-1567(C. Liu)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: chunhua.liu@parsons.com	
CLIENT ADDRESS: 150 Federal Street, Boston, MA 02110		
Samplers Signature & Initials:		

Sample Information

REQUIRED ANALYSES: Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A

Page 1 of 1

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 3 business days Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

NUMBER OF CONTAINERS SUBMITTED: 8 8 8

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A
7/18/2007	10:47	16EXFL-B6-01		Grab	N	S	X
7/19/2007	15:55	16EXFL-B7-01		Grab	N	S	X
7/19/2007	15:05	16EXFL-B8-01		Grab	N	S	X
7/19/2007	15:20	16EXFL-B9-01		Grab	N	S	X
7/19/2007	14:35	16EXFL-C5-01		Grab	N	S	X
7/19/2007	14:40	16EXFL-C6-01		Grab	N	S	X
7/19/2007	14:45	16EXFL-C7-01		Grab	N	S	X
7/19/2007	15:45	16EXFL-C8-01		Grab	N	S	X
7/19/2007	16:00	16EXFL-C9-01		Grab	N	S	X

REMARKS
1. Please run a straight sample analysis (without dilution) for every sample.
2. Please use 16EXFL-B10-01 for QA/QC analysis.
3. Please report only the requested metals.

Preservative
8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	7/20/07	16:00						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
M	7.21	09:15			

304.200

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

20-07-07-03

SEVERN TRENT STL

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Buffalo

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
Ph: 716-691-2600
Fax: 716-691-7991
Website: www.stl-inc.com

Unknown

Lab Disposal

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME: SEAD-16/17 Remedial Action	PROJECT NO.: 745172-01200	NY
STL (LAB) PROJECT MANAGER: Tony Bogolin	P.O. NUMBER: 745172-30000-00	CONTRACT/Quote NO.: 745172-30000-00
CLIENT (SITE) PM: Jacqueline Travers/Chunhua Liu	CLIENT PHONE: 617-449-1567(C. Liu)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: chunhua.liu@parsons.com	
CLIENT ADDRESS: 150 Federal Street, Boston, MA 02110		
Samplers Signature & Initials:		

Final Report Type (Circle at least one): ABP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 3 business days ____ Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSES: (1) Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A; (2) Carcinogenic PAHs - Metod 8270C

NUMBER OF CONTAINERS SUBMITTED: 8 | 8 | 8

DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A	Carcinogenic PAHs - Metod 8270C	REMARKS
7/19/2007	17:40	16EXSW-D8-05		Grab	N	S	X		
7/19/2007	17:20	16EXSW-D8-02		Grab	N	S	X		1. Please run a straight sample analysis (without dilution) for every sample.
7/19/2007	17:25	16EXSW-D8-03		Grab	N	S	X		2. Please use 16EXSW-D8-01 for QA/QC analysis.
7/19/2007	17:30	16EXSW-D8-04		Grab	N	S	X		3. Please report only the requested metals and PAHs.
7/19/2007	13:05	16EXSW-E5-01		Grab	N	S	X		
7/19/2007	13:10	16EXSW-E5-02		Grab	N	S	X		
7/19/2007	13:15	16EXSW-E5-03		Grab	N	S	X		
7/19/2007	13:20	16EXSW-E5-04		Grab	N	S	X		
7/20/2007	12:20	16EXPR-I2-01		Grab	N	S	X		Preservative
									8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	7/20/07	16:00						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
[signature]	7-21	09:15	8		

3 @ 4.0°C

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

49/379

20-07-07-01

SEVERN TRENT STL

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Buffalo

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
Ph: 716-691-2600
Fax: 716-691-7991
Website: www.stl-inc.com

Unknown

Lab Disposal

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-16/17 Remedial Action	PROJECT NO.: 745172-01200	Project State: NY
STL (LAB) PROJECT MANAGER: Tony Bogolin	P.O. NUMBER: 745172-30000-00	CONTRACT/Quote NO.: 745172-30000-00
CLIENT (SITE) PM: Jacqueline Travers/Chunhua Liu	CLIENT PHONE: 617-449-1567(C. Liu)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: chunhua.liu@parsons.com	
CLIENT ADDRESS: 150 Federal Street, Boston, MA 02110		
Samplers Signature & Initials:		

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 3 business days Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSES: Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A

NUMBER OF CONTAINERS SUBMITTED: 8 | 8 | 8

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Sb, As, Cd, Cu, Pb, Hg, Tl, Zn - Method 6010B & 7471A
7/19/2007	15:10	16EXFL-B8-02		Grab	N	S	X
7/19/2007	15:15	16EXFL-B8-03		Grab	N	S	X
7/19/2007	15:38	16EXFL-B10-01		Grab	N	S	X
7/19/2007	15:40	16EXFL-B10-02		Grab	N	S	X
7/19/2007	12:05	16EXFL-J1-01		Grab	N	S	X
7/19/2007	12:10	16EXFL-K1-01		Grab	N	S	X
7/19/2007	17:45	16EXFL-E12-01		Grab	N	S	X
7/19/2007	17:55	16EXFL-E13-01		Grab	N	S	X
7/19/2007	15:35	16EXFL-A8-01		Grab	N	S	X

REMARKS

1. Please run a straight sample analysis (without dilution) for every sample.
2. Please select one project sample from this SDG for QA/QC analysis.
3. Please report only the requested metals.

Preservative
8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	7/20/07	16:00						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
[signature]	7-21	09:15	YES NO		

3.4 .PK

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

53/661

APPENDIX G

CASE NARRATIVE

SDG NARRATIVE

Job#: A07-4776

STL Project#: NY5A9493.1
Site Name: SENECA AD

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A07-4776
Sample Cooler(s) were received at the following temperature(s); 2.0 °C
Samples 17 and 18 housed under jobs A07-3430-08,MS,MSD and A07-3433-12,MS,MSD respectively.

Metals Data

The recoveries of sample 17EXPR-E2-01 Matrix Spike exhibited results below the quality control limits for Copper and Lead and a result above the quality control limits for Zinc. The recoveries of sample 17EXPR-E2-01 Matrix Spike Duplicate exhibited results below the quality control limits for Copper and Zinc and a result above the quality control limits for Lead. The sample results are more than four times greater than the spike added. The RPD between sample 17EXPR-E2-01 Matrix Spike and Matrix Spike Duplicate exceeded the quality control criteria for Copper and Lead. The LCS was acceptable.

The recoveries of sample 17EXPR-E2-01 Matrix Spike and Matrix Spike Duplicate exhibited results below the quality control limits for Antimony and Mercury (MSD only)_ Sample matrix is suspect. However, the LCS was acceptable.

SAMPLE SUMMARY

			SAMPLED		RECEIVED	
LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE	TIME	DATE	TIME
A7477604	16EXPR-A8-01	SOIL	05/03/2007	16:12	05/04/2007	08:35
A7477605	16EXPR-A8-02	SOIL	05/03/2007	16:15	05/04/2007	08:35
A7477606	16EXPR-A9-01	SOIL	05/03/2007	16:23	05/04/2007	08:35
A7477603	16EXPR-B5-01	SOIL	05/03/2007	16:06	05/04/2007	08:35
A7477618	16EXPR-G5-01	SOIL	04/04/2007	16:25	05/04/2007	08:35
A7477618MS	16EXPR-G5-01MS	SOIL	04/04/2007	16:25	05/04/2007	08:35
A7477618SD	16EXPR-G5-01MSD	SOIL	04/04/2007	16:25	05/04/2007	08:35
A7477602	16EXPR-H4-01	SOIL	05/03/2007	16:00	05/04/2007	08:35
A7477601	16EXPR-I4-01	SOIL	05/03/2007	15:45	05/04/2007	08:35
A7477612	17EXPR-A3-01	SOIL	05/03/2007	15:10	05/04/2007	08:35
A7477613	17EXPR-A3-02	SOIL	05/03/2007	15:15	05/04/2007	08:35
A7477611	17EXPR-A7-01	SOIL	05/03/2007	15:05	05/04/2007	08:35
A7477610	17EXPR-B7-02	SOIL	05/03/2007	15:00	05/04/2007	08:35
A7477614	17EXPR-C3-02	SOIL	05/03/2007	15:20	05/04/2007	08:35
A7477615	17EXPR-E2-01	SOIL	05/03/2007	15:23	05/04/2007	08:35
A7477615FD	17EXPR-E2-01FD	SOIL	05/03/2007	15:23	05/04/2007	08:35
A7477615MS	17EXPR-E2-01MS	SOIL	05/03/2007	15:23	05/04/2007	08:35
A7477615SD	17EXPR-E2-01MSD	SOIL	05/03/2007	15:23	05/04/2007	08:35
A7477616	17EXPR-E2-02	SOIL	05/03/2007	15:27	05/04/2007	08:35
A7477617	17EXPR-F6-01	SOIL	04/04/2007	15:00	05/04/2007	08:35
A7477617MS	17EXPR-F6-01MS	SOIL	04/04/2007	15:00	05/04/2007	08:35
A7477617SD	17EXPR-F6-01MSD	SOIL	04/04/2007	15:00	05/04/2007	08:35
A7477608	17EXPR-F7-02	SOIL	05/03/2007	15:34	05/04/2007	08:35
A7477609	17EXPR-F8-02	SOIL	05/03/2007	15:39	05/04/2007	08:35
A7477607	17EXPR-G5-02	SOIL	05/03/2007	15:29	05/04/2007	08:35

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

SDG NARRATIVE

Job#: A07-5307

STL Project#: NY5A9493.1
Site Name: SENECA AD

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A07-5307
Sample Cooler(s) were received at the following temperature(s); 2.0 °C
At client's request, samples collected on 4/4/06 and received on 4/6/06 were redigested and reanalyzed for Total Zinc.

LAB: Please mix sample thoroughly using a disposal bowl prior to extraction.

Metals Data

The recovery of sample 17EXPR-F6-01 Matrix Spike exhibited a result above the quality control limit for Zinc. Sample matrix was suspect. However, the LCS was acceptable.

SAMPLE SUMMARY

			SAMPLED		RECEIVED	
LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE	TIME	DATE	TIME
A7530701	17EXPR-A4-01	SOIL	04/04/2007	14:37	04/06/2007	10:30
A7530702	17EXPR-A4-02	SOIL	04/04/2007	15:20	04/06/2007	10:30
A7530703	17EXPR-A5-01	SOIL	04/04/2007	14:40	04/06/2007	10:30
A7530704	17EXPR-B7-01	SOIL	04/04/2007	14:33	04/06/2007	10:30
A7530705	17EXPR-B8-01	SOIL	04/04/2007	14:30	04/06/2007	10:30
A7530706	17EXPR-C7-01	SOIL	04/04/2007	14:10	04/06/2007	10:30
A7530707	17EXPR-C7-02	SOIL	04/04/2007	15:10	04/06/2007	10:30
A7530708	17EXPR-F6-01	SOIL	04/04/2007	15:00	04/06/2007	10:30
A7530708MS	17EXPR-F6-01	SOIL	04/04/2007	15:00	04/06/2007	10:30
A7530708SD	17EXPR-F6-01	SOIL	04/04/2007	15:00	04/06/2007	10:30
A7530709	17EXPR-F6-02	SOIL	04/04/2007	15:10	04/06/2007	10:30

SDG NARRATIVE

Job#: A07-5309

STL Project#: NY5A9493.1
Site Name: SENECA AD

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A07-5309
Sample Cooler(s) were received at the following temperature(s); 2.0 °C
At client's request, samples collected on 4/4/06 and received on 4/6/06 were redigested and reanalyzed for Total Lead and Copper (16EXPR-G5-01 and 16EXPR-G5-02 only).

LAB: Please mix sample thoroughly using a disposal bowl prior to extraction.

Metals Data

The recovery of sample 16EXPR-G5-01 Matrix Spike exhibited a result below the quality control limits for Lead. Sample matrix is suspect. However, the LCS was acceptable.

The Serial Dilution of sample 16EXPR-G5-01 exceeded the quality control limits for Copper. However, the Post Spike of this sample and element was compliant. Therefore, no corrective action was necessary.

The Post Spike and Serial Dilution of sample 16EXPR-G5-01 exceeded the quality control limits for Lead. Sample matrix is suspect, therefore, no correction action was necessary.

SAMPLE SUMMARY

			SAMPLED		RECEIVED	
LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE	TIME	DATE	TIME
A7530908	16EXPR-B9-01	SOIL	04/04/2007	15:58	04/06/2007	10:30
A7530909	16EXPR-B9-02	SOIL	04/04/2007	16:00	04/06/2007	10:30
A7530910	16EXPR-E13-01	SOIL	04/04/2007	17:15	04/06/2007	10:30
A7530903	16EXPR-E3-01	SOIL	04/04/2007	15:47	04/06/2007	10:30
A7530901	16EXPR-G2-01	SOIL	04/04/2007	16:00	04/06/2007	10:30
A7530902	16EXPR-G3-01	SOIL	04/04/2007	15:45	04/06/2007	10:30
A7530911	16EXPR-G4-01	SOIL	04/04/2007	16:20	04/06/2007	10:30
A7530912	16EXPR-G5-01	SOIL	04/04/2007	16:25	04/06/2007	10:30
A7530912MS	16EXPR-G5-01	SOIL	04/04/2007	16:25	04/06/2007	10:30
A7530912SD	16EXPR-G5-01	SOIL	04/04/2007	16:25	04/06/2007	10:30
A7530913	16EXPR-G5-02	SOIL	04/04/2007	16:30	04/06/2007	10:30
A7530904	16EXPR-H3-01	SOIL	04/04/2007	15:45	04/06/2007	10:30
A7530905	16EXPR-H3-02	SOIL	04/04/2007	15:40	04/06/2007	10:30
A7530906	16EXPR-I3-01	SOIL	04/04/2007	15:55	04/06/2007	10:30
A7530907	16EXPR-I3-02	SOIL	04/04/2007	15:50	04/06/2007	10:30

SDG NARRATIVE

Job#: A07-7480

Project#: NY5A9493.1
Site Name: SENECA AD

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A07-7480

Sample Cooler(s) were received at the following temperature(s); 12.0 °C
Samples were received at a temperature of 12.0° C. These samples were analyzed as per instructions from the client. Based on EPA data validation guidelines, all detected concentrations and detection limits should be considered estimated values.

GC/MS Volatile Data

Initial calibration standard curve A7I0000493-1 exhibited a percent Relative Standard Deviation (%RSD) of greater than 15% for compounds Bromomethane, Methylene Chloride, 1,2,3-Trichlorobenzene and 1,2-Dibromo-3-chloropropane. However, the overall mean RSD of all compounds is 6.64%.

All samples were preserved to a pH less than 2.

GC/MS Semivolatile Data

Linear regression was used to calibrate analytes that were greater than 15% RSD in the initial calibration A7I0000447-1.

SAMPLE SUMMARY

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	SAMPLED DATE	SAMPLED TIME	RECEIVED DATE	RECEIVED TIME
A7748002	16EX00001	WATER	07/03/2007		07/05/2007	10:20
A7748001	16WWT16-0703	WATER	07/03/2007	11:15	07/05/2007	10:20

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

SDG NARRATIVE

Job#: A07-7847

Project#: NY5A9493.1
Site Name: SENECA AD

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A07-7847
Sample Cooler(s) were received at the following temperature(s); 2.0 °C
All samples were received in good condition.

Metals Data

The recovery of sample 17EXPR-G7-01 Matrix Spike exhibited a result above the quality control limits for Lead. The sample result is more than four times greater than the spike added. The LCS was acceptable.

The recovery of sample 17EXPR-G7-01 Post Spike exhibited a result below the quality control limits for Lead. However, the Serial Dilution of this sample was compliant. Therefore, no corrective action was necessary.

Revision Comments

This report was revised to correct client sample IDs. Sample 17EXFL-A4-01 collected at 10:20 was incorrectly logged in as 17EXFL-A4-03. Sample 17EXPR-A4-01 collected at 10:25 was changed to 17EXPR-A4-03 at client's request.

33R/468

SAMPLE SUMMARY

			SAMPLED		RECEIVED	
LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE	TIME	DATE	TIME
A7784713	17EX00100	WATER	07/13/2007	16:00	07/14/2007	09:00
A7784701	17EXFL-A4-01	SOIL	07/13/2007	10:20	07/14/2007	09:00
A7784702	17EXFL-A5-01	SOIL	07/13/2007	10:15	07/14/2007	09:00
A7784704	17EXFL-B3-01	SOIL	07/13/2007	10:40	07/14/2007	09:00
A7784703	17EXFL-B4-01	SOIL	07/13/2007	10:30	07/14/2007	09:00
A7784705	17EXFL-B5-01	SOIL	07/13/2007	10:10	07/14/2007	09:00
A7784706	17EXFL-C4-01	SOIL	07/13/2007	10:45	07/14/2007	09:00
A7784707	17EXFL-D4-01	SOIL	07/13/2007	10:50	07/14/2007	09:00
A7784711	17EXPR-A4-03	SOIL	07/13/2007	10:25	07/14/2007	09:00
A7784708	17EXPR-C8-01	SOIL	07/13/2007	13:00	07/14/2007	09:00
A7784709	17EXPR-D2-01	SOIL	07/13/2007	10:50	07/14/2007	09:00
A7784710	17EXPR-G3-01	SOIL	07/13/2007	12:20	07/14/2007	09:00
A7784712	17EXPR-G7-01	SOIL	07/13/2007	21:55	07/14/2007	09:00
A7784712MS	17EXPR-G7-01	SOIL	07/13/2007	21:55	07/14/2007	09:00
A7784712SD	17EXPR-G7-01	SOIL	07/13/2007	21:55	07/14/2007	09:00

SDG NARRATIVE

Job#: A07-7848

Project#: NY5A9493.1
Site Name: SENECA AD

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A07-7848

Sample Cooler(s) were received at the following temperature(s); 2.0 °C

Sample 08 was listed on the COC as 17EXFL-E2-01 but was labeled as 17EXFL-F2-01 (sampled at 1105). It was logged in by the bottle label ID. Sample time was changed to 1110 by client.

Sample 17EXFL-F2-01 (sampled at 1115) was not received.

Two bottles were received for point 17EXFL-G3-01. One was sampled at 1230 and the other at 1210. The ID for the sample collected at 1230 was changed to 17EXFL-G3-02 per the client.

Sample 17EXFL-F3-01 was not listed on the COC but was received. It was logged in using sample dates and times from the bottle label.

Metals Data

The recoveries of sample 17EXFL-D3-01 Matrix Spike Duplicate exhibited results below the quality control limits for Antimony and Zinc. Sample matrix is suspect. However, the LCS was acceptable.

SAMPLE SUMMARY

			SAMPLED		RECEIVED	
LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE	TIME	DATE	TIME
A7784803	17EXFL-C5-01	SOIL	07/13/2007	10:00	07/14/2007	09:00
A7784802	17EXFL-C7-01	SOIL	07/13/2007	07:30	07/14/2007	09:00
A7784801	17EXFL-D3-01	SOIL	07/13/2007	11:00	07/14/2007	09:00
A7784801MS	17EXFL-D3-01	SOIL	07/13/2007	11:00	07/14/2007	09:00
A7784801SD	17EXFL-D3-01	SOIL	07/13/2007	11:00	07/14/2007	09:00
A7784804	17EXFL-D7-01	SOIL	07/13/2007	10:05	07/14/2007	09:00
A7784805	17EXFL-D8-01	SOIL	07/13/2007	07:35	07/14/2007	09:00
A7784806	17EXFL-E2-01	SOIL	07/13/2007	11:05	07/14/2007	09:00
A7784807	17EXFL-E3-01	SOIL	07/13/2007	11:20	07/14/2007	09:00
A7784809	17EXFL-E7-01	SOIL	07/13/2007	09:45	07/14/2007	09:00
A7784810	17EXFL-E8-01	SOIL	07/13/2007	09:40	07/14/2007	09:00
A7784808	17EXFL-F2-01	SOIL	07/13/2007	11:10	07/14/2007	09:00
A7784819	17EXFL-F3-01	SOIL	07/13/2007	11:15	07/14/2007	09:00
A7784817	17EXFL-F4-01	SOIL	07/13/2007	12:35	07/14/2007	09:00
A7784815	17EXFL-F6-01	SOIL	07/13/2007	09:50	07/14/2007	09:00
A7784818	17EXFL-F7-01	SOIL	07/13/2007	09:55	07/14/2007	09:00
A7784816	17EXFL-F8-01	SOIL	07/13/2007	09:30	07/14/2007	09:00
A7784813	17EXFL-G3-01	SOIL	07/13/2007	12:10	07/14/2007	09:00
A7784812	17EXFL-G3-02	SOIL	07/13/2007	12:30	07/14/2007	09:00
A7784811	17EXFL-G4-01	SOIL	07/13/2007	12:40	07/14/2007	09:00
A7784814	17EXFL-G5-01	SOIL	07/13/2007	12:45	07/14/2007	09:00

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Bogolin, Tony

From: Liu, Chunhua [Chunhua.Liu@parsons.com]

Sent: Tuesday, July 17, 2007 12:00 PM

To: Bogolin, Tony

Subject: Sample ID change - A07-7848

Tony:

Would you please rename 17EXFL-G3-01 collected at 7/13 12:30 to 17EXFL-G3-02?

Thanks.

Chunhua Liu, Sc.D.
Project Engineer
Parsons
150 Federal Street
4th Floor
Boston, MA 02110
Tel: (617) 449-1567 (DID), (617) 946-9400
Fax: (617) 946-9777
http://www.parsons.com

The recoveries of sample 17EXFL-B6-01 Matrix Spike exhibited results below the quality control limits for Antimony, Cadmium and Thallium. The recoveries of sample 17EXFL-B6-01 Matrix Spike Duplicate exhibited results below the quality control limits for Antimony, Arsenic, Cadmium, Copper, and Thallium. Sample matrix is suspect. The RPD between sample 17EXFL-B6-01 Matrix Spike and Matrix Spike Duplicate exceeded the quality control criteria for Arsenic and Copper. The LCS was acceptable.

The Serial Dilution of sample 17EXFL-B6-01 exceeded the quality control limits for Cadmium. However, the Post Spike of this sample and element was compliant. Therefore, no corrective action was necessary.

The Post Spike and Serial Dilution of sample 17EXFL-B6-01 exceeded the quality control limits for Copper, Lead and Zinc. Sample matrix is suspect, therefore, no correction action was necessary.

The Serial Dilution of sample 17-DS-19 exceeded the quality control limits for Barium and Chromium. However, the Post Spike of this sample was compliant. Therefore, no corrective action was necessary.

Wet Chemistry Data

No deviations from protocol were encountered during the analytical procedures.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data package and in the electronic data deliverables has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."

Tony Bogolin

Anthony E. Bogolin
Project Manager

7/30/07

Date

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

METHODS SUMMARY

Job#: A07-8159

Project#: NY5A9493.1
Site Name: SENECA AD

PARAMETER	ANALYTICAL METHOD
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Barium - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Chromium - Total	SW8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7470
Mercury - Total	SW8463 7471
Selenium - Total	SW8463 6010
Silver - Total	SW8463 6010
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010
Toxicity Characteristic Leaching Procedure	SW8463 1311

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

The results presented in this report relate only to the analytical testing and conditions of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

The recoveries of sample 16EXFL-D8-01 Matrix Spike and Matrix Spike Duplicate exhibited results below the quality control limits for Antimony, Arsenic, Cadmium, and Thallium (MS). The recovery of sample 16EXFL-D8-01 Matrix Spike exhibited a result above the quality control limit for Mercury. Sample matrix was suspect. The RPD between sample 16EXFL-D8-01 Matrix Spike and Matrix Spike Duplicate exceeded the quality control criteria for Mercury. However, the LCS was acceptable.

The Post Spike and Serial Dilution of sample 16EXFL-D8-01 exceeded the quality control limits for Lead and Zinc. Sample matrix was suspect, therefore, no correction action was necessary.

The recovery of sample 16EXFL-D8-01 Post Spike exhibited a result above the quality control limit for Copper. However, the Serial Dilution of this sample was compliant. Therefore, no corrective action was necessary.

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Tony Boggolin

Anthony E. Boggolin
Project Manager

7/30/07

Date

METHODS SUMMARY

Job#: A07-8164

Project#: NY5A9493.1
Site Name: SENECA AD

PARAMETER	ANALYTICAL METHOD
METHOD 8270- POLYNUCLEAR AROMATIC HYDROCARBONS	SW8463 8270
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

Metals Data

The recoveries of sample 16EXFL-E8-01 Matrix Spike exhibited results below the quality control limits for Antimony, Arsenic, Cadmium, Copper, Lead, Thallium, and Zinc. The recoveries of sample 16EXFL-E8-01 Matrix Spike Duplicate exhibited results below the quality control limits for Antimony, Arsenic, Cadmium, and Thallium. Sample matrix is suspect. However, the LCS was acceptable.

The Serial Dilution of sample 16EXFL-E8-01 exceeded the quality control limits for Copper and Zinc. However, the Post Spike of this sample was compliant. Therefore, no corrective action was necessary.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data package and in the electronic data deliverables has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."

Tony Bogolin

Anthony E. Bogolin
Project Manager

7/30/07

Date

METHODS SUMMARY

Job#: A07-8166

Project#: NY5A9493.1
Site Name: SENECA AD

PARAMETER	ANALYTICAL METHOD
METHOD 8270- POLYNUCLEAR AROMATIC HYDROCARBONS	SW8463 8270
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

The results presented in this report relate only to the analytical testing and conditions of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

The recovery of sample 16EXSW-D8-02 Post Spike exhibited a result below the quality control limit for Lead. However, the Serial Dilution of this sample and element was compliant. Therefore, no corrective action was necessary.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data package and in the electronic data deliverables has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."

Tony Bogolin
Anthony E. Bogolin
Project Manager

7/30/07
Date

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METHODS SUMMARY

Job#: A07-8169

Project#: NY5A9493.1
Site Name: SENECA AD

PARAMETER	ANALYTICAL METHOD
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data package and in the electronic data deliverables has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."

Tony Bogolin

Anthony E. Bogolin
Project Manager

8/2/07

Date

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

METHODS SUMMARY

Job#: A07-8507

Project#: NY5A9493.1
Site Name: SENECA AD

PARAMETER	ANALYTICAL METHOD
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

The recovery of sample 16EXSW-D8-02 Post Spike exhibited a result above the quality control limits for Lead. However, the Serial Dilution of this sample was compliant. Therefore, no corrective action was necessary.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data package and in the electronic data deliverables has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."

Tony Bogolin

Anthony E. Bogolin
Project Manager

8/10/07

Date

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

METHODS SUMMARY

Job#: A07-8673

Project#: NY5A9493.1
Site Name: SENECA AD

PARAMETER	ANALYTICAL METHOD
Lead - Total	SW8463 6010

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data package and in the electronic data deliverables has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."

Tony Bogolin

Anthony E. Bogolin
Project Manager

8/10/07

Date

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

METHODS SUMMARY

Job#: A07-8686

Project#: NY5A9493.1
Site Name: SENECA AD

PARAMETER	ANALYTICAL METHOD
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

The Post Spike and Serial Dilution of sample 16EXFL-D8-02 exceeded the quality control limits for Lead. Sample matrix is suspect, therefore, no correction action was necessary.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data package and in the electronic data deliverables has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."

Tony Bogolin

Anthony E. Bogolin
Project Manager

8/9/07

Date

METHODS SUMMARY

Job#: A07-8747

Project#: NY5A9493.1
Site Name: SENECA AD

PARAMETER	ANALYTICAL METHOD
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

The recoveries of sample 17EXPR-B3-01 Post Spike exhibited results below the quality control limits for Lead and Zinc. However, the Serial Dilution of this sample was compliant. Therefore, no corrective action was necessary.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data package and in the electronic data deliverables has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."

Tony Bogolin

Anthony E. Bogolin
Project Manager

4/19/07

Date

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

METHODS SUMMARY

Job#: A07-3429

STL Project#: NY5A9493.1
Site Name: SENECA AD

PARAMETER	ANALYTICAL METHOD
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

The recovery of sample 17EXPR-F6-01 Post Spike exhibited a result below the quality control limits for Lead. However, the Serial Dilution of this sample and element was compliant. Therefore, no corrective action was necessary.

The Serial Dilution of sample 17EXPR-F6-01 exceeded the quality control limits for Cadmium and Zinc. However, the Post Spike of this sample and elements was compliant. Therefore, no corrective action was necessary.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data package and in the electronic data deliverables has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."

Tony Bogolin

Anthony E. Bogolin
Project Manager

4/19/07

Date

METHODS SUMMARY

Job#: A07-3430

STL Project#: NY5A9493.1
Site Name: SENECA AD

PARAMETER	ANALYTICAL METHOD
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data package and in the electronic data deliverables has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."

Tony Bogolin

Anthony E. Bogolin
Project Manager

4/26/07

Date

METHODS SUMMARY

Job#: A07-3432

STL Project#: NY5A9493.1
Site Name: SENECA AD

PARAMETER	ANALYTICAL METHOD
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

Metals Data

The recoveries of sample 16EXPR-G5-01 Matrix Spike and Matrix Spike Duplicate exhibited results below the quality control limits for Copper and Zinc. The sample results are more than four times greater than the spike added. The RPD between sample 16EXPR-G5-01 Matrix Spike and Matrix Spike Duplicate exceeded the quality control criteria for Copper. The LCS was acceptable.

The recoveries of sample 16EXPR-G5-01 Matrix Spike and Matrix Spike Duplicate exhibited results below the quality control limits for Antimony and results above the quality control limits for Lead. Sample matrix is suspect. The RPD between 16EXPR-G5-01 Matrix Spike and Matrix Spike Duplicate exceeded the quality control criteria for Antimony and Lead. The LCS was acceptable.

The recoveries of sample 15EXPR-G5-01 Post Spike exhibited results below the quality control limits for Copper and Zinc. However, the Serial Dilution of this sample was compliant. Therefore, no corrective action was necessary.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data package and in the electronic data deliverables has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."

Tony Bogolin

Anthony E. Bogolin
Project Manager

4/26/07

Date

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

METHODS SUMMARY

Job#: A07-3433

STL Project#: NY5A9493.1
Site Name: SENECA AD

PARAMETER	ANALYTICAL METHOD
METHOD 8270- POLYNUCLEAR AROMATIC HYDROCARBONS	SW8463 8270
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Copper - Total	SW8463 6010
Lead - Total	SW8463 6010
Mercury - Total	SW8463 7471
Thallium - Total	SW8463 6010
Zinc - Total	SW8463 6010

References:

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

The results presented in this report relate only to the analytical testing and conditions of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

APPENDIX H

DATA VALIDATION

APPENDIX H: DATA VALIDATION

This appendix presents an overall summary of data usability for the SEAD-16/17 soil confirmatory samples collected during the Remedial Action during April through August 2007. The data reviewed include 17 sample delivery groups (SDG) submitted by Test American Laboratories, Inc. (former Severn Trent Laboratories, Inc.), Amherst, NY (A07-3429, A07-3430, A07-3432, A07-3433, A07-4776, A07-5307, A07-5309, A07-7847, A07-7848, A07-8159, A07-8164, A07-8166, A07-8169, A07-8507, A07-8673, A07-8686, and A07-8747). **Table H-1** provides a summary of the data that have been validated. In summary, the following confirmatory samples were submitted for analysis:

- 86 confirmatory samples from SEAD-17 for analysis of antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc;
- 96 confirmatory samples from SEAD-16 for analysis of antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc; 6 samples among the 96 samples were also analyzed for carcinogenic Polycyclic Aromatic Hydrocarbons (PAHs).

Carcinogenic PAH samples collected for the remedial action were analyzed using the USEPA SW-846 Method 8270C. Metal analyses were conducted in accordance with the USEPA SW-846 Method 6010B and 7471A.

It should be noted that there are some other samples collected under the remedial action program (e.g., disposal material waste characterization samples, excavation water sample, and fill material sample). Validation for these sample results was not required for the project and therefore these sample results are not discussed in this appendix.

Data validation was performed by Parsons' chemists and completed under the guidelines set forth in the Region 2 RCRA and CERCLA Data Validation Standard Operating Procedures (SOPs) with consideration for the site-specific quality assurance requirements presented in the Final Remedial Design Work Plan and Design Report (Parsons, 2007) and the general quality assurance requirements presented in the Generic Site-Wide Sampling and Analysis Plan (SAP) for the Seneca Army Depot Activity (Parsons, 2006). The Region 2 SOPs used for data validation include Evaluation of Metals Data for the Contract Laboratory Program (CLP; SOP HW-2) and Validating Semivolatile Organic Compounds by SW-846 Method 8270 (HW-22), and CLP Organics Data Review and Preliminary Review, and Training Course for CLP Organic Data Validation. If guidance could not be found in the above SOPs, the project SAP, or the Seneca Site-Wide SAP, requirements set forth in the USEPA CLP, the New York State Department of Environmental Conservation (NYSDEC) Contract Laboratory Program Analytical Services Protocol (ASP), USEPA (2004) Contract Laboratory Program National Functional Guidelines for Inorganic Data Review; and USEPA (1999) Contract Laboratory Program National Functional Guidelines for Organic Data Review were considered during data validation. The data evaluation included performance of a completeness audit and a review of the following parameters, where applicable: holding times, sample preservations, percentage of solids, quality control (QC) results of calibration, equipment/rinsate blanks, method blanks, matrix spike/matrix spike duplicate (MS/MSD) analyses, laboratory control sample (LCS) performances, laboratory and field duplicates, surrogate recoveries, instrument performance, chromatograms and mass spectrums, internal standard recovery, reporting limits, Inductively Coupled Plasma (ICP) serial dilution, interference check sample results, and ICP linear range. In performing the data validation, the raw data were spot-checked in accordance with the Region 2 SOPs to evaluate whether there was any transcription error.

Data qualifiers were added to the data based on the data validation and Attachment G-1 presents definition of data qualifiers.

1. OVERALL SUMMARY OF DATA USABILITY

The data reviewed were determined to be usable except for the data presented in **Table H-2.** The listed results were rejected either due to the spike results or field/laboratory duplicate results. All the other results are considered usable based on the data validation. It should be noted that with the exception of 16EXSW-D8-01 and 16EXSW-D8-05, all these samples have the affected fractions reanalyzed and all the reanalysis results were deemed usable. Lead for 16EXSW-D8-05 was also reanalyzed and the reanalysis result was acceptable.

2. ACCURACY

Accuracy was evaluated by reviewing the percent recovery (%R) of the MS/MSD, LCS, surrogate spikes, and internal standards. In addition, blank sample (method blank, trip blank, and equipment rinsate blank) results were reviewed to evaluate any potential contamination.

2.1 MS/MSD Results

MS/MSD sample analyses were conducted for ten project samples (17EXPR-B3-01, 17EXPR-F6-01, 16EXPR-F3-01, 16EXPR-G5-01, 17EXPR-E2-01, 17EXPR-G7-01, 17EXFL-D3-01, 17EXFL-B6-01, 16EXFL-D8-01, and 11EXPRJ1201) for metal analysis. In addition, MS/MSD analyses were conducted for 16EXPR-G5-01 for cPAH analysis. The samples were spiked with all target compound analytes and the frequency of MS/MSD sample analyses conducted is consistent with the generic requirement for Seneca project presented in the Generic Site-Wide Sampling and Analysis Plan (Parsons, 2006). Metal spike analysis was performed for each SDG and cPAH spike analysis was performed for each SDG with cPAH samples except SDG A07-8164.

All MS/MSD recoveries were within the laboratory established QC limits or/and the project limits of 75%-125% for all samples except those summarized in **Table H-3**.

In general, MS/MSD results for cPAH analysis indicated minimal matrix impact. No action was taken based solely on the MS/MSD results for cPAH analysis. MS/MSD results for metal analysis indicated matrix impact and qualifiers were added to the affected metal results based on the spike results in accordance with the USEPA Region 2 SOPs and the details are presented in **Table H-3**.

2.2 LCS Results

LCS results for cPAH analyses were all within the laboratory established limits and the project advisory limits of 70~130%. LCS results for metal analysis were all within the project limits of 80%~120% with the exception of the LCS results for antimony in ten SDGs were above 120%, as summarized in **Table H-4**. LCS results for metal analysis were all within the project limits of 80%~120% with the exception of the LCS results for antimony in ten SDGs and arsenic, lead, thallium, and zinc results in SDG A07-8166 were above 120%, as summarized in **Table H-4**. All the associated metal detects were qualified J based on the LCS results.

2.3 Surrogate Recovery Results

Surrogate spike analyses were conducted for cPAH samples. All surrogate spike recoveries were within the laboratory established limits for cPAH analysis.

2.4 Internal Standard Results

Internal standards were added to cPAH samples to determine instrument stability. All the internal standard recoveries were within the project QC limits (i.e., the internal standard area responses were within -50% ~ +100% of the internal standard area associated with CCV and all retention times were within 30 seconds of the standard associated with CCV.)

2.5 Blank Sample Results

Method blank analysis was conducted for each SDG per analytical method. Two rinsate blanks were collected for the remedial action sampling event and analyzed for antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc. No metals were detected in either any of the rinsate blank samples.

Table H-5 presents a summary of blank noncompliance results. In summary, no cPAH contamination was detected in any cPAH method blanks. Various metals were detected in the initial calibration blanks (ICBs), continuing calibration blanks (CCBs), and preparation blanks in most SDGs, as shown in **Table H-5**. All detected concentrations were below the respective reporting limits. The sample results associated with the noncompliance blank results were qualified in accordance with the USEPA Region 2 SOPs.

3. PRECISION

Precision is determined by evaluating the RPD of the parent/field duplicate (FD) and MS/MSD or parent/laboratory duplicate. The generic precision limits for the Seneca project are presented in the

Generic Site-Wide Sampling and Analysis Plan for the Seneca Army Depot Activity (Parsons, 2006). Professional judgment will be used based on the USEPA Region SOP for metal data validation (i.e., HW-2) when sample results are close to reporting limits. As an example, for sample results within five times of reporting limits, the difference was compared with two times of the reporting limits.

As shown in **Table H-6**, a total of 13 field duplicate pairs were available for the confirmatory soil samples collected from SEAD-16/17 for metal analysis (i.e., 17EXPR-B3-01/17EXPR-B3-02, 17EXPR-F6-01/17EXPR-F6-02, 16EXPR-F3-01/16EXPR-F3-02, 16EXPR-G5-01/16EXPR-G5-02, 17EXPR-E2-01/17EXPR-E2-02, 17EXFL-G3-01/17EXFL-G3-02, 17EXFL-B7-01/17EXFL-B7-02, 16EXSW-D8-01/16EXSW-D8-05, 16EXPR-G5-03/16EXPR-G5-04, 16EXFL-F3-01/16EXFL-F3-02, 16EXFL-B10-01/16EXFL-B10-02, 16EXSW-D8-06/16EXSW-D8-07, and 16EXFL-F9-01/16EXFL-F9-02). 16EXPR-G5-01/16EXPR-G5-02 and 16EXPR-G5-03/16EXPR-G5-04 were also analyzed for cPAHs. The field duplicate collection frequency is compliant with the requirement specified in the Generic Site-Wide SAP. All field duplicate results comply with the project limits presented in the Generic Site-Wide SAP or the criteria discussed above with several exceptions as presented in **Table H-6**.

Laboratory duplicate analysis was conducted for metal analysis for all SDGs on either the samples (SDG A07-4776, A07-5307, A07-5309, A07-8673) or the spiked samples (all other SDGs plus SDG A07-8673). All laboratory duplicate results comply with the project limits presented in the Generic Site-Wide SAP or the criteria discussed above with several exceptions as presented in **Table H-7**.

All RPD results for MS/MSD samples for cPAH analysis were within the laboratory established limits and the project limit of 25%.

4. REPRESENTATIVENESS AND OTHER TECHNICAL ISSUES

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Sample Package Completeness and Deliverables
- Sample Preservation and Technical Holding Time
- Laboratory Transcription Error
- Other Quality Assurance/Quality Control (QA/QC) Results

4.1 Sample Package Completeness and Deliverables

The data packages submitted by TestAmerican Laboratories are sufficient for the data validation conducted for this project.

4.2 Sample Preservation and Technical Holding Time

All samples were preserved according to the preservation requirement presented in the Generic Site-Wide SAP and analyzed within the holding time. All coolers were received with temperature below

6°C, within the limits specified by the USEPA Region II SOP HW-24 (i.e., 10°C) and the USEPA (1999) Contract Laboratory Program National Functional Guidelines for Organic Data Review (i.e., 4±2 °C).

4.3 Laboratory Transcription Error

The raw data were spot-checked in accordance with the Region 2 SOP and no transcription error was observed.

4.4 Other QA/QC Results

4.4.1 Instrument Performance

GC/MS instrument performance check was performed for cPAH analyses. GC/MS performance met the analytical method requirements for all SDGs. Chromatography baselines were generally stable for cPAH analysis.

4.4.2 TCL Results

For cPAH target compound lists (TCLs) detected in the samples, a comparison of the sample relative ion intensities with the standard relative ion intensities for the respective reference TCL was conducted. All relative retention times (RRTs) for the identified analytes were within 0.06RRT units of the standard RRT from continuing calibration verification. The relative ion intensities generally agree within 20% of the standard relative ion intensities with several exceptions. No action was taken based on the review of the mass spectrums.

The laboratory case narratives for SDGs A07-3433 indicated that the chromatographic peaks for benzo(b)fluoranthene and benzo(k)fluoranthene could not be resolved for the samples in the SDG due to the sample matrix. The final values for the affected samples were reported as benzo(b)fluoranthene but should be considered an value for both compounds. The affected benzo(b)fluoranthene and benzo(k)fluoranthene results were qualified (nondetects were qualified UJ and detects were qualified J).

4.4.3 Reporting Limits

For cPAH analyses, the lowest calibration standard was used as the reporting limit and the reporting limits are the same as the CRQL specified by the CLP OLM04.3. For metal analysis, method detection limit was used as the basis for reporting limit and all reporting limits were below the CRQLs.

4.4.4 Calibration

Initial calibration and continuing calibration verification were conducted for cPAH and metal analyses. Calibration noncompliances were observed for SDG A07-3433 only and the detailed information is presented in **Table H-8**. The affected data were validated based on the EPA Region 2 SOPs.

CRQL standard check was conducted for metal analysis and the results were within the project limits of 70% - 130% with the exceptions listed in **Table H-9**.

4.4.5 ICP Serial Dilution

ICP serial dilution was conducted for all SDGs with metal samples. All ICP serial dilution results were within the limits specified in the USEPA Region 2 SOPs with the exceptions summarized in **Table H-10**. The results for the noncompliance metals were qualified in accordance with the Region 2 SOP HW-2.

4.4.6 ICP Linear Range

All inorganic concentrations used as sample results were within the ICP linear ranges.

4.4.7 ICP Interference Check

All ICP interference check sample results were with the QC limits (i.e., 80-120%).

4.4.8 Sample Percentage of Solids

All samples have percentage of solids greater than or at 50% except 17EXPR-A4-01 and 17EXPR-A4-02. 17EXPR-A4-01 and 17EXPR-A4-02 have percentage of solids at 41% and 46%, respectively (**Table H-11**). All results for 17EXPR-A4-01 and 17EXPR-A4-02 were qualified (detects were qualified J and nondetects were qualified UJ).

4.4.9 Multiple Analysis Results

As discussed in **Section 1**, results listed in **Table H-2** were rejected either due to the spike results or field/laboratory duplicate results. With the exception of 16EXSW-D8-01 and 16EXSW-D8-05, all these samples have the affected fractions reanalyzed; lead for 16EXSW-D8-05 was also reanalyzed. The reanalysis results were acceptable with the exception of the lead reanalysis results for samples in SDG A07-8169. Therefore, the reanalysis results were used to represent the sample concentrations for all the reanalysis samples except the samples in SDG A07-8169/A07-8673.

For samples in SDG A07-8169/A07-8673, the laboratory duplicate results for lead for both the original analysis and the reanalysis were above 120% (as shown in **Table H-7**). According to the laboratory observation, the sample used for duplicate analysis had large chunks of material mixed in with the soil. Therefore, the laboratory duplicate results caused by matrix heterogeneous might not truly represent the laboratory precision of the analysis. In fact, comparing the reanalysis results in

SDG A07-8673 and the original results in A07-8169 indicates that the laboratory precision is acceptable (i.e., all RPDs within 120%). Further, the laboratory duplicate analysis performed for 16EXSW-D8-02 spike sample had a RPD within the 35% RPD QC limit for lead. As a conservative step, the greater values from the two analyses (i.e., the original analysis and the reanalysis) were used to represent the Pb results for all samples and all results were qualified J.

16EXPR-G5-01 was analyzed for 8-metal analysis first time in SDG A07-3433; a lead reanalysis was conducted for 16EXPR-G5-01 and MS/MSD with SDG A07-4776. Further a Cu and Pb reanalysis for all samples in SDG A07-3433 (including 16EXPR-G5-01) was conducted and the Cu and Pb results presented in this SDG (SDG A07-5309) were used for all these samples.

17EXPR-F6-01 was analyzed for antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc first time in SDG A07-3430; a zinc reanalysis was conducted for 17EXPR-F6-01 and MS/MSD with SDG A07-4776. Further a Zn reanalysis for all samples in SDG A07-3430 (including 17EXPR-F6-01) was conducted and the Zn results presented in this SDG (SDG A07-5307) were used for all these samples.

Attachment 1

Definition of Data Qualifiers

DEFINITIONS OF DATA QUALIFIERS – ORGANICS

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

DEFINITIONS OF DATA QUALIFIERS – INORGANICS

J	The associated value is an estimated quantity.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
UJ	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data was unusable. (Note: Analyte may or may not be present.).

Table H-1
Summary of Validated Data
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SDG	Samp ID	Matrix	Analyses 1	Cooler Temperature
A07-3429	17EXPR-B3-01	Soil	Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn	2.3°C
	17EXPR-B3-02	Soil		
	17EXPR-B6-01	Soil		
	17EXPR-C3-01	Soil		
	17EXPR-D3-01	Soil		
	17EXPR-D7-01	Soil		
	17EXPR-D7-02	Soil		
	17EXPR-D8-01	Soil		
	17EXPR-E8-01	Soil		
	17EXPR-F2-01	Soil		
	17EXPR-F5-01	Soil		
	17EXPR-F7-01	Soil		
	17EXPR-F8-01	Soil		
	17EXPR-G2-01	Soil		
	17EXPR-G4-01	Soil		
	17EXPR-G5-01	Soil		
A07-3430	17EXPR-A4-01	Soil	Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn	2.3°C
	17EXPR-A4-02	Soil		
	17EXPR-A5-01	Soil		
	17EXPR-B7-01	Soil		
	17EXPR-B8-01	Soil		
	17EXPR-C7-01	Soil		
	17EXPR-C7-02	Soil		
	17EXPR-F6-01	Soil		
	17EXPR-F6-02	Soil		
A07-3432	16EXPR-B10-01	Soil	Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn	2.3°C
	16EXPR-B10-02	Soil		
	16EXPR-B6-01	Soil		
	16EXPR-B7-01	Soil		
	16EXPR-B8-01	Soil		
	16EXPR-C10-01	Soil		
	16EXPR-C4-01	Soil		
	16EXPR-C5-01	Soil		
	16EXPR-C6-01	Soil		
	16EXPR-D4-01	Soil		
	16EXPR-D4-02	Soil		
	16EXPR-E9-01	Soil		
	16EXPR-F3-01	Soil		
	16EXPR-F3-02	Soil		
	16EXPR-F8-01	Soil		
	16EXPR-F9-01	Soil		

Table H-1
Summary of Validated Data
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SDG	Samp ID	Matrix	Analyses 1	Cooler Temperature
A07-3433	16EXPR-B9-01	Soil	Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn	2.3°C
	16EXPR-B9-02	Soil		
	16EXPR-E13-01	Soil		
	16EXPR-E3-01	Soil		
	16EXPR-G2-01	Soil		
	16EXPR-G3-01	Soil		
	16EXPR-G4-01	Soil	cPAHs, Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn	
	16EXPR-G5-01	Soil		
	16EXPR-G5-02	Soil		
	16EXPR-H3-01	Soil	Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn	
	16EXPR-H3-02	Soil		
	16EXPR-I3-01	Soil		
	16EXPR-I3-02	Soil		
A07-4776	16EXPR-A8-01	Soil	Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn	2.0°C
	16EXPR-A8-02	Soil		
	16EXPR-A9-01	Soil		
	16EXPR-B5-01	Soil		
	16EXPR-G5-01	Soil	Pb reanalysis	
	16EXPR-H4-01	Soil	Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn	
	16EXPR-I4-01	Soil		
	17EXPR-A3-01	Soil		
	17EXPR-A3-02	Soil		
	17EXPR-A7-01	Soil		
	17EXPR-B7-02	Soil		
	17EXPR-C3-02	Soil		
	17EXPR-E2-01	Soil		
	17EXPR-E2-02	Soil		
	17EXPR-F6-01	Soil	Zn reanalysis	
	17EXPR-F7-02	Soil	Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn	
	17EXPR-F8-02	Soil		
	17EXPR-G5-02	Soil		
A07-5307 (Zn reanalysis of SDG A07-3430)	17EXPR-A4-01	Soil	Zn reanalysis	2.3°C
	17EXPR-A4-02	Soil		
	17EXPR-A5-01	Soil		
	17EXPR-B7-01	Soil		
	17EXPR-B8-01	Soil		
	17EXPR-C7-01	Soil		
	17EXPR-C7-02	Soil		
	17EXPR-F6-01	Soil		
	17EXPR-F6-02	Soil		

Table H-1
Summary of Validated Data
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SDG	Samp ID	Matrix	Analyses 1	Cooler Temperature
A07-5309 (Cu and Pb reanalysis of SDG A07-3433)	16EXPR-B9-01	Soil	Cu and Pb reanalyses	2.3°C
	16EXPR-B9-02	Soil		
	16EXPR-E13-01	Soil		
	16EXPR-E3-01	Soil		
	16EXPR-G2-01	Soil		
	16EXPR-G3-01	Soil		
	16EXPR-G4-01	Soil		
	16EXPR-G5-01	Soil		
	16EXPR-G5-02	Soil		
	16EXPR-H3-01	Soil		
	16EXPR-H3-02	Soil		
	16EXPR-I3-01	Soil		
	16EXPR-I3-02	Soil		
A07-7847	17EX00100	Water	Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn	2.0°C
	17EXFL-A4-01	Soil		
	17EXFL-A5-01	Soil		
	17EXFL-B3-01	Soil		
	17EXFL-B4-01	Soil		
	17EXFL-B5-01	Soil		
	17EXFL-C4-01	Soil		
	17EXFL-D4-01	Soil		
	17EXPR-A4-03	Soil		
	17EXPR-C8-01	Soil		
	17EXPR-D2-01	Soil		
	17EXPR-G3-01	Soil		
	17EXPR-G7-01	Soil		
A07-7848	17EXFL-C5-01	Soil	Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn	2.0°C
	17EXFL-C7-01	Soil		
	17EXFL-D3-01	Soil		
	17EXFL-D7-01	Soil		
	17EXFL-D8-01	Soil		
	17EXFL-E2-01	Soil		
	17EXFL-E3-01	Soil		
	17EXFL-E7-01	Soil		
	17EXFL-E8-01	Soil		
	17EXFL-F2-01	Soil		
	17EXFL-F3-01	Soil		
	17EXFL-F4-01	Soil		
	17EXFL-F6-01	Soil		
	17EXFL-F7-01	Soil		
	17EXFL-F8-01	Soil		
	17EXFL-G3-01	Soil		
	17EXFL-G3-02	Soil		
	17EXFL-G4-01	Soil		
	17EXFL-G5-01	Soil		

Table H-1
Summary of Validated Data
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

<table>
<tr><th>SDG</th><th>Samp ID</th><th>Matrix</th><th>Analyses 1</th><th>Cooler Temperature</th></tr>
<tr><td rowspan="15">A07-8159</td><td>17EXFL-A4-02</td><td>Soil</td><td rowspan="15">Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn</td><td rowspan="15">4.8°C</td></tr>
<tr><td>17EXFL-B6-01</td><td>Soil</td></tr>
<tr><td>17EXFL-B7-01</td><td>Soil</td></tr>
<tr><td>17EXFL-B7-02</td><td>Soil</td></tr>
<tr><td>17EXFL-C6-01</td><td>Soil</td></tr>
<tr><td>17EXFL-D5-01</td><td>Soil</td></tr>
<tr><td>17EXFL-D6-01</td><td>Soil</td></tr>
<tr><td>17EXFL-E5-01</td><td>Soil</td></tr>
<tr><td>17EXFL-E6-01</td><td>Soil</td></tr>
<tr><td>17EXFL-F5-01</td><td>Soil</td></tr>
<tr><td>17EXFL-F7-02</td><td>Soil</td></tr>
<tr><td>17EXFL-G3-03</td><td>Soil</td></tr>
<tr><td>17EXPR-C8-02</td><td>Soil</td></tr>
<tr><td>17EXPR-D2-02</td><td>Soil</td></tr>
<tr><td>EX00101</td><td>Water</td></tr>
<tr><td rowspan="17">A07-8164</td><td>16EXFL-D4-01</td><td>Soil</td><td rowspan="9">Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn</td><td rowspan="17">4.8°C</td></tr>
<tr><td>16EXFL-D5-01</td><td>Soil</td></tr>
<tr><td>16EXFL-D6-01</td><td>Soil</td></tr>
<tr><td>16EXFL-D7-01</td><td>Soil</td></tr>
<tr><td>16EXFL-D8-01</td><td>Soil</td></tr>
<tr><td>16EXFL-D9-01</td><td>Soil</td></tr>
<tr><td>16EXFL-E4-01</td><td>Soil</td></tr>
<tr><td>16EXFL-E5-01</td><td>Soil</td></tr>
<tr><td>16EXFL-E6-01</td><td>Soil</td></tr>
<tr><td>16EXFL-G5-01</td><td>Soil</td><td>cPAHs, Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn</td></tr>
<tr><td>16EXFL-H3-01</td><td>Soil</td><td rowspan="7">Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn</td></tr>
<tr><td>16EXPR-B6-02</td><td>Soil</td></tr>
<tr><td>16EXPR-C10-02</td><td>Soil</td></tr>
<tr><td>16EXPR-E4-01</td><td>Soil</td></tr>
<tr><td>16EXPR-F9-02</td><td>Soil</td></tr>
<tr><td>16EXPR-G3-02</td><td>Soil</td></tr>
<tr><td>16EXSW-D8-01</td><td>Soil</td></tr>
</table>

Table H-1
Summary of Validated Data
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SDG	Samp ID	Matrix	Analyses 1	Cooler Temperature
A07-8166	16EXFL-A8-01	Soil	Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn	4.8°C
	16EXFL-B10-01	Soil		
	16EXFL-B10-02	Soil		
	16EXFL-B8-02	Soil		
	16EXFL-B8-03	Soil		
	16EXFL-E12-01	Soil		
	16EXFL-E13-01	Soil		
	16EXFL-E8-01	Soil		
	16EXFL-E9-01	Soil		
	16EXFL-F3-01	Soil		
	16EXFL-F3-02	Soil		
	16EXFL-F4-01	Soil		
	16EXFL-G3-01	Soil		
	16EXFL-J1-01	Soil		
	16EXFL-K1-01	Soil		
	16EXPR-G5-03	Soil	cPAHs, Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn	
	16EXPR-G5-04	Soil		
A07-8169	16EXSW-D8-05	Soil	Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn	4.8°C
	16EXSW-D8-02	Soil		
	16EXSW-D8-03	Soil		
	16EXSW-D8-04	Soil		
	16EXSW-E5-01	Soil		
	16EXSW-E5-02	Soil		
	16EXSW-E5-03	Soil		
	16EXSW-E5-04	Soil		
	16EXPR-I2-01	Soil		
	16EXFL-B6-01	Soil		
	16EXFL-B7-01	Soil		
	16EXFL-B8-01	Soil		
	16EXFL-B9-01	Soil		
	16EXFL-C5-01	Soil		
	16EXFL-C6-01	Soil		
	16EXFL-C7-01	Soil		
	16EXFL-C8-01	Soil		
	16EXFL-C9-01	Soil		
A07-8507	16EXFL-D8-02	Soil	Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn	4°C
	16EXSW-D8-06	Soil		
	16EXSW-D8-07	Soil		
	17EXFL-E5-02	Soil		
	17EXFL-F2-02	Soil		

Table H-1
Summary of Validated Data
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SDG	Samp ID	Matrix	Analyses 1	Cooler Temperature
A07-8673 (Pb reanalysis for samples in SDG A07-8169)	16EXSW-D8-05	Soil	Pb reanalysis	4.8°C
	16EXSW-D8-02	Soil		
	16EXSW-D8-03	Soil		
	16EXSW-D8-04	Soil		
	16EXSW-E5-01	Soil		
	16EXSW-E5-02	Soil		
	16EXSW-E5-03	Soil		
	16EXSW-E5-04	Soil		
	16EXPR-I2-01	Soil		
	16EXFL-B6-01	Soil		
	16EXFL-B7-01	Soil		
	16EXFL-B8-01	Soil		
	16EXFL-B9-01	Soil		
	16EXFL-C5-01	Soil		
	16EXFL-C6-01	Soil		
	16EXFL-C7-01	Soil		
	16EXFL-C8-01	Soil		
	16EXFL-C9-01	Soil		
A07-8686	16EXFL-C10-01	Soil	Sb, As, Cd, Cu, Pb, Hg, Tl, and Zn	2.0°C
	16EXFL-C9-02	Soil		
	16EXFL-F9-01	Soil		
	16EXFL-F9-02	Soil		
	16EXPR-C10-03	Soil		
	16EXPR-F9-03	Soil		
	17EXFL-D2-01	Soil		
	17EXFL-D6-02	Soil		
	17EXFL-G3-04	Soil		
	17EXPR-D2-03	Soil		
A07-8747 (Hg and Pb reanalysis for samples in SDG A07-8507)	16EXFL-D8-02	Soil	Hg and Pb reanalyses	4.0°C
	16EXSW-D8-06	Soil		
	16EXSW-D8-07	Soil		
	17EXFL-E5-02	Soil		
	17EXFL-F2-02	Soil		

Only validated data listed except for samples with Water matrix, which were not validated.

Table H-2
Summary of Nonusuable Analytical Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Sample	SDG	Nonusuable Fraction	Reason
17EXPR-A4-01 17EXPR-A4-02 17EXPR-A5-01 17EXPR-B7-01 17EXPR-B8-01 17EXPR-C7-01 17EXPR-C7-02 17EXPR-F6-01 17EXPR-F6-02	A07-3430	Zn	spike recoveries >200% or <0%
16EXPR-B9-01 16EXPR-B9-02 16EXPR-E13-01 16EXPR-E3-01 16EXPR-G2-01 16EXPR-G3-01 16EXPR-G4-01 16EXPR-G5-01 16EXPR-G5-02 16EXPR-H3-01 16EXPR-H3-02 16EXPR-I3-01 16EXPR-I3-02	A07-3433	Pb detects (Pb detected in all samples in the SDG)	spike recoveries >200%
16EXPR-G5-01 16EXPR-G5-02	A07-3433	Cu	field duplicate results %RPD >120%
16EXSW-D8-01	A07-8164	Cd, Cu, Pb, Hg, and Zn	field duplicate results %RPDs >120%
16EXSW-D8-05	A07-8169	Cd, Cu, Pb, Hg, and Zn	field duplicate results %RPDs >120%

Table H-2
Summary of Nonusuable Analytical Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Sample	SDG	Nonusuable Fraction	Reason
16EXSW-D8-05 16EXSW-D8-02 16EXSW-D8-03 16EXSW-D8-04 16EXSW-E5-01 16EXSW-E5-02 16EXSW-E5-03 16EXSW-E5-04 16EXPR-I2-01 16EXFL-B6-01 16EXFL-B7-01 16EXFL-B8-01 16EXFL-B9-01 16EXFL-C5-01 16EXFL-C6-01 16EXFL-C7-01 16EXFL-C8-01 16EXFL-C9-01	A07-8169	Pb	laboratory duplicate %RPDs >120%
16EXFL-D8-02 16EXSW-D8-06 16EXSW-D8-07 17EXFL-E5-02 17EXFL-F2-02	A07-8507	Pb and Hg	spike recoveries >200%; laboratory duplicate %RPDs >120%

Table H-3
Summary of Spike Analysis Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SDG	Spiked Sample	Noncompliance	Sample Affected	Action
A07-3429	17EXPR-B3-01	Spike recoveries for Sb below 75% while sample concentrations below 4x spike levels.	All soil samples in the SDG	All Sb detects were qualified J and all nondetects were qualified UJ.
A07-3430	17EXPR-F6-01	Spike recoveries for Sb below 75%; spike recoveries for Cu below 75% or above 125%; spike recoveries for Zn below 0% or above 200% while sample concentrations below 4x spike levels.	All soil samples in the SDG	All Sb and Cu results were qualified (detects were qualified J and nondetects were qualified UJ) and all Zn results were qualified R.
A07-3432	16EXPR-F3-01	Spike recovery for Sb and Zn below 75% while sample concentrations below 4x spike levels.	All soil samples in the SDG	All Sb and Zn detects were qualified J and all nondetects were qualified UJ.
A07-3433	16EXPR-G5-01	Spike recoveries for Sb below 75% while spike recoveries for Pb above 200% while sample concentrations below 4x spike levels.	All soil samples in the SDG	All Sb detects were qualified J and all nondetects were qualified UJ. All Pb detects were qualified R.
A07-4776	17EXPR-E2-01	Spike recoveries for Sb below 75% while sample concentrations below 4x spike levels.	All soil samples in the SDG	All Sb detects were qualified J and all nondetects were qualified UJ.
	16EXPR-G5-01RE1	Spike recoveries for Zn above 125% (145% and 170%) for this sample from SDG A07-3433	NA	As the sample is from a different SDG, no action was taken based on these results for samples in this SDG.
	17EXPR-F6-01RE1	Spike recoveries for Zn either above 125% or below 0% for this sample from SDG A07-3430	NA	As the sample is from a different SDG, no action was taken based on these results for samples in this SDG.
A07-5307	17EXPR-F6-01RE2	Spike recovery for Zn above 125% for MSD while sample concentrations below 4x spike levels.	All soil samples in the SDG	Zn detects were qualified J.
A07-5309	16EXPR-G5-01RE2	Spike recovery for Pb below 75% at 58% while sample concentration below 4x spike levels.	All soil samples in the SDG	All Pb detects were qualified J and Pb nondetects were qualified UJ.
A07-7848	17EXFL-D3-01	Spike recoveries for Sb and Zn below 75% while sample concentration below 4x spike levels.	All soil samples in the SDG	All Sb and Zn detects were qualified J and all nondetects were qualified UJ.
A07-8159	17EXFL-B6-01	Spike recoveries for Sb, As, Cd, Cu, and Tl below 75% while sample concentration below 4x spike levels.	All soil samples in the SDG	All Sb, As, Cd, Cu, and Tl results were qualified (detects were qualified J and nondetects were qualified UJ).
A07-8164	16EXFL-D8-01	Spike recoveries for Sb, As, Cd, and Tl below 75% while sample concentration below 4x spike levels.	All soil samples in the SDG	All Sb, As, Cd, and Tl results were qualified (detects were qualified J and nondetects were qualified UJ)
A07-8166	16EXFL-E8-01	Spike recoveries for Sb, As, Cd, Cu, Pb, Tl, and Zn below 75% while sample concentration below 4x spike levels.	All soil samples in the SDG	All results for the affected metals were qualified (detects were qualified J and nondetects were qualified UJ).
A07-8169	16EXSW-D8-02	Spike recovery for Cu above 125% while sample concentration below 4x spike levels.	All soil samples in the SDG	All Cu detects were qualified J (Cu was detected in all samples in this SDG).
A07-8507	16EXFL-D8-02	Spike recoveries for Sb and Zn below 75%; spike recoveries for Pb and Hg above 200% while sample concentration below 4x spike levels.	All soil samples in the SDG	All Sb and Zn results were qualified (detects were qualified J and nondetects were qualified UJ) and all Pb and Hg detects were qualified R.
A07-8686	16EXFL-F9-01	Spike recoveries for Sb below 75% while sample concentration below 4x spike levels.	All soil samples in the SDG	All Sb results were qualified (detects were qualified J and nondetects were qualified UJ).

Table H-4
Summary of Laboratory Control Sample Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SDG	Noncompliance	Sample Affected	Action
A07-3429	LCS for Sb above 120% at 135%	All soil samples in the SDG	All Sb detects were qualified J.
A07-3430	LCS for Sb above 120% at 134%	All soil samples in the SDG	All Sb detects were qualified J.
A07-7847	LCS for Sb above 120% at 163%	All soil samples in the SDG	All Sb detects were qualified J.
A07-7848	LCS for Sb above 120% at 184%	All soil samples in the SDG	All Sb detects were qualified J.
A07-8159	LCS for Sb above 120% at 200%	All soil samples in the SDG	All Sb detects were qualified J.
A07-8164	LCS for Sb above 120% at 184%	All soil samples in the SDG	All Sb detects were qualified J.
A07-8166	LCS for Sb, As, Pb, Tl, and Zn above 120%.	All soil samples in the SDG	All Sb, As, Pb, Tl, and Zn detects were qualified J.
A07-8169	LCS for Sb above 120% at 166%	All soil samples in the SDG	All Sb detects were qualified J.
A07-8507	LCS for Sb above 120% at 179%	All soil samples in the SDG	All Sb detects were qualified J.
A07-8686	LCS for Sb above 120% at 192% and 171%.	All soil samples in the SDG	All Sb detects were qualified J.

Table H-5
Summary of Blank Noncompliance Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SDG	Analytes Detected	Blank	Sample Affected	Blank Concentration	Action
A07-3429, A07-3430	Zn	Preparation Blank	All samples in the affected SDGs.	<RL	All Zn results > RLs; therefore, no action was taken.
A07-3432	Cu	CCB	16EXPR-F8-01, 16EXPR-F9-01, 16EXPR-E9-01, 16EXPR-B10-01, 16EXPR-B10-02, 16EXPR-C10-01, and 16EXPR-B6-01	<RL	All Cu results > RLs; therefore, no action was taken.
	Zn	Preparation Blank	All samples in this SDG.	<RL	All Zn results > RLs; therefore, no action was taken.
A07-3433	Zn	Preparation Blank	All samples in this SDG.	<RL	All Zn results > RLs; therefore, no action was taken.
A07-4776	As	ICB	16EXPR-I4-01, 16EXPR-H4-01, 16EXPR-B5-01, 16EXPR-A8-01, 16EXPR-A8-02, 16EXPR-A9-01, 17EXPR-G5-02, 17EXPR-F7-02, and 17EXPR-F8-02	<RL	All results were above RLs for affected metals; therefore, no action was taken.
	Cd and Cu	ICB	17EXPR-B7-02, 17EXPR-A7-01, 17EXPR-A3-01, 17EXPR-A3-02, 17EXPR-C3-02, 17EXPR-E2-01, 17EXPR-E2-02, and 17EXPR-F6-01	<RL	All results were above RLs for affected metals; therefore, no action was taken.
	Sb	CCB	17EXPR-B7-02, 17EXPR-A7-01, 17EXPR-A3-01, 17EXPR-A3-02, 17EXPR-C3-02, and 17EXPR-E2-01	<RL	All results detected below RLs in the affected samples were qualified U with the respective RLs.
	Cu	CCB	17EXPR-B7-02, 17EXPR-A7-01, 17EXPR-A3-01, 17EXPR-A3-02, 17EXPR-C3-02, 17EXPR-E2-01, 17EXPR-E2-02, and 17EXPR-F6-01	<RL	All results were above RLs for Cu; therefore, no action was taken.
	Pb	CCB	17EXPR-A7-01, 17EXPR-A3-01, 17EXPR-A3-02, 17EXPR-C3-02, 17EXPR-E2-01, and 17EXPR-E2-02	<RL	All results were above RLs for Pb; therefore, no action was taken.
A07-7847	Zn	Preparation Blank	All samples in this SDG.	<RL	All Zn results > RLs; therefore, no action was taken.
A07-7848	Zn	Preparation Blank	All samples in this SDG.	<RL	All Zn results > RLs; therefore, no action was taken.
A07-8159	Cu	CCB	All samples in this SDG.	<RL	All Cu results > RLs; therefore, no action was taken.
	Cu and Zn	Preparation Blank	All samples in this SDG.	<RL	All Cu and Zn results > RLs; therefore, no action was taken.
A07-8164	Zn	Preparation Blank	All samples in this SDG.	<RL	All Zn results > RLs; therefore, no action was taken.
A07-8166	Zn	Preparation Blank	All samples in this SDG.	<RL	All Zn results > RLs; therefore, no action was taken.

Table H-5
Summary of Blank Noncompliance Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SDG	Analytes Detected	Blank	Sample Affected	Blank Concentration	Action
A07-8169	Sb	CCB	16EXFL-B6-01, 16EXFL-B7-01, 16EXFL-B8-01, 16EXFL-B9-01, and 1616EXFL-C5 01	<RL	All Sb results for the affected samples were changed to soilds RL with U
	Cu and Zn	Preparation Blank	All samples in this SDG.	<RL	All Cu and Zn results > RLs; therefore, no action was taken.
A07-8507	Zn	Preparation Blank	All samples in this SDG.	<RL	All Zn results > RLs; therefore, no action was taken.
A07-8686	Cd	ICB	16EXFL-C9-02, 16EXFL-C10-01, 16EXFL-C10-03, 16EXFL-F9-02, 16EXFL F9-03, 17EXFL-D6-02, 16EXFL-G3-04. 16EXFL-D2-01, and 16EXFL-D2-03	<RL	All Cd results > RLs; therefore, no action was taken.
	Cu	CCB	16EXFL-C9-02, 16EXFL-C10-01, 16EXFL-C10-03, 16EXFL-F9-02, 16EXFL F9-03, 17EXFL-D6-02, 16EXFL-G3-04, 16EXFL-D2-01, and 16EXFL-D2-03	<RL	All Cu results > RLs; therefore, no action was taken.

Table H-6
List of Parent/Field Duplicate Samples
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SDG	Parent Sample	Field Duplicate
A07-3429	17EXPR-B3-01	17EXPR-B3-02
A07-3430/A07-5307 (reanalysis of Zn)	17EXPR-F6-01	17EXPR-F6-02
A07-3432	16EXPR-F3-01	16EXPR-F3-02
A07-3433/A07-5309 (reanalysis for Cu and Pb)	16EXPR-G5-01 [1]	16EXPR-G5-02 [1]
A07-4776	17EXPR-E2-01	17EXPR-E2-02
A07-7848	17EXFL-G3-01	17EXFL-G3-02
A07-8159	17EXFL-B7-01	17EXFL-B7-02
A07-8164/8169/A07-8673 (reanalysis of Pb for A07-8169)	16EXSW-D8-01	16EXSW-D8-05
A07-8166	16EXPR-G5-03 [1]	16EXPR-G5-04 [1]
	16EXFL-F3-01	16EXFL-F3-02
	16EXFL-B10-01	16EXFL-B10-02
A07-8507/A07-8747 (Hg and Pb reanalysis for samples in SDG A07-8507)	16EXSW-D8-06	16EXSW-D8-07
A07-8686	16EXFL-F9-01	16EXFL-F9-02

Notes:
Unless otherwise specified, duplicate analysis was conducted for 8 metals:
antimony, arsenic, cadmium, copper, lead, mercury, thallium, and zinc.
1. cPAH and 8-metal analyses were conducted.

Table H-7
Summary of Noncompliance Results for Parent/Field Duplicate Samples
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Sample	SDG	Noncompliance TCLs/TALs	Action
		Field Duplicate	
17EXPR-F6-01/17EXPR-F6-02	A07-3430	Cd, Cu, Pb, and Zn RPDs above 35%	Associated Results qualified J for the duplicate pair
16EXPR-F3-01/16EXPR-F3-02	A07-3432	Pb RPD above 35%	Associated Results qualified J for the duplicate pair
16EXPR-G5-01/16EXPR-G5-02	A07-3433	Cd, Pb, and Zn RPDs >35%; Cu RPD>120%	Cd, Pb, and Zn results for the duplicate pair were qualified J and Cu results for the duplicate pair were qualified R.
17EXPR-F6-01RE/17EXPR-F6-02RE	A07-5307	Zn RPD>35% at 39%	All results for the referenced analytes were qualified J for the duplicate samples.
16EXPR-G5-01RE/16EXPR-G5-02RE	A07-5309	Pb RPD>35% at 39%	Associated Results qualified J for the duplicate pair
17EXFL-G3-01/17EXFL-G3-02	A07-7848	Cd, Cu, Pb, and Zn RPDs above 35% but below 120%	Associated Results qualified J for the duplicate pair
17EXFL-B7-01/17EXFL-B7-02	A07-8159	Cd absolute difference above 2RL but below 4RL while both results <5RL.	Associated Results qualified J for the duplicate pair
16EXSW-D8-01/16EXSW-D8-05	A07-8164/A07-8169	Sb and As results <5RLs and absolute difference >2RLs but below 4RLs; Cd, Cu, Pb, Hg, and Zn RPDs>120% while both results >5RLs or absolute difference>4RLs while one or both concentrations<5RLs.	Sb and As results were qualified J and Cd, Cu, Pb, Hg, and Zn results for the duplicate pair were rejected.
16EXFL-F3-01/16EXFL-F3-02	A07-8166	One Hg result <5RL and absolute difference >2RLs but below 4RLs.	Hg results were qualified J for the duplicate pair.
16EXSW-D8-06/16EXSW-D8-07	A07-8507	Pb RPD above 35% but below 120%.	Pb results were qualified J for the duplicate pair.

Table H-7
Summary of Noncompliance Results for Parent/Field Duplicate Samples
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Sample	SDG	Noncompliance TCLs/TALs	Action
		Laboratory Duplicate	
17EXPR-B3-01spike	A07-3429	Pb and Zn RPDs above 35% (63% and 39%, respectively)	All Pb and Zn results >RLs; therefore all Pb and Zn results in the SDG were qualified J.
17EXPR-F6-01spike	A07-3430	Pb and Zn RPDs above 35% (82% and 68%, respectively)	All Pb and Zn results >RLs; therefore all Pb and Zn results in the SDG were qualified J.
16EXPR-G5-01spike	A07-3433	Cu and Pb PRDs above 35% (41% and 88%, respectively)	All Cu and Pb results > RLs; therefore, all Cu and Pb results in the SDG were qualified J.
17EXPR-E2-01	A07-4776	Cd RPD above 35% (42%)	All Cd detects>RLs in this SDG were qualified J.
17EXFL-B6-01spike	A07-8159	Pb and Zn RPDs above 35% but below 120%.	All Pb and Zn detects>RLs in this SDG were qualified J.
16EXSW-D8-02spike	A07-8169	Pb RPD above 120%.	All Pb results > RLs in this SDG and therefore all Pb results were qualified R.
16EXFL-D8-02spike	A07-8507	Pb and Hg RPDs above 120%.	All Pb and Hg results in this SDG were qualified R.
16EXSW-D8-02	A07-8673	Pb RPD above 120% (134%).	The sample used for duplicate analysis have large chunks of material mixed in with the soil. Therefore, the laboratory duplicate results caused by matrix heterogeneous may not truly represent the laboratory precision of the analysis. In fact, comparing the reanalysis results in this SDG and original results in A07-8169 indicates that the laboratory precision is acceptable (i.e., all RPDs within 120%). Further, the lab duplicate analysis performed for 16EXSW-D8-02 spike sample had a RPD within the 35% RPD QC limit for lead. As a conservative step, the greater values from these two analyses were used to represent the Pb results for all samples and all results were qualified J.
16EXFL-D8-02spike	A07-8742	Hg RPD above 35% (37%).	All Hg results in this SDG were >RLs and therefore all Hg results were qualified J.

Table H-8
Summary of Calibration Noncompliance Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SDG	Noncompliance	Calibration	Sample Affected	Action
A07-3433	%RSDs of 2,4,6-tribromophenol (surrogate) above 15% limit (17.5%)	IC 03/07/07 09:43-11:44	All soil samples in the SDG	No action as all surrogate recoveries were within the limits.

IC = Initial Calibration
%RSD - Percent Relative Standard Deviation

Table H-9
Summary of CRQL Standard Check Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SDG	Noncompliance	Sample Affected	Action
A07-4776	Hg CRQL standard recoveries below limit of 70% (60%).	All samples in this SDG	Hg results for 16EXPR-H4-01, 16EXPR-I4-01, 17EXPR-B7-02, 17EXPR-C3-02, 17EXPR-E2-01, 17EXPR-E2-02, 17EXPR-F7-02, 17EXPR-F8-02, and 17EXPR-G5-02 were below 2CRQL and therefore were qualified J.
A07-7848	Zn CRQL standard recoveries above limits of 70-130% (140%)	All samples in this SDG	As all Zn results were above 2CRQL; no action was taken.
A07-8169	Hg CRQL standard recovery below limits of 70-130% (60%)	All samples in this SDG	Hg results for 16EXFL-B6-01, 16EXFL-C7-01, 16EXFL-C9-01, and 16EXSW-D8-03 were below 2CRQL and therefore were qualified J.
A07-8507	Hg CRQL standard recovery above limits of 70-130% (135%)	All samples in this SDG	All Hg results > 2CRQL; therefore, no action was taken.

Table H-10
Summary of ICP Serial Dilution Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SDG	Serial Dilution Sample	Noncompliance	Sample Affected	Action
A07-3430	16EXPR-F3-01	%Ds for Cd and Zn above 10% with original concentrations > 50xMDLs	All soil samples in the SDG	All Cd and Zn results were qualified J as all Cd and Zn raw results > aqueous MDLs.
A07-4776	17EXPR-E2-01	%Ds for Sb above 10% with original concentrations > 50xMDLs	All soil samples in the SDG	All Sb results were qualified J as all Sb raw results > aqueous MDLs.
A07-5309	16EXPR-G5-01RE	%D for Pb above 10% with original concentrations > 50xMDLs	All soil samples in the SDG	All Pb results were qualified J as all Pb raw results > aqueous MDLs.
A07-7848	17EXFL-D3-01	%D for Zn above 10% with original concentrations > 50xMDLs	All soil samples in the SDG	All Zn results were qualified J as all Zn raw results > aqueous MDLs.
A07-8159	17EXFL-B6-01	%Ds for Cd, Cu, Pb, and Zn above 10% with original concentrations > 50xMDLs	All soil samples in the SDG	All results were qualified J for the affected metals as all raw results > aqueous MDLs.
A07-8164	16EXFL-D8-01	%Ds for Pb and Zn above 10% with original concentrations > 50xMDL	All soil samples in the SDG	All results were qualified J for the affected metals as all raw results > aqueous MDLs.
A07-8166	16EXFL-E8-01	%Ds for Cu and Zn above 10% with original concentrations > 50xMDL	All soil samples in the SDG	All results were qualified J for the affected metals as all raw results > aqueous MDLs.
A07-8747	16EXFL-D8-02	%D for Pb above 10% with original concentrations > 50xMDL	All soil samples in the SDG	All Pb results were qualified J for this SDG as all Pb raw results > aqueous MDLs.

Table H-11
Summary of Percentage of Solids Noncompliance Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

SDG	Samples with Noncompliance	% Solids	Action
A07-3430	17EXPR-A4-01 17EXPR-A4-02	41% 46%	All results for the samples were qualified (detects were qualified J and nondetects were qualified UJ)

Table H-12
Split Sample Summary
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Sample Date	Time of Sample from COC	Parsons Sample ID	EPA Split Sample ID	Parsons Sample Result (mg/kg)	EPA Split Sample Result (mg/kg)	%RPD
7/18/2007	F4 collected at 10:35, E4 collected at 12:50 on 7/19	16EXFL-F4-01	16EXFL-E4-01	247	466	61%
7/18/2007	10:20	16EXFL-G5-01	16EXFL-G5-01	86.1 J	121	34%
7/18/2007	10:47	16EXFL-B6-01	16EXFL-B6-01	16.6	16.6	0%
7/18/2007	11:01	16EXPR-C10-02	16EXPR-C10-01	776 J	1360	55%
7/18/2007	10:10	16EXPR-F9-02	16EXPR-F9-02	383 J	2940	154%
7/18/2007	9:00	17EXFL-A4-02	17EXFL-A4-02	21.5	21	2%
7/18/2007	9:37	17EXFL-F7-02	17EXFL-F7-02	14.8	20.9	34%
7/18/2007	9:23	17EXFL-G3-03	17EXFL-G3-02	606	2210	114%
7/18/2007	10:00	17EXPR-C8-02	17EXFL-C8-02	239	573	82%
7/18/2007	9:15	17EXPR-D2-02	17EXPR-D2-02	1240	506	84%

%RPD = Relative Percent Difference

APPENDIX I

USEPA SPLIT DATA

Table I
USEPA's Split Sample Analytical Results for Lead
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Summary of Split Sample Analytical Results for Lead – SEAD-16	
Sample ID	USEPA Analytical Results (mg/kg)
16EXFL-E4-01	466
16EXFL-G5-01	121
16EXFL-B6-01	16.6 (15.6 - duplicate)
16EXPR-C10-02	1360
16EXPR-F9-02	2940

Summary of Split Sample Analytical Results for Lead – SEAD-17	
Sample ID	USEPA Analytical Results (mg/kg)
17EXFL-A4-02	21
17EXFL-F7-02	20.9
17EXFL-G3-03 *	2,210
17EXPR-C8-02	573
17EXPR-D2-02	2,300
* USEPA records list sample ID as 17EXFL-G3-02.	

Note: These results were transmitted by email from the USEPA by Julio Vazquez to Todd Heino (Parsons) on July 31, 2007.

APPENDIX J

SUMP WATER RESULTS

Table J-1
Sump Water Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Location	SEAD-16
Type	SUMP WATER
Sample ID	16WWT16-0703
Date	07/03/07
QC CODE	SA
STUDY ID	RA

Parameter	Units	Value (Q)
Volatile Organic Compounds		
1,1,1-Trichloroethane	UG/L	1 U
1,1,2,2-Tetrachloroethane	UG/L	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	1 U
1,1,2-Trichloroethane	UG/L	1 U
1,1-Dichloroethane	UG/L	1 U
1,1-Dichloroethene	UG/L	1 U
1,2,3-Trichlorobenzene	UG/L	1 U
1,2,4-Trichlorobenzene	UG/L	1 U
1,2-Dibromo-3-chloropropane	UG/L	1 U
1,2-Dibromoethane	UG/L	1 U
1,2-Dichlorobenzene	UG/L	1 U
1,2-Dichloroethane	UG/L	1 U
1,2-Dichloropropane	UG/L	1 U
1,3-Dichlorobenzene	UG/L	1 U
1,4-Dichlorobenzene	UG/L	1 U
Acetone	UG/L	5 U
Benzene	UG/L	1 U
Bromochloromethane	UG/L	1 U
Bromodichloromethane	UG/L	1 U
Bromoform	UG/L	1 U
Carbon disulfide	UG/L	1 U
Carbon tetrachloride	UG/L	1 U
Chlorobenzene	UG/L	1 U
Chlorodibromomethane	UG/L	1 U
Chloroethane	UG/L	1 U
Chloroform	UG/L	1 U
Cis-1,2-Dichloroethene	UG/L	1 U
Cis-1,3-Dichloropropene	UG/L	1 U
Cyclohexane	UG/L	1 U
Dichlorodifluoromethane	UG/L	1 U
Ethyl benzene	UG/L	1 U
Isopropylbenzene	UG/L	1 U
Methyl Acetate	UG/L	1 U
Methyl Tertbutyl Ether	UG/L	1 U
Methyl bromide	UG/L	1 U
Methyl butyl ketone	UG/L	5 U
Methyl chloride	UG/L	1 U
Methyl cyclohexane	UG/L	1 U
Methyl ethyl ketone	UG/L	5 U
Methyl isobutyl ketone	UG/L	5 U
Methylene chloride	UG/L	1 U
Styrene	UG/L	1 U
Tetrachloroethene	UG/L	1 U
Toluene	UG/L	1 U
Total Xylenes	UG/L	3 U
Trans-1,2-Dichloroethene	UG/L	1 U
Trans-1,3-Dichloropropene	UG/L	1 U
Trichloroethene	UG/L	1 U
Trichlorofluoromethane	UG/L	1 U
Vinyl chloride	UG/L	1 U
Semivolatile Organic Compounds		
1,1'-Biphenyl	UG/L	5 U
2,4,5-Trichlorophenol	UG/L	5 U
2,4,6-Trichlorophenol	UG/L	5 U
2,4-Dichlorophenol	UG/L	5 U
2,4-Dimethylphenol	UG/L	5 U
2,4-Dinitrophenol	UG/L	9 U
2,4-Dinitrotoluene	UG/L	5 U
2,6-Dinitrotoluene	UG/L	5 U

Table J-1
Sump Water Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Location	SEAD-16
Type	SUMP WATER
Sample ID	16WWT16-0703
Date	07/03/07
QC CODE	SA
STUDY ID	RA

Parameter	Units	Value (Q)
2-Chloronaphthalene	UG/L	5 U
2-Chlorophenol	UG/L	5 U
2-Methylnaphthalene	UG/L	5 U
2-Methylphenol	UG/L	5 U
2-Nitroaniline	UG/L	9 U
2-Nitrophenol	UG/L	5 U
3,3'-Dichlorobenzidine	UG/L	5 U
3-Nitroaniline	UG/L	9 U
4,6-Dinitro-2-methylphenol	UG/L	9 U
4-Bromophenyl phenyl ether	UG/L	5 U
4-Chloro-3-methylphenol	UG/L	5 U
4-Chloroaniline	UG/L	5 U
4-Chlorophenyl phenyl ether	UG/L	5 U
4-Methylphenol	UG/L	5 U
4-Nitroaniline	UG/L	9 U
4-Nitrophenol	UG/L	9 U
Acenaphthene	UG/L	5 U
Acenaphthylene	UG/L	5 U
Acetophenone	UG/L	5 U
Anthracene	UG/L	5 U
Atrazine	UG/L	5 U
Benzaldehyde	UG/L	5 U
Benzo(a)anthracene	UG/L	5 U
Benzo(a)pyrene	UG/L	5 U
Benzo(b)fluoranthene	UG/L	5 U
Benzo(ghi)perylene	UG/L	5 U
Benzo(k)fluoranthene	UG/L	5 U
Bis(2-Chloroethoxy)methane	UG/L	5 U
Bis(2-Chloroethyl)ether	UG/L	5 U
Bis(2-Chloroisopropyl)ether	UG/L	5 U
Bis(2-Ethylhexyl)phthalate	UG/L	5 U
Butylbenzylphthalate	UG/L	5 U
Caprolactam	UG/L	5 U
Carbazole	UG/L	5 U
Chrysene	UG/L	5 U
Di-n-butylphthalate	UG/L	5 U
Di-n-octylphthalate	UG/L	5 U
Dibenz(a,h)anthracene	UG/L	5 U
Dibenzofuran	UG/L	5 U
Diethyl phthalate	UG/L	5 U
Dimethylphthalate	UG/L	5 U
Fluoranthene	UG/L	5 U
Fluorene	UG/L	5 U
Hexachlorobenzene	UG/L	5 U
Hexachlorobutadiene	UG/L	5 U
Hexachlorocyclopentadiene	UG/L	5 U
Hexachloroethane	UG/L	5 U
Indeno(1,2,3-cd)pyrene	UG/L	5 U
Isophorone	UG/L	5 U
N-Nitrosodiphenylamine	UG/L	5 U
N-Nitrosodipropylamine	UG/L	5 U
Naphthalene	UG/L	5 U
Nitrobenzene	UG/L	5 U
Pentachlorophenol	UG/L	9 U
Phenanthrene	UG/L	5 U
Phenol	UG/L	5 U

Table J-1
Sump Water Results
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Location	SEAD-16
Type	SUMP WATER
Sample ID	16WWT16-0703
Date	07/03/07
QC CODE	SA
STUDY ID	RA

Parameter	Units	Value	(Q)
Pyrene	UG/L	5	U
Metals			
Aluminum	UG/L	**203**	
Antimony	UG/L	**118**	
Arsenic	UG/L	4.2	U
Barium	UG/L	279	
Beryllium	UG/L	0.5	B
Cadmium	UG/L	1.2	
Calcium	UG/L	111000	
Chromium	UG/L	3.9	B
Cobalt	UG/L	0.89	U
Copper	UG/L	**522**	
Iron	UG/L	**2680**	
Lead	UG/L	**1970**	
Magnesium	UG/L	22300	
Manganese	UG/L	109	
Mercury	UG/L	**19**	
Nickel	UG/L	6.1	B
Potassium	UG/L	6020	
Selenium	UG/L	6.1	U
Silver	UG/L	1	U
Sodium	UG/L	**37800**	
Thallium	UG/L	6.4	U
Vanadium	UG/L	0.78	U
Zinc	UG/L	600	

Note(s):
U = compound was not detected
B = the result is below reporting limit but above method detection limit

Shading indicates concentration above action level

1. GA = NYSDEC Class GA Groundwater Standard (TOGS 1.1.1, June 1998)
   MCL = Maximum Contaminant Level - Drinking Water Standards and Health Advisory (EPA 822-B-00-001)
   SEC = Secondary Drinking Water Regulations - Drinking Water Standards and Health Advisory (EPA 82-B-00-001)

APPENDIX K

WASTE MANIFEST

Table K-1
Waste Manifest Log
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

TRUCK INSPECTION / LOAD OUT LOG
Parsons Project No 745172
Seneca Army Depot, Romulus NY

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	SEAD Area	Total Tns	Total to date tons	Total Loads	Total to date loads	SEAD 16 Tons	SEAD 17 Tons
7/10/2007	Roiccelli	71		11293	17.82	17						17.82
7/10/2007	Roiccelli	74		11294	18.32	17						18.32
7/10/2007	Roiccelli	73		11295	16.83	17						16.83
7/10/2007	Roiccelli	71		11296	21.39	17						21.39
7/10/2007	Roiccelli	73		11297	20.55	17						20.55
7/10/2007	Roiccelli	74		11298	20.84	17						20.84
7/10/2007	Roiccelli	71		11299	20.82	17						20.82
7/10/2007	Roiccelli	73		11300	23.05	17						23.05
7/10/2007	Roiccelli	74		11301	23.49	17						23.49
7/10/2007	Roiccelli	71		11302	24.26	17						24.26
7/10/2007	Roiccelli	73		11303	23.58	17						23.58
7/10/2007	Roiccelli	74		11304	23.85	17						23.85
7/10/2007	Roiccelli	38		11305	22.63	17	277.43	277.43	13	13		22.63
7/11/2007	Roiccelli	56		11335	15.96	17						15.96
7/11/2007	Roiccelli	74		11336	21.12	17						21.12
7/11/2007	Roiccelli	38		11337	20.35	17						20.35
7/11/2007	Roiccelli	14		11338	21.59	17						21.59
7/11/2007	Roiccelli	19		11339	20.87	17						20.87
7/11/2007	Roiccelli	32		11340	19.50	17						19.50
7/11/2007	Roiccelli	71		11341	20.12	17						20.12
7/11/2007	Roiccelli	74		11342	22.07	17	161.58	439.01	8	21		22.07
7/12/2007	Roiccelli	19	414	11343	33.61	17						33.61
7/12/2007	Roiccelli	14	409	11344	36.36	17						36.36
7/12/2007	Roiccelli	32	402	11345	35.27	17						35.27
7/12/2007	Roiccelli	38		11346	23.14	17						23.14
7/12/2007	Roiccelli	73		11347	22.41	17						22.41
7/12/2007	Roiccelli	41		11348	20.29	17						20.29
7/12/2007	Roiccelli	37		11349	20.06	17						20.06
7/12/2007	Roiccelli	74		11350	21.15	17						21.15
7/12/2007	Roiccelli	71		11351	20.40	17						20.40
7/12/2007	Roiccelli	307	407	11352	32.43	17						32.43
7/12/2007	Roiccelli	132	151	11353	27.78	17						27.78
7/12/2007	Roiccelli	19	414	11354	37.25	17						37.25
7/12/2007	Roiccelli	14	409	11355	34.49	17						34.49

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Table K-1
Waste Manifest Log
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

TRUCK INSPECTION / LOAD OUT LOG
Parsons Project No 745172
Seneca Army Depot, Romulus NY

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	SEAD Area	Total Tns	Total to date tons	Total Loads	Total to date loads	SEAD 16 Tons	SEAD 17 Tons
7/12/2007	Roiccelli	32	402	11356	30.56	17						30.56
7/12/2007	Roiccelli	38		11357	22.49	17						22.49
7/12/2007	Roiccelli	73		11358	18.09	17						18.09
7/12/2007	Roiccelli	37		11359	20.94	17						20.94
7/12/2007	Roiccelli	74		11360	20.72	17						20.72
7/12/2007	Roiccelli	41		11361	19.16	17						19.16
7/12/2007	Roiccelli	71		11362	20.70	17						20.70
7/12/2007	Roiccelli	132	151	11363	37.50	17						37.50
7/12/2007	Roiccelli	307	407	11364	37.62	17						37.62
7/12/2007	Roiccelli	19	414	11365	31.83	17						31.83
7/12/2007	Roiccelli	14	409	11366	29.50	17						29.50
7/12/2007	Roiccelli	32	402	11367	27.74	17						27.74
7/12/2007	Roiccelli	38		11368	19.90	17						19.90
7/12/2007	Roiccelli	73		11369	20.26	17						20.26
7/12/2007	Roiccelli	37		11370	20.01	17						20.01
7/12/2007	Roiccelli	41		11371	17.49	17						17.49
7/12/2007	Roiccelli	71		11372	18.94	17						18.94
7/12/2007	Roiccelli	74		11373	20.14	17						20.14
7/12/2007	Roiccelli	132	151	11374	33.58	17						33.58
7/12/2007	Roiccelli	307	407	11375	33.06	17						33.06
7/12/2007	Roiccelli	19	414	11376	30.34	17						30.34
7/12/2007	Roiccelli	14	409	11377	32.78	17						32.78
7/12/2007	Roiccelli	32	402	11378	35.03	17						35.03
7/12/2007	Roiccelli	38		11379	21.32	17						21.32
7/12/2007	Roiccelli	73		11380	22.47	17						22.47
7/12/2007	Roiccelli	37		11381	21.28	17						21.28
7/12/2007	Roiccelli	41		11382	21.68	17						21.68
7/12/2007	Roiccelli	71		11383	20.82	17						20.82
7/12/2007	Roiccelli	74		11384	21.88	17						21.88
7/12/2007	Roiccelli	132	151	11385	39.39	17						39.39
7/12/2007	Roiccelli	307	402	11386	37.68	17						37.68
7/12/2007	Roiccelli	64	416	11387	35.06	17						35.06
7/12/2007	Roiccelli	19	414	11388	32.77	17						32.77
7/12/2007	Roiccelli	14	409	11389	32.84	17						32.84

Table K-1
Waste Manifest Log
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

TRUCK INSPECTION / LOAD OUT LOG
Parsons Project No 745172
Seneca Army Depot, Romulus NY

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	SEAD Area	Total Tns	Total to date tons	Total Loads	Total to date loads	SEAD 16 Tons	SEAD 17 Tons
7/12/2007	Roiccelli	32	402	11390	32.72	17						32.72
7/12/2007	Roiccelli	60	421	11391	37.73	17						37.73
7/12/2007	Roiccelli	254	4	11392	32.34	17						32.34
7/12/2007	Roiccelli	18	413	11393	32.35	17						32.35
7/12/2007	Roiccelli	38		11394	22.55	17						22.55
7/12/2007	Roiccelli	73		11395	22.91	17						22.91
7/12/2007	Roiccelli	37		11396	23.22	17						23.22
7/12/2007	Roiccelli	41		11397	20.91	17						20.91
7/12/2007	Roiccelli	71		11398	21.57	17						21.57
7/12/2007	Roiccelli	74		11399	21.78	17	1,538.29	1,977.30	57	78		21.78
7/13/2007	Roiccelli	14	409	11400	31.38	17						31.38
7/13/2007	Roiccelli	32		11401	18.96	17						18.96
7/13/2007	Roiccelli	19	414	11402	32.30	17						32.30
7/13/2007	Roiccelli	60	421	11403	32.20	17						32.20
7/13/2007	Roiccelli	307	407	11404	32.81	17						32.81
7/13/2007	Roiccelli	168		11405	28.57	17						28.57
7/13/2007	Roiccelli	30	400	11406	29.25	17						29.25
7/13/2007	Roiccelli	132	151	11407	27.93	17						27.93
7/13/2007	Roiccelli	74		11408	19.68	16					19.68	
7/13/2007	Roiccelli	14	161	11409	32.70	17						32.70
7/13/2007	Roiccelli	73		11410	20.46	16					20.46	
7/13/2007	Roiccelli	71		11411	19.58	16					19.58	
7/13/2007	Roiccelli	156	211	11412	35.60	17						35.60
7/13/2007	Roiccelli	47	422	11413	36.66	17						36.66
7/13/2007	Roiccelli	116	169	11414	30.89	16					30.89	
7/13/2007	Roiccelli	32		11415	23.46	16					23.46	
7/13/2007	Roiccelli	14		11416	21.32	16					21.32	
7/13/2007	Roiccelli	19		11417	20.94	16					20.94	
7/13/2007	Roiccelli	60	421	11418	24.04	16					24.04	
7/13/2007	Roiccelli	307	407	11419	23.17	16					23.17	
7/13/2007	Roiccelli	30	400	11420	20.49	16					20.49	
7/13/2007	Roiccelli	74		11421	21.27	16					21.27	
7/13/2007	Roiccelli	140	168	11422	35.40	16					35.40	
7/13/2007	Roiccelli	132	151	11423	35.21	16					35.21	

Table K-1
Waste Manifest Log
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

TRUCK INSPECTION / LOAD OUT LOG
Parsons Project No 745172
Seneca Army Depot, Romulus NY

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	SEAD Area	Total Tns	Total to date tons	Total Loads	Total to date loads	SEAD 16 Tons	SEAD 17 Tons
7/13/2007	Roiccelli	71		11424	21.63	16					21.63	
7/13/2007	Roiccelli	73		11425	21.62	16					21.62	
7/13/2007	Roiccelli	32		11426	20.84	16					20.84	
7/13/2007	Roiccelli	14		11427	21.56	16					21.56	
7/13/2007	Roiccelli	19		11428	22.32	16					22.32	
7/13/2007	Roiccelli	74		11429	22.31	16					22.31	
7/13/2007	Roiccelli	71		11430	22.72	16					22.72	
7/13/2007	Roiccelli	73		11431	23.49	16					23.49	
7/13/2007	Roiccelli	32		11432	17.50	16	848.26	2,825.56	33	111	17.50	
7/16/2007	Roiccelli	14		11433	17.81	16					17.81	
7/16/2007	Roiccelli	94		11434	18.27	16					18.27	
7/16/2007	Roiccelli	71		11435	19.17	16					19.17	
7/16/2007	Roiccelli	32		11436	17.80	16					17.80	
7/16/2007	Roiccelli	73		11437	20.92	16					20.92	
7/16/2007	Roiccelli	71		11438	21.92	16					21.92	
7/16/2007	Roiccelli	94		11439	23.94	16					23.94	
7/16/2007	Roiccelli	14		11440	21.86	16					21.86	
7/16/2007	Roiccelli	32		11441	18.89	16					18.89	
7/16/2007	Roiccelli	73		11442	13.95	16					13.95	
7/16/2007	Roiccelli	71		11443	21.65	16					21.65	
7/16/2007	Roiccelli	94		11444	19.42	16					19.42	
7/16/2007	Roiccelli	14		11445	19.43	16					19.43	
7/16/2007	Roiccelli	32		11446	19.33	16					19.33	
7/16/2007	Roiccelli	73		11447	20.16	16					20.16	
7/16/2007	Roiccelli	19		11448	20.63	16					20.63	
7/16/2007	Roiccelli	71		11449	20.56	16					20.56	
7/16/2007	Roiccelli	74		11450	21.39	16					21.39	
7/16/2007	Roiccelli	94		11451	21.16	16					21.16	
7/16/2007	Roiccelli	14		11452	20.48	16					20.48	
7/16/2007	Roiccelli	32		11453	22.57	16					22.57	
7/16/2007	Roiccelli	73		11454	22.73	16					22.73	
7/16/2007	Roiccelli	19		11455	22.99	16					22.99	
7/16/2007	Roiccelli	71		11456	22.17	16					22.17	
7/16/2007	Roiccelli	74		11457	23.09	16					23.09	

Table K-1
Waste Manifest Log
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

TRUCK INSPECTION / LOAD OUT LOG
Parsons Project No 745172
Seneca Army Depot, Romulus NY

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	SEAD Area	Total Tns	Total to date tons	Total Loads	Total to date loads	SEAD 16 Tons	SEAD 17 Tons
7/16/2007	Roiccelli	94		11458	22.22	16					22.22	
7/16/2007	Roiccelli	32		11459	22.66	16					22.66	
7/16/2007	Roiccelli	14		11460	22.40	16	579.57	3,405.13	28	139	22.40	
7/17/2007	Roiccelli	30	400	11461	29.14	16					29.14	
7/17/2007	Roiccelli	132	151	11462	36.51	16					36.51	
7/17/2007	Roiccelli	140	168	11463	40.34	16					40.34	
7/17/2007	Roiccelli	501	167	11464	35.84	16					35.84	
7/17/2007	Roiccelli	307	407	11465	33.66	16					33.66	
7/17/2007	Roiccelli	14		11466	23.46	16					23.46	
7/17/2007	Roiccelli	74		11467	21.85	16					21.85	
7/17/2007	Roiccelli	32		11468	21.02	16					21.02	
7/17/2007	Roiccelli	71		11469	22.39	16					22.39	
7/17/2007	Roiccelli	30	400	11470	34.95	16					34.95	
7/17/2007	Roiccelli	132	151	11471	38.40	16					38.40	
7/17/2007	Roiccelli	140	168	11472	37.48	16					37.48	
7/17/2007	Roiccelli	501	167	11473	34.12	16					34.12	
7/17/2007	Roiccelli	307	407	11474	30.41	16					30.41	
7/17/2007	Roiccelli	14		11475	19.87	16					19.87	
7/17/2007	Roiccelli	74		11476	21.10	16					21.10	
7/17/2007	Roiccelli	71		11477	20.52	16					20.52	
7/17/2007	Roiccelli	32		11478	22.51	16					22.51	
7/17/2007	Roiccelli	19		11479	15.26	16					15.26	
7/17/2007	Roiccelli	30	400	11480	33.31	16					33.31	
7/17/2007	Roiccelli	132	151	11481	37.48	16					37.48	
7/17/2007	Roiccelli	140	168	11482	41.54	16					41.54	
7/17/2007	Roiccelli	501	167	11483	37.92	16					37.92	
7/17/2007	Roiccelli	14		11484	23.03	16					23.03	
7/17/2007	Roiccelli	74		11485	22.43	16					22.43	
7/17/2007	Roiccelli	307	407	11486	37.00	16					37.00	
7/17/2007	Roiccelli	71		11487	20.78	16					20.78	
7/17/2007	Roiccelli	32		11488	23.03	16					23.03	
7/17/2007	Roiccelli	19		11489	22.67	16					22.67	
7/17/2007	Roiccelli	30	400	11490	36.57	16					36.57	
7/17/2007	Roiccelli	14	168	11491	33.93	16					33.93	

Table K-1
Waste Manifest Log
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

TRUCK INSPECTION / LOAD OUT LOG
Parsons Project No 745172
Seneca Army Depot, Romulus NY

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	SEAD Area	Total Tns	Total to date tons	Total Loads	Total to date loads	SEAD 16 Tons	SEAD 17 Tons
7/17/2007	Roiccelli	501	167	11492	33.91	16					33.91	
7/17/2007	Roiccelli	132	151	11493	30.64	16					30.64	
7/17/2007	Roiccelli	307	407	11494	25.58	16					25.58	
7/17/2007	Roiccelli	71		11495	19.21	16					19.21	
7/17/2007	Roiccelli	32		11496	16.86	16					16.86	
7/17/2007	Roiccelli	19		11497	21.69	16					21.69	
	Roiccelli		VOID	11498							-	
7/17/2007	Roiccelli	14	168	11499	33.55	16					33.55	
7/17/2007	Roiccelli	501	167	11500	32.09	16	1,122.05	4,527.18	39	178	32.09	
7/18/2007	Roiccelli	73		11501	17.38	17						17.38
7/18/2007	Roiccelli	71		11502	17.30	17						17.30
7/18/2007	Roiccelli	32		11503	19.31	17						19.31
7/18/2007	Roiccelli	14		11504	18.82	17						18.82
7/18/2007	Roiccelli	74		11505	19.37	17						19.37
7/18/2007	Roiccelli	19		11506	21.05	17						21.05
7/18/2007	Roiccelli	73		11507	21.51	17						21.51
7/18/2007	Roiccelli	71		11508	19.64	17						19.64
7/18/2007	Roiccelli	32		11509	18.40	17						18.40
7/18/2007	Roiccelli	14		11510	20.24	17						20.24
7/18/2007	Roiccelli	74		11511	19.85	17						19.85
7/18/2007	Roiccelli	94		11512	19.25	17						19.25
7/18/2007	Roiccelli	19		11513	20.28	17						20.28
7/18/2007	Roiccelli	73		11514	21.10	17						21.10
7/18/2007	Roiccelli	71		11515	20.38	17						20.38
7/18/2007	Roiccelli	32		11516	22.95	17						22.95
7/18/2007	Roiccelli	14		11517	22.58	17						22.58
7/18/2007	Roiccelli	74		11518	21.90	17						21.90
7/18/2007	Roiccelli	73		11519	22.42	17						22.42
7/18/2007	Roiccelli	71		11520	16.91	17						16.91
7/18/2007	Roiccelli	32		11521	17.81	17						17.81
7/18/2007	Roiccelli	14		11522	19.16	17	437.61	4,964.79	22	200		19.16
7/30/2007	Roiccelli	19		11523	22.51	17						22.51
7/30/2007	Roiccelli	74		11524	22.65	17						22.65
7/30/2007	Roiccelli	14		11525	23.87	17						23.87

Table K-1
Waste Manifest Log
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

TRUCK INSPECTION / LOAD OUT LOG
Parsons Project No 745172
Seneca Army Depot, Romulus NY

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	SEAD Area	Total Tns	Total to date tons	Total Loads	Total to date loads	SEAD 16 Tons	SEAD 17 Tons
7/30/2007	Roiccelli	32		11526	22.79	17						22.79
7/30/2007	Roiccelli	71		11527	22.06	17						22.06
7/30/2007	Roiccelli	97		11528	20.91	17						20.91
7/30/2007	Roiccelli	74		11529	23.06	17						23.06
7/30/2007	Roiccelli	19		11530	20.97	17						20.97
7/30/2007	Roiccelli	14		11531	19.86	17						19.86
7/30/2007	Roiccelli	32		11532	16.78	17						16.78
7/30/2007	Roiccelli	71		11533	21.11	17						21.11
7/30/2007	Roiccelli	97		11534	22.57	17						22.57
7/30/2007	Roiccelli	74		11535	19.34	17						19.34
7/30/2007	Roiccelli	19	414	11536	33.86	17						33.86
7/30/2007	Roiccelli	71		11537	21.05	17						21.05
7/30/2007	Roiccelli	97		11538	20.55	17						20.55
7/30/2007	Roiccelli	14	409	11539	34.27	17						34.27
7/30/2007	Roiccelli	32	402	11540	35.62	17						35.62
7/30/2007	Roiccelli	74		11541	24.11	17						24.11
7/30/2007	Roiccelli	19	414	11542	33.63	17						33.63
7/30/2007	Roiccelli	71		11543	21.19	17						21.19
7/30/2007	Roiccelli	14	409	11544	34.31	17						34.31
7/30/2007	Roiccelli	32	402	11545	36.23	17						36.23
7/30/2007	Roiccelli	74		11546	23.49	17						23.49
7/30/2007	Roiccelli	19	414	11547	28.41	17						28.41
7/30/2007	Roiccelli	71		11548	20.35	17	645.55	5,610.34	26	226		20.35
7/31/2007	Roiccelli	71		11590	20.40	16					20.40	
7/31/2007	Roiccelli	14	409	11591	28.21	16					28.21	
7/31/2007	Roiccelli	19	414	11592	36.30	16					36.30	
7/31/2007	Roiccelli	74		11593	19.56	16					19.56	
7/31/2007	Roiccelli	32	402	11594	34.73	16					34.73	
7/31/2007	Roiccelli	94		11595	19.68	16	158.88	5,769.22	6	232	19.68	
8/1/2007	Roiccelli	132		11596	32.14	16					32.14	
8/1/2007	Roiccelli	114		11597	30.15	16					30.15	
8/1/2007	Roiccelli	307		11598	32.27	16	94.56	5,863.78	3	235	32.27	
8/2/2007	Roiccelli	94		11720	22.87	17						22.87

APPENDIX L

BORROW SOURCE RESULTS

Table L-1
SEAD-16 Borrow Source Data
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

BORROW SOURCE LOCATION	Off-Site
MATRIX	GRAVEL
SAMPLE ID	16FM-SPX-01
SAMPLE DATE	8/10/2007
QC CODE	SA
STUDY ID	RA

Parameter	Units	Maximum Value	Acceptable Level [2]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	Value (Q)
Volatile Organic Compounds							
1,1,1-Trichloroethane	UG/KG	0	680	0	0	1	5 U
1,1,2,2-Tetrachloroethane	UG/KG	0		0	0	1	5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0		0	0	1	5 U
1,1,2-Trichloroethane	UG/KG	0		0	0	1	5 U
1,1-Dichloroethane	UG/KG	0	270	0	0	1	5 U
1,1-Dichloroethene	UG/KG	0	330	0	0	1	5 U
1,2,3-Trichlorobenzene	UG/KG	0		0	0	1	5 U
1,2,4-Trichlorobenzene	UG/KG	0		0	0	1	5 U
1,2-Dibromo-3-chloropropane	UG/KG	0		0	0	1	5 U
1,2-Dibromoethane	UG/KG	0		0	0	1	5 U
1,2-Dichlorobenzene	UG/KG	0	1100	0	0	1	5 U
1,2-Dichloroethane	UG/KG	0	20	0	0	1	5 U
1,2-Dichloropropane	UG/KG	0		0	0	1	5 U
1,3-Dichlorobenzene	UG/KG	0	2400	0	0	1	5 U
1,4-Dichlorobenzene	UG/KG	0	1800	0	0	1	5 U
Acetone	UG/KG	0	50	0	0	1	27 U
Benzene	UG/KG	0	60	0	0	1	5 U
Bromochloromethane	UG/KG	0		0	0	1	5 U
Bromodichloromethane	UG/KG	0		0	0	1	5 U
Bromoform	UG/KG	0		0	0	1	5 U
Carbon disulfide	UG/KG	0		0	0	1	5 U
Carbon tetrachloride	UG/KG	0	760	0	0	1	5 U
Chlorobenzene	UG/KG	0	1100	0	0	1	5 U
Chlorodibromomethane	UG/KG	0		0	0	1	5 U
Chloroethane	UG/KG	0		0	0	1	5 U
Chloroform	UG/KG	0	370	0	0	1	5 U
Cis-1,2-Dichloroethene	UG/KG	0	250	0	0	1	5 U
Cis-1,3-Dichloropropene	UG/KG	0		0	0	1	5 U
Cyclohexane	UG/KG	0		0	0	1	5 U
Dichlorodifluoromethane	UG/KG	0		0	0	1	5 U
Ethyl benzene	UG/KG	0	1000	0	0	1	5 U
Isopropylbenzene	UG/KG	0		0	0	1	5 U
Methyl Acetate	UG/KG	0		0	0	1	5 U
Methyl Tertbutyl Ether	UG/KG	0	930	0	0	1	5 U
Methyl bromide	UG/KG	0		0	0	1	5 U
Methyl butyl ketone	UG/KG	0		0	0	1	27 U
Methyl chloride	UG/KG	0		0	0	1	5 U
Methyl cyclohexane	UG/KG	0		0	0	1	5 U
Methyl ethyl ketone	UG/KG	0	120	0	0	1	27 U
Methyl isobutyl ketone	UG/KG	0		0	0	1	27 U
Methylene chloride	UG/KG	8	50	0	1	1	8 B
Styrene	UG/KG	0		0	0	1	5 U
Tetrachloroethene	UG/KG	0	1300	0	0	1	5 U
Toluene	UG/KG	0	700	0	0	1	5 U
Total Xylenes	UG/KG	0	260	0	0	1	16 U
Trans-1,2-Dichloroethene	UG/KG	0	190	0	0	1	5 U
Trans-1,3-Dichloropropene	UG/KG	0		0	0	1	5 U

Table L-1
SEAD-16 Borrow Source Data
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

BORROW SOURCE LOCATION	Off-Site
MATRIX	GRAVEL
SAMPLE ID	16FM-SPX-01
SAMPLE DATE	8/10/2007
QC CODE	SA
STUDY ID	RA

Parameter	Units	Maximum Value	Acceptable Level [2]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	Value (Q)
Trichloroethene	UG/KG	0	470	0	0	1	5 U
Trichlorofluoromethane	UG/KG	1		0	1	1	1 J
Vinyl chloride	UG/KG	0	20	0	0	1	11 U
Carcinogenic PAHs							
Benzo(a)anthracene	UG/KG	4		0	1	1	4 J
Benzo(a)pyrene	UG/KG	0		0	0	1	180 U
Benzo(b)fluoranthene	UG/KG	0		0	0	1	180 U
Benzo(k)fluoranthene	UG/KG	0		0	0	1	180 U
Chrysene	UG/KG	0		0	0	1	180 U
Dibenz(a,h)anthracene	UG/KG	0		0	0	1	180 U
Indeno(1,2,3-cd)pyrene	UG/KG	0		0	0	1	180 U
BAP Toxicity Equivalence [3]	MG/KG	0.0004	10	0	1	1	ND
Metals							
Antimony	MG/KG	0.69	41	0	1	1	0.69 B
Arsenic	MG/KG	2.2	21.5	0	1	1	2.2
Cadmium	MG/KG	0	60	0	0	1	0.04 U
Copper	MG/KG	9.5	10000	0	1	1	9.5
Lead	MG/KG	4.2	1250	0	1	1	4.2
Mercury	MG/KG	0	5.7	0	0	1	0.005 U
Thallium	MG/KG	0	6.7	0	0	1	0.67 U
Zinc	MG/KG	31.9	10000	0	1	1	31.9

Notes:
(1) Sample16FM-SPX-01 was not validated. Qualifiers were assigned by the laboratory.
(2) The acceptable criteria are from Table 4-3 of SEAD-16/17 Remedial Design Work Plan.
(3): Benzo(a)pyrene (BAP) Toxicity Equivalence value was calculated assuming non-detects were half value.
The toxicity equivalent factors (TEF) for the NYSDEC BTE guidelines were as follow:

cPAHs	NYSDEC TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.01
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

U = compound was not detected
J / B = the reported value is an estimated concentration
ND = non-detect

APPENDIX M

GROUNDWATER DATA

Table M-1
SEAD-16 Post-RA Groundwater Monitoring Results
SEAD-16 and SEAD-17 Construction Completion Report
Seneca Army Depot Activity

SITE LOCATION									SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16	SEAD-16
LOCATION ID									MW16-1	MW16-1	MW16-2	MW16-4	MW16-5	MW16-6	MW16-7
MATRIX									GW	GW	GW	GW	GW	GW	GW
SAMPLE ID									16LM20001	16LM20000	16LM20002	16LM20003	16LM20004	16LM20005	16LM20006
SAMPLE DATE									12/20/2007	12/20/2007	12/20/2007	12/20/2007	12/20/2007	12/20/2007	12/20/2007
QC CODE									DU	SA	SA	SA	SA	SA	SA
STUDY ID									LTM	LTM	LTM	LTM	LTM	LTM	LTM
									1	1	1	1	1	1	1
Parameter	Units	Maximum Value	Frequency of Detection	Criteria[1]	Action Level	Number of Exceedances	Number of Times Detected	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Aluminum	UG/L	168	100%			0	7	7	91.6 J	61.4 J	98.8 J	167 J	160 J	168 J	45.9 J
Antimony	UG/L	9.58	71%	GA	3	3	5	7	1.02	1 U	3.36	5.11	1.82	1 U	9.58
Arsenic	UG/L	0	0%	MCL	10	0	0	7	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U
Barium	UG/L	170	100%	GA	1000	0	7	7	59	60.4	64.6	44.5	38.9	31.8	170
Beryllium	UG/L	0	0%	MCL	4	0	0	7	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
Cadmium	UG/L	0.46	14%	GA	5	0	1	7	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.46 J
Calcium	UG/L	194000	100%			0	7	7	105000 J	107000 J	143000 J	87100 J	89000 J	80400 J	194000
Chromium	UG/L	1.1	29%	GA	50	0	2	7	0.84 U	0.84 U	0.84 U	1 J	1.1 J	0.84 U	0.84 U
Cobalt	UG/L	1.6	14%			0	1	7	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	1.6 J
Copper	UG/L	34.7	71%	GA	200	0	5	7	1.3 U	1.3 U	4.5 J	5.4 J	3.1 J	3.4 J	34.7
Iron	UG/L	1200	100%	GA	300	2	7	7	68.3	35.8 J	49.5 J	95.4	1200	418	29.2 J
Iron+Manganese	UG/L	1238	100%	GA	500	2	7	7	73	39 J	53 J	127	1238	441	660 J
Lead	UG/L	26.5	14%	GA	25	1	1	7	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	26.5
Magnesium	UG/L	32000	100%			0	4	4	15900 J	16100 J	15600 J	9440 R	9380 R	7100 R	32000 J
Manganese	UG/L	631	100%	GA	300	1	7	7	5	3.3	3.4	31.2	37.6	23.3	631
Mercury	UG/L	0.507	14%	GA	0.7	0	1	7	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.507
Nickel	UG/L	5.5	14%	GA	100	0	1	7	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	5.5 J
Potassium	UG/L	5480	100%			0	1	1	907 R	886 R	2050 R	1300 R	4420 R	2690 R	5480 J
Selenium	UG/L	0	0%	GA	10	0	0	7	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U
Silver	UG/L	0	0%	GA	50	0	0	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Sodium	UG/L	68400	100%	GA	20000	5	5	5	25300 J	24200 J	49600 J	40800 J	8410 R	6110 R	68400 J
Thallium	UG/L	0.03	14%	MCL	2	0	1	7	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 J
Vanadium	UG/L	1.2	29%			0	2	7	0.78 U	0.78 U	0.78 U	0.78 U	1.2 J	0.86 J	0.78 U
Zinc	UG/L	34.4	86%	MCL	5000	0	6	7	7.8 J	4.4 J	8.2 J	5.3 J	34.4	5.5 J	3.6 U

Notes:

1. The criteria values are NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998) and EPA Maximum Contamination Limit (MCL), Source http://www epa.gov/safewater/mcl.html#inorganic.html
2. Shading indicates a concentration above GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
R = the result was rejected

Table M-2
SEAD-17 Post-RA Groundwater Monitoring Results
SEAD-16 and SEAD-17 Construction Completion Report
Seneca Army Depot Activity

SITE LOCATION									SEAD-17	SEAD-17	SEAD-17	SEAD-17	SEAD-17
LOCATION ID									MW17-1	MW17-2	MW17-3	MW17-4	MW17-5
MATRIX									GW	GW	GW	GW	GW
SAMPLE ID									17LM20000	17LM20001	17LM20002	17LM20003	17LM20004
SAMPLE DATE									12/20/2007	12/20/2007	12/20/2007	12/20/2007	12/20/2007
QC CODE									SA	SA	SA	SA	SA
STUDY ID									LTM	LTM	LTM	LTM	LTM
									1	1	1	1	1
Parameter	Units	Maximum Value	Frequency of Detection	Criteria[1]	Action Level	Number of Exceedances	Number of Times Detected	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Aluminum	UG/L	204	100%			0	5	5	204	110 J	106 J	50.2 J	98.5 J
Antimony	UG/L	3.44	20%	GA	3	1	1	5	1 U	3.44	1 U	1 U	1 U
Arsenic	UG/L	0	0%	MCL	10	0	0	5	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U
Barium	UG/L	86.7	100%	GA	1000	0	5	5	70	58.8	39	32.5	86.7
Beryllium	UG/L	0	0%	MCL	4	0	0	5	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
Cadmium	UG/L	0	0%	GA	5	0	0	5	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U
Calcium	UG/L	110000	100%			0	5	5	98300 J	110000 J	69000 J	74900 J	97100 J
Chromium	UG/L	1	20%	GA	50	0	1	5	0.84 U	0.84 U	0.84 U	1 J	0.84 U
Cobalt	UG/L	0	0%			0	0	5	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U
Copper	UG/L	6.2	60%	GA	200	0	3	5	1.3 U	6.2 J	2.6 J	1.8 J	1.3 U
Iron	UG/L	140	100%	GA	300	0	5	5	106	140	133	45.4 J	91.7
Iron+Manganese	UG/L	170	100%	GA	500	0	5	5	119	160	170	59 J	128
Lead	UG/L	0	0%	GA	25	0	0	5	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U
Magnesium	UG/L	21800	100%			0	2	2	21800 J	11000 R	7560 R	10400 R	15800 J
Manganese	UG/L	36.7	100%	GA	300	0	5	5	13.2	20.5	36.7	13.7	36.5
Mercury	UG/L	0	0%	GA	0.7	0	0	5	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Nickel	UG/L	0	0%	GA	100	0	0	5	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Potassium	UG/L	0	0%			0	0	0	614 R	1690 R	2620 R	838 R	972 R
Selenium	UG/L	0	0%	GA	10	0	0	5	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U
Silver	UG/L	0	0%	GA	50	0	0	5	1 U	1 U	1 U	1 U	1 U
Sodium	UG/L	28500	100%	GA	20000	1	1	1	7790 R	6620 R	4550 R	28500 J	7950 R
Thallium	UG/L	0	0%	MCL	2	0	0	5	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Vanadium	UG/L	0	0%			0	0	5	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U
Zinc	UG/L	72	100%	MCL	5000	0	5	5	4.7 J	72 J	27 J	5.1 J	4.7 J

Notes

1 The criteria values are NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998) and EPA Maximum Contamination Limit (MCL). Source http://www.epa.gov/safewater/mcl.html#inorganic.html

2 Shading indicates a concentration above GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
R = the result was rejected

APPENDIX N

RESPONSE TO COMMENTS

Army's Response to Comments from the New York State Department of Environmental Conservation

Subject: Draft Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot
Romulus, New York

Comments Dated: April 7, 2008

Date of Comment Response: May 27, 2008

Army's Response to Comments

SPECIFIC COMMENTS

Comment 1: Section 4.3. Please explain in the text why only 4427 CY of soil needed to be excavated (per Table 3.2) when the July 2007 Work Plan anticipated the need to remove 4692 CY.

Response 1: This question is addressed in Section 4.3 of the subject document. The excavation volume is based on the actual tonnage of soil removed from the site. A deviation of less than 6% from the estimated volume presented in the Work Plan is not significant and does not represent a notable deviation from the plan.

Comment 2: Section 5.0. Post Construction Activities – please describe briefly the sampling frequency for groundwater and the time schedule for routine inspections instead of text references to the Post-Closure Monitoring and Maintenance Plan (PCMMP).

Response 2: The text from the PCMMP has been added to this section. The groundwater sampling event was completed in December 2007. The results of the sampling event have been added to this section. Based on the data, the groundwater at SEAD-16 and SEAD-17 has not been impacted by site activities, though some metals were detected above their respective NYSDEC Class GA groundwater standards. Therefore, the Army will continue to monitor the groundwater at SEAD-16 and SEAD-17 annually and reevaluate during the 5-year review.

Comment 3: Table 3.3, Page 7 of 8. Sample 17EXPR-F6-02 – the Lead exceeds the 1250 mg/kg site cleanup goal (see Appendix D, Table D-2, Page 8 of 11). Army should justify why this soil does not need to be excavated.

Response 3: A concentration at a location where a sample and a sample duplicate were collected is represented by the average value of the sample duplicate pair. This approach is consistent with the USEPA protocol. As an example, in its Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category (USEPA, 2004), USEPA states:

"Because the analytical data from each duplicate pair characterize the same conditions at the same time at a single sample point, EPA aggregated the data to obtain one data value for those conditions by calculating the arithmetic average of the duplicate pair."

Therefore, the concentration of soil at that location was assumed to be the average of 702 mg/kg and 1,540 mg/kg, or 1,121 mg/kg, which is below the lead cleanup goal of 1,250 mg/kg. The analytical results for a sample and its associated duplicate are evaluated as a unique data point represented by the average of the sample and the duplicate data. This detail has been added to the text in Section 3.4.1.

Comment 4: Appendix D, Table D-1, Page 2-13. Lead Concentration exceed the cleanup goal concentration of Lead in sample 16EXFL-B8-02, 16EXFL-C9-01, 16EXFL-D8-01, 16EXSW-D8-05, 16EXSW-D8-01 and 17EXFL-E5-01. The Cell for 16EXFL-B8-02 should be outlined and bold the Text as done for other samples with exceedances.

Response 4: The table has been revised so that the data for 16EXL-B8-02 are bolded and outlined. It should be noted that Appendix D has been renamed as Appendix E in the Draft Final CCR.

Army's Response to Comments from the United States Environmental Protection Agency

Subject: Draft Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot
Romulus, New York

Comments Dated: February 12, 2008

Date of Comment Response: May 27, 2008

Army's Response to Comments

GENERAL COMMENTS

Comment 1: Section 3.3, Air Monitoring, discusses dust monitoring during excavation activities. Although the Report references the project Health and Safety Plan, including the Lead Monitoring Plan, there is no indication of why lead was the only analyte selected for dust monitoring. Perimeter real time measurements were conducted; please provide information on how frequently the dust monitors were checked, if the results were logged in a field book, and where the dust monitoring data can be located in the report.

Response 1:
Section 3.3 addresses community air monitoring (CAMP) activities. CAMP generally includes air monitoring for PM_{10} and VOCs. The approved Work Plan states that although the NYSDOH CAMP also requires real-time perimeter measurements for total VOCs, such monitoring is not applicable at SEAD-16 and SEAD-17 since VOCs are not contaminants of concern at these sites.

The dust monitoring began when the excavation commenced and the air data were logged in both the field book and the field forms. The data were recorded on the field forms at a high frequency (every couple of hours) for the first days of the excavation to ensure that elevated dust levels that could pose a risk to receptors at the perimeter were not detected. Those field forms are attached and included in Appendix C. After the first two days of the most intrusive work, a review of the dust data indicated that the concentrations of PM10 were consistently below the action level. Therefore, from this point on, periodic readings from the dataram were recorded in the log book; a table of the dust readings from the log book is also presented in a new appendix (i.e., **Appendix C**).

Lead monitoring will be discussed under the health and safety discussion, Section 3.2, as it was completed to monitor workers' heath and safety. Contaminants of concern at the two sites were heavy metals in soils. Due to its high toxicity (i.e. low permissible exposure limit; or PEL) and its concentration in soils at SEAD-16 and SEAD-17, lead was the only heavy metal that could potentially cause exposure above the PEL at dust levels below the point at which dust is visible (5 mg/m^3). The monitoring specifically for lead was performed to ensure that there was no hazardous lead level at dust levels below the point at which dust is visible.

Comment 2: The table on page 3-10, Section 3.5.1, Excavation and Confirmatory Sampling, does not correlate with the Final Confirmatory Soil Sample Results in Table 3-3 (SEAD-17). Statements below the tables on page 3-6 and 3-10 say that sampling activities were completed on August 14, 2007, but none of the samples in Tables 3-2 or 3-3 have that sample date. The table on page 3-10 shows 73 final samples, but Table 3-3 includes only 64 samples.

In addition, the sample count provided in the Executive Summary for SEAD-17 (page E-2) reflects the same number of soil samples as the table on page 3-10. Revise the report to provide the correct numbers and dates of the samples.

Response 2: Perimeter confirmatory sampling began in April and May 2007 prior to the excavation, and the pre-excavation perimeter data were combined with a subset of historic RI data to delineate the horizontal limits of excavation. This information was presented in the approved Work Plan for this work. Additional perimeter confirmatory samples (seven samples at SEAD-16 and 5 samples at SEAD-17) were collected post-excavation as well. The appearance of a sample count discrepancy is due to the inclusion of nine historic RI samples in the count on Page 3-10. These nine historic RI samples were counted as perimeter samples, used to define the extent of lead contamination. The table on Page 3-10 contains a footnote explaining this information. For clarity, a footnote has been added to Table 3-3, indicating that the table only includes confirmatory samples collected as part of the remedial action effort, and historic RI samples used to define the perimeter of excavation are not presented. A note has been added to Table 3-3 indicating the numbers presented in the text include RI samples.

The statements below the tables on Page 3-6 and 3-10 have been revised to state that "All excavation activities were completed on August 14, 2007."

Comment 3: The "Phase I Sampling" subsections of 3.4.1 and 3.5.1, Excavation and Confirmatory Sampling (for SEAD-16 and SEAD-17, respectively), indicate that U.S. EPA personnel collected five split soil confirmatory samples from each site. Both U.S. EPA and Parson's analytical data (TestAmerica Laboratories, Inc.) for these 10 samples is provided in the appendices and it was documented that the sample results varied. The U.S. EPA sample results tended to yield higher concentrations than the Parson's results. In 40% of the split samples, the U.S. EPA concentrations exceeded the 1,250 milligram per kilogram (mg/kg) cleanup goal, when the Parson's laboratory results did not. Please include a discussion of the reason(s) for this apparent variability. For example, it is unclear if there were sample preparation or analysis differences between EPA's laboratory and the facility's laboratory (e.g., were the same methods used, did the laboratories prepare the sample in the same manner, etc.).

In addition, many of the site's results were qualified J. However, it is unclear if the results were qualified as estimated due to QC exceedances and if these QC exceedances resulted in low biases which may explain the reported differences, or if the results were qualified due to elevated reporting limits (i.e., results were between the MDL and RL). Further, although these areas were excavated to an additional depth and resampled to confirm the lead contaminated soil was removed, the Report does not discuss if potential heterogeneity issues exist. If sample heterogeneity is an issue it is possible that additional confirmation samples not split with U.S. EPA may have concentrations that exceeded the cleanup goals (i.e., sample heterogeneity is an issue which could cause erroneous decisions to be made at the site). These items should all be discussed in a sample precision, accuracy, representativeness, comparability, and completeness (PARCC) section. The PARCC discussion should summarize all QC results associated with the analyses including the matrix spike, post digest spike, serial dilution, laboratory duplicate, field duplicate, and laboratory control sample results for the two sets of data. Please revise the report to discuss these differences between the U.S. EPA and Parsons data.

Response 3:

Split Sample Discrepancy

The discrepancies between USEPA and the Army's results were discussed with USEPA upon receipt of the data via email on July 31, 2007. Rather than determine the analytical basis for the differences in the data, it was decided that a conservative approach would be taken and would assume that the higher of the Army's or USEPA's split sample results were the true concentrations. When the higher concentration exceeded the cleanup goal, then the Army excavated additional soil, as documented in the CCR, and collected additional confirmatory samples. The new confirmatory samples met the cleanup goals.

In order to assess the variability between the USEPA's and the Army's data, the Army will require more information (including e.g. methodology, laboratory narratives, and QA/QC data) from the USEPA.

Data Quality Issues:

A Data Validation Memorandum was included in the CCR as Appendix G. This memo includes tables that provide a detailed assessment of qualified data. It should be noted that Appendix G has been renamed as Appendix H in the Draft Final CCR.

Qualified Data

A Data Validation Memorandum was included in the CCR as Appendix G. To determine what the J qualifier is based on, the reader must refer to Appendix G, which provided additional information to help judge whether or not the J was due to relative QC exceedances. QC exceedances and the resulted qualification of the sample results were listed in detail in Tables G-2 through G-11 and summarized in the Data Validation Memorandum presented in Appendix G. It should be noted that Appendix G has been renamed as Appendix H in the Draft Final CCR.

Sample Heterogeneity

The field duplicate results indicate that although there is some heterogeneity of soils at SEAD-16/17, the heterogeneity issue does not impact the overall confirmatory sample results. Soil heterogeneity is expected in shallow granular soils where metals fragments may be present.

Field duplicate results indicate that there could have been a potential heterogeneity issue associated with SEAD-16/17 soil; however, the heterogeneity did not significantly impact the overall confirmatory sample results. A total of 13 field duplicate pairs were collected to evaluate the potential heterogeneity issue in soil at SEAD-16/17. One or more metals in eight field duplicate pairs (out of the 13 field duplicate pairs) had relative percent difference (RPD) above the Region 2 limit of 35% (as shown in Table G-7), indicating potential heterogeneity issue associated with soil.

However, most exceedances had RPDs below the Region 2 limit of 120%, which means the associated results are estimated values but are still usable data. Only Cd, Cu, Pb, Hg, and Zn in 16EXSW-D8-01/16EXSW-D8-05 pair and Cu in 16EXPR-G5-01/16EXPR-G5-02 pair had RPDs above 120%; indicating the data was significantly impacted by heterogeneity issue and therefore are not usable That caused the data to be rejected ,reanalyzed and the reanalysis was acceptable.

In summary, Laboratory duplicate and matrix spike results support the conclusion that the heterogeneity issue is minor and did not significantly impact the overall confirmatory sample results. Laboratory duplicate analysis and matrix spike analysis were conducted for each SDG of the total 13 SDGs (not including the reanalysis). Potential heterogeneity impacts to both the laboratory duplicate results and the matrix spike results were observed for several SDGs. However, only limited metals in limited SDGs had results rejected due to the duplicate or spike results (as shown in Table G-2).

QC exceedances have been taken into account during the data validation process; all data have been qualified by qualified chemists in accordance with the EPA Region 2 SOPs. As a result, all data that arc not rejected are considered usable to represent the site conditions.

It should bc noted that all QC results associated with the analyses including the matrix spike, post digest spike, serial dilution, laboratory duplicate, field duplicate, and laboratory control sample results were discussed in detail in Appendix G, which has been renamed as Appendix H in the Draft Final CCR.

Comment 4: Section 3.4.2, Water Removal, discusses standing water in the basement of Building S-311 at the time removal construction activities began. The water was sampled and the analytical results are provided as Appendix I. The results should be compared to water disposal criteria to identify any elevated concentrations in the water. Revise the text to include the final destination (i.e., local waste water treatment plant, disposal onto ground surface) of the standing water and how it got there. If documentation of the water removal is presented in a different report, provide a brief summary of activities and reference the document.

Response 4: The water in the basement of Building S-311 was pumped into the on-site water truck on July 12, 2007 for use as dust control for soils within the excavation areas at SEAD-16 that were excavated and disposed off-site. The excavated soils were sprayed to suppress dust and were not saturated with water. Erosion controls were in place to prevent any runoff. This information has been added to the text. A comparison of the water data to groundwater standards is presented in Table 1 attached to this response to comments for your reference. Visual observations of the water indicated that the water sample contained suspended solids resulting from the historic accumulation of dirt and debris in the basement of the abandoned building; analysis of water with a high level of turbidity can result in reporting falsely elevated metals concentrations. A large part of the accumulated dirt and debris was removed with the water when the basement was pumped. Building S-311's cellar was broken up and filled with hard fill (concrete) generated from demolition activities at SEDA. If any dirt and debris did remain in the basement of the building, it was buried underneath the concrete fill. This information has been added to the text.

Comment 5: It is reported in the "Phase II Sampling" subsection of 3.5.1, Excavation and Confirmatory Sampling, for SEAD-17 that five floor samples and one perimeter sample were collected. No duplicate samples were collected during the Phase II Sampling. U.S. EPA typically recommends one duplicate sample be collected for each 20 samples collected and a minimum of one duplicate sample be collected from each sampling event. Since no duplicate sample was collected from the Phase II event, address the duplicate count to ensure proper sampling protocol.

Response 5: Quality control (QC) samples for SEAD-16/17 were collected in accordance with the Sampling and Analysis Plan (SAP) prepared by Parsons (2006) for the Seneca Army Depot Activity. According to Table 12 of the SAP, field duplicate samples will be collected at a frequency of one for every 20 project samples, or per sample delivery group (SDG), whichever is more frequent, per matrix. The collection of duplicate samples for SEAD-16/17 removal action activity complied with the SAP requirement and the rationales are presented below.

The Phase II sampling at both SEAD-16 and SEAD-17 was considered to be one sampling event. A field duplicate sample was not collected specifically for SEAD-17 during the Phase II sampling, though a field duplicate pair was collected at SEAD-16 during the Phase II sampling (16EXFL-F9-01 and 16EXFL-F9-02). Prior investigations and remedial actions at SEAD-16 and SEAD-17 have consistently been conducted concurrently; the chemical impacts at these two sites are similar. Further, Phase II excavation and sampling for SEAD-16 and SEAD-17 was performed during the same time period, by the same field crew, and the samples were grouped in the same SDG. Therefore, the field duplicate sample collected from SEAD-16 during the Phase II sampling is effective to evaluate sampling precision and matrix homogeneity for SEAD-17 Phase II samples.

Nine field duplicate samples were collected for a sum of 138 final confirmatory samples for the SEAD-16/17 construction activity. The field duplicate collection frequency is approximately 6.5%, which is greater than the 5% SAP requirement.

Based on the above discussion, it is concluded that field duplicate samples were collected in accordance with the SAP and USEPA requirement (as referred in the comment) for the SEAD-16/17 removal action construction.

Comment 6: Revise the legend in Site Plan Figures for SEAD-16 and SEAD-17, C-2 and C-3, respectively, to include the Stockpile and Decon areas. They currently resemble excavation areas on other figures provided in the Report.

Response 6: The features have been revised in the legends.

Comment 7: The confirmation floor samples collected from the excavated grids are not labeled on figures C-4 and C-5. Revise figures to include sample IDs similar to perimeter and side wall samples for consistency and clarity.

Response 7: The drawings have been revised and all of the samples are labeled.

Comment 8: Sample 17EXPR-F6-02 presented in Table 3-3, SEAD-17 Final Confirmatory Soil Sample Results, and Table D-2, SEAD-17 Complete Confirmatory Soil Sample Results (located in Appendix D), is a duplicate sample for 17EXPR-F6-01. The lead concentration in the duplicate sample (17EXPR-F6-02) exceeds the 1,250 mg/kg site cleanup goal, while the actual sample concentration only yielded 702 J mg/kg. Provide an explanation as to why the potentially contaminated soil was left in place and not excavated (i.e., was the average used?). Alternatively, include a footnote in the applicable tables explaining the exceedance.

Response 8: A concentration at a location where a duplicate was collected is represented by the average value of the sample and its associated field duplicate. This approach is consistent with the USEPA protocol. As an example, in its Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category (USEPA, 2004), USEPA states:

"Because the analytical data from each duplicate pair characterize the same conditions at the same time at a single sample point, EPA aggregated the data to obtain one data value for those conditions by calculating the arithmetic average of the duplicate pair."

Therefore, the concentration of soil at that location was assumed to be the average of 702 mg/kg and 1,540 mg/kg, or 1,121 mg/kg, which is below the lead cleanup goal of 1,250 mg/kg. The analytical results for a sample and its associated duplicate are evaluated as a unique data point represented by the average of the sample and the duplicate data. This detail has been added to the text in Section 3.4.1.

SPECIFIC COMMENTS

Comment 1: Section 5.0, Post-Construction Activities, discusses the requirement of long-term groundwater monitoring at both SEAD-16 and SEAD-17. Although the Report references the Post-Closure Monitoring and Maintenance Plan (PCMMP) of the Final Work Plan, revise the text to include a short summary of the proposed plan. Discuss the frequency of the groundwater sampling events, analyses to be conducted, etc., for readers not having access to the PCMMP.

Response 1: The text from the PCMMP has been added to this section. The groundwater sampling event was completed in December 2007. The results of the sampling event have been added to this section. Based on the data, the groundwater at SEAD-16 and SEAD-17 has not been impacted by site activities, though some metals were detected above their respective NYSDEC Class GA groundwater standards. Therefore, the Army will continue to monitor the groundwater at SEAD-16 and SEAD-17 annually and reevaluate during the 5-year review.

Comment 2: Table D-1, Appendix D, Page 2 of 13. Antimony and lead concentration in sample 16EXFL-B8-02 exceed the site cleanup goals. Outline the cell and bold the text to denote the exceedance.

Response 2: The table has been revised accordingly. It should be noted that Appendix D has been renamed as Appendix E in the Draft Final CCR.

Comment 3: Appendix H, USEPA Split Sample Data. The table provided does not indicate the analyte (lead). Revise the tables to identify the analyte.

Response 3: The table has been revised accordingly. It should be noted that Appendix H has been renamed as Appendix I in the Draft Final CCR.

Table 1
Sump Water Results Compared to Groundwater Standards
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Location	SEAD-16
Type	SUMP WATER
Sample ID	16WWT16-0703
Date	07/03/07
QC CODE	SA
STUDY ID	RA

Parameter	Units	Maximum	Frequency	Groundwater Standard	Criteria[1]	Exceed Standard	Detect	Analyses	Value (Q)
Volatile Organic Compounds									
1,1,1-Trichloroethane	UG/L	0	0%	5	GA	0	0	1	1 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	GA	0	0	1	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	GA	0	0	1	1 U
1,1,2-Trichloroethane	UG/L	0	0%	1	GA	0	0	1	1 U
1,1-Dichloroethane	UG/L	0	0%	5	GA	0	0	1	1 U
1,1-Dichloroethene	UG/L	0	0%	5	GA	0	0	1	1 U
1,2,3-Trichlorobenzene	UG/L	0	0%	5	GA	0	0	1	1 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	GA	0	0	1	1 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	GA	0	0	1	1 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	GA	0	0	1	1 U
1,2-Dichlorobenzene	UG/L	0	0%	3	GA	0	0	1	1 U
1,2-Dichloroethane	UG/L	0	0%	0.6	GA	0	0	1	1 U
1,2-Dichloropropane	UG/L	0	0%	1	GA	0	0	1	1 U
1,3-Dichlorobenzene	UG/L	0	0%	3	GA	0	0	1	1 U
1,4-Dichlorobenzene	UG/L	0	0%	3	GA	0	0	1	1 U
Acetone	UG/L	0	0%			0	0	1	5 U
Benzene	UG/L	0	0%	1	GA	0	0	1	1 U
Bromochloromethane	UG/L	0	0%	5	GA	0	0	1	1 U
Bromodichloromethane	UG/L	0	0%	80	MCL	0	0	1	1 U
Bromoform	UG/L	0	0%	80	MCL	0	0	1	1 U
Carbon disulfide	UG/L	0	0%			0	0	1	1 U
Carbon tetrachloride	UG/L	0	0%	5	GA	0	0	1	1 U
Chlorobenzene	UG/L	0	0%	5	GA	0	0	1	1 U
Chlorodibromomethane	UG/L	0	0%	80	MCL	0	0	1	1 U
Chloroethane	UG/L	0	0%	5	GA	0	0	1	1 U
Chloroform	UG/L	0	0%	7	GA	0	0	1	1 U
Cis-1,2-Dichloroethene	UG/L	0	0%	5	GA	0	0	1	1 U
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	GA	0	0	1	1 U
Cyclohexane	UG/L	0	0%			0	0	1	1 U
Dichlorodifluoromethane	UG/L	0	0%	5	GA	0	0	1	1 U
Ethyl benzene	UG/L	0	0%	5	GA	0	0	1	1 U
Isopropylbenzene	UG/L	0	0%	5	GA	0	0	1	1 U
Methyl Acetate	UG/L	0	0%			0	0	1	1 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	0	1	1 U
Methyl bromide	UG/L	0	0%	5	GA	0	0	1	1 U
Methyl butyl ketone	UG/L	0	0%			0	0	1	5 U
Methyl chloride	UG/L	0	0%	5	GA	0	0	1	1 U
Methyl cyclohexane	UG/L	0	0%			0	0	1	1 U
Methyl ethyl ketone	UG/L	0	0%			0	0	1	5 U
Methyl isobutyl ketone	UG/L	0	0%			0	0	1	5 U
Methylene chloride	UG/L	0	0%	5	GA	0	0	1	1 U
Styrene	UG/L	0	0%	5	GA	0	0	1	1 U
Tetrachloroethene	UG/L	0	0%	5	GA	0	0	1	1 U
Toluene	UG/L	0	0%	5	GA	0	0	1	1 U
Total Xylenes	UG/L	0	0%	5	GA	0	0	1	3 U
Trans-1,2-Dichloroethene	UG/L	0	0%	5	GA	0	0	1	1 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	GA	0	0	1	1 U
Trichloroethene	UG/L	0	0%	5	GA	0	0	1	1 U
Trichlorofluoromethane	UG/L	0	0%	5	GA	0	0	1	1 U
Vinyl chloride	UG/L	0	0%	2	GA	0	0	1	1 U
Semivolatile Organic Compounds									
1,1'-Biphenyl	UG/L	0	0%	5	GA	0	0	1	5 U
2,4,5-Trichlorophenol	UG/L	0	0%	1	GA	0	0	1	5 U
2,4,6-Trichlorophenol	UG/L	0	0%	1	GA	0	0	1	5 U
2,4-Dichlorophenol	UG/L	0	0%	5	GA	0	0	1	5 U
2,4-Dimethylphenol	UG/L	0	0%			0	0	1	5 U
2,4-Dinitrophenol	UG/L	0	0%			0	0	1	9 U

Table 1
Sump Water Results Compared to Groundwater Standards
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Location	SEAD-16
Type	SUMP WATER
Sample ID	16WWT16-0703
Date	07/03/07
QC CODE	SA
STUDY ID	RA

Parameter	Units	Maximum	Frequency	Groundwater Standard	Criteria[1]	Exceed Standard	Detect	Analyses	Value (Q)
2,4-Dinitrotoluene	UG/L	0	0%	5	GA	0	0	1	5 U
2,6-Dinitrotoluene	UG/L	0	0%	5	GA	0	0	1	5 U
2-Chloronaphthalene	UG/L	0	0%			0	0	1	5 U
2-Chlorophenol	UG/L	0	0%			0	0	1	5 U
2-Methylnaphthalene	UG/L	0	0%			0	0	1	5 U
2-Methylphenol	UG/L	0	0%			0	0	1	5 U
2-Nitroaniline	UG/L	0	0%	5	GA	0	0	1	9 U
2-Nitrophenol	UG/L	0	0%	1	GA	0	0	1	5 U
3,3'-Dichlorobenzidine	UG/L	0	0%	5	GA	0	0	1	5 U
3-Nitroaniline	UG/L	0	0%	5	GA	0	0	1	9 U
4,6-Dinitro-2-methylphenol	UG/L	0	0%	1	GA	0	0	1	9 U
4-Bromophenyl phenyl ether	UG/L	0	0%			0	0	1	5 U
4-Chloro-3-methylphenol	UG/L	0	0%	1	GA	0	0	1	5 U
4-Chloroaniline	UG/L	0	0%	5	GA	0	0	1	5 U
4-Chlorophenyl phenyl ether	UG/L	0	0%			0	0	1	5 U
4-Methylphenol	UG/L	0	0%			0	0	1	5 U
4-Nitroaniline	UG/L	0	0%	5	GA	0	0	1	9 U
4-Nitrophenol	UG/L	0	0%	1	GA	0	0	1	9 U
Acenaphthene	UG/L	0	0%			0	0	1	5 U
Acenaphthylene	UG/L	0	0%			0	0	1	5 U
Acetophenone	UG/L	0	0%			0	0	1	5 U
Anthracene	UG/L	0	0%			0	0	1	5 U
Atrazine	UG/L	0	0%	7.5	GA	0	0	1	5 U
Benzaldehyde	UG/L	0	0%			0	0	1	5 U
Benzo(a)anthracene	UG/L	0	0%			0	0	1	5 U
Benzo(a)pyrene	UG/L	0	0%	0	GA	0	0	1	5 U
Benzo(b)fluoranthene	UG/L	0	0%			0	0	1	5 U
Benzo(ghi)perylene	UG/L	0	0%			0	0	1	5 U
Benzo(k)fluoranthene	UG/L	0	0%			0	0	1	5 U
Bis(2-Chloroethoxy)methane	UG/L	0	0%	5	GA	0	0	1	5 U
Bis(2-Chloroethyl)ether	UG/L	0	0%	1	GA	0	0	1	5 U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%	5	GA	0	0	1	5 U
Bis(2-Ethylhexyl)phthalate	UG/L	0	0%	5	GA	0	0	1	5 U
Butylbenzylphthalate	UG/L	0	0%			0	0	1	5 U
Caprolactam	UG/L	0	0%			0	0	1	5 U
Carbazole	UG/L	0	0%			0	0	1	5 U
Chrysene	UG/L	0	0%			0	0	1	5 U
Di-n-butylphthalate	UG/L	0	0%	50	GA	0	0	1	5 U
Di-n-octylphthalate	UG/L	0	0%			0	0	1	5 U
Dibenz(a,h)anthracene	UG/L	0	0%			0	0	1	5 U
Dibenzofuran	UG/L	0	0%			0	0	1	5 U
Diethyl phthalate	UG/L	0	0%			0	0	1	5 U
Dimethylphthalate	UG/L	0	0%			0	0	1	5 U
Fluoranthene	UG/L	0	0%			0	0	1	5 U
Fluorene	UG/L	0	0%			0	0	1	5 U
Hexachlorobenzene	UG/L	0	0%	0.04	GA	0	0	1	5 U
Hexachlorobutadiene	UG/L	0	0%	0.5	GA	0	0	1	5 U
Hexachlorocyclopentadiene	UG/L	0	0%	5	GA	0	0	1	5 U
Hexachloroethane	UG/L	0	0%	5	GA	0	0	1	5 U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%			0	0	1	5 U
Isophorone	UG/L	0	0%			0	0	1	5 U
N-Nitrosodiphenylamine	UG/L	0	0%			0	0	1	5 U
N-Nitrosodipropylamine	UG/L	0	0%			0	0	1	5 U
Naphthalene	UG/L	0	0%			0	0	1	5 U
Nitrobenzene	UG/L	0	0%	0.4	GA	0	0	1	5 U
Pentachlorophenol	UG/L	0	0%	1	GA	0	0	1	9 U
Phenanthrene	UG/L	0	0%			0	0	1	5 U
Phenol	UG/L	0	0%	1	GA	0	0	1	5 U

Table 1
Sump Water Results Compared to Groundwater Standards
Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot Activity

Location	SEAD-16
Type	SUMP WATER
Sample ID	16WWT16-0703
Date	07/03/07
QC CODE	SA
STUDY ID	RA

Parameter	Units	Maximum	Frequency	Groundwater Standard	Criteria[1]	Exceed Standard	Detect	Analyses	Value (Q)
Pyrene	UG/L	0	0%			0	0	1	5 U
Metals									
Aluminum	UG/L	203	100%	50	SEC	1	1	1	203
Antimony	UG/L	118	100%	3	GA	1	1	1	118
Arsenic	UG/L	0	0%	10	MCL	0	0	1	4.2 U
Barium	UG/L	279	100%	1000	GA	0	1	1	279
Beryllium	UG/L	0.5	100%	4	MCL	0	1	1	0.5 B
Cadmium	UG/L	1.2	100%	5	GA	0	1	1	1.2
Calcium	UG/L	111000	100%			0	1	1	111000
Chromium	UG/L	3.9	100%	50	GA	0	1	1	3.9 B
Cobalt	UG/L	0	0%			0	0	1	0.89 U
Copper	UG/L	522	100%	200	GA	1	1	1	522
Iron	UG/L	2680	100%	300	GA	1	1	1	2680
Lead	UG/L	1970	100%	15	MCL	1	1	1	1970
Magnesium	UG/L	22300	100%			0	1	1	22300
Manganese	UG/L	109	100%	300	GA	0	1	1	109
Mercury	UG/L	19	100%	0.7	GA	1	1	1	19
Nickel	UG/L	6.1	100%	100	GA	0	1	1	6.1 B
Potassium	UG/L	6020	100%			0	1	1	6020
Selenium	UG/L	0	0%	10	GA	0	0	1	6.1 U
Silver	UG/L	0	0%	50	GA	0	0	1	1 U
Sodium	UG/L	37800	100%	20000	GA	1	1	1	37800
Thallium	UG/L	0	0%	2	MCL	0	0	1	6.4 U
Vanadium	UG/L	0	0%			0	0	1	0.78 U
Zinc	UG/L	600	100%	5000	SEC	0	1	1	600

Note(s):
U = compound was not detected
B = the result is below reporting limit but above method detection limit

Shading indicates concentration above action level

1. GA = NYSDEC Class GA Groundwater Standard (TOGS 1.1.1, June 1998)
   MCL = Maximum Contaminant Level - Drinking Water Standards and Health Advisory (EPA 822-B-00-001)
   SEC = Secondary Drinking Water Regulations - Drinking Water Standards and Health Advisory (EPA 82-B-00-001)

Army's Response to Comments from the United States Environmental Protection Agency

Subject: Response to USEPA Comments dated 021208
Draft Construction Completion Report for SEAD-16 and SEAD-17
Seneca Army Depot
Romulus, New York

Comments Dated: July 10, 2008 (email)

Date of Comment Response: September 09, 2008

Army's Response to Comments

SPECIFIC COMMENTS

Comment 1: The Army's response to EPA Comment 3 is inadequate. Based on the issues identified in EPA's previous Comment 3 (i.e., concerns over potential low bias in the metals results as well as in the precision and representativeness of the metal results) and the data validation in Appendix H, concerns remain over how accurately the results document that the Record of Decision (ROD) dictated remedial goals have been achieved with the desired certainty. While, the Data Validation Memorandum provides an overview of the data validation, the level of detail is insufficient to ensure the data were properly validated and assessed. Please provide a complete electronic copy of the data package(s) received from the laboratory used by the Army in addition to the information included in Appendix H. Alternatively, please revise the Report to provide a validation memorandum which presents the actual values for each of the QC exceedances observed, a table of all results including those that were rejected and subsequently reanalyzed (e.g., the initial analysis of 16EXPR-G5-01 and 16EXPR-G5-02), a discussion on the differences between the EPA method and the facility's procedures, and a thorough assessment of the impact of the observed QC exceedances on the data.

Response 1: All data collected by Parsons have been validated by chemists according to the EPA Region 2 SOPs (on-line resources available at http://www.epa.gov/region02/qa/documents.htm). The qualifiers were added according to the Region 2 SOPs. The detailed data validation results and discussions including QC exceedance details are presented in Appendix H of the CCR. More specifically:

- Noncompliance matrix spike results are presented in Table H-3.
- LCS exceedance results are presented in Table H-4.
- Noncompliance blank results are presented in Table H-5.
- Duplicate analysis (including field duplicate and laboratory duplicate) %RPD exceedance results are presented in Table H-7.
- Calibration noncompliance results are presented in Table H-8.
- CRDL standard check noncompliance results are listed in Table H-9.
- Serial dilution noncompliance results are summarized in Table H-10.
- Percentage of solids noncompliance results are presented in Table H-11.

All the affected results (also shown in the above tables) were qualified in accordance with the Region 2 SOPs and Table H-2 summarizes all non-usable results due to the QC exceedances. Although QC non-compliances were observed for the project, the data have all been validated accordingly and non-usable results were not used for project management decision. In other words, all the results used in the CCR for the project management decision are usable according to the Region 2 SOPs, although some are considered "estimated" values. Further, there is no indication of consistent low bias based on the review of the QC data.

In summary, it is the Army's position that there is no evidence the data produced for the project are biased low and the rationales are summarized below:

- The laboratory used for this project (Test American Laboratories, Inc., Amherst, NY) is a certified laboratory for New York State's Contract Laboratory Program, Analytical Services Protocol (administered by NYSDOH).
- The QC data that support the sample results do not suggest that there is a biased low trend.
- The data have been validated in accordance with the EPA Region 2 SOPs.

Although the results for soil confirmation samples reported by the Army's laboratory were generally lower than the EPA split sample results, relative percent difference (RPD) values computed for these paired analyses, exclusive of the results reported by the two laboratories for 16EXPR-F9-02, were less than 120%, which is Region 2's limit for judging whether the duplicate pair data reported by a single laboratory are usable or not. Therefore, with the exception of the results for the questionable sample 16EXPR-F9-02, the noted differences between split sample results obtained would not result in rejection of any of the data. The Army further believes that it is necessary to remind the EPA commenter that the 120% threshold is for duplicate samples that are handled in the same manner and sent to one laboratory for analysis via identical methods; there is no threshold guidance value defined for RPD for inter-laboratory comparisons. As such, achieving agreement within the single laboratory duplicate pair RPD threshold value (120%) is a very conservative demonstration of the data acceptability as there are differences between the split pairs regarding analytical operations due to the different laboratories used.

Ultimately, soil associated with questionable sample 16EXPR-F9-02 was excavated and disposed off-site in accordance with the agreement made between the EPA and the Army due to the noted data variation, which called for the larger of the split sample results to be used as the basis of the decision, so the failure of this single sample is no longer of importance. Subsequent to the excavation of soil at location 16EXPR-F9-02, three new samples (a floor sample/duplicate pair, 16EXFL-F9-01/16EXFL-F9-02, 13.5 mg/Kg/10.1 mg/Kg; perimeter sample 16EXPR-F9-03, 8.3 mg/Kg) were collected from the area and analyzed for lead. As is shown above, all lead results surrounding the former location of questionable sample 16EXPR-F9-02 are below the defined cleanup goal for lead.

Further, it is important to note that while the Army's data have been validated, we have not received information from the EPA that indicates that their data were validated beyond the level that is normally done in the laboratory. Without this independent verification of the EPA laboratory results, Parsons and the Army believe that it is inappropriate to use the split sample results produced by the EPA lab to criticize the results provided by the Army's laboratory. Parsons and the Army were unable to evaluate the differences between the split sample results because we were not provided the detailed report of the EPA split sample results.

The Army would be glad to submit the original hardcopy data package for your review if requested.

Comment 2: The Army's response to EPA Comment 4 is inadequate. The comment response indicates that the standing water removed from the basement of Building S-311 was pumped into the on-site water truck and used for dust control of soils within the excavation areas at SEAD-16. The analytical results obtained from the analysis of the basement water indicate that it contained concentrations of metals above Maximum Contaminant Levels (MCLs). The described use of the pumped out water was not an EPA authorized use; please revise the Report to indicate this. Once a material considered a waste is removed from its original location, current RCRA regulations require that it be managed as a waste. If reuse/recycling options are to be considered, analytical results need to be available to support the option.

Response 2: The EPA's original comment on the Draft SEAD-16 and SEAD-17 Construction Completion Report is presented below.

> "Comment 4: Section 3.4.2, Water Removal, discusses standing water in the basement of Building S-311 at the time removal construction activities began. The water was sampled and the analytical results are provided as Appendix I. The results should be compared to water disposal criteria to identify any elevated concentrations in the water. Revise the text to include the final destination (i.e., local waste water treatment plant, disposal onto ground surface) of the standing water and how it got there. If documentation of the water removal is presented in a different report, provide a brief summary of activities and reference the document."

The revision to Section 3.4.2 provided the location where the analytical results for the water were presented within the Draft Final Construction Completion Report (Appendix J) and the response included a comparison to New York State GA Groundwater standards, which indicates that several metals in the standing water were observed at concentrations in excess of GA groundwater standards.

Language incorporated into the Draft Final Completion Report indicating this will be modified to read as follows (Reference last paragraph of Section 3.4.2 of Completion Report):

> The water in the basement of Building S-311 was pumped into the on-site water truck on July 12, 2007 for use as dust suppression water for soils that were excavated from SEAD-16 and loaded onto trucks for transport off-site and disposal at licensed landfills on that day. The excavated soils were sprayed to suppress dust and were not saturated with water. Erosion controls were in place and were effective in preventing runoff from the work area.

As is indicated in the proposed revised text for the Construction Completion Report, the soil upon which the Building 311 water was used for dust suppression was subsequently excavated and removed from the site. The water was not allowed to pond or puddle on the site, and controls were in place to prevent the water from running onto other areas of the greater site.

Confirmatory soil sample results for samples collected from beneath the areas where soils were sprayed and then excavated indicate that there were no exceedances of cleanup goals, so it is not likely that metals entrained or dissolved in the water impacted the underlying soils. Groundwater sampling data collected from SEAD-16 after the completion of the removal action, further suggests that the groundwater underlying the site has not been impacted as a result of this water's use as groundwater concentrations are generally lower now than previously reported during the RI.

As Section 3.4.2 is currently written, there is no claim or representation that the EPA approved of the use of the water for dust suppression. **Comment 3:** The Army's response to EPA Comment 8 is inadequate. The Army has indicated that when EPA split sample data and the Army's split sample data were compared, it was agreed that the higher of the two values would be used to determine when the ROD required remedial levels had been obtained. However, when Army duplicate data was compared, the two values were averaged, and an EPA citation that is found in the Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category, USEPA, 2004 is used as reference for this approach. This stance is inconsistent and unsubstantiated, as EPA guidance for liquid media is not transferable to solids, and National Pollutant Discharge Elimination System (NPDES) data is intended to be averaged over a typical 24-hour discharge period, which is not similar to the remedial conditions at Seneca. Further, the stated Report objectives indicate that data will be compared to the ROD clean-up levels to determine if the remedy is complete, without any reference to averaging the data. Revise the Report so that whenever two data points are available to define site conditions, the higher of the two values is used. If this impacts the determination that the remedial action is complete, revise the Report to indicate where additional excavation and sampling is warranted. It may be necessary to present the results and associated sampling points visually to clearly make this assessment.

Response 3: As has been discussed with all parties (i.e., EPA, NYSDEC, NYSDOH) repeatedly during the course of the CERCLA-related activities at the Seneca Army Depot, it is the Army position that decisions relative to completion of work are based on site-wide assessments and determinations, and not on the basis of individual sample results. This has been, and will continue to be, the Army's process and basis of action, and it is our belief that this approach and process is reasonable and appropriate, and compliant with the requirements of CERCLA.

The lead in soil cleanup goal for SEAD-17 was 1250 mg/Kg. Sixty-four soil samples were collected, characterized, and qualified as appropriate during the confirmation sampling, and these samples were used as the basis of the Army's decisions made at SEAD-17. These samples were collected from 62 locations, with sample/duplicate pairs being collected at two locations. After reflecting on the EPA's comment, the Army believes that there are four alternative ways that the available data could have been evaluated and presented. These are summarized below:

1. All 64 data points used;
2. Data from all 62 locations considered, with the maximum result from sample/duplicate pairs being used as the value that is most representative of that sample/duplicate sampling locations (i.e., the approach specified in the EPA's comment);
3. Data from all 62 locations considered, with the minimum result from sample/duplicate pairs being used as the value that is most representative of that sample/duplicate sampling locations;
4. Data from all 62 locations considered, with the average result from sample/duplicate pairs being used as the value that is most representative of that sample/duplicate sampling locations (i.e., the approach used by the Army).

Summary results for each of these alternative approaches are presented below:

Description	Minimum Lead Concentration Detected at SEAD-17 (mg/Kg)	Maximum Lead Concentration Detected at SEAD-17 (mg/Kg)	Average Lead Concentration Detected at SEAD-17 (mg/Kg)	95^{th} UCL Concentration of Lead Detected at SEAD-17 (mg/Kg)
Approach 1: 64 samples collected, all data points considered	4.8	1540	350.5	643.7
Approach 2: 62 data points (use MAXIMUM value for sample/duplicate pairs) EPA approach	4.8	1540	350	648.9
Approach 3: 62 data points (use MINIMUM value for sample/duplicate pairs) EPA approach	4.8	1120	336.5	611.9
Approach 4: 62 data points (use AVERAGE value for sample/duplicate pairs) Army approach	4.8	1121	343.2	627.5

Regardless of the data analysis and assessment approach that was used for the identified dataset, it is the Army's contention that the lead cleanup goal has been achieved on a site-wide basis. In each case, the 95^{th} UCL value for lead in soil is roughly half of the cleanup goal specified. Under two approaches, the maximum value reported exceeds the cleanup goal. Examination of the full confirmatory soil data set for SEAD-17 shows that the highest value is 1,540 "J" mg/Kg, and the next highest value is 1,120 mg/Kg. The presence of this lone value above the cleanup goal suggests that there is no wide-spread problem at the site, and in fact, the duplicate associated with the sample value of concern further supports this belief, as the value of lead reported for it was 702 "J" mg/Kg. Both of the reported values reported for this location are equally likely to be correct, and as such, the best one can do within reason is to presume that the real level of lead lies somewhere in the middle (e.g., at the average concentration). In the Army's opinion, the degree of variation shown at this one location is more suggestive of soil heterogeneity rather than an indication of a possible wide-spread contaminated zone at the site. Simply put, data from the other sixty-one locations does not support this fear, as they are all lower than the cleanup goal.

The EPA's approach (see Approach 2 above) which uses only the maximum value from sample/duplicate pairs skews the assessment of what is presented on a site-wide and a location-by-location basis. Approach 3 also skews the site-wide and location-by-location assessment of the data, but in this case to the opposite pole. Approach 1 gives more credence to the results found at two locations than to the other 60 locations that are within the site's dataset, and as such, one could argue that this approach also skews the analysis. The approach selected by the Army gives equal weight to all sample locations within the dataset, and in our opinion, produces a fair representation of what is present on a site-wide basis. Under the Army's approach, results from each individual location (i.e., 62 locations) in the SEAD-17 area affected were compared to the cleanup value, and data from all of the locations were found to be lower than the goal.

As is currently documented in the Construction Completion Report, the lead cleanup goal was achieved in accordance with common practices that have been used by the Army throughout all investigative and remedial actions at the Depot since the late 1990s, which includes averaging the results of sample/duplicate pairs in data presentations. Parsons and the Army adopted the practice of averaging the results of samples and sample duplicates and have reported and analyzed data presented to the agency in this manner since that time. This is referenced in several of the reports that have been issued to the EPA since that time. The EPA has not previously commented on this approach in any of this other work. This procedure is also consistent with the Army and EPA's approach that has been used at other Army installations as is documented in the EPA Superfund Record of Decision for Fort Devens Operable Unit 03 (Refer to Tables 13 – 15 and footnotes of ROD found at http://www.epa.gov/superfund/sites/rods/fulltext/r0196119.pdf).

Finally, the Army believes that it is appropriate to note that the lead in soil cleanup value established for SEAD-17 (i.e., 1250 mg/Kg) is itself an average, based on the range defined (750 – 1750 mg/Kg) in the document "*Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil*" (USEPA, December 1996) for an acceptable residual risk under an industrial use scenario