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January 15, 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: Removal Action at the Location of Former Ore Piles Staged at SEAD-121I 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 this letter report for the removal activities completed at the location of Piles 1 and 2 located at the Rumored Cosmoline Oil Disposal Area (SEAD-121I) at the Seneca Army Depot Activity (SEDA) in Romulus, New York. This letter describes the removal action construction activities addressing residual ferro-manganese ore and associated soil and asphalt at SEAD-121I between July 30, 2007 and August 15, 2007.

A summary of the completed activities has been previously provided in the Revised Draft Final Proposed Plan for SEAD-121C and SEAD-121I submitted by Parsons on November 7, 2007.

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 letter 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

cc: S. Absolom, SEDA (3 copies)
K. Hoddinott, USACHPPM (2 copies)
C. Boes, USAEC (1 copy)
R. Battaglia, USACE - NY District (1 paper copy)
T. Battaglia, USACE - NY District (1 paper copy)
J. Fallo, USACE - NY District (1 paper copy)
P. O'Connor, Portage (1 electronic copy)
AFCEE Contact Data Library (letter only via email)

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January 15, 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: Removal Action at the Location of Former Ore Piles Staged at SEAD-121I at Seneca Army Depot Activity; Contract FA8903-04-D-8675; DO# 0031
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 this letter report for the removal activities completed at the location of Piles 1 and 2 located at the Rumored Cosmoline Oil Disposal Area (SEAD-121I) at the Seneca Army Depot Activity (SEDA) in Romulus, New York (USEPA Site ID# NY0213820830 and NY Site ID# 8-50-006). This letter describes the removal action construction activities addressing residual ferro-manganese ore and associated soil and asphalt at SEAD-121I between July 30, 2007 and August 15, 2007. A summary of the completed activities has been previously provided in the Revised Draft Final Proposed Plan for SEAD-121C and SEAD-121I submitted by Parsons on November 7, 2007.

Parsons appreciates the opportunity to provide you with this letter 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.
Program Manager

Enclosures
cc: J. Hill, AFCEE
M. Heaney, TechLaw
C. Boes, USAEC
J. Fallo, USACE - NY
P. O'Connor, Portage
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TECHNICAL MEMORANDUM

Date: January 15, 2008

To: Julio Vazquez, USEPA
Kuldeep Gupta, NYSDEC
Mark Sergott, NYSDOH

From: Todd Heino, Parsons

Subject: Removal Action at the Location of Former Ore Piles Staged at SEAD-121I at Seneca Army Depot Activity, Romulus, New York

1. INTRODUCTION

This letter details the housekeeping activities completed between July 30, 2007 and August 15, 2007 to remove residual ferro-manganese ore and associated soil and asphalt from the former locations of Pile 1 and Pile 2 located within the solid waste management unit (SWMU), the Rumored Cosmoline Oil Disposal Area (SEAD-121I), located at the Seneca Army Depot Activity (SEDA or the Depot), Romulus, New York. The U.S. Government historically staged strategic stockpiles of ferro-manganese ore in portions of SEAD-121I. The U.S. Government's strategic stockpile mission at the SEDA has terminated and the Government recently sold and removed the stockpiles. While Parsons' field crew, the earthwork subcontractor St. George, and the T&D subcontractor Riccelli Enterprises, Inc. were on-site for the three removal actions conducted at SEAD-121C, SEAD-16, and SEAD-17, the Army directed Parsons to remove residual ore and soil mixed with ore residuals from the former strategic stockpiles of ferro-manganese ore located at SEAD-121I.

This letter report describes the removal activities at SEAD-121I and presents sample collection and laboratory test results, drawings, and photo documentation. This letter documents that all construction activities associated with the Ore Pile removal at SEAD-121I were completed in general accordance with similar SEDA removal action work plans for metals contaminated sites. As a result of this work, no further action associated with the Ore storage mission is required at SEAD-121I. The removal action involved the removal and off-site disposal of ore contaminated soil, asphalt, and residual quantities of ferro-manganese ore. This technical memorandum has been prepared for the Air Force Center for Engineering and the Environment (AFCEE) and the U.S. Army Corps of Engineers (USACE) under Contract No: FA8903-04-D-8675, Task Order No. 0031.

1.1 Site Description

Since its inception in 1941, SEDA's primary mission was the receipt, storage, maintenance, and supply of military items. In addition, beginning shortly after the end of World War II, land at the SEDA was also used as the location where strategic and critical materials were stockpiled in the interest of national defense.

SEDA was nominated for inclusion on the NPL in July 1989, and it was listed under Group 14 on the Federal Section of the NPL in August of 1990. 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 Facilities Agreement (FFA). This agreement stated that future investigations would be based on CERCLA guidelines, and that the Resource Conservation and Recovery Act (RCRA) was considered an ARAR pursuant to Section 121 of CERCLA. In October 1995, SEDA was designated as a facility to be closed under the provisions of the Department of Defense's (DoD's) Base Realignment and Closure (BRAC) process.

SEDA is a 10,587-acre former military facility located in Seneca County in the Towns of Varick and Romulus, 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 **Figure 1**. As shown in **Figure 1**, SEDA is located between Seneca Lake and Cayuga Lake in Seneca County.

SEAD-121I begins at a point that is located approximately 4,300 feet south-southwest of the former main entrance gate to the Depot and extending approximately 2,600 feet further towards the south. SEAD-121I encompasses four rectangular-shaped, open grass and dirt covered areas that are bounded by 3rd and 7th Streets (north and south ends, respectively) and Avenues C and D (west and east sides, respectively). The AOC is approximately 300 feet in width throughout its length, and the overall size of the AOC is approximately 16.8 acres. The portions of SEAD-121I addressed in the removal action are the second and fourth (north to south) blocks, where the ferro-manganese ore piles were staged. A railroad spur line enters SEAD-121I from the south and extends to the northern end of the AOC where it terminates near the intersection of 3rd St. and Avenue C. Two sidings branch off the main spur line; one terminates in the first (north to south) block and the other terminates in the third (north to south) block. There are concrete loading docks located in the first and third blocks next to the railroad lines.

The two former ferro-manganese ore stockpiles were staged on asphalt pads that were adjacent to the railroad lines that run south to north along Avenue C, one between 4th and 5th Streets (second block, north to south), with the other between 6th and 7th Streets (fourth block, north to south), shown in the site plan in **Figure 2**.

1.2 Contaminants of Concern

Soil Data

The results of the soil sampling completed during the Environmental Baseline Study (EBS) and the Remedial Investigation (RI) indicated that ore had mixed with the soil had occurred at this site. This was identified in the soil at SEAD-121I where iron and manganese were found, specifically in the areas surrounding the two ferro-manganese ore piles. The maximum concentrations of iron and manganese detected during the RI and EBS were 69,000 mg/kg and 349,000 mg/kg, respectively, shown on **Figure 2**.

Groundwater Data

Groundwater is not present in the shallow overburden underlying SEAD-121I.

2.0 Pre-construction activities

2.1 Site Security and Security

Prior to the removal action, the ore pile locations were enclosed and isolated from the surrounding area by security fences with access gates that were kept locked. Warning signs were also affixed to the security fence around each of the ore pile locations. The Army provided site access to the field team prior to and during the performance of construction activities at SEAD-121I.

The excavations performed at the ore pile areas at SEAD-121I extended to the edge of the storage area, and as a result, the security fences used to isolate the piles from the surrounding areas were removed prior to the excavation of soil from these areas.

All aspects of the construction activities performed at the work areas located within SEAD-121I were coordinated with the 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, provided in **Attachment A**.

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.

2.2 Clearing

Tall grass and scrub brush present around the edge of the security fences at SEAD-121I was mowed and cleared prior to the initiation of the work. Mowed grass and cleared brush were left on the ground at the excavation site and removed with soil during excavation activities.

2.3 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. Access to the excavation areas in SEAD-121I were off the existing roads (Avenue C or D and 4th, 5th, 6th or 7th Streets).

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, security and minimized the likelihood that known site contaminants were introduced to new areas of the Depot. The work support zone at SEAD-121I was located within the footprint of the respective excavation zones.

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

2.4 Establishment of Erosion and Sedimentation Controls

Hay bales were placed over the top of storm water catch basins located along the southern and northern ends of the ore stockpile locations in SEAD-121I to prevent migration of sediments at the catch basins. The hay bales were maintained throughout the excavation and are still in-place. No storm events occurred during the construction activity period.

2.5 Disposal Characterization and Approval

Pre-approval was received from the disposal facility for the excavated non-hazardous soil from the SEAD-121I ore piles. The disposal facility, Ontario County Landfill in Flint, New York, required the analysis of one sample per 2,000 tons of material from the area anticipated to be excavated at each of the locations. This sampling frequency requirement was based on the disposal facility's review of the historic sampling results at SEAD-121I and their specific sampling requirements.

Four composite waste characterization samples were collected from the areas to be excavated at SEAD-121I. The samples were submitted to Severn-Trent Laboratory (STL) located in Buffalo, New York. The disposal facility required that all samples were analyzed for hazardous waste characterization (reactivity, ignitability, and corrosivity) and Toxicity Characteristic Leaching Procedure (TCLP) metals. The disposal facility did not require testing for other TCLP parameters based on a review of historic information. All samples met the criteria. The analytical data is provided in **Attachment B**.

3.0 CONSTRUCTION ACTIVITIES

This section documents construction-phase activities associated with the removal action at SEAD-121I. Construction activities began with mobilization of Parsons' field crew and selected earthwork subcontractor, St. George Enterprises, Inc of Fredonia, New York, on July 30, 2007. All construction activities were completed by August 15, 2007, at which time Parsons and St. George demobilized from the site. All pre-construction, construction, and post-construction activities that took place at SEDA were documented in daily reports (**Attachment A**).

To facilitate access by the excavator to the SEAD-121I excavation areas, the fence surrounding the site was taken down. The fence fabric and gates were removed and stored. The fence posts were cut off at grade and disposed at an off-site facility.

3.1 Excavation and Confirmatory Sampling

The proposed excavation area at SEAD-121I was delineated based on the historic location of the former strategic ore piles and based on concentrations of iron and manganese observed in the soil during the RI, shown on **Figure 2**. Excavation began on July 30, 2007 and was completed on August 15, 2007. **Figure 3** shows the initial excavation area at SEAD-121I. The excavation areas were separated into "Pile 1" and "Pile 2". Pile 1 is the southernmost location of the former ferro-manganese ore pile situated in the west side of the block located between Avenue C, Sixth Street, Avenue D, and Seventh Street; Pile 2 is the northernmost location of the former strategic ore pile located in the west side of the block bounded by Avenue C, Fourth Street, Avenue D, and Fifth Street. The limits of the initial Phase I excavation ran along the footprints of the former ore piles, shown on **Figures 2** and **3**.

Phase I Excavation

The initial excavations of Piles 1 and 2 were termed Phase I excavations. The Phase I excavations at both Pile 1 and Pile 2 were completed between July 30, 2007 and August 2, 2007. The excavations extended to a depth of approximately 1 foot below ground surface or shallower if hard shale was encountered. The former piles were placed directly on asphalt, therefore the asphalt, the underlying soil, and bits of shale were excavated. Railroad ties, which has outlined the ore piles were collected at Pile 1 and 2 as part of housekeeping activities and staged for off-site disposal with the excavated soil. The

excavated material was pushed to the west and temporarily staged along the eastern edge of each excavation area. Excavated material was loaded and transported off-site by Riccelli Enterprises Inc. of Syracuse, New York at the end of each excavation phase and was not staged for extended periods of time. Approximately 1,349 cy of soil at Pile 1 and 2,028 cy of soil at Pile 2 were excavated during Phase I. Excavation quantities are summarized in **Table 1.** Photos of site activities are provided in **Attachment C**.

Phase I Sampling

After the Phase I excavation was completed, confirmatory samples were collected from the floor and perimeter of the excavation to confirm that all soil with iron and manganese exceeding the cleanup goals was excavated and removed from the site. The cleanup goal for iron (listed in **Table 2**) at SEAD-121I is as follows:

- The 95th UCL of the mean of 100,000 mg/kg (as calculated using USEPA's ProUCL program), which is the USEPA Region IX Industrial Preliminary Remedial Goal (PRG).

The cleanup goals for manganese (listed in **Table 2**) at SEAD-121I are as follows:

- The 95th UCL of the mean of 10,000 mg/kg (as calculated using USEPA's ProUCL program), which is the NYSDEC's Commercial and Industrial Use soil Cleanup Objective; and
- No individual sample exceeding 20,000 mg/kg.

All samples were collected at SEAD-121I according to procedures outlined in the "Final Sampling and Analysis Plan for Seneca Army Depot Activity (SAP)" (Parsons, 2006c). Floor and perimeter samples were collected as grab samples from unique locations, at depth range between 0 and 2 inches below ground surface, unless otherwise noted. Analytical data for all confirmatory samples are provided in **Attachment D**. Field duplicates were collected to meet the QA/QC requirements. The data 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 (SOP). Samples were submitted to STL located in Buffalo, New York for analysis of iron and manganese by USEPA SW846 Method 6010B. Analytical results were compared to the cleanup goal listed in **Table 2**. Confirmatory floor samples were not collected when the excavation reached bedrock, since soil was not available to sample.

Pile 1

After the Phase I excavation, five floor and six perimeter confirmatory samples were collected at Pile 1 on August 3, 2007. One floor sample, 121EXFL-03, exceeded the cleanup goal for manganese (20,000

mg/kg) with a concentration of 31,000 J mg/kg. Two perimeter samples exceeded the manganese cleanup goal with concentrations of 46,200 J mg/kg and 96,200 J mg/kg at 121IEXPR-04 and 121IEXPR-05, respectively. The two perimeter samples were located between the former pile and the railroad tracks to the west. Visual observations showed that ferro-manganese ore residue was still present in this area following the initial excavation. All other Phase I confirmatory samples met the cleanup goals for iron and manganese.

Pile 2

After the Phase I excavation, five floor samples (plus 1 field duplicate) and six perimeter confirmatory samples (plus 1 field duplicate) were collected at the Pile 2 area on August 3, 2007. All of the floor samples met the cleanup goals for iron and manganese. The data from two perimeter sample locations (121IEXPR-07 and 121IEXPR-12/13), including one sample with a duplicate, exceeded the manganese cleanup goal. 121IEXPR-07 (41,000 J mg/kg manganese) was located to the north of the Phase I excavation area, and 121IEXPR-12 (47,850 J mg/kg manganese – average of sample and associated duplicate) was located to the west of the excavation area by the railroad tracks. Visual observation showed that the ferro-manganese ore residue was still present in this area following the initial excavation. All other Phase I confirmatory samples at Pile 2 met the cleanup goals for iron and manganese.

The locations of the samples that failed to meet the cleanup goals are shown on **Figure 4**. The location of samples that achieved the cleanup goals are shown on **Figure 3**.

Phase II excavation

Subsequently, a Phase II excavation was completed at Piles 1 and 2 on August 14, 2007, and the excavation area was delineated based on visual observations of residual ferro-manganese ore in the soil and based on the locations of the Phase I samples that failed to meet the cleanup goals. The Phase II excavation was completed in the following areas:

1. The excavations extended laterally to the end of the blocks to the north and south and to the railroad tracks to the west of the original excavation to a depth of approximately 1 foot or shallower if shale was encountered, shown on **Figure 3**, which encompassed soil where ore residuals were visible. The excavation area included the removal of soil associated with failed samples 121IEXPR-04, 121IEXPR-05, 121IEXPR-07, and 121IEXPR-12, as well as the soil associated with four other samples 121IEXPR-01, 121IEXPR-06, 121IEXPR-10, and 121IEXPR-11;

2. A 50 foot by 50 foot area located around failed sample 121EXFL-03 at Pile 1 approximately 125 feet north of Seventh Street was excavated to bedrock; and

3. A 50 foot by 50 foot area located immediately east of and adjacent to the Pile 2, Phase I excavation area (around sample 121EXPR-09) was excavated to bedrock due to visual observations of ferro-manganese ore.

A total of 1,545 cy were excavated from Pile 1 and a total of 2,589 cy were excavated from Pile 2 in Phases I and II, summarized in **Table 1**.

Phase II Sampling

Following the Phase II excavation, additional confirmatory samples were collected on August 14, 2007 to confirm that soil remaining on-site met the cleanup goals. One additional floor sample (121IEXFL-12) was collected at Pile 1 north of 50 foot box to provide data in the area of the former 121IEXFL-03 location. Three new perimeter samples (121IEXPR-14, 121IEXPR-15, 121IEXPR-16 plus one field duplicate) were collected on the three sides of the 50 foot by 50 foot box located east of the Pile 2 Phase I excavation, shown on **Figure 3**. Additional perimeter samples were not collected along the western edge of the Phase II excavation, since the RI data, shown on **Figure 3**, bounds the manganese concentrations at the railroad tracks. All Phase II confirmatory samples collected at Pile 1 and Pile 2 met the cleanup goal for iron and manganese.

This discussion above details the field activities and the removal of soil associated with samples that failed to meet the iron cleanup goal. Therefore, the data for the failed samples are no longer representative of soil remaining at the site. The failed sample data are included in **Attachment D** for completeness, and are not included in the final confirmatory dataset, presented in **Table 3**. The locations of all final confirmatory samples with their detected iron and manganese concentrations are shown in **Figure 3**, and the locations and concentrations of failed samples are presented in **Figure 4**.

The 95th UCL of the mean was calculated for the final confirmatory sample dataset at SEAD-121I (including both Pile 1 and Pile 2) using the ProUCL program. The 95th UCL for iron is 22,116 mg/kg, which is below the cleanup goal of 100,000 mg/kg. The 95th UCL for manganese was calculated as 3,550 mg/kg, which is below the cleanup goal of the 95th UCL goal of 10,000 mg/kg. **Table 3** shows that all soil remaining on-site achieves the site cleanup goals for iron and manganese.

3.2 Transportation and Off-Site Disposal

Parsons subcontracted with Riccelli Enterprises, Inc. of Syracuse, New York to transport and dispose of the non-hazardous soil at Ontario County Landfill in Flint, NY. Truck load out was completed by August 15, 2007. A total of 5,914 tons (229 loads), including 25 tons of railroad ties, 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 **Attachment E**.

3.3 Site Restoration

Once the excavation was completed, the areas were graded to promote positive drainage. The surface is mostly shale bits. The area was not re-vegetated as it remains a hard fill storage area. The crew demobilized from the site on August 15, 2007.

3.4 Construction Costs

The total construction costs for the removal action at SEAD-121I were approximately $405,000. The cost break down is as follows:

Engineering/Oversight	$25,000
Construction	$375,000
Analytical Laboratory	$5,000

4. CONCLUSIONS AND RECOMMENDATIONS

Based on the analytical results from the final confirmatory sampling, there is no longer a potential impact from the former Ore storage at SEAD-121I.

Based on the construction work at SEAD-121I, the Army has concluded the following:

- At SEAD-121I, 5,914 tons (4,134 cy) of ferro-manganese ore-impacted soil was excavated and disposed, along with 25 tons of railroad ties, as non-hazardous waste at Ontario County Landfill in Flint, New York.

- A total of 16 final confirmatory samples (plus field duplicates) were collected from the floor and perimeter of the SEAD-121I excavation areas (Piles 1 and 2) and were analyzed for iron and manganese. All final confirmatory samples met the cleanup goal for iron, with the 95th UCL of the mean for iron of 22,116 mg/kg less than the cleanup goal of 100,000 mg/kg. All final confirmatory samples met the cleanup goal for manganese for individual samples of 20,000 mg/kg and the 95th UCL of the mean manganese was 3,550 mg/kg, which is less than the cleanup goals of 10,000 mg/kg. Therefore, no further action is required at SEAD-121I.

The cleanup objectives for SEAD-121I have been achieved and no further action is required. The Army will continue with preparing and submitting the Final Proposed Plan and Record of Decision (ROD) with Land Use Controls (LUCs).

5. REFERENCES

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

Parsons, 2006. Remedial Investigation Report for Two EBS Sites in the Planned Industrial Development Area (SEAD-121C and SEAD-121I), Final, Parsons, April 2006.

Parsons, 2006c. Contract-Specific Site-Wide Sampling and Analysis Plan for the Seneca Army Depot Activity. Final. October 2006.

Parsons, 2006b. Project Safety Plan and Site-Specific Health and Safety Plan for Seneca Army Depot Activity PBC II. August 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, Parsons, July 2007.

TABLES

Table 1
Summary of Excavation and Disposal Quantities
SEAD-121I Removal Action
Seneca Army Depot Activity

	Pile 1		Pile 2		SEAD-121I (total)	
	tons	cy[1]	tons	cy[1]	tons	cy[1]
Phase I	2,360	1,349	2,515	2,028	4,875	3,377
Phase II	343	196	696	561	1,039	757
RR ties	10.5		15		25.5	
Total[2]	**2,703**	**1,545**	**3,211**	**2,589**	**5,914**	**4,134**

1. The quantities were provided in tons from the weigh tickets from Ontario County Landfill. The volume was calculated based on a site-specific density. The density values were calculated by weighing three 5-gallon buckets of soil from each site. The density for Piles 1 and 2 at SEAD-121I was calculated as 1.75 tons/cy and 1.24 tons/cy, respectively.

2. The total quantities at SEAD-121I do not include the quantity of railroad ties.

Table 2
Cleanup Goals
SEAD-121I Removal Action
Seneca Army Depot Activity

	Units	Cleanup Goal for 95th UCL[1]	Cleanup Goal for Individual Sample
SEAD-121I			
Iron	mg/kg	100,000	100,000
Manganese	mg/kg	10,000	20,000

(1) The 95th upper confidence level (UCL) of the mean was calculated using USEPA's ProUCL (Version 4) for the final confirmatory dataset (http://www.epa.gov/nerlesd1/tsc/software.htm).

Table 3
SEAD-121I Final Confirmatory Soil Sample Results
SEAD-121I Removal Action
Seneca Army Depot Activity

FACILITY									SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I
LOCATION ID									121IEXFL-01	121IEXFL-02	121IEXFL-04	121IEXFL-05	121IEXFL-06	121IEXFL-07
MATRIX									SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID									121IEXFL-01	121IEXFL-02	121IEXFL-04	121IEXFL-05	121IEXFL-06	121IEXFL-07
SAMPLE DEPTH TO TOP OF SAMPLE									0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE									0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE									8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007
QC CODE									SA	SA	SA	SA	SA	SA
STUDY ID									RA	RA	RA	RA	RA	RA
PILE No.									1	1	1	1	2	2
Parameter	Units	Maximum Value	95th UCL [1]	Frequency of Detection	Cleanup Goal [2]	Number of Exceedances	Number of Times Detected	Number of Analyses [3]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Iron	MG/KG	31,300	22,116	100%	100,000	0	16	16	23800 J	19200 J	20700 J	25100 J	13200 J	15000 J
Manganese	MG/KG	11,100	3,550	100%	20,000	0	16	16	3360 J	1690 J	1550 J	1330 J	11100 J	4240 J

Notes:

(1) The 95th UCL was calculated using the ProUCL (Version 4) and the recommended iron UCL was the Student's-t UCL and the recommended manganese UCL was the 95% Approximate Gamma UCL. (http: www.epa.gov nerlesd1 tse software.htm)

(2) The cleanup goal for iron: 100,000 mg/kg.
The cleanup goals for manganese: the 95th UCL must be below 10,000 mg/kg, and no single sample shall exceed 20,000 mg/kg.

(3) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from final confirmatory soil samples only.

J = the reported value is an estimated concentration

Table 3
SEAD-121I Final Confirmatory Soil Sample Results
SEAD-121I Removal Action
Seneca Army Depot Activity

FACILITY									SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I
LOCATION ID									121IEXFL-08	121IEXFL-09	121IEXFL-10	121IEXFL-10	121IEXFL-12	121IEXPR-02
MATRIX									SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID									121IEXFL-08	121IEXFL-09	121IEXFL-11	121IEXFL-10	121IEXFL-12	121IEXPR-02
SAMPLE DEPTH TO TOP OF SAMPLE									0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE									0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE									8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/14/2007	8/3/2007
QC CODE									SA	SA	DU	SA	SA	SA
STUDY ID									RA	RA	RA	RA	RA	RA
PILE No.									2	2	2	2	1	1
Parameter	Units	Maximum Value	95th UCL [1]	Frequency of Detection	Cleanup Goal [2]	Number of Exceedances	Number of Times Detected	Number of Analyses [3]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Iron	MG/KG	31,300	22,116	100%	100,000	0	16	16	16400 J	10700 J	10400 J	10500 J	16100 J	16400 J
Manganese	MG/KG	11,100	3,550	100%	20,000	0	16	16	944 J	1120 J	1540 J	1700 J	1030 J	1900 J

Notes:

(1) The 95th UCL was calculated using the ProUCL (Version 4) and the recommended iron UCL was the Student's-t UCL and the recommended manganese UCL was the 95% Approximate Gamma UCL. (http: www.epa.gov nerlesd1 tsc software.htm)

(2) The cleanup goal for iron: 100,000 mg/kg.
The cleanup goals for manganese: the 95th UCL must be below 10,000 mg/kg, and no single sample shall exceed 20,000 mg/kg.

(3) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from final confirmatory soil samples only.

J = the reported value is an estimated concentration

Table 3
SEAD-121I Final Confirmatory Soil Sample Results
SEAD-121I Removal Action
Seneca Army Depot Activity

FACILITY									SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I
LOCATION ID									121IEXPR-03	121IEXPR-08	121IEXPR-14	121IEXPR-15	121IEXPR-15	121IEXPR-17
MATRIX									SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID									121IEXPR-03	121IEXPR-08	121IEXPR-14	121IEXPR-16	121IEXPR-15	121IEXPR-17
SAMPLE DEPTH TO TOP OF SAMPLE									0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE									0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE									8/3/2007	8/3/2007	8/14/2007	8/14/2007	8/14/2007	8/14/2007
QC CODE									SA	SA	SA	DU	SA	SA
STUDY ID									RA	RA	RA	RA	RA	RA
PILE No.									1	2	2	2	2	2
Parameter	Units	Maximum Value	95th UCL [1]	Frequency of Detection	Cleanup Goal [2]	Number of Exceedances	Number of Times Detected	Number of Analyses [3]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Iron	MG/KG	31,300	22,116	100%	100,000	0	16	16	22700 J	23000 J	31300 J	28800 J	26700 J	20300 J
Manganese	MG/KG	11,100	3,550	100%	20,000	0	16	16	1690 J	2960 J	2140 J	776 J	2010 J	2900 J

Notes:

(1) The 95th UCL was calculated using the ProUCL (Version 4) and the recommended iron UCL was the Student's-t UCL and the recommended manganese UCL was the 95% Approximate Gamma UCL. (http: www.epa.gov nerlesd1 tse software.htm)

(2) The cleanup goal for iron: 100,000 mg/kg.
The cleanup goals for manganese: the 95th UCL must be below 10,000 mg/kg, and no single sample shall exceed 20,000 mg/kg.

(3) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from final confirmatory soil samples only.

J = the reported value is an estimated concentration

FIGURES

CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY

SEAD-121I Removal Action

DEPT: ENVIRONMENTAL ENGINEERING

DWG NO: 745172

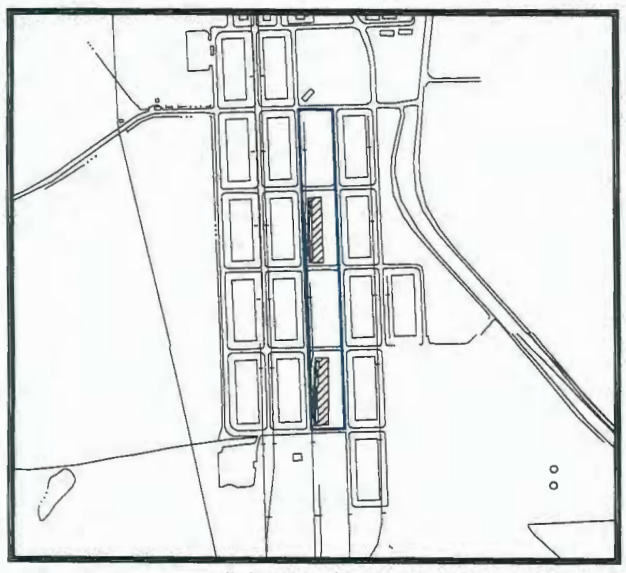
FIGURE 1

LOCATION MAP

SCALE: 1 INCH = 5 MILES, APPROX.

DATE: December 2007

P: PIT-Projects Seneca PBC II SEAD-121I construction Letter rpt Figures Fig 1 LOC MAP.CDR



N

Building 331
Building 343
Building 325
Building 330
Buiding 342
Building 326
Building 329
Building 341
Building 327
Building 328
Building 340

Avenue A
Avenue B
Avenue C
Avenue D
Avenue E

Fourth Street
Fifth Street
Sixth Street

Haul Route
Temp. Staging Area
Pile 2 Proposed Excavation Area
Temp. Staging Area
Pile 1 Proposed Excavation Area

SS121I-31 14500 377
SD121I-7 14550J 465J
SS121I-18 14000 648
SS121I-32 16900 428
SD121I-0 12500 477
SS121I-33 10300 847
SS121I-23 6130 594
SS121I-1 NS NS
SB121I-1 11500 474J
SD121I-2EBS NS NS
SS121I-19 16900 854
SS121I-34 14600 634
SS121I-5 15900 404
SS121I-7 25200 28100
SS121I-6 24500 880
SB121I-2 29300 45500J
SS121I-24 6100 406
SS121I-20 19400 779
SS121I-29 69400 349000
SS121I-2 NS NS
SD121I-2 10100 303
SS121I-9 27900 9500
SS121I-8 15100 567
SD121I-9 13900J 767
SD121I-8 30400 1490
SS121I-11 12600 1120
SS121I-10 17350 804
SS121I-3 NS NS
SS121I-28 8250 699
SS121I-21 14100 909
SS121I-25 5720 593
SB121I-3 15400 534J
SD121I-1EBS NS NS
SD121I-6 23800 1240
SS121I-13 12500 2656J
SS121I-12 13900 709
SS121I-14 28100 2340
SS121I-15 39800 33100
SS121I-26 8350 1230
SB121I-5 30200 1010J
SS121I-4 NS NS
SS121I-27 15400 9729
SB121I-4 30400 1420J
SS121I-22 11800 557
SS121I-16 24400 442
SS121I-17 23900 5560
SD121I-5 11300 471

200 100 0 200
Feet

LEGEND:

- Railroad Tracks
- Site Boundary
- Surface Water
- Surface Water Flow Direction
- Extent of Proposed Excavation
- Temporary Staging Area
- SB121I-3 / 15400 / 543J — RI Surface Soil Location with Iron and Manganese Concentration (mg/Kg), respectively.

IRON

- □ <100000 mg/Kg

MANGANESE

- • 0 - 10000 mg/Kg
- ● 10001 - 20000 mg/Kg
- ● 20001 - 1000000 mg/Kg
- NS Not Sampled

NOTE:

Iron and manganese data are from the RI (Parsons 2006)

PARSONS

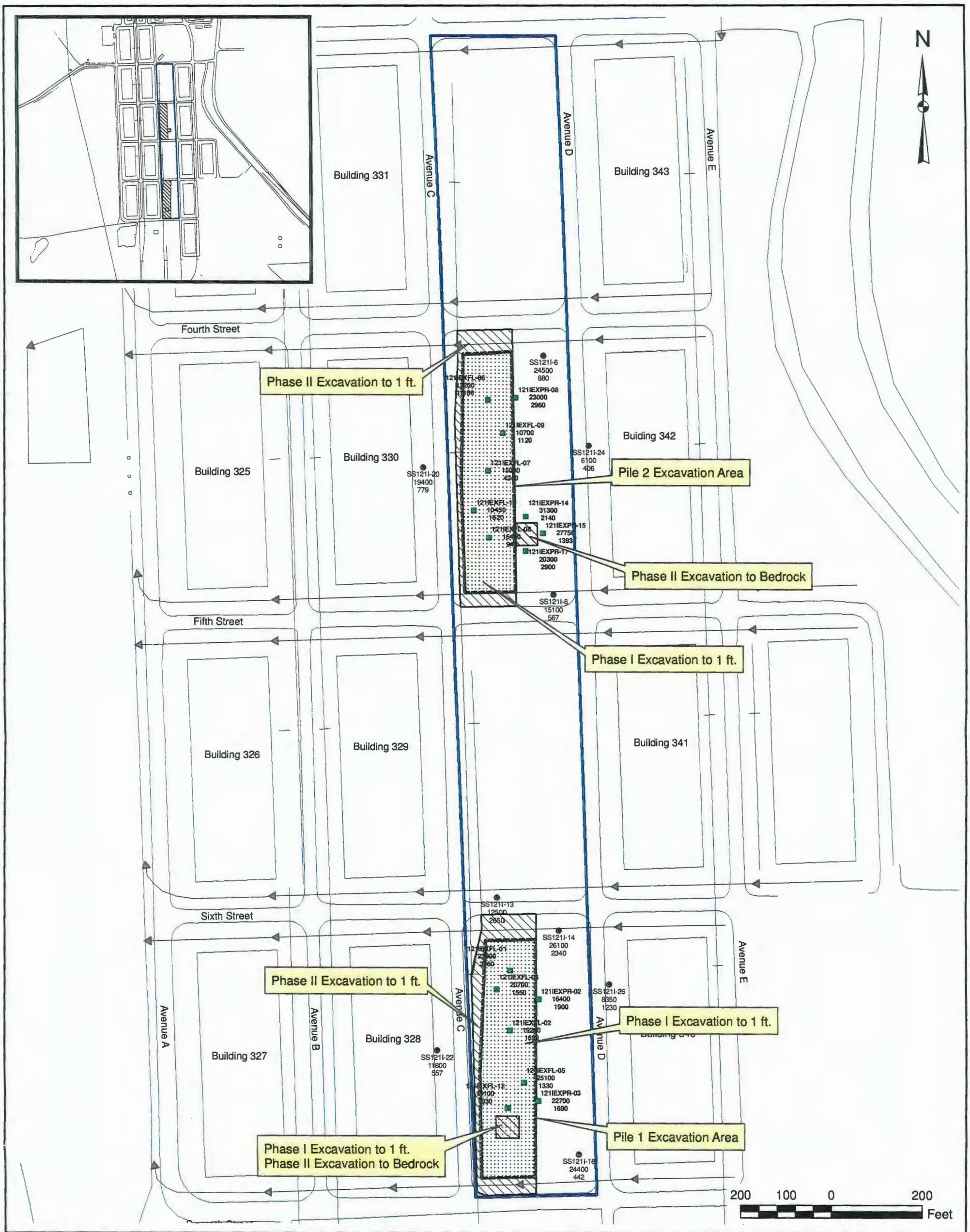
SENECA ARMY DEPOT ACTIVITY

SEAD-121I Removal Action

FIGURE 2
SEAD-121I
PRE-CONSTRUCTION PLAN

Job #: 741172-02300 | Date: DECEMBER 2007

P:\PIT\Projects\Seneca PBC II\SEAD-121C\Construction Completion Report\Draft\Figures\121I F-2.mxd



LEGEND:

- Railroad Tracks
- Site Boundary
- Surface Water
- Surface Water Flow Direction
- Phase I Excavation Area
- Phase II excavation Area
- Limits of Initial Phase I Excavation

SS121I-16 / 24400 / 442 — RI Surface Soil Location with Iron and Manganese Concentrations (mg/Kg), respectively

121IEXPR-02 / 16400 / 1900 — Approximate Final Confirmatory Sample Location with Iron and Manganese Concentrations (mg/Kg), respectively

P:\PIT\Projects\Seneca PBC II\SEAD-121C\Construction Completion Report\Draft\Figures\121I F-3.mxd

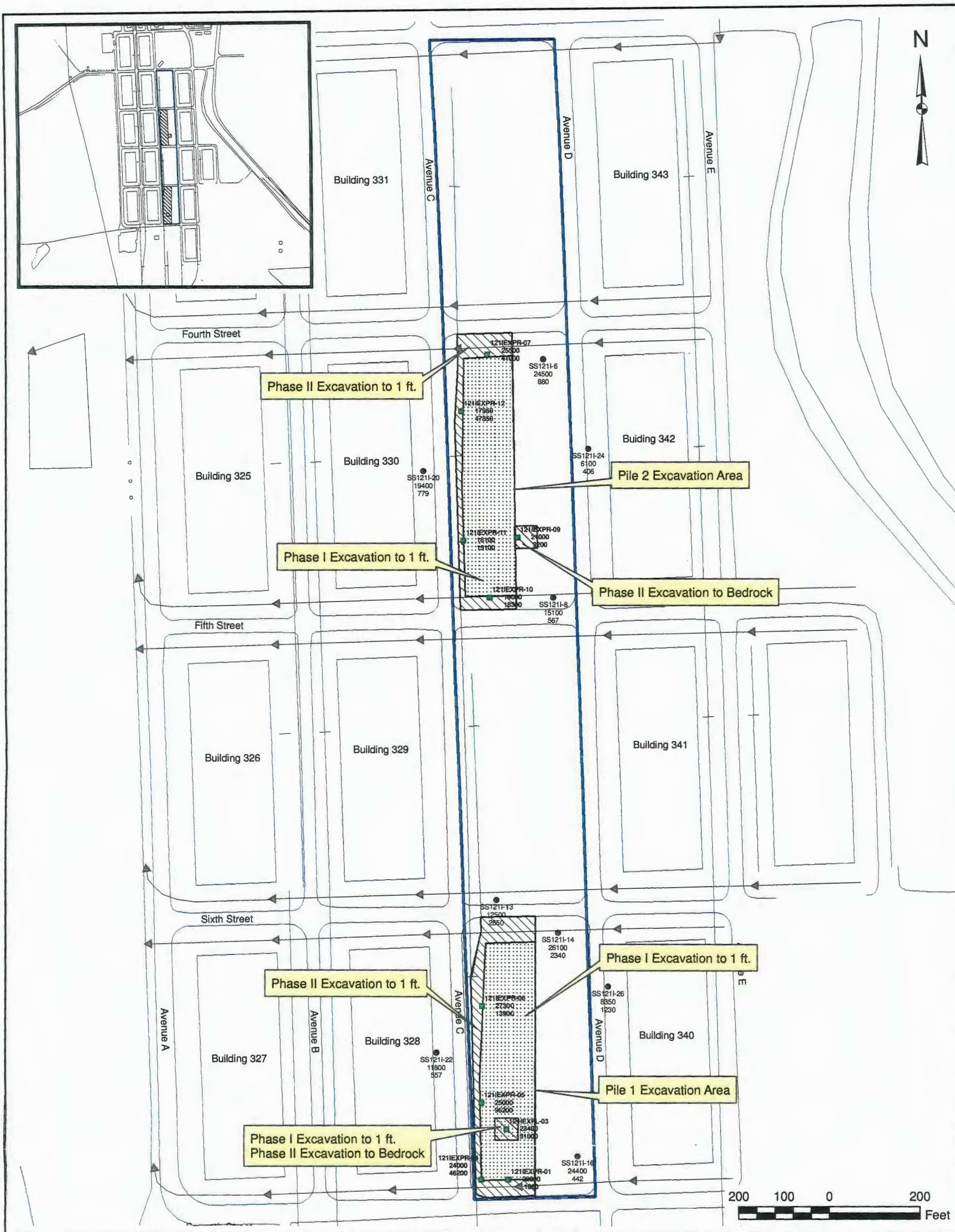
PARSONS

SENECA ARMY DEPOT ACTIVITY

SEAD-121I Removal Action

FIGURE 3
SEAD-121I
EXCAVATION AREA & FINAL CONFIRMATORY SAMPLE LOCATIONS

Job #: 741172-02300 | Date: DECEMBER 2007



LEGEND:

- Railroad Tracks
- Site Boundary
- Surface Water
- Surface Water Flow Direction
- Phase I Excavation Area
- Phase II excavation Area

SS121I-16 / 24400 / 442 — RI Surface Soil Location with Iron and Manganese Concentrations (mg/Kg)

121IEXPR-04 / 24000 / 46200 — Confirmatory Sample Location in Soil Excavated from Site with Iron and Manganese Concentrations (mg/Kg)

NOTE:

The soil associated with the confirmatory samples shown on this figure have been removed during the Phase II excavation and are not representative of soil remaining at the site.

PARSONS

SENECA ARMY DEPOT ACTIVITY

SEAD-121I Removal Action

FIGURE 4
SEAD-121I
LOCATION OF REMOVED
CONFIRMATORY SAMPLES

Job #: 741172-02300 | Date: DECEMBER 2007

P:\PIT\Projects\Seneca PBC II\SEAD-121C\Construction Completion Report\Draft\Figures\121I F-4.mxd

ATTACHMENT A:
DAILY FIELD REPORTS

Daily Field Report

Date:	7/30/2007	**Day:**	Monday	**Weather Conditions:**	
Job #	745172			clear 80's	
Site Name:				**Task(s):**	
Seneca Army Depot Ore Pile Storage - SEAD 1211				Excavation at SEAD-1211, Piles 1 and 2	

Parsons:	**Position**	**S. St. George**	**Position**
Thomas C Andrews	CM	Steve St George	Owner
Ben Mcallister	SSO	Josh Schmack	Operator
		Jason Micael	Operator/Supt.
Visitors	**Representing**	Paul St. George	Operator

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

Health and Safety:

Daily Tool box meeting

Work Performed:

The fence surrounding SEAD-1211 was removed so that the excavator could access Piles 1 and 2.
Pile 1 was excavated to a depth of approximately 1 foot. The excavated material included ore remnants, soil, and asphalt.
Excavated soil was temporarily staged within the boundary of the excavation along the western edge of the Pile area.

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest Nos.
Non-haz	None				SEAD Dirt	Riccelli	

Sampling:

# of samples collected today:

None

Notes:

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
None			

Prepared by: Thomas C Andrews

Daily Field Report

Date:	7/31/2007	**Day:**	Tuesday	**Weather Conditions:**	
Job #	745172			Clear 70-80	
Site Name:				**Task(s):**	
Seneca Army Depot Ore Pile Storage - SEAD 1211				Collect RR Ties, and Load out Excavated Material	

Parsons:	**Position**	**S. St. George**	**Position**
Thomas C Andrews	CM	Steve St George	Owner
Ben Mcallister	SSO	Jason Micael	Oper/Supt
		Josh Schmack	Operator
Visitors	**Representing**	Paul St. George	Operator

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

Health and Safety:

Daily Tool box meeting

Work Performed:

Railroad ties were collected from both Pile 1 and Pile 2, as part of housekeeping activities. The railroad ties, totaling 25.5 tons, were hauled off-site by Riccelli. Load out of the excavated soil staged at Pile 1 began. Riccelli trucks loaded the non-hazardous soil and transported it to Ontario County Landfill.

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest Nos.
Non-haz	18	18	505	505	SEAD Dirt	Riccelli	11572 to 11589
RR Ties	2	2	25.5	25.5	RR Ties	Riccelli	11557 and 11613

Also see attached truck and disposal log.

Sampling:

# of samples collected today:

None

Notes:

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
None			

Prepared by:

Thomas C Andrews

Daily Field Report

Date:	8/1/2007	**Day:**	Wednesday	**Weather Conditions:**	
Job #	745172			Clear 80-90	
Site Name:				**Task(s):**	
Seneca Army Depot Ore Pile Storage - SEAD 1211				Clean Up Former Ore Pile Storage Areas	

Parsons:	**Position**	**S. St. George**	**Position**
Thomas C Andrews	CM	Josh Schmack	Operator
Ben Mcallister	SSO	Paul St. George	Operator
		Bill Caldwell	Operator
Visitors	**Representing**		

Equipment Utilized:				**PPE Level(s):**
Dozer	1	Mechanics Truck	1	D
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	1	

Health and Safety:

Tool Box Safety Meeting

Work Performed:

Pile 2 was excavated to the staked limits to a depth of 1 foot. The excavated material included ore remnants, soil, and asphalt. The Pile 2 material was temporarily staged on the west side of the excavation area. Load out of the Pile 1 material continued, and load out of the Pile 2 material began. The Riccelli trucks transported the non-hazardous material to the Ontario County Landfill.

Material Loaded

	Loads	Total to date	Estimated tons	To. Tons to date	Mat'l Type	Hauler	Manifest Nos.
Non-haz	103	121	3318.27	3,823	SEAD Dirt	Riccelli	11600 to 11625, 11630-11707
RR Ties		2		25.5	RR Ties		

Also see attached truck and disposal log.

Sampling:

# of samples collected today:

None

Notes:

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
None			

Prepared by:

Thomas C Andrews

Daily Field Report

Date:	8/2/2007	**Day:**	Thursday	**Weather Conditions:**	
Job #	745172			clear 90's	
Site Name:				**Task(s):**	
Seneca Army Depot Ore Pile Storage - SEAD 1211				Load Out at Pile 2	

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

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

Health and Safety:

Tool Box Safety Meeting

Work Performed:

The load out of excavated material at Pile 2 was completed. All material excavated at SEAD-1211 has been transported off-site by Riccelli. St. George was not on-site.

Material Loaded

	Loads	Total to date	Estimated tons	To. Tons to date	Mat'l Type	Hauler	Manifest Nos.
Non-haz	38	159	1,051	4,875	SEAD Dirt	Riccelli	11708 to 11750
RR Ties		2		25.5	RR Ties	Riccelli	16744 to 16747

Also see attached truck and disposal log.

Sampling:

# of samples collected today:

None

Notes:

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
None			

Prepared by:

Thomas C Andrews

Daily Field Report

Date:	8/3/2007	**Day:**	Friday	**Weather Conditions:**	
Job #	745172			clear 90's	
Site Name:				**Task(s):**	
Seneca Army Depot Ore Pile Storage - SEAD 1211				Confirmatory Sampling	

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:

Tool Box Safety Meeting

Work Performed:

Confirmatory perimeter and soil sampling was completed at Piles 1 and 2. At Pile 1, 5 floor samples and 6 perimeter samples were collected. At Pile 2, 5 floor samples (and one field duplicate), and 6 perimeter samples (and one field duplicate) were collected. The lab (STL) was instructed to use one project sample to run QA/QC analyses. All samples were packed in a cooler and FedExed to STL in Buffalo for analysis of iron and manganese.

Material Loaded

	Loads	Total to date	Estimated tons	To. Tons to date	Mat'l Type	Hauler	Manifest Nos.	
Non-haz		159		4,875	SEAD Dirt	Riccelli		
RR Ties		2		25.5	RR Ties	Riccelli		

Sampling:

# of samples collected today:

22 samples (plus 2 field duplicates)

Notes:

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
None			

Prepared by: Thomas C Andrews

Daily Field Report

Date:	8/14/2007	Tuesday	**Weather Conditions:**
Job #	745172		Clear 70's
Site Name:			**Task(s):**
Seneca Army Depot Ore Pile Storage - SEAD 1211			Hot spot excavation and additional sampling

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

Visitors	**Representing**
Jackie Travers, Proj. Engineer	Parsons
Todd Heino, PM	Parsons

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

Health and Safety:

Tool box meeting was held.

Work Performed:

The project engineers reviewed the analytical results from the confirmatory samples collected on 8/3/07, and they communicated to the field that 5 samples failed to meet the cleanup goals and excavation of additional soil will be necessary. Closer visual inspection of the areas where samples failed observed the presence of fine ore particles mixed in with the soil. This was specifically observed in the area between the western boundary of the excavations and the railroad tracks. Two spots at Pile 1 and two spots at Pile 2 were excavated. At both piles, the areas north and south of the original excavations were excavated to the edge of the blocks, and the area to the west of the original excavation were excavated up to the railroad tracks to approximately 1 foot in depth. At Pile 1, a 50 x 50 foot grid was excavated around the sample 1211EXFL-03 to bedrock. At Pile 2, a 50 x 50 ft grid was excavated around the sample 1211EXPR-09 to bedrock. Shale bits were visible. Three new perimeter samples (plus a field duplicate) were collected around the 3 new sides of the 50x50 ft box at Pile 2. 1 floor sample was collected immediately north of the 50x50 ft box at Pile 1. Samples were sent to STL for iron and manganese analysis.

Load out of the soil excavated at Pile 2 began and was transported off-site by Riccelli. Some of the soil from Pile 2 and the soil excavated at Pile 1 was temporarily staged along the western edge of the original excavation area.

Material Loaded

	Loads	Total to date	Estimated tons	To. Tons to date	Mat'l Type	Hauler	Manifest Nos.
Non-haz	6	165	159	5.033	SEAD Dirt	Riccelli	16765 to 16770
RR Ties		2		25.5	RR Ties		

Also see attached truck and disposal log.

Sampling:

# of samples collected today:

4 samples (plus 1 field duplicate)

Notes:

Other Materials brought on or off-site

None

Type	Loads	CY	Tons
None			

Prepared by: Thomas C Andrews

Daily Field Report

Date:	8/15/2007	Wednesday	**Weather Conditions:**
Job #	745172		Clear 70's
Site Name:			**Task(s):**
Seneca Army Depot Ore Pile Storage - SEAD 1211			Final Load Out and Demobilization

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

Visitors	**Representing**
Jackie Travers, Proj. Engineer	Parsons
Todd Heino, PM	Parsons

Equipment Utilized:				**PPE Level(s):**
Dozer	1	Mechanics Truck	1	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	1	

Health and Safety:

Tool box meeting was held.

Work Performed:

Load out of the soil excavated at Pile 2 was completed and all soil excavated at Pile1 was loaded out. Load out and transportation off-site was completed.

All work is completed. The contractor and all field crew demobilized from the site.

Visual assessment of depth of excavation

6" or to rock

Material Loaded

	Loads	Total to date	Estimated tons	To. Tons to date	Mat'l Type	Hauler	Manifest Nos.
Non-haz	27	192	881	5,914	SEAD Dirt	Riccelli	16771 to 16797
RR Ties		2		25.5	RR Ties		

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

ATTACHMENT B:

WASTE CHARACTERIZATION DATA

Parsons Seneca Army Depot (Parsons project 745172)
Seneca II Ore Piles

Sample ID: ORE PILE NA
Lab Sample ID: A7129401
Date Collected: 02/08/2007
Time Collected: 11:25

Date Received: 02/08/2007
Project No: NY5A9493.1
Client No: 51465
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
TCLP Metals Analysis							
Arsenic - Total	3.9	B	0.37	UG/L	6010	02/13/2007 20:27	
Barium - Total	7.2		0.05	UG/L	6010	02/13/2007 20:27	
Cadmium - Total	ND		0.06	UG/L	6010	02/13/2007 20:27	
Chromium - Total	ND		0.09	UG/L	6010	02/13/2007 20:27	
Lead - Total	11.1		0.19	UG/L	6010	02/13/2007 20:27	
Mercury - Total	ND		0.120	UG/L	7470	02/13/2007 16:22	LH
Selenium - Total	68.3		0.59	UG/L	6010	02/13/2007 20:27	
Silver - Total	ND		0.15	UG/L	6010	02/13/2007 20:27	
Wet Chemistry Analysis							
Corrosivity (pH)	7.39		0	S.U.	9045	02/11/2007 13:25	RG
Flashpoint	>200		0	°F	1010	02/13/2007	AEG
H2S Released From Waste	ND		10	MG/KG	SECT7.3	02/09/2007 20:00	SM
HCN Released From Waste	ND		10	MG/KG	SECT7.3	02/09/2007 20:00	SM

Parsons Seneca Army Depot (Parsons project 745172)
Seneca II Ore Piles

Sample ID: ORE PILE NB
Lab Sample ID: A7129402
Date Collected: 02/08/2007
Time Collected: 11:25

Date Received: 02/08/2007
Project No: NY5A9493.1
Client No: 51465
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
TCLP Metals Analysis							
Arsenic - Total	6.7	B	0.37	UG/L	6010	02/13/2007 20:52	
Barium - Total	51.6		0.05	UG/L	6010	02/13/2007 20:52	
Cadmium - Total	ND		0.06	UG/L	6010	02/13/2007 20:52	
Chromium - Total	12.9		0.09	UG/L	6010	02/13/2007 20:52	
Lead - Total	28.6		0.19	UG/L	6010	02/13/2007 20:52	
Mercury - Total	ND		0.120	UG/L	7470	02/13/2007 16:27	LH
Selenium - Total	166		0.59	UG/L	6010	02/13/2007 20:52	
Silver - Total	ND		0.15	UG/L	6010	02/13/2007 20:52	
Wet Chemistry Analysis							
Corrosivity (pH)	7.53		0	S.U.	9045	02/11/2007 13:25	RG
Flashpoint	>200		0	°F	1010	02/14/2007 09:00	SM
H2S Released From Waste	ND		10	MG/KG	SECT7.3	02/09/2007 20:00	SM
HCN Released From Waste	ND		10	MG/KG	SECT7.3	02/09/2007 20:00	SM

Sample ID: ORE PILE SA
Lab Sample ID: A7129403
Date Collected: 02/08/2007
Time Collected: 11:50

Date Received: 02/08/2007
Project No: NY5A9493.1
Client No: 51465
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
TCLP Metals Analysis							
Arsenic - Total	4.7	B	0.37	UG/L	6010	02/13/2007 20:57	
Barium - Total	60.6		0.05	UG/L	6010	02/13/2007 20:57	
Cadmium - Total	ND		0.06	UG/L	6010	02/13/2007 20:57	
Chromium - Total	6.9		0.09	UG/L	6010	02/13/2007 20:57	
Lead - Total	19.7		0.19	UG/L	6010	02/13/2007 20:57	
Mercury - Total	ND		0.120	UG/L	7470	02/13/2007 16:28	LH
Selenium - Total	117		0.59	UG/L	6010	02/13/2007 20:57	
Silver - Total	ND		0.15	UG/L	6010	02/13/2007 20:57	
Wet Chemistry Analysis							
Corrosivity (pH)	7.39		0	S.U.	9045	02/11/2007 13:25	RG
Flashpoint	>200		0	°F	1010	02/14/2007 09:00	SM
H2S Released From Waste	ND		10	MG/KG	SECT7.3	02/09/2007 20:00	SM
HCN Released From Waste	ND		10	MG/KG	SECT7.3	02/09/2007 20:00	SM

Sample ID: ORE PILE SB
Lab Sample ID: A7129404
Date Collected: 02/08/2007
Time Collected: 11:40

Date Received: 02/08/2007
Project No: NY5A9493.1
Client No: 51465
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
TCLP Metals Analysis							
Arsenic - Total	6.1	B	0.37	UG/L	6010	02/13/2007 21:16	
Barium - Total	74.7		0.05	UG/L	6010	02/13/2007 21:16	
Cadmium - Total	ND		0.06	UG/L	6010	02/13/2007 21:16	
Chromium - Total	6.2		0.09	UG/L	6010	02/13/2007 21:16	
Lead - Total	20.6		0.19	UG/L	6010	02/13/2007 21:16	
Mercury - Total	ND		0.120	UG/L	7470	02/13/2007 16:32	LH
Selenium - Total	125		0.59	UG/L	6010	02/13/2007 21:16	
Silver - Total	ND		0.15	UG/L	6010	02/13/2007 21:16	
Wet Chemistry Analysis							
Corrosivity (pH)	7.43		0	S.U.	9045	02/11/2007 13:25	RG
Flashpoint	>200		0	°F	1010	02/14/2007 09:00	SM
H2S Released From Waste	ND		10	MG/KG	SECT7.3	02/09/2007 20:00	SM
HCN Released From Waste	ND		10	MG/KG	SECT7.3	02/09/2007 20:00	SM

ATTACHMENT C:

PHOTOGRAPHS

Photographs from SEAD-121I

Location of Former Ore Pile 1

Western side of Warehouse Area Block between 6th and 7th Streets Avenue C and Avenue D

SEAD-121I Former Ore Pile Location 1 Looking South During Soil Load Out

SEAD-121I Former Ore Pile Location 1 Looking South

Photographs from SEAD-121I

Location of Former Ore Pile 2

Western side of Warehouse Area Block between 4th and 5th Streets Avenue C and Avenue D

SEAD-121l Former Ore Pile Location 2
Railroad Ties

SEAD-121l Former Ore Pile 2 Location Looking Northeast

SEAD-121l Former Ore Pile 2 Location Looking East

SEAD-121l Former Ore Pile Location 2 Looking Southeast

SEAD-121I Former Ore Pile Location 2 Looking Southeast

SEAD-121I Pile 2 Excavation Area with Overburden Removed

SEAD-121I Former Ore Pile Location 2 During Soil Load Out
Looking South

ATTACHMENT D:

COMPLETE ANALYTICAL DATA

Attachment D
Table D-1
SEAD-121I Complete Confirmatory Soil Sample Results
SEAD-121I Removal Action
Seneca Army Depot Activity

FACILITY								SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I
LOCATION ID								121IEXFL-01	121IEXFL-02	121IEXFL-03	121IEXFL-04	121IEXFL-05	121IEXFL-06
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								121IEXFL-01	121IEXFL-02	121IEXFL-03	121IEXFL-04	121IEXFL-05	121IEXFL-06
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
PILE No.								1	1	1	1	1	2
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [2]	Number of Exceedances	Number of Times Detected	Number of Analyses [3]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Iron	MG/KG	31300	100%	100000	0	26	26	23800 J	19200 J	**23400 J**	20700 J	25100 J	13200 J
Manganese	MG/KG	96200	100%	20000	5	26	26	3360 J	1690 J	**31000 J**	1550 J	1330 J	11100 J

Notes:

(1) The cleanup goal for iron is 100,000 mg/kg. The cleanup goals for manganese is that the 95th UCL must be below 10,000 mg/kg, and no single sample shall exceed 20,000 mg/kg.

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.

(3) Bolded cells indicate that the sample failed to meet the cleanup goal. A shaded and boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the sample results are not representative of soil remaining at the site, and the analytical results for the shaded sample are not part of the final dataset.

J = the reported value is an estimated concentration

Attachment D
Table D-1
SEAD-121I Complete Confirmatory Soil Sample Results
SEAD-121I Removal Action
Seneca Army Depot Activity

FACILITY								SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I
LOCATION ID								121IEXFL-07	121IEXFL-08	121IEXFL-09	121IEXFL-10	121IEXFL-10	121IEXFL-12
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								121IEXFL-07	121IEXFL-08	121IEXFL-09	121IEXFL-11	121IEXFL-10	121IEXFL-12
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/14/2007
QC CODE								SA	SA	SA	DU	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
PILF No.								2	2	2	2	2	1
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [2]	Number of Exceedances	Number of Times Detected	Number of Analyses [3]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Iron	MG/KG	31300	100%	100000	0	26	26	15000 J	16400 J	10700 J	10400 J	10500 J	16100 J
Manganese	MG/KG	96200	100%	20000	5	26	26	4240 J	944 J	1120 J	1540 J	1700 J	1030 J

Notes:

(1) The cleanup goal for iron is 100,000 mg/kg. The cleanup goals for manganese is that the 95th UCL must be below 10,000 mg/kg, and no single sample shall exceed 20,000 mg/kg.

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.

(3) Bolded cells indicate that the sample failed to meet the cleanup goal. A shaded and boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the sample results are not representative of soil remaining at the site, and the analytical results for the shaded sample are not part of the final dataset.

J = the reported value is an estimated concentration

Attachment D
Table D-1
SEAD-121I Complete Confirmatory Soil Sample Results
SEAD-121I Removal Action
Seneca Army Depot Activity

FACILITY								SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I
LOCATION ID								121IEXPR-01	121IEXPR-02	121IEXPR-03	121IEXPR-04	121IEXPR-05	121IEXPR-06
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								121IEXPR-01	121IEXPR-02	121IEXPR-03	121IEXPR-04	121IEXPR-05	121IEXPR-06
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
PILE No.								1	1	1	1	1	1
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [2]	Number of Exceedances	Number of Times Detected	Number of Analyses [1]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Iron	MG/KG	31300	100%	100000	0	26	26	22000 J	16400 J	22700 J	24000 J	25000 J	27300 J
Manganese	MG/KG	96200	100%	20000	5	26	26	1860 J	1900 J	1690 J	**46200 J**	**96200 J**	13900 J

Notes:

(1) The cleanup goal for iron is 100,000 mg/kg. The cleanup goals for manganese is that the 95th UCL must be below 10,000 mg/kg, and no single sample shall exceed 20,000 mg/kg.

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.

(3) Bolded cells indicate that the sample failed to meet the cleanup goal. A shaded and boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the sample results are not representative of soil remaining at the site, and the analytical results for the shaded sample are not part of the final dataset.

J = the reported value is an estimated concentration

Attachment D
Table D-1
SEAD-121I Complete Confirmatory Soil Sample Results
SEAD-121I Removal Action
Seneca Army Depot Activity

FACILITY								SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I
LOCATION ID								121IEXPR-07	121IEXPR-08	121IEXPR-09	121IEXPR-10	121IEXPR-11	121IEXPR-12
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								121IEXPR-07	121IEXPR-08	121IEXPR-09	121IEXPR-10	121IEXPR-11	121IEXPR-13
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007
QC CODE								SA	SA	SA	SA	SA	DU
STUDY ID								RA	RA	RA	RA	RA	RA
PILE No.								2	2	2	2	2	2
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [2]	Number of Exceedances	Number of Times Detected	Number of Analyses [1]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Iron	MG/KG	31300	100%	100000	0	26	26	25500 J	23000 J	21000 J	19000 J	18100 J	17700 J
Manganese	MG/KG	96200	100%	20000	5	26	26	41000 J	2960 J	9200 J	18300	15100	47000

Notes:

(1) The cleanup goal for iron is 100,000 mg/kg. The cleanup goals for manganese is that the 95th UCL must be below 10,000 mg/kg, and no single sample shall exceed 20,000 mg/kg.

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.

(3) Bolded cells indicate that the sample failed to meet the cleanup goal. A shaded and boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the sample results are not representative of soil remaining at the site, and the analytical results for the shaded sample are not part of the final dataset.

J = the reported value is an estimated concentration

Attachment D
Table D-1
SEAD-121I Complete Confirmatory Soil Sample Results
SEAD-121I Removal Action
Seneca Army Depot Activity

FACILITY								SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I
LOCATION ID								121IEXPR-12	121IEXPR-14	121IEXPR-15	121IEXPR-15	121IEXPR-17
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								121IEXPR-12	121IEXPR-14	121IEXPR-16	121IEXPR-15	121IEXPR-17
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/3/2007	8/14/2007	8/14/2007	8/14/2007	8/14/2007
QC CODE								SA	SA	DU	SA	SA
STUDY ID								RA	RA	RA	RA	RA
PILE No.								2	2	2	2	2
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [2]	Number of Exceedances	Number of Times Detected	Number of Analyses [1]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Iron	MG/KG	31300	100%	100000	0	26	26	18200 J	31300 J	28800 J	26700 J	20300 J
Manganese	MG/KG	96200	100%	20000	5	26	26	**48700**	2140 J	776 J	2010 J	2900 J

Notes:

(1) The cleanup goal for iron is 100.000 mg/kg. The cleanup goals for manganese is that the 95th UCL must be below 10.000 mg/kg. and no single sample shall exceed 20,000 mg/kg.

(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.

(3) Bolded cells indicate that the sample failed to meet the cleanup goal. A shaded and boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the sample results are not representative of soil remaining at the site, and the analytical results for the shaded sample are not part of the final dataset.

J = the reported value is an estimated concentration

File SEAD 121 I

PARSONS

150 Federal Street, 4th Floor • Boston, Massachusetts 02110 • (617) 946-9400 • Fax (617) 946-9777 • www.parsons.com

September 16, 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: Revised Letter Report for Removal Action at the Location of Former Ore Piles Staged at SEAD-121I 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 this revised letter report for the removal activities completed at the location of Piles 1 and 2 located at the Rumored Cosmoline Oil Disposal Area (SEAD-121I) at the Seneca Army Depot Activity (SEDA) in Romulus, New York. This letter describes the removal action construction activities addressing residual ferro-manganese ore and associated soil and asphalt at SEAD-121I between July 30, 2007 and August 15, 2007.

A summary of the completed activities has been previously provided in the Final Proposed Plan and the Final Record of Decision for SEAD-121C and SEAD-121I submitted by Parsons on January 15, 2008 and August 27, 2008, respectively.

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 letter 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

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)

PARSONS

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September 16, 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: Revised Letter Report for Removal Action at the Location of Former Ore Piles Staged at SEAD-121I at Seneca Army Depot Activity; Contract FA8903-04-D-8675; 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 this revised letter report for the removal activities completed at the location of Piles 1 and 2 located at the Rumored Cosmoline Oil Disposal Area (SEAD-121I) at the Seneca Army Depot Activity (SEDA) in Romulus, New York (USEPA Site ID# NY0213820830 and NY Site ID# 8-50-006). This letter describes the removal action construction activities addressing residual ferro-manganese ore and associated soil and asphalt at SEAD-121I between July 30, 2007 and August 15, 2007. A summary of the completed activities has been previously provided in the Final Proposed Plan and the Final Record of Decision for SEAD-121C and SEAD-121I submitted by Parsons on January 15, 2008 and August 27, 2008, respectively.

Parsons appreciates the opportunity to provide you with this letter 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.
Program Manager

Enclosures

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

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Army's Response to Comments from the U.S. Environmental Protection Agency, Region II

Subject: Letter Construction Report for SEAD-121I Removal Action
Seneca Army Depot
Romulus, New York

Comments Dated: March 05, 2008

Date of Comment Response: September 15, 2008

Comment 1:

Based on the report and the photographs, the areas that once contained piles of ferrous-manganese ore are now gone, soil has been excavated, and the site was regraded. Everything seems to be in order. The only question regards the cleanup levels that were chosen. For iron, a cleanup value of 100,000 mg/kg was used and for manganese a cleanup value of 20,000 mg/kg was used. A recent document for SEAD 24 identified 36,500, 38,600, and 23,000 mg/kg as appropriate cleanup values for iron and 1060, 2380, 1600, and 1800 mg/kg as appropriate cleanup values for manganese, so I am not sure how the values of 100,000 mg/kg for iron and 20,000 mg/kg for manganese were derived.

At any rate, based on the post-excavation sampling, the 95% UCL for iron was 22,116 mg/kg, which is below all of the listed cleanup values above. However the 95% UCL for manganese was 3,550 mg/kg, which is above all of the cleanup values listed above. In addition, the area that was excavated was not covered with clean fill or even vegetated, it was only graded. It would seem appropriate to do something to the area to reduce run off, especially since the manganese concentrations are above criteria that were deemed acceptable for another SEAD located on the site.

Response 1:

The SEAD-121I cleanup goals selected for manganese were specified as a 95th UCL value of 10,000 mg/Kg, based only on the samples associated with the excavation, with a secondary limit that no individual sample's concentration could exceed a value of 20,000 mg/Kg.

The 10,000 mg/Kg UCL value was selected based on the New York's Part 375 Part 6.8 industrial use soil cleanup objective (SCO) value, while the 20,000 was selected as it approximated the 19,458 mg/Kg Region IX Industrial soil PRG for manganese.

The 100,000 mg/Kg is the Region IX Industrial soil PRG for Iron. There is no NYS SCO for iron.

The EPA, the NYSDEC, and the NYSDOH were advised that the Army had established these cleanup goals via an email that was forwarded to all parties on July 26, 2007.

With reference to the commenter's concerns about the difference between the numbers used for SEAD 24 and SEAD 121I, SEAD 24 is located in an area that was formerly classified as conservation/recreational, but now has been reclassified by the Seneca County Industrial Development Agency (SCIDA, i.e., the current owner of the land surrounding SEAD 24) as Development Reserve (i.e., Industrial). SEAD 121I I is located in an area where the future land use is defined as commercial or industrial by the current owner, SCIDA (exclusive of Army retained properties).

At the time when the proposed plan for SEAD 24 was first prepared, the Army compared site data to New York's Technical and Administrative Guidance Memorandum #4046 values and SEDA specific background data. The values listed for iron (36,500, 38,600, and 23,000 mg/kg) reflect the 95th percentile value of the SEDA background data set (previously used as the TAGM 4046 value), the maximum iron concentration found in the SEDA background data set, and the approximate EPA Region IX residential soil PRG, respectively. The 1060, 2380, 1600, and 1800 mg/kg values listed for manganese represent the 95th percentile value of the SEDA background data set, the maximum manganese concentration found in the SEDA background data set, the current NYSDEC Part 375 SCO value for unrestricted use, and the approximate EPA Region IX residential soil PRG, respectively.

NYSDEC TAGM #4046 values are no longer used in current data evaluations and assessments at SEDA; they have been replaced by NYSDEC's Part 375 SCO values for the varying land reuse classifications. Comparison of SEAD 121I site conditions to residential use guidance values is not appropriate, because the site is located in a commercial/industrial area.

Army's Response to Comments from the New York State Department of Environmental Conservation

Subject: Letter Construction Report for SEAD-121I Removal Action
Seneca Army Depot
Romulus, New York

Comments Dated: April 28, 2008

Date of Comment Response: September 15, 2008

GENERAL COMMENTS:

Comment 1: It is noted that a work plan for this removal action was not submitted to DEC for review and approval. The ROD concurred by State on March 31, 2008 includes documentation of the implementation of this removal action.

Response 1: This work was performed as a housekeeping activity and not as a CERCLA required action, subsequent to the Army's termination of the ore stockpile mission at the site. This work was conducted concurrent to work at other sites at the Depot where CERCLA based actions were being performed. The removal was conducted in a manner that was consistent with the other actions that were underway at the time. The NYSDEC and the EPA were notified that this work would be performed in a manner that was consistent with the other ongoing actions.

Comment 2: For iron, a cleanup value of 100,000 mg/kg was used and for manganese a cleanup value of 20,000 mg/kg was used. How have you derived this cleanup number in Table 2?

Response 2: The SEAD-121I cleanup goals selected for manganese were specified as a 95% UCL value of 10,000 mg/Kg, based only on the samples associated with the excavation, with a secondary limit that no individual sample's concentration could exceed a value of 20,0000 mg/Kg.

The 10,000 mg/Kg UCL value was selected based on the New York's Part 375 Part 6.8 industrial use soil cleanup objective (SCO) value, while the 20,000 was selected as it approximated the 19,458 mg/Kg Region IX Industrial soil PRG for manganese.

The 100,000 mg/Kg is the Region IX Industrial soil PRG for Iron. There is no NYS SCO for iron.

The EPA, the NYSDEC, and the NYSDOH were advised that the Army had established these cleanup goals via an email that was forwarded to all parties on July 26, 2007.

SPECIFIC COMMENTS:

Comment 1: Section 3.3. Site restoration – the area that was excavated was not covered with clean fill or even vegetated, it was only graded. It would be appropriate to do something to the area to reduce run off, especially since the manganese concentrations are above criteria that were deemed acceptable for another SEAD located on the site.

Response 1: Excavations performed in SEAD 121I as part of the ore pile removals generally terminated at bedrock, and are below the elevation of the surrounding area. Therefore, it is unlikely that runoff from the area excavation to the surrounding areas will occur. The manganese concentrations left at SEAD 121I are consistent with the cleanup goals established for the removal action, and are consistent with the continued use of the site for industrial or commercial purposes. The State's non-specific reference to another SEAD at SEDA can not be specifically addressed without further information. The Army developed its SEAD 121I cleanup goals with specific consideration of the SWMU's intended future use.

Comment 2: Section 4. The statement "No further action is required...." is not adequate for the ROD, the use of this AOC for residential activities is prohibited until unrestricted use and unlimited exposure criteria are attained.

Response 2: Agreed, this section will be reworded.

Comment 3: Table 3. The text should note that confirmatory samples 121IEXPR-08, 121IEXPR-14, 121IEXPR-15 and 121IEXPR-17 on August 14, 2007 have manganese above the established limits for residential-unrestricted use in NYS.

Response 3: The Army's presentation is consistent with the cleanup goals established for the housekeeping activity, and the future land use of the SWMU, which is continued use as industrial/commercial land. Comparisons to residential and unrestricted future uses are not warranted given the defined future use of the site.

PARSONS

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TECHNICAL MEMORANDUM

Date: September 16, 2008

To: Julio Vazquez, USEPA
Kuldeep Gupta, NYSDEC
Mark Sergott, NYSDOH

From: Todd Heino, Parsons

Subject: Revised Letter Report, Removal Action at the Location of Former Ore Piles Staged at SEAD-121I at Seneca Army Depot Activity, Romulus, New York

1.0 INTRODUCTION

This letter details the housekeeping activities completed between July 30, 2007 and August 15, 2007 to remove residual ferro-manganese ore and associated soil and asphalt from the former locations of Pile 1 and Pile 2 located within the solid waste management unit (SWMU), the Rumored Cosmoline Oil Disposal Area (SEAD-121I), located at the Seneca Army Depot Activity (SEDA or the Depot), Romulus, New York. The U.S. Government historically staged strategic stockpiles of ferro-manganese ore in portions of SEAD-121I. The U.S. Government's strategic stockpile mission at the SEDA has terminated and the Government recently sold and removed the stockpiles. While Parsons' field crew, the earthwork subcontractor St. George, and the T&D subcontractor Riccelli Enterprises, Inc. were on-site for the three removal actions conducted at SEAD-121C, SEAD-16, and SEAD-17, the Army directed Parsons to remove residual ore and soil mixed with ore residuals from the former strategic stockpiles of ferro-manganese ore located at SEAD-121I.

This letter report describes the removal activities at SEAD-121I and presents sample collection and laboratory test results, drawings, and photo documentation. This letter documents that all construction activities associated with the Ore Pile removal at SEAD-121I were completed in general accordance with similar SEDA removal action work plans for metals contaminated sites. As a result of this work, no further action associated with the Ore storage mission is required at SEAD-121I. The removal action involved the removal and off-site disposal of ore contaminated soil, asphalt, and residual quantities of ferro-manganese ore. This technical memorandum has been prepared for the Air Force Center for Engineering and the Environment (AFCEE) and the U.S. Army Corps of Engineers (USACE) under Contract No: FA8903-04-D-8675, Task Order No. 0031.

1.1 Site Description

SEDA is a 10,587-acre former military facility located in Seneca County in the Towns of Varick and Romulus, 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 **Figure 1**. As shown in **Figure 1**, SEDA is located between Seneca Lake and Cayuga Lake in Seneca County.

Since its inception in 1941, SEDA's primary mission was the receipt, storage, maintenance, and supply of military items. In addition, beginning shortly after the end of World War II, land at the SEDA was also used as the location where strategic and critical materials were stockpiled in the interest of national defense.

SEDA was nominated for inclusion on the NPL in July 1989, and it was listed under Group 14 on the Federal Section of the NPL in August of 1990. 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 Facilities Agreement (FFA). This agreement stated that future investigations would be based on CERCLA guidelines, and that the Resource Conservation and Recovery Act (RCRA) was considered an ARAR pursuant to Section 121 of CERCLA. In October 1995, SEDA was designated as a facility to be closed under the provisions of the Department of Defense's (DoD's) Base Realignment and Closure (BRAC) process.

SEAD-121I begins at a ocation approximately 4,300 feet south-southwest of the former main entrance gate to the Depot and extends approximately 2,600 feet further towards the south. SEAD-121I encompasses four rectangular-shaped, open grass and dirt covered areas that are bounded by 3rd and 7th Streets (north and south ends, respectively) and Avenues C and D (west and east sides, respectively). The area of concern (AOC) is approximately 300 feet in width throughout its length, and the overall size of the AOC is approximately 16.8 acres. The portions of SEAD-121I addressed in the removal action are the second and fourth (north to south) blocks, where the ferro-manganese ore piles were staged. A railroad spur line enters SEAD-121I from the south and extends to the northern end of the AOC where it terminates near the intersection of 3rd St. and Avenue C. Two sidings branch off the main spur line; one terminates in the first (north to south) block and the other terminates in the third (north to south) block. There are concrete loading docks located in the first and third blocks next to the railroad lines.

The two former ferro-manganese ore stockpiles were staged on asphalt pads that were adjacent to the railroad lines that run south to north along Avenue C, one between 4th and 5th Streets (second block, north to south), with the other between 6th and 7th Streets (fourth block, north to south), shown in the area plan in **Figure 2**.

1.2 Contaminants of Concern

Soil Data

The results of the soil sampling completed during the Environmental Baseline Study (EBS) and the Remedial Investigation (RI) indicated that ore had mixed with the soil at SEAD-121I. This was identified in the soil at SEAD-121I where iron and manganese were found, specifically in the areas surrounding the two ferro-manganese ore piles. The maximum concentrations of iron and manganese detected during the RI and EBS were 69,000 mg/kg and 349,000 mg/kg, respectively, shown in **Figure 2.**

Groundwater Data

Groundwater is not present in the shallow overburden underlying SEAD-121I.

2.0 PRE-CONSTRUCTION ACTIVITIES

2.1 Access and Security

Prior to the removal action, the former ore pile locations were enclosed and isolated from the surrounding area by security fences with access gates that were kept locked. Warning signs were also affixed to the security fence around each of the ore pile locations. The Army provided site access to the field team prior to and during the performance of construction activities at SEAD-121I.

The excavations performed at the former ore pile areas at SEAD-121I extended to the edge of the storage area, and as a result, the security fences used to isolate the piles from the surrounding areas were removed prior to the excavation of soil from these areas.

All aspects of the construction activities performed at the work areas located within SEAD-121I were coordinated with the 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, provided in **Attachment A.**

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, prior to their entry into any of the active work zones.

2.2 Clearing

Tall grass and scrub brush present around the edge of the security fences at SEAD-121I was mowed and cleared prior to the initiation of the work. Mowed grass and cleared brush were left on the ground and removed with soil during excavation activities.

2.3 Establishment of Work and Staging Areas

The perimeter of the 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. Access to the excavation areas in SEAD-121I were off the existing roads (Avenue C or D and 4th, 5th, 6th or 7th Streets).

The work support zone was arranged to facilitate free and logical equipment movement to and from the excavation area, which enhanced safety, security and minimized the likelihood that contaminants were introduced to other areas of the Depot. The work support zone at SEAD-121I was located within the footprint of the respective excavation zones.

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

2.4 Establishment of Erosion and Sedimentation Controls

Hay bales were placed over the top of storm water catch basins located along the southern and northern ends of the ore stockpile locations in SEAD-121I to prevent migration of sediments at the catch basins. The hay bales were maintained throughout the excavation. No storm events occurred during the construction activity period.

2.5 Disposal Characterization and Approval

Pre-approval was received from the disposal facility for the excavated non-hazardous soil from the SEAD-121I ore piles. The disposal facility, Ontario County Landfill in Flint, New York, required the analysis of one sample per 2,000 tons of material from the area anticipated to be excavated at each of the locations. This sampling frequency requirement was based on the disposal facility's review of the historic sampling results at SEAD-121I and their specific sampling requirements.

Four composite waste characterization samples were collected from the areas to be excavated at SEAD-121I. The samples were submitted to Severn-Trent Laboratory (STL) located in Buffalo, New York. All samples were analyzed for hazardous waste characterization (reactivity, ignitability, and corrosivity) and Toxicity Characteristic Leaching Procedure (TCLP) metals. The disposal facility did not require testing for other TCLP parameters based on a review of historic information. All samples met the limits listed in Title 40 Code of Federal Regulations (CFR) Part 261.21 through 261.24. The analytical data are provided in **Attachment B**.

3.0 CONSTRUCTION ACTIVITIES

This section documents construction-phase activities associated with the removal action at SEAD-121I. Construction activities began with mobilization of Parsons' field crew and selected earthwork subcontractor, St. George Enterprises, Inc. of Fredonia, New York, on July 30, 2007. All construction activities were completed by August 15, 2007, at which time Parsons and St. George demobilized from the site. All pre-construction, construction, and post-construction activities that took place at SEDA were documented in daily reports (**Attachment A**).

To facilitate access by the excavator to the SEAD-121I excavation areas, the fence surrounding the AOC was taken down. The fence fabric and gates were removed and stored. The fence posts were cut off at grade and disposed at an off-site facility.

3.1 Excavation and Confirmatory Sampling

The proposed excavation area at SEAD-121I was delineated based on the historic location of the former strategic ore piles and based on concentrations of iron and manganese observed in the soil during the RI, shown in **Figure 2**. Excavation began on July 30, 2007 and was completed on August 15, 2007. **Figure 3** shows the initial excavation area at SEAD-121I. The excavation areas were separated into "Pile 1" and "Pile 2". Pile 1 is the southernmost location of the former ferro-manganese ore pile situated in the west side of the block located between Avenue C, Sixth Street, Avenue D, and Seventh Street; Pile 2 is the northernmost location of the former strategic ore pile located in the west side of the block bounded by Avenue C, Fourth Street, Avenue D, and Fifth Street. The limits of the initial Phase I excavation ran along the footprints of the former ore piles, shown in **Figures 2** and **3**.

Phase I Excavation

The initial excavation of Piles 1 and 2 were termed Phase I excavation. The Phase I excavation was completed between July 30, 2007 and August 2, 2007. The excavation extended to a depth of approximately 1 foot below ground surface or shallower if hard shale was encountered. The former piles were placed directly on asphalt, therefore the asphalt, the underlying soil, and bits of shale were excavated. Railroad ties, which has outlined the ore piles were collected at Pile 1 and 2 as part of

housekeeping activities and staged for off-site disposal with the excavated soil. The excavated material was pushed to the west and temporarily staged along the eastern edge of each excavation area. Excavated material was loaded and transported off-site by Riccelli Enterprises Inc. of Syracuse, New York at the end of each excavation phase and was not staged for extended periods of time. Approximately 1,349 cy of soil at Pile 1 and 2,028 cy of soil at Pile 2 were excavated during Phase I. Excavation quantities are summarized in **Table 1**. Photos of the excavation activities are provided in **Attachment C**.

Phase I Sampling

After the Phase I excavation was completed, confirmatory samples were collected from the floor and perimeter of the excavation to confirm that all soil with iron and manganese exceeding the cleanup goals was excavated and removed from the AOC. The cleanup goal for iron (listed in **Table 2**) at SEAD-121I is as follows:

- The 95% UCL of the mean (as calculated using USEPA's ProUCL program) of 100,000 mg/kg, which was the USEPA Region IX Industrial Preliminary Remedial Goal (PRG).

The cleanup goals for manganese (listed in **Table 2**) at SEAD-121I are as follows:

- The 95% UCL of the mean (as calculated using USEPA's ProUCL program) of 10,000 mg/kg, which is the NYSDEC's Commercial and Industrial Use Soil Cleanup Objective; and
- No individual sample exceeding 20,000 mg/kg.

The basis used for establishing the identified cleanup goals are as follows:

- The 100,000 mg/kg limit established for iron is equivalent to the U.S. EPA Region IX Industrial soil PRG for iron (October 2004). There is no soil cleanup objective value iron identified by the NYSDEC.
- The 10,000 mg/kg value for manganese was selected based on the New York's Part 375 Part 6.8 commercial and industrial use soil cleanup objective value, while the 20,000 mg/kg individual sample limit was selected because it approximated the 19,458 mg/kg U.S. EPA Region IX industrial soil PRG (October 2004) for manganese.

All samples were collected at SEAD-121I according to procedures outlined in the Contract-Specific Site-Wide Sampling and Analysis Plan for Seneca Army Depot Activity (SAP) (Parsons, 2006c). Floor and perimeter samples were collected as grab samples from unique locations, at depth range between 0 and 2 inches below ground surface, unless otherwise noted. Analytical data for all confirmatory samples are provided in **Attachment D**. Field duplicates were collected to meet the QA/QC requirements. The data

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 II's Standard Operating Procedures (SOP). Samples were submitted to STL located in Buffalo, New York for analysis of iron and manganese by USEPA SW846 Method 6010B. Analytical results were compared to the cleanup goals listed in **Table 2**. Confirmatory floor samples were not collected when the excavation reached bedrock, since soil was not available to sample.

Pile 1

After the Phase I excavation, five floor and six perimeter confirmatory samples were collected at Pile 1 on August 3, 2007. One floor sample, 121EXFL-03, exceeded the cleanup goal for manganese (20,000 mg/kg) with a concentration of 31,000 J mg/kg. Two perimeter samples exceeded the manganese cleanup goal with concentrations of 46,200 J mg/kg and 96,200 J mg/kg at 121IEXPR-04 and 121IEXPR-05, respectively. The two perimeter samples were located between the former pile and the railroad tracks to the west. Visual observations showed that ferro-manganese ore residue was still present in this area following the initial excavation. All other Phase I confirmatory samples at Pile 1 met the cleanup goals for iron and manganese.

Pile 2

After the Phase I excavation, five floor samples (plus 1 field duplicate) and six perimeter confirmatory samples (plus 1 field duplicate) were collected in the Pile 2 area on August 3, 2007. All of the floor samples met the cleanup goals for iron and manganese. The data from two perimeter sample locations (121IEXPR-07 and 121IEXPR-12/13), including one sample with a duplicate, exceeded the manganese cleanup goal. 121IEXPR-07 (41,000 J mg/kg manganese) was located to the north of the Phase I excavation area, and 121IEXPR-12 (47,850 J mg/kg manganese – average of sample and associated duplicate) was located to the west of the excavation area by the railroad tracks. Visual observation showed that the ferro-manganese ore residue was still present in this area following the initial excavation. All other Phase I confirmatory samples at Pile 2 met the cleanup goals for iron and manganese.

The locations of the samples that failed to meet the cleanup goals are shown in **Figure 4**. The locations of samples that achieved the cleanup goals are shown in **Figure 3**.

Phase II excavation

Subsequently, a Phase II excavation was completed at Piles 1 and 2 on August 14, 2007, and the excavation area was delineated based on visual observations of residual ferro-manganese ore in the soil and based on the locations of the Phase I samples that failed to meet the cleanup goals. The Phase II excavation was completed in the following areas:

1. The excavation extended laterally to the end of the blocks to the north and south and to the railroad tracks to the west of the original excavation to a depth of approximately 1 foot or shallower if shale was encountered, shown in **Figure 3**, which encompassed soil where ore residuals were visible. The excavation area included the removal of soil associated with failed samples 121IEXPR-04, 121IEXPR-05, 121IEXPR-07, and 121IEXPR-12, as well as the soil associated with four other samples 121IEXPR-01, 121IEXPR-06, 121IEXPR-10, and 121IEXPR-11;

2. A 50 foot by 50 foot area located around failed sample 121EXFL-03 at Pile 1 approximately 125 feet north of Seventh Street was excavated to bedrock; and

3. A 50 foot by 50 foot area located immediately east of and adjacent to the Pile 2, Phase I excavation area (around sample 121EXPR-09) was excavated to bedrock due to visual observations of ferro-manganese ore.

A total of 1,545 cy were excavated from Pile 1 and a total of 2,589 cy were excavated from Pile 2 in Phases I and II, summarized in **Table 1**.

Phase II Sampling

Following the Phase II excavation, additional confirmatory samples were collected on August 14, 2007 to confirm that soil remaining on-site met the cleanup goals. One additional floor sample (121IEXFL-12) was collected at Pile 1 north of 50 foot box to provide data in the area of the former 121IEXFL-03 location. Three new perimeter samples (121IEXPR-14, 121IEXPR-15, 121IEXPR-16 plus one field duplicate) were collected on the three sides of the 50 foot by 50 foot box located east of the Pile 2 Phase I excavation, shown in **Figure 3**. Additional perimeter samples were not collected along the western edge of the Phase II excavation, since the RI data, shown on **Figure 3**, bounds the manganese concentrations at the railroad tracks. All Phase II confirmatory samples collected at Pile 1 and Pile 2 met the cleanup goal for iron and manganese.

This discussion above details the field activities and the removal of soil associated with samples that failed to meet the iron cleanup goal. Therefore, the data for the failed samples are no longer representative of soil remaining at the AOC. The failed sample data are included in **Attachment D** for completeness, and are not included in the final confirmatory dataset, presented in **Table 3**. The locations of all final confirmatory samples with their detected iron and manganese concentrations are shown in **Figure 3**, and the locations and concentrations of failed samples are presented in **Figure 4**.

The 95% UCL of the mean was calculated for the final confirmatory sample dataset at SEAD-121I (including both Pile 1 and Pile 2) using the ProUCL program (Version 3.0). The 95% UCL for iron is 22,116 mg/kg, which is below the cleanup goal of 100,000 mg/kg. The 95% UCL for manganese is 3,550

mg/kg, which is below the cleanup goal of 10,000 mg/kg. **Table 3** shows that all soil remaining on-site achieves the AOC cleanup goals for iron and manganese.

3.2 Transportation and Off-Site Disposal

Parsons subcontracted with Riccelli Enterprises, Inc. of Syracuse, New York to transport and dispose of the non-hazardous soil at Ontario County Landfill in Flint, NY. Truck load out was completed by August 15, 2007. A total of 5,914 tons (229 loads), including 25 tons of railroad ties, 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 **Attachment E**.

3.3 AOC Restoration

Once the excavation was completed, the areas were graded to promote positive drainage. The surface is mostly shale bits. The area was not re-vegetated and it remains a hard fill storage area. The crew demobilized from the site on August 15, 2007.

3.4 Construction Costs

The total construction costs for the removal action at SEAD-121I were approximately $405,000. The cost break down is as follows:

Engineering/Oversight	$25,000
Construction	$375,000
Analytical Laboratory	$4,300

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analytical results from the final confirmatory sampling, there is no longer a potential impact from the former Ore storage at SEAD-121I.

Based on the construction work at SEAD-121I, the Army has concluded the following:

- At SEAD-121I, 5,914 tons (4,134 cy) of ferro-manganese ore-impacted soil were excavated and disposed, along with 25 tons of railroad ties, as non-hazardous waste at Ontario County Landfill in Flint, New York.
- A total of 16 final confirmatory samples (plus field duplicates) were collected from the floor and perimeter of the SEAD-121I excavation areas (Piles 1 and 2) and were analyzed for iron and manganese. All final confirmatory samples met the cleanup goal for iron, with the 95% UCL of the

mean for iron of 22,116 mg/kg less than the cleanup goal of 100,000 mg/kg. All final confirmatory samples met the cleanup goal for manganese for individual samples of 20,000 mg/kg. The 95% UCL of the mean for manganese is 3,550 mg/kg, which is less than the cleanup goals of 10,000 mg/kg. Therefore, no further action is required at SEAD-121I.

The cleanup objectives for SEAD-121I have been achieved and no removal of soil and debris from the area is required given the location's intended future use as commercial / industrial land. The Army is proposing to impose land use controls on SEAD-121I that will prohibit residential housing, elementary and secondary schools, childcare facilities and playgrounds, as well as prohibit the access to and use of groundwater until New York's GA Standards are achieved. The Army has submitted a Final Proposed Plan and a Final Record of Decision with LUCs for SEAD-121I on January 15, 2008 and August 27, 2008, respectively.

5.0 REFERENCES

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

Parsons, 2006a. Remedial Investigation Report for Two EBS Sites in the Planned Industrial Development Area (SEAD-121C and SEAD-121I), Final, Parsons, April 2006.

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

Parsons, 2006c. Contract-Specific Site-Wide Sampling and Analysis Plan for the Seneca Army Depot Activity. Final. October 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, Parsons, July 2007.

United States Environmental Protection Agency (USEPA). 2004. Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. July.

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

TABLES

Table 1
Summary of Excavation and Disposal Quantities
SEAD-121I Removal Action
Seneca Army Depot Activity

	Pile 1		Pile 2		SEAD-121I (total)	
	tons	cy[1]	tons	cy[1]	tons	cy[1]
Phase I	2,360	1,349	2,515	2,028	4,875	3,377
Phase II	343	196	696	561	1,039	757
RR ties	10.5		15		25.5	
Total[2]	**2,703**	**1,545**	**3,211**	**2,589**	**5,914**	**4,134**

1. The quantities were provided in tons from the weigh tickets from Ontario County Landfill. The volume was calculated based on a site-specific density. The density values were calculated by weighing three 5-gallon buckets of soil from each site. The density for Piles 1 and 2 at SEAD-121I was calculated as 1.75 tons/cy and 1.24 tons/cy, respectively.

2. The total quantities at SEAD-121I do not include the quantity of railroad ties.

Table 2
Cleanup Goals
SEAD-121I Removal Action
Seneca Army Depot Activity

	Units	Cleanup Goal for 95th UCL[1]	Cleanup Goal for Individual Sample
SEAD-121I			
Iron	mg/kg	100,000	100,000
Manganese	mg/kg	10,000	20,000

(1) The 95th upper confidence level (UCL) of the mean was calculated using USEPA's ProUCL (Version 4) for the final confirmatory dataset (http://www.epa.gov/nerlesd1/tsc/software.htm).

Table 3
SEAD-121I Final Confirmatory Soil Sample Results
SEAD-121I Removal Action
Seneca Army Depot Activity

FACILITY								SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I
LOCATION ID								121IEXFL-01	121IEXFL-02	121IEXFL-04	121IEXFL-05	121IEXFL-06	121IEXFL-07
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								121IEXFL-01	121IEXFL-02	121IEXFL-04	121IEXFL-05	121IEXFL-06	121IEXFL-07
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
PILE No.								1	1	1	1	2	2
Parameter	Units	Maximum Value	95th UCL [1]	Frequency of Detection	Cleanup Goal [2]	Number of Exceedances	Number of Times Detected	Number of Analyses [3]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Iron	MG/KG	31,300	22,116	100%	100,000	0	16	16	23800 J	19200 J	20700 J	25100 J	13200 J	15000 J
Manganese	MG/KG	11,100	3,550	100%	20,000	0	16	16	3360 J	1690 J	1550 J	1330 J	11100 J	4240 J

Notes:

(1) The 95th UCL was calculated using the ProUCL (Version 4) and the recommended iron UCL was the Student's-t UCL and the recommended manganese UCL was the 95% Approximate Gamma UCL. (http://www.epa.gov/nerlesd1/tsc/software.htm)

(2) The cleanup goal for iron: 100,000 mg/kg.
The cleanup goals for manganese: the 95th UCL must be below 10,000 mg/kg, and no single sample shall exceed 20,000 mg/kg.

(3) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from final confirmatory soil samples only.

J = the reported value is an estimated concentration

Table 3
SEAD-121I Final Confirmatory Soil Sample Results
SEAD-121I Removal Action
Seneca Army Depot Activity

FACILITY									SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I
LOCATION ID									121IEXFL-08	121IEXFL-09	121IEXFL-10	121IEXFL-10	121IEXFL-12	121IEXPR-02
MATRIX									SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID									121IEXFL-08	121IEXFL-09	121IEXFL-11	121IEXFL-10	121IEXFL-12	121IEXPR-02
SAMPLE DEPTH TO TOP OF SAMPLE									0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE									0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE									8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/14/2007	8/3/2007
QC CODE									SA	SA	DU	SA	SA	SA
STUDY ID									RA	RA	RA	RA	RA	RA
PILE No.									2	2	2	2	1	1
Parameter	Units	Maximum Value	95th UCL [1]	Frequency of Detection	Cleanup Goal [2]	Number of Exceedances	Number of Times Detected	Number of Analyses [3]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Iron	MG/KG	31,300	22,116	100%	100,000	0	16	16	16400 J	10700 J	10400 J	10500 J	16100 J	16400 J
Manganese	MG/KG	11,100	3,550	100%	20,000	0	16	16	944 J	1120 J	1540 J	1700 J	1030 J	1900 J

Notes:

(1) The 95th UCL was calculated using the ProUCL (Version 4) and the recommended iron UCL was the Student's-t UCL and the recommended manganese UCL was the 95% Approximate Gamma UCL. (http://www.epa.gov/nerlesd1/tsc/software.htm)

(2) The cleanup goal for iron: 100,000 mg/kg.
The cleanup goals for manganese: the 95th UCL must be below 10,000 mg/kg, and no single sample shall exceed 20,000 mg/kg.

(3) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from final confirmatory soil samples only.

J = the reported value is an estimated concentration

Table 3
SEAD-121I Final Confirmatory Soil Sample Results
SEAD-121I Removal Action
Seneca Army Depot Activity

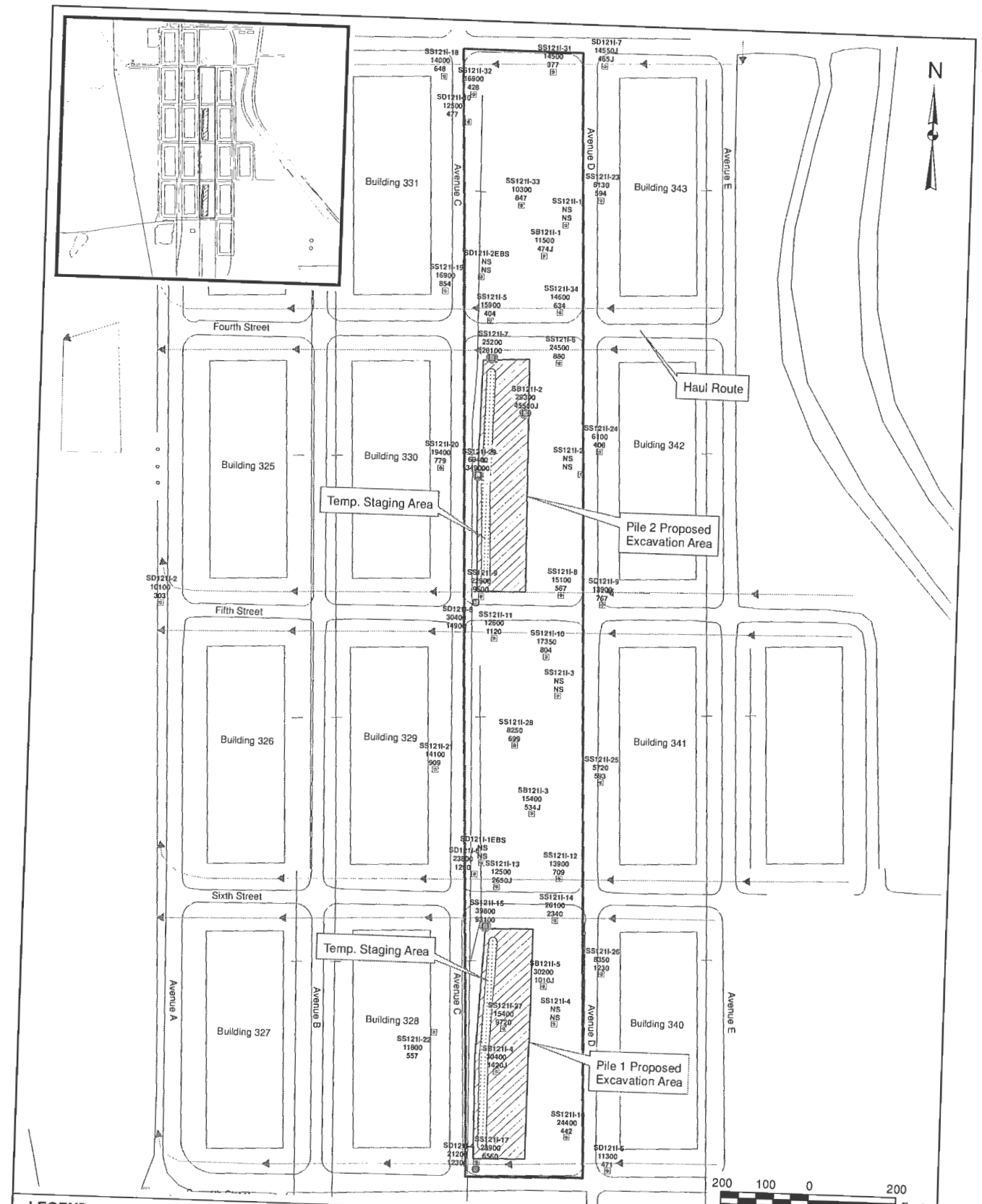
FACILITY								SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I
LOCATION ID								121IEXPR-03	121IEXPR-08	121IEXPR-14	121IEXPR-15	121IEXPR-15	121IEXPR-17
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								121IEXPR-03	121IEXPR-08	121IEXPR-14	121IEXPR-16	121IEXPR-15	121IEXPR-17
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/3/2007	8/3/2007	8/14/2007	8/14/2007	8/14/2007	8/14/2007
QC CODE								SA	SA	SA	DU	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
PILE No.								1	2	2	2	2	2
Parameter	Units	Maximum Value	95th UCL [1]	Frequency of Detection	Cleanup Goal [2]	Number of Exceedances	Number of Times Detected	Number of Analyses [3]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Iron	MG/KG	31,300	22,116	100%	100,000	0	16	16	22700 J	23000 J	31300 J	28800 J	26700 J	20300 J
Manganese	MG/KG	11,100	3,550	100%	20,000	0	16	16	1690 J	2960 J	2140 J	776 J	2010 J	2900 J

Notes:
(1) The 95th UCL was calculated using the ProUCL (Version 4) and the recommended iron UCL was the Student's-t UCL and the recommended manganese UCL was the 95% Approximate Gamma UCL. (http://www.epa.gov/nerlesd1/tsc/software.htm)
(2) The cleanup goal for iron: 100,000 mg/kg.
The cleanup goals for manganese: the 95th UCL must be below 10,000 mg/kg, and no single sample shall exceed 20,000 mg/kg.
(3) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from final confirmatory soil samples only.

J = the reported value is an estimated concentration

FIGURES

P:\PIT\Projects\Seneca PBC II\SEAD-121I\construction Letter rpt\FiguresFig 1 LOCMAP.CDR



LEGEND:

- Railroad Tracks
- Site Boundary
- Surface Water
- Surface Water Flow Direction
- Extent of Proposed Excavation
- Temporary Staging Area
- SB121I-3 / 15400 / 543J — RI Surface Soil Location with Iron and Manganese Concentration (mg/Kg), respectively.

IRON

- □ <100000 mg/Kg

MANGANESE

- • 0 - 10000 mg/Kg
- ◍ 10001 - 20000 mg/Kg
- ○ 20001 - 1000000 mg/Kg
- NS Not Sampled

NOTE:

Iron and manganese data are from the RI (Parsons 2006)

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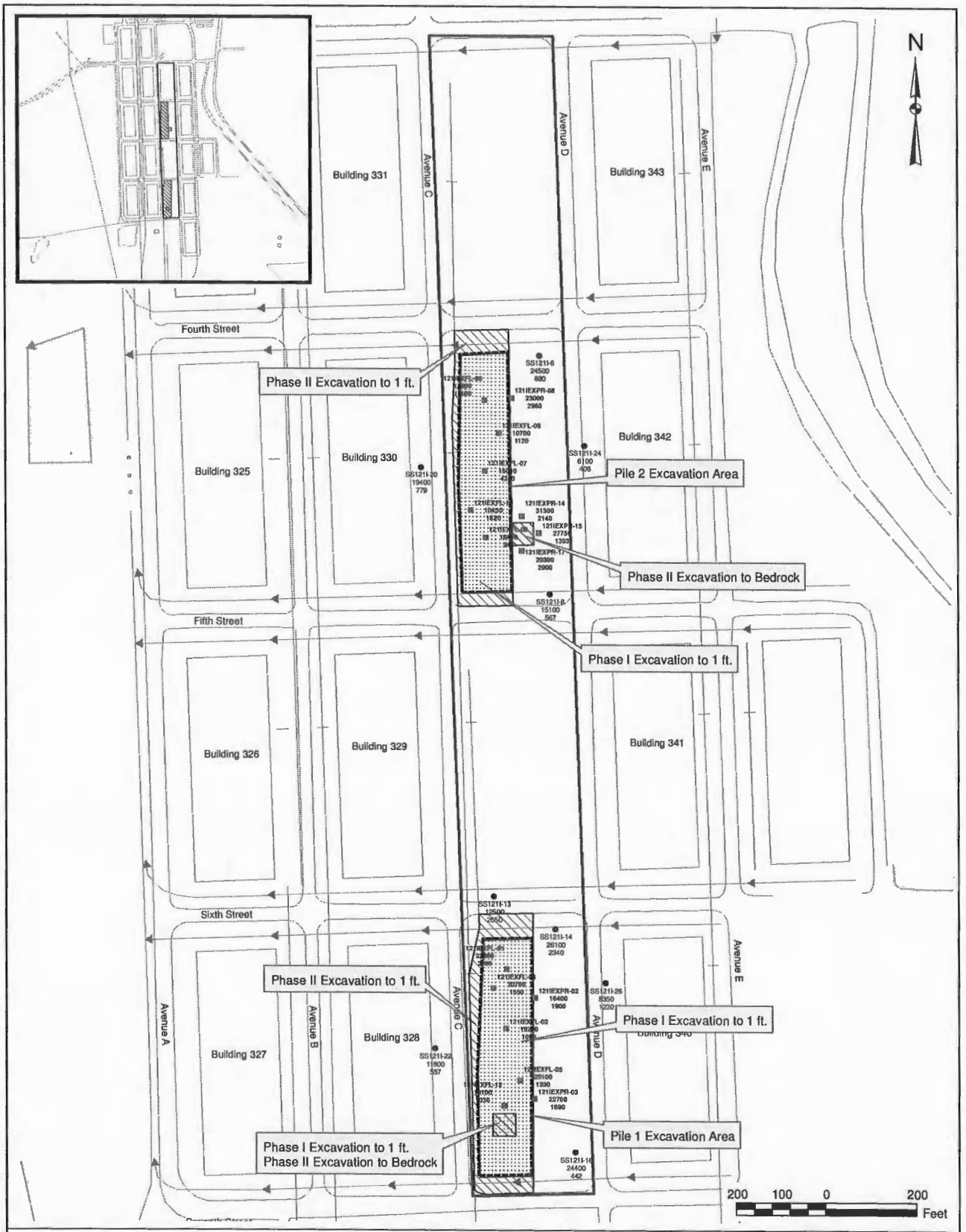
PARSONS

SENECA ARMY DEPOT ACTIVITY

SEAD-121I Removal Action

FIGURE 2
SEAD-121I
PRE-CONSTRUCTION PLAN

Job #: 741172-02300 | Date: DECEMBER 2007



LEGEND:

- Railroad Tracks
- Site Boundary
- Surface Water
- Surface Water Flow Direction
- Phase I Excavation Area
- Phase II excavation Area
- Limits of Initial Phase I Excavation
- SS121I-16 / 24400 / 442 — RI Surface Soil Location with Iron and Manganese Concentrations (mg/Kg), respectively
- 121IEXPR-02 / 16400 / 1900 — Approximate Final Confirmatory Sample Location with Iron and Manganese Concentrations (mg/Kg), respectively

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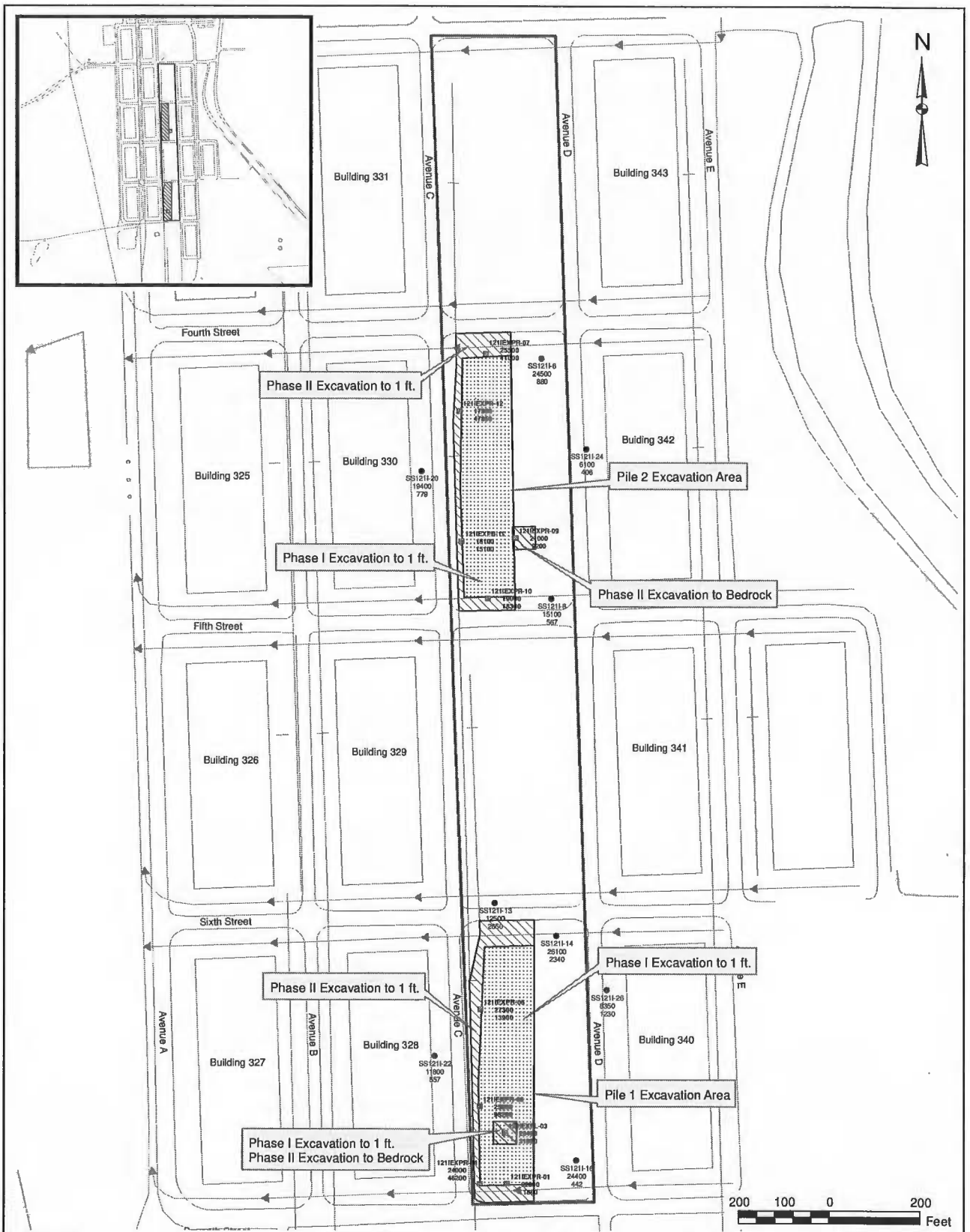
PARSONS

SENECA ARMY DEPOT ACTIVITY

SEAD-121I Removal Action

FIGURE 3
SEAD-121I
EXCAVATION AREA & FINAL CONFIRMATORY SAMPLE LOCATIONS

Job #: 741172-02300 | Date: DECEMBER 2007



LEGEND:

- Railroad Tracks
- Site Boundary
- Surface Water
- Surface Water Flow Direction
- Phase I Excavation Area
- Phase II excavation Area

SS121I-16 24400 442 — RI Surface Soil Location with Iron and Manganese Concentrations (mg/Kg)

121IEXPR-04 24000 46200 — Confirmatory Sample Location in Soil Excavated from Site with Iron and Manganese Concentrations (mg/Kg)

NOTE:

The soil associated with the confirmatory samples shown on this figure have been removed during the Phase II excavation and are not representative of soil remaining at the site.

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PARSONS

SENECA ARMY DEPOT ACTIVITY

SEAD-121I Removal Action

FIGURE 4
SEAD-121I
LOCATION OF REMOVED
CONFIRMATORY SAMPLES

Job #: 741172-02300 | Date: DECEMBER 2007

ATTACHMENT A:

DAILY FIELD REPORTS

Daily Field Report

Date:	7/30/2007	**Day:**	Monday	**Weather Conditions:**	
Job #	745172			clear 80's	
Site Name:				**Task(s):**	
Seneca Army Depot Ore Pile Storage - SEAD 121I				Excavation at SEAD-121I, Piles 1 and 2	

Parsons:	**Position**	**S. St. George**	**Position**
Thomas C Andrews	CM	Steve St George	Owner
Ben Mcallister	SSO	Josh Schmack	Operator
		Jason Micael	Operator/Supt.
Visitors	**Representing**	Paul St. George	Operator

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

Health and Safety:

Daily Tool box meeting

Work Performed:

The fence surrounding SEAD-121I was removed so that the excavator could access Piles 1 and 2.
Pile 1 was excavated to a depth of approximately 1 foot. The excavated material included ore remnants, soil, and asphalt.
Excavated soil was temporarily staged within the boundary of the excavation along the western edge of the Pile area

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest Nos.
Non-haz	None				SEAD Dirt	Riccelli	

Sampling:

# of samples collected today:

None

Notes:

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
None			

Prepared by: Thomas C Andrews

Daily Field Report

Date:	7/31/2007	**Day:**	Tuesday	**Weather Conditions:**	
Job #	745172			Clear 70-80	
Site Name:				**Task(s):**	
Seneca Army Depot Ore Pile Storage - SEAD 121I				Collect RR Ties, and Load out Excavated Material	

Parsons:	**Position**	**S. St. George**	**Position**
Thomas C Andrews	CM	Steve St George	Owner
Ben Mcallister	SSO	Jason Micael	Oper/Supt
		Josh Schmack	Operator
Visitors	**Representing**	Paul St. George	Operator

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

Health and Safety:

Daily Tool box meeting

Work Performed:

Railroad ties were collected from both Pile 1 and Pile 2, as part of housekeeping activities. The railroad ties, totaling 25.5 tons, were hauled off-site by Riccelli. Load out of the excavated soil staged at Pile 1 began. Riccelli trucks loaded the non-hazardous soil and transported it to Ontario County Landfill.

Material Loaded

	Loads	Total to date	Estimated tons	To. Ton to date	Mat'l Type	Hauler	Manifest Nos.
Non-haz	18	18	505	505	SEAD Dirt	Riccelli	11572 to 11589
RR Ties	2	2	25.5	25.5	RR Ties	Riccelli	11557 and 11613

Also see attached truck and disposal log.

Sampling:

# of samples collected today:

None

Notes:

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
None			

Prepared by:

Thomas C Andrews

Daily Field Report

Date:	8/1/2007	**Day:**	Wednesday	**Weather Conditions:**	
Job #	745172			Clear 80-90	
Site Name:				**Task(s):**	
Seneca Army Depot Ore Pile Storage - SEAD 121I				Clean Up Former Ore Pile Storage Areas	

Parsons:	**Position**	**S. St. George**	**Position**
Thomas C Andrews	CM	Josh Schmack	Operator
Ben Mcallister	SSO	Paul St. George	Operator
		Bill Caldwell	Operator
Visitors	**Representing**		

Equipment Utilized:				**PPE Level(s):**
Dozer	1	Mechanics Truck	1	D
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	1

Health and Safety:

Tool Box Safety Meeting

Work Performed:

Pile 2 was excavated to the staked limits to a depth of 1 foot. The excavated material included ore remnants, soil, and asphalt. The Pile 2 material was temporarily staged on the west side of the excavation area. Load out of the Pile 1 material continued, and load out of the Pile 2 material began. The Riccelli trucks transported the non-hazardous material to the Ontario County Landfill.

Material Loaded

	Loads	Total to date	Estimated tons	To. Tons to date	Mat'l Type	Hauler	Manifest Nos.
Non-haz	103	121	3318.27	3,823	SEAD Dirt	Riccelli	11600 to 11625, 11630-11707
RR Ties		2		25.5	RR Ties		

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:	8/2/2007	**Day:**	Thursday	**Weather Conditions:**	
Job #	745172			clear 90's	
Site Name:				**Task(s):**	
Seneca Army Depot Ore Pile Storage - SEAD 121I				Load Out at Pile 2	

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

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

Health and Safety:

Tool Box Safety Meeting

Work Performed:

The load out of excavated material at Pile 2 was completed. All material excavated at SEAD-121I has been transported off-site by Riccelli. St. George was not on-site.

Material Loaded

	Loads	Total to date	Estimated tons	To. Tons to date	Mat'l Type	Hauler	Manifest Nos.
Non-haz	38	159	1,051	4,875	SEAD Dirt	Riccelli	11708 to 11750
RR Ties		2		25.5	RR Ties	Riccelli	16744 to 16747

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:	8/3/2007	**Day:**	Friday	**Weather Conditions:**	
Job #	745172			clear 90's	
Site Name:				**Task(s):**	
Seneca Army Depot Ore Pile Storage - SEAD 121I				Confirmatory Sampling	

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:

Tool Box Safety Meeting

Work Performed:

Confirmatory perimeter and soil sampling was completed at Piles 1 and 2. At Pile 1, 5 floor samples and 6 perimeter samples were collected. At Pile 2, 5 floor samples (and one field duplicate), and 6 perimeter samples (and one field duplicate) were collected. The lab (STL) was instructed to use one project sample to run QA/QC analyses. All samples were packed in a cooler and FedExed to STL in Buffalo for analysis of iron and manganese.

Material Loaded

	Loads	Total to date	Estimated tons	To. Tons to date	Mat'l Type	Hauler	Manifest Nos.
Non-haz		159		4,875	SEAD Dirt	Riccelli	
RR Ties		2		25.5	RR Ties	Riccelli	

Sampling:

# of samples collected today:

22 samples (plus 2 field duplicates)

Notes:

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
None			

Prepared by: Thomas C Andrews

Daily Field Report

Date:	8/14/2007	Tuesday	**Weather Conditions:**
Job #	745172		Clear 70's
Site Name:			**Task(s):**
Seneca Army Depot Ore Pile Storage - SEAD 121I			Hot spot excavation and additional sampling

Parsons:	**Position**
Thomas C Andrews	CM
Ben Mcallister	SSO

S. St. George	**Position**
Bill Caldwell	Operator
Jason Micael	Oper/Supt

Visitors	**Representing**
Jackie Travers, Proj. Engineer	Parsons
Todd Heino, PM	Parsons

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

Health and Safety:

Tool box meeting was held.

Work Performed:

The project engineers reviewed the analytical results from the confirmatory samples collected on 8/3/07, and they communicated to the field that 5 samples failed to meet the cleanup goals and excavation of additional soil will be necessary Closer visual inspection of the areas where samples failed observed the presence of fine ore particles mixed in with the soil. This was specifically observed in the area between the western boundary of the excavations and the railroad tracks Two spots at Pile 1 and two spots at Pile 2 were excavated. At both piles, the areas north and south of the original excavations were excavated to the edge of the blocks, and the area to the west of the original excavation were excavated up to the railroac tracks to approximately 1 foot in depth. At Pile 1, a 50 x 50 foot grid was excavated around the sample 121IEXFL-03 to bedrock. At Pile 2, a 50 x 50 ft grid was excavated around the sample 121IEXPR-09 to bedrock. Shale bits were visible Three new perimeter samples (plus a field duplicate) were collected around the 3 new sides of the 50x50 ft box at Pile 2. 1 floor sample was collected immediately north of the 50x50 ft box at Pile 1. Samples were sent to STL for iron and manganese analysis

Load out of the soil excavated at Pile 2 began and was transported off-site by Riccelli. Some of the soil from Pile 2 and the soil excavated at Pile 1 was temporarily staged along the western edge of the original excavation area

Material Loaded

	Loads	Total to date	Estimated tons	To. Tons to date	Mat'l Type	Hauler	Manifest Nos.
Non-haz	6	165	159	5,033	SEAD Dirt	Riccelli	16765 to 16770
RR Ties		2		25.5	RR Ties		

Also see attached truck and disposal log.

Sampling:

# of samples collected today:

4 samples (plus 1 field duplicate)

Notes:

Other Materials brought on or off-site

None Type	Loads	CY	Tons
None			

Prepared by: Thomas C Andrews

Daily Field Report

Date:	8/15/2007	Wednesday	**Weather Conditions:**
Job #	745172		Clear 70's
Site Name:			**Task(s):**
Seneca Army Depot Ore Pile Storage - SEAD 121I			Final Load Out and Demobilization

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

Visitors	**Representing**
Jackie Travers, Proj. Engineer	Parsons
Todd Heino, PM	Parsons

Equipment Utilized:				**PPE Level(s):**
Dozer	1	Mechanics Truck	1	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	1	

Health and Safety:

Tool box meeting was held.

Work Performed:

Load out of the soil excavated at Pile 2 was completed and all soil excavated at Pile1 was loaded out. Load out and transportation off-site was completed.

All work is completed. The contractor and all field crew demobilized from the site.

Visual assessment of depth of excavation

6" or to rock

Material Loaded

	Loads	Total to date	Estimated tons	To. Tons to date	Mat'l Type	Hauler	Manifest Nos.
Non-haz	27	192	881	5,914	SEAD Dirt	Riccelli	16771 to 16797
RR Ties		2		25.5	RR Ties		

Also see attached truck and disposal log.

Sampling:

# of samples collected today:

None

Notes:

Other Materials brought on or off-site

Mat'l Type	Loads	CY	Tons
None			

Prepared by: Thomas C Andrews

ATTACHMENT B:

WASTE CHARACTERIZATION DATA

Parsons Seneca Army Depot (Parsons project 745172)
Seneca II Ore Piles

Sample ID: ORE PILE NA
Lab Sample ID: A7129401
Date Collected: 02/08/2007
Time Collected: 11:25

Date Received: 02/08/2007
Project No: NY5A9493.1
Client No: 51465
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
TCLP Metals Analysis							
Arsenic - Total	3.9	B	0.37	UG/L	6010	02/13/2007 20:27	
Barium - Total	7.2		0.05	UG/L	6010	02/13/2007 20:27	
Cadmium - Total	ND		0.06	UG/L	6010	02/13/2007 20:27	
Chromium - Total	ND		0.09	UG/L	6010	02/13/2007 20:27	
Lead - Total	11.1		0.19	UG/L	6010	02/13/2007 20:27	
Mercury - Total	ND		0.120	UG/L	7470	02/13/2007 16:22	LH
Selenium - Total	68.3		0.59	UG/L	6010	02/13/2007 20:27	
Silver - Total	ND		0.15	UG/L	6010	02/13/2007 20:27	
Wet Chemistry Analysis							
Corrosivity (pH)	7.39		0	S.U.	9045	02/11/2007 13:25	RG
Flashpoint	>200		0	°F	1010	02/13/2007	AEG
H2S Released From Waste	ND		10	MG/KG	SECT7.3	02/09/2007 20:00	SM
HCN Released From Waste	ND		10	MG/KG	SECT7.3	02/09/2007 20:00	SM

Sample ID: ORE PILE NB
Lab Sample ID: A7129402
Date Collected: 02/08/2007
Time Collected: 11:25

Date Received: 02/08/2007
Project No: NY5A9493.1
Client No: 51465
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
TCLP Metals Analysis							
Arsenic - Total	6.7	B	0.37	UG/L	6010	02/13/2007 20:52	
Barium - Total	51.6		0.05	UG/L	6010	02/13/2007 20:52	
Cadmium - Total	ND		0.06	UG/L	6010	02/13/2007 20:52	
Chromium - Total	12.9		0.09	UG/L	6010	02/13/2007 20:52	
Lead - Total	28.6		0.19	UG/L	6010	02/13/2007 20:52	
Mercury - Total	ND		0.120	UG/L	7470	02/13/2007 16:27	LH
Selenium - Total	166		0.59	UG/L	6010	02/13/2007 20:52	
Silver - Total	ND		0.15	UG/L	6010	02/13/2007 20:52	
Wet Chemistry Analysis							
Corrosivity (pH)	7.53		0	S.U.	9045	02/11/2007 13:25	RG
Flashpoint	>200		0	°F	1010	02/14/2007 09:00	SM
H2S Released From Waste	ND		10	MG/KG	SECT7.3	02/09/2007 20:00	SM
HCN Released From Waste	ND		10	MG/KG	SECT7.3	02/09/2007 20:00	SM

Sample ID: ORE PILE SA
Lab Sample ID: A7129403
Date Collected: 02/08/2007
Time Collected: 11:50

Date Received: 02/08/2007
Project No: NY5A9493.1
Client No: 51465
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
TCLP Metals Analysis							
Arsenic - Total	4.7	B	0.37	UG/L	6010	02/13/2007 20:57	
Barium - Total	60.6		0.05	UG/L	6010	02/13/2007 20:57	
Cadmium - Total	ND		0.06	UG/L	6010	02/13/2007 20:57	
Chromium - Total	6.9		0.09	UG/L	6010	02/13/2007 20:57	
Lead - Total	19.7		0.19	UG/L	6010	02/13/2007 20:57	
Mercury - Total	ND		0.120	UG/L	7470	02/13/2007 16:28	LH
Selenium - Total	117		0.59	UG/L	6010	02/13/2007 20:57	
Silver - Total	ND		0.15	UG/L	6010	02/13/2007 20:57	
Wet Chemistry Analysis							
Corrosivity (pH)	7.39		0	S.U.	9045	02/11/2007 13:25	RG
Flashpoint	>200		0	°F	1010	02/14/2007 09:00	SM
H2S Released From Waste	ND		10	MG/KG	SECT7.3	02/09/2007 20:00	SM
HCN Released From Waste	ND		10	MG/KG	SECT7.3	02/09/2007 20:00	SM

Parsons Seneca Army Depot (Parsons project 745172)
Seneca II Ore Piles

Sample ID: ORE PILE SB
Lab Sample ID: A7129404
Date Collected: 02/08/2007
Time Collected: 11:40

Date Received: 02/08/2007
Project No: NY5A9493.1
Client No: 51465
Site No:

Parameter	Result	Flag	Detection Limit	Units	Method	Date/Time Analyzed	Analyst
TCLP Metals Analysis							
Arsenic - Total	6.1	B	0.37	UG/L	6010	02/13/2007 21:16	
Barium - Total	74.7		0.05	UG/L	6010	02/13/2007 21:16	
Cadmium - Total	ND		0.06	UG/L	6010	02/13/2007 21:16	
Chromium - Total	6.2		0.09	UG/L	6010	02/13/2007 21:16	
Lead - Total	20.6		0.19	UG/L	6010	02/13/2007 21:16	
Mercury - Total	ND		0.120	UG/L	7470	02/13/2007 16:32	LH
Selenium - Total	125		0.59	UG/L	6010	02/13/2007 21:16	
Silver - Total	ND		0.15	UG/L	6010	02/13/2007 21:16	
Wet Chemistry Analysis							
Corrosivity (pH)	7.43		0	S.U.	9045	02/11/2007 13:25	RG
Flashpoint	>200		0	°F	1010	02/14/2007 09:00	SM
H2S Released From Waste	ND		10	MG/KG	SECT7.3	02/09/2007 20:00	SM
HCN Released From Waste	ND		10	MG/KG	SECT7.3	02/09/2007 20:00	SM

ATTACHMENT C:

PHOTOGRAPHS

Photographs from SEAD-121I

Location of Former Ore Pile 1

Western side of Warehouse Area Block between 6th and 7th Streets Avenue C and Avenue D

SEAD-121I Former Ore Pile Location 1 Looking South During Soil Load Out

SEAD-121I Former Ore Pile Location 1 Looking South

Photographs from SEAD-121I

Location of Former Ore Pile 2

Western side of Warehouse Area Block between 4th and 5th Streets Avenue C and Avenue D

SEAD-121l Former Ore Pile Location 2
Railroad Ties

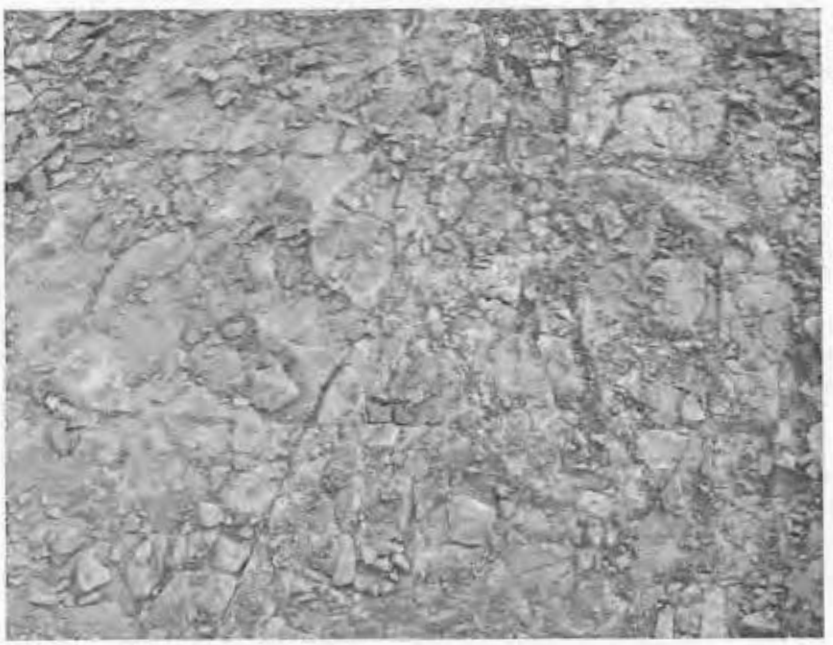
SEAD-121l Former Ore Pile 2 Location Looking Northeast

SEAD-121l Former Ore Pile 2 Location Looking East

SEAD-121l Former Ore Pile Location 2 Looking Southeast

SEAD-121I Former Ore Pile Location 2 Looking Southeast

SEAD-121I Pile 2 Excavation Area with Overburden Removed



SEAD-121I Former Ore Pile Location 2 During Soil Load Out
Looking South

ATTACHMENT D:

COMPLETE ANALYTICAL DATA

Attachment D
Table D-1
SEAD-121I Complete Confirmatory Soil Sample Results
SEAD-121I Removal Action
Seneca Army Depot Activity

FACILITY								SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I
LOCATION ID								121IEXFL-01	121IEXFL-02	121IEXFL-03	121IEXFL-04	121IEXFL-05	121IEXFL-06
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								121IEXFL-01	121IEXFL-02	121IEXFL-03	121IEXFL-04	121IEXFL-05	121IEXFL-06
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
PILE No.								1	1	1	1	1	2
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [2]	Number of Exceedances	Number of Times Detected	Number of Analyses [3]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Iron	MG/KG	31300	100%	100000	0	26	26	23800 J	19200 J	23400 J	20700 J	25100 J	13200 J
Manganese	MG/KG	96200	100%	20000	5	26	26	3360 J	1690 J	31000 J	1550 J	1330 J	11100 J

Notes:
(1) The cleanup goal for iron is 100,000 mg/kg. The cleanup goals for manganese is that the 95th UCL must be below 10,000 mg/kg, and no single sample shall exceed 20,000 mg/kg.
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(3) Bolded cells indicate that the sample failed to meet the cleanup goal. A shaded and boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the sample results are not representative of soil remaining at the site, and the analytical results for the shaded sample are not part of the final dataset.

J = the reported value is an estimated concentration

Attachment D
Table D-1
SEAD-121I Complete Confirmatory Soil Sample Results
SEAD-121I Removal Action
Seneca Army Depot Activity

FACILITY							SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I
LOCATION ID							121IEXFL-07	121IEXFL-08	121IEXFL-09	121IEXFL-10	121IEXFL-10	121IEXFL-12
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							121IEXFL-07	121IEXFL-08	121IEXFL-09	121IEXFL-11	121IEXFL-10	121IEXFL-12
SAMPLE DEPTH TO TOP OF SAMPLE							0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/14/2007
QC CODE							SA	SA	SA	DU	SA	SA
STUDY ID							RA	RA	RA	RA	RA	RA
PILE No.							2	2	2	2	2	1
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [2]	Number of Exceedances	Number of Times Detected	Number of Analyses [3]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Iron	MG/KG	31300	100%	100000	0	26	26	15000 J	16400 J	10700 J	10400 J	10500 J	16100 J
Manganese	MG/KG	96200	100%	20000	5	26	26	4240 J	944 J	1120 J	1540 J	1700 J	1030 J

Notes:
(1) The cleanup goal for iron is 100,000 mg/kg. The cleanup goals for manganese is that the 95th UCL must be below 10,000 mg/kg, and no single sample shall exceed 20,000 mg/kg.
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(3) Bolded cells indicate that the sample failed to meet the cleanup goal. A shaded and boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the sample results are not representative of soil remaining at the site, and the analytical results for the shaded sample are not part of the final dataset.

J = the reported value is an estimated concentration

Attachment D
Table D-1
SEAD-121I Complete Confirmatory Soil Sample Results
SEAD-121I Removal Action
Seneca Army Depot Activity

FACILITY								SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I
LOCATION ID								121IEXPR-01	121IEXPR-02	121IEXPR-03	121IEXPR-04	121IEXPR-05	121IEXPR-06
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								121IEXPR-01	121IEXPR-02	121IEXPR-03	121IEXPR-04	121IEXPR-05	121IEXPR-06
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
PILE No.								1	1	1	1	1	1
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)
Iron	MG/KG	31300	100%	100000	0	26	26	22000 J	16400 J	22700 J	24000 J	25000 J	27300 J
Manganese	MG/KG	96200	100%	20000	5	26	26	1860 J	1900 J	1690 J	**46200 J**	**96200 J**	13900 J

Notes:
(1) The cleanup goal for iron is 100,000 mg/kg. The cleanup goals for manganese is that the 95th UCL must be below 10,000 mg/kg, and no single sample shall exceed 20,000 mg/kg.
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(3) Bolded cells indicate that the sample failed to meet the cleanup goal. A shaded and boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the sample results are not representative of soil remaining at the site, and the analytical results for the shaded sample are not part of the final dataset.

J = the reported value is an estimated concentration

Attachment D
Table D-1
SEAD-121I Complete Confirmatory Soil Sample Results
SEAD-121I Removal Action
Seneca Army Depot Activity

FACILITY								SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I
LOCATION ID								121IEXPR-07	121IEXPR-08	121IEXPR-09	121IEXPR-10	121IEXPR-11	121IEXPR-12
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								121IEXPR-07	121IEXPR-08	121IEXPR-09	121IEXPR-10	121IEXPR-11	121IEXPR-13
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007	8/3/2007
QC CODE								SA	SA	SA	SA	SA	DU
STUDY ID								RA	RA	RA	RA	RA	RA
PILE No.								2	2	2	2	2	2
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [2]	Number of Exceedances	Number of Times Detected	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Iron	MG/KG	31300	100%	100000	0	26	26	25500 J	23000 J	21000 J	19000 J	18100 J	17700 J
Manganese	MG/KG	96200	100%	20000	5	26	26	**41000** J	2960 J	9200 J	18300	1510u	**47000**

Notes:
(1) The cleanup goal for iron is 100,000 mg/kg. The cleanup goals for manganese is that the 95th UCL must be below 10,000 mg/kg, and no single sample shall exceed 20,000 mg/kg.
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(3) Bolded cells indicate that the sample failed to meet the cleanup goal. A shaded and boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the sample results are not representative of soil remaining at the site, and the analytical results for the shaded sample are not part of the final dataset.

J = the reported value is an estimated concentration

Attachment D
Table D-1
SEAD-121I Complete Confirmatory Soil Sample Results
SEAD-121I Removal Action
Seneca Army Depot Activity

FACILITY								SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I	SEAD-121I
LOCATION ID								121IEXPR-12	121IEXPR-14	121IEXPR-15	121IEXPR-15	121IEXPR-17
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								121IEXPR-12	121IEXPR-14	121IEXPR-16	121IEXPR-15	121IEXPR-17
SAMPLE DEPTH TO TOP OF SAMPLE								0	0	0	0	0
SAMPLE DEPTH TO BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/3/2007	8/14/2007	8/14/2007	8/14/2007	8/14/2007
QC CODE								SA	SA	DU	SA	SA
STUDY ID								RA	RA	RA	RA	RA
FILE No.								2	2	2	2	2
Parameter	Units	Maximum Value	Frequency of Detection	Cleanup Goal [2]	Number of Exceedances	Number of Times Detected	Number of Analyses	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Iron	MG/KG	31300	100%	100000	0	26	26	18200 J	31300 J	28800 J	26700 J	20300 J
Manganese	MG/KG	96200	100%	20000	5	26	26	48700	2140 J	776 J	2010 J	2900 J

Notes:
(1) The cleanup goal for iron is 100,000 mg/kg. The cleanup goals for manganese is that the 95th UCL must be below 10,000 mg/kg, and no single sample shall exceed 20,000 mg/kg.
(2) Sample-duplicate pairs were averaged and the average results were used in the summary statistics presented in this table. Note that this table includes data from all confirmatory soil sample collected, including failed samples.
(3) Bolded cells indicate that the sample failed to meet the cleanup goal. A shaded and boxed sample indicates that the soil represented by the sample has been removed from the site as part of the excavation. Therefore, the sample results are not representative of soil remaining at the site, and the analytical results for the shaded sample are not part of the final dataset.

J = the reported value is an estimated concentration

ATTACHMENT E:

WASTE MANIFESTS

Attachment E
Table E-1
SEAD-121I Ore Pile Manifest Log
SEAD-121I Removal Action
Seneca Army Depot Activity

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	Ore Pile	Total Tns	Total to date tons	Total Loads	Total to date loads	Pile 1 (south)	Pile 2 (north)	COMMENTS
7/31/2007	Riccelli	7A434	2 roll offs	11557	10.50	1					10.5		Rail road ties
7/31/2007	Riccelli	60	421	11572	27.85	1					27.85		
7/31/2007	Riccelli	134		11573	27.29	1					27.29		
7/31/2007	Riccelli	94		11574	17.41	1					17.41		
7/31/2007	Riccelli	131		11575	29.27	1					29.27		
7/31/2007	Riccelli	268		11576	26.81	1					26.81		
7/31/2007	Riccelli	259		11577	33.56	1					33.56		
7/31/2007	Riccelli	14	409	11578	31.05	1					31.05		
7/31/2007	Riccelli	253		11579	31.60	1					31.6		
7/31/2007	Riccelli	71		11580	19.73	1					19.73		
7/31/2007	Riccelli	19		11581	30.70	1					30.7		
7/31/2007	Riccelli	74		11582	20.86	1					20.86		
7/31/2007	Riccelli	60	421	11583	33.21	1					33.21		
7/31/2007	Riccelli	32	402	11584	31.21	1					31.21		
7/31/2007	Riccelli	134		11585	34.33	1					34.33		
7/31/2007	Riccelli	94		11586	21.19	1					21.19		
7/31/2007	Riccelli	131		11587	35.27	1					35.27		
7/31/2007	Riccelli	259		11588	29.30	1					29.3		
7/31/2007	Riccelli	268		11589	24.55	1					24.55		
7/31/2007	Riccelli	7A434	2-roll offs	11613	15.00	2	530.69	530.69	20	20		15	Rail road ties
8/1/2007	Riccelli	47	422	11600	30.93	1						30.93	
8/1/2007	Riccelli	116		11601	30.10	1					30.1		
8/1/2007	Riccelli	119	209	11602	36.07	1					36.07		
8/1/2007	Riccelli	134	212	11603	34.80	1					34.8		
8/1/2007	Riccelli	71		11604	22.20	1						22.2	
8/1/2007	Riccelli	253	153	11605	30.59	1					30.59		
8/1/2007	Riccelli	14	409	11606	32.97	1					32.97		
8/1/2007	Riccelli	262		11607	25.68	1					25.68		
8/1/2007	Riccelli	19	414	11608	31.83	1					31.83		

Attachment E
Table E-1
SEAD-121I Ore Pile Manifest Log
SEAD-121I Removal Action
Seneca Army Depot Activity

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	Ore Pile	Total Tns	Total to date tons	Total Loads	Total to date loads	Pile 1 (south)	Pile 2 (north)	COMMENTS
8/1/2007	Riccelli	32	402	11609	31.41	1						31.41	
8/1/2007	Riccelli	60	421	11610	35.92	1						35.92	
8/1/2007	Riccelli	10	405	11611	32.63	1					32.63		
8/1/2007	Riccelli	268		11612	31.08	1						31.08	
8/1/2007	Riccelli	60	421	11614	30.95	1					30.95		
8/1/2007	Riccelli	10	405	11615	26.14	1						26.14	
8/1/2007	Riccelli	18	413	11616	28.27	1					28.27		
8/1/2007	Riccelli	268		11617	33.18	1					33.18		
8/1/2007	Riccelli	259		11618	33.22	1						33.22	
8/1/2007	Riccelli	131		11619	33.61	1						33.61	
8/1/2007	Riccelli	204	161	11620	35.03	1					35.03		
8/1/2007	Riccelli	47	422	11621	44.50	1					44.5		
8/1/2007	Riccelli	259		11622	34.69	1						34.69	
8/1/2007	Riccelli	131		11623	34.40	1					34.4		
8/1/2007	Riccelli	204		11624	46.85	1					46.85		
8/1/2007	Riccelli	71		11625	20.67	1						20.67	11626 to 11629 @ SEAD 16&17
8/1/2007	Riccelli	14	409	11630	31.20	1					31.2		
8/1/2007	Riccelli	134		11631	30.82	1					30.82		
8/1/2007	Riccelli	32	402	11632	29.35	1						29.35	
8/1/2007	Riccelli	262		11633	32.83	1					32.83		
8/1/2007	Riccelli	94		11634	18.41	1					18.41		
8/1/2007	Riccelli	19	414	11635	30.93	1					30.93		
8/1/2007	Riccelli	74		11636	19.64	1					19.64		
8/1/2007	Riccelli	60	421	11637	33.86	1						33.86	
8/1/2007	Riccelli	18	413	11638	31.08	1					31.08		
8/1/2007	Riccelli	38		11639	18.45	1					18.45		
8/1/2007	Riccelli	10	405	11640	34.61	1						34.61	
8/1/2007	Riccelli	268		11641	38.23	1						38.23	
8/1/2007	Riccelli	259		11642	30.19	1						30.19	

Attachment E
Table E-1
SEAD-121I Ore Pile Manifest Log
SEAD-121I Removal Action
Seneca Army Depot Activity

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	Ore Pile	Total Tns	Total to date tons	Total Loads	Total to date loads	Pile 1 (south)	Pile 2 (north)	COMMENTS
8/1/2007	Riccelli	131		11643	32.77	1						32.77	
8/1/2007	Riccelli	71		11644	19.35	1						19.35	
8/1/2007	Riccelli	204		11645	34.68	1					34.68		
8/1/2007	Riccelli	253	153	11646	29.83	1					29.83		
8/1/2007	Riccelli	132		11647	33.84	1						33.84	
8/1/2007	Riccelli	47	422	11648	36.53	1					36.53		
8/1/2007	Riccelli	307	407	11649	29.23	1					29.23		
8/1/2007	Riccelli	114		11650	42.05	1					42.05		
8/1/2007	Riccelli	14	409	11651	34.39	1					34.39		
8/1/2007	Riccelli	114		11652	33.75	1						33.75	
8/1/2007	Riccelli	307	407	11653	32.07	1					32.07		
8/1/2007	Riccelli	119	209	11654	29.33	1						29.33	
8/1/2007	Riccelli	116		11655	41.30	1					41.3		
8/1/2007	Riccelli	19	414	11656	33.33	1					33.33		
8/1/2007	Riccelli	116		11657	32.08	1					32.08		
8/1/2007	Riccelli	94		11658	20.22	1					20.22		
8/1/2007	Riccelli	32	402	11659	35.40	2						35.4	
8/1/2007	Riccelli	38		11660	21.31	1					21.31		
8/1/2007	Riccelli	119	209	11661	38.24	2						38.24	
8/1/2007	Riccelli	262		11662	38.47	1					38.47		
8/1/2007	Riccelli	60	421	11663	36.24	2						36.24	
8/1/2007	Riccelli	18	413	11664	34.20	1					34.2		
8/1/2007	Riccelli	10	405	11665	34.55	2						34.55	
8/1/2007	Riccelli	74		11666	21.53	1					21.53		
8/1/2007	Riccelli	268		11667	35.22	2						35.22	
8/1/2007	Riccelli	71		11668	22.42	2						22.42	
8/1/2007	Riccelli	259	160	11669	33.46	2						33.46	
8/1/2007	Riccelli	204	161	11670	40.04	1					40.04		
8/1/2007	Riccelli	131	166	11671	45.47	2						45.47	

Attachment E
Table E-1
SEAD-121I Ore Pile Manifest Log
SEAD-121I Removal Action
Seneca Army Depot Activity

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	Ore Pile	Total Tns	Total to date tons	Total Loads	Total to date loads	Pile 1 (south)	Pile 2 (north)	COMMENTS
8/1/2007	Riccelli	134	212	11672	45.78	1					45.78		
8/1/2007	Riccelli	253		11673	37.68	1					37.68		
8/1/2007	Riccelli	114	165	11674	35.74	1					35.74		
8/1/2007	Riccelli	47	422	11675	41.02	1					41.02		
8/1/2007	Riccelli	132	151	11676	34.22	2						34.22	
8/1/2007	Riccelli	307		11677	28.87	1					28.87		
8/1/2007	Riccelli	14	409	11678	33.51	2						33.51	
8/1/2007	Riccelli	19	414	11679	33.89	1					33.89		
8/1/2007	Riccelli	32	402	11680	31.54	2						31.54	
8/1/2007	Riccelli	94		11681	18.21	1					18.21		
8/1/2007	Riccelli	38		11682	20.65	2						20.65	
8/1/2007	Riccelli	116		11683	30.58	1					30.58		
8/1/2007	Riccelli	262		11684	34.21	2						34.21	
8/1/2007	Riccelli	109	209	11685	45.96	1					45.96		
8/1/2007	Riccelli	71		11686	21.55	1					21.55		
8/1/2007	Riccelli	74		11687	22.09	2						22.09	
8/1/2007	Riccelli	10	405	11688	32.22	1					32.22		
8/1/2007	Riccelli	18	413	11689	26.94	1					26.94		
8/1/2007	Riccelli	60	421	11690	35.45	2						35.45	
8/1/2007	Riccelli	204		11691	46.99	1					46.99		
8/1/2007	Riccelli	288		11692	32.46	2						32.46	
8/1/2007	Riccelli	259		11693	38.33	1					38.33		
8/1/2007	Riccelli	134		11694	34.43	2						34.43	
8/1/2007	Riccelli	131		11695	39.89	1					39.89		
8/1/2007	Riccelli	307	407	11696	31.91	2						31.91	
8/1/2007	Riccelli	114		11697	29.97	2						29.97	
8/1/2007	Riccelli	253		11698	47.71	1					47.71		
8/1/2007	Riccelli	132		11699	40.96	1					40.96		
8/1/2007	Riccelli	47	422	11700	36.57	2						36.57	

Attachment E
Table E-1
SEAD-121I Ore Pile Manifest Log
SEAD-121I Removal Action
Seneca Army Depot Activity

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	Ore Pile	Total Tns	Total to date tons	Total Loads	Total to date loads	Pile 1 (south)	Pile 2 (north)	COMMENTS
8/1/2007	Riccelli	14	409	11701	33.97	2						33.97	
8/1/2007	Riccelli	19	414	11702	35.07	2						35.07	
8/1/2007	Riccelli	94		11703	23.21	2						23.21	
8/1/2007	Riccelli	32	402	11704	32.13	2						32.13	
8/1/2007	Riccelli	38		11705	21.25	2						21.25	
8/1/2007	Riccelli	71		11706	22.39	2						22.39	
8/1/2007	Riccelli	74		11707	22.30	2	3318.27	3848.96	103	123		22.3	
8/2/2007	Riccelli	14	409	11708	32.71	2						32.71	
8/2/2007	Riccelli	71		11709	17.40	2						17.4	
8/2/2007	Riccelli	19	414	11710	31.54	2						31.54	
8/2/2007	Riccelli	307	407	11711	33.27	2						33.27	
8/2/2007	Riccelli	38		11712	18.92	2						18.92	
8/2/2007	Riccelli	14	409	11713	37.33	2						37.33	
8/2/2007	Riccelli	19	414	11714	38.90	2						38.9	
8/2/2007	Riccelli	94		11715	22.27	2						22.27	
8/2/2007	Riccelli	307	407	11716	36.42	2						36.42	
8/2/2007	Riccelli	32	402	11717	35.79	2						35.79	
8/2/2007	Riccelli	38		11718	24.53	2						24.53	
8/2/2007	Riccelli	14	409	11719	38.46	2						38.46	
8/2/2007	Riccelli	32	402	11729	35.02	2						35.02	
8/2/2007	Riccelli	38		11730	21.01	2						21.01	
8/2/2007	Riccelli	14	409	11731	38.44	2						38.44	
8/2/2007	Riccelli	19	414	11732	34.55	2						34.55	
8/2/2007	Riccelli	74		11733	23.07	2						23.07	
8/2/2007	Riccelli	71		11734	22.84	2						22.84	
8/2/2007	Riccelli	97		11735	25.38	2						25.38	
8/2/2007	Riccelli	94		11736	23.88	2						23.88	
8/2/2007	Riccelli	38		11737	22.71	2						22.71	
8/2/2007	Riccelli	19	414	11738	33.24	2						33.24	

Attachment E
Table E-1
SEAD-121I Ore Pile Manifest Log
SEAD-121I Removal Action
Seneca Army Depot Activity

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	Ore Pile	Total Tns	Total to date tons	Total Loads	Total to date loads	Pile 1 (south)	Pile 2 (north)	COMMENTS
8/2/2007	Riccelli	32	402	11739	33.28	2						33.28	
8/2/2007	Riccelli	71		11740	18.77	2						18.77	
8/2/2007	Riccelli	307		11741	30.47	2						30.47	
8/2/2007	Riccelli	74		11742	21.46	2						21.46	
8/2/2007	Riccelli	97		11743	21.21	2						21.21	
8/2/2007	Riccelli	94		11744	21.13	2						21.13	
8/2/2007	Riccelli	14	409	11745	35.23	2						35.23	
8/2/2007	Riccelli	38		11746	20.30	2						20.3	
8/2/2007	Riccelli	73		11747	21.93	2						21.93	
8/2/2007	Riccelli	56		11748	20.16	2						20.16	
8/2/2007	Riccelli	19	414	11749	29.43	2						29.43	
8/2/2007	Riccelli	32	402	11750	27.65	2						27.65	
8/2/2007	Riccelli	19	414	16744	39.22	2						39.22	
8/2/2007	Riccelli	97		16745	22.61	2						22.61	
8/2/2007	Riccelli	307	407	16746	31.04	2						31.04	
8/2/2007	Riccelli	71		16747	9.78	2	1051.35	4900.31	38	161		9.78	
8/14/2007	Riccelli	600	205	16765	29.73	2						29.73	
8/14/2007	Riccelli	38		16766	16.93	2						16.93	
8/14/2007	Riccelli	71		16767	16.95	2						16.95	
8/14/2007	Riccelli	14		16768	27.14	2						27.14	
8/14/2007	Riccelli	19		16769	32.00	2						32	
8/14/2007	Riccelli	32	402	16770	35.77	2	158.52	5058.83	6	167		35.77	
8/15/2007	Riccelli	74		16771	21.04	2						21.04	
8/15/2007	Riccelli	19	414	16772	31.37	2						31.37	
8/15/2007	Riccelli	12	419	16773	34.94	2						34.94	
8/15/2007	Riccelli	309	420	16774	39.80	2						39.8	
8/15/2007	Riccelli	501	167	16775	37.07	2						37.07	
8/15/2007	Riccelli	114	165	16776	44.71	2						44.71	
8/15/2007	Riccelli	132	151	16777	39.92	2						39.92	

Attachment E
Table E-1
SEAD-121I Ore Pile Manifest Log
SEAD-121I Removal Action
Seneca Army Depot Activity

DATE	Hauler	Truck No.	Trailer No.	Manifest Number	Net Tons	Ore Pile	Total Tns	Total to date tons	Total Loads	Total to date loads	Pile 1 (south)	Pile 2 (north)	COMMENTS
8/15/2007	Riccelli	17	412	16778	32.64	2						32.64	
8/15/2007	Riccelli	119	209	16779	40.51	2						40.51	
8/15/2007	Riccelli	148	206	16780	32.47	2						32.47	
8/15/2007	Riccelli	252	130	16781	26.75	2						26.75	
8/15/2007	Riccelli	32	402	16782	31.01	2						31.01	
8/15/2007	Riccelli	19	414	16783	33.62	2						33.62	
8/15/2007	Riccelli	12	419	16784	32.40	2						32.4	
8/15/2007	Riccelli	309	420	16785	26.91	2						26.91	
8/15/2007	Riccelli	501	167	16786	32.30	2						32.3	
8/15/2007	Riccelli	14	409	16787	31.66	1					31.66		
8/15/2007	Riccelli	114	165	16788	28.81	1					28.81		
8/15/2007	Riccelli	132	151	16789	28.59	1					28.59		
8/15/2007	Riccelli	17	412	16790	35.25	1					35.25		
8/15/2007	Riccelli	119	209	16791	31.18	1					31.18		
8/15/2007	Riccelli	148	206	16792	38.23	1					38.23		
8/15/2007	Riccelli	252	130	16793	28.34	1					28.34		
8/15/2007	Riccelli	32	402	16794	22.48	1					22.48		
8/15/2007	Riccelli	19	414	16795	36.54	1					36.54		
8/15/2007	Riccelli	12	419	16796	26.64	1					26.64		
8/15/2007	Riccelli	309	420	16797	35.63	1	880.61	5939.44	27	194	35.63		
											2713.63	3225.81	
							Less Rail Road ties				10.5	15	Totals
							Total Soil Removed			Tons	2703.13	3210.81	5913.94
										tn/cy	1.75	1.24	
										CY	1544.64571	2589.362903	4134.008618

File 121 PRAP

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April 27, 2007

Mr. John Hill
U. S. Air Force Center for Environmental Excellence
HQ AFCEE/IWP
3300 Sidney Brooks
Brooks City-Base, TD 78235-5112

SUBJECT: Draft Final Proposed Plan for Two Areas of Concern Requiring Land Use Controls, SWMUs SEAD-121C, the Defense Reutilization and Marketing Office Yard and SEAD-121I, the Rumored Cosmoline Oil Disposal Area at Seneca Army Depot Activity; Contract FA8903-04-D-8675, Delivery Order 0031, CDRL A001D

Dear Mr. Hill:

Parsons is pleased to submit the Draft Final Proposed Plan for Two Areas of Concern Requiring Land Use Controls, SWMUs SEAD-121C, the Defense Reutilization and Marketing Office Yard, and SEAD-121I, the Rumored Cosmoline Oil Disposal Area at the Seneca Army Depot Activity (SEDA) in Romulus, New York.

This work was performed in accordance with the Scope of Work (SOW) for Contract No. FA8903-04-D-8675, Task Order No. 0031.

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

Sincerely,

J W Adams
for

Todd Heino, P.E.
Project Manager

Enclosures

cc: S. Absolom, SEDA (3 paper copies, 1 electronic copy)
K. Hoddinott, USACHPPM (2 paper copies, 1 electronic copy)
C. Boes, USAEC (1 copy, electronic and paper)
R. Battaglia, USACE, NY District (1copy, electronic and paper)
T. Battaglia, USACE, NY District (1 copy, electronic and paper)
J. Nohrstedt, USACE, Huntsville (2 paper copies, 1 electronic copy)
Air Force email (letter only)

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April 27, 2007

Mr. Julio Vazquez
U.S. Environmental Protection Agency, 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
New York State Department of Health
Bureau of Environmental Exposure Investigation, Room 300
547 River Street, Flanigan Square
Troy, New York 12180

SUBJECT: **Draft Final Proposed Plan for Two Areas of Concern Requiring Land Use Controls, SWMUs SEAD-121C, the Defense Reutilization and Marketing Office Yard and SEAD-121I, the Rumored Cosmoline Oil Disposal Area at Seneca Army Depot Activity; EPA Site ID# NY0213820830 and NY Site ID# 8-50-006**

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

Parsons is pleased to submit the Draft Final Proposed Plan for Two Areas of Concern Requiring Land Use Controls, SWMUs SEAD-121C, the Defense Reutilization and Marketing Office Yard and SEAD-121I, the Rumored Cosmoline Oil Disposal Area located at the Seneca Army Depot Activity (SEDA) in Romulus, New York (EPA Site ID# NY0213820830 and NY Site ID# 8-50-006). This document has been prepared in the new streamlined format as requested by the US Environmental Protection Agency.

An electronic copy of the complete Proposed Plan is enclosed with this submittal.

Should you have any questions, please do not hesitate to call me at (617) 449-1405 to discuss them.

Sincerely,

for

Todd Heino, P.E.
Program Manager

Enclosures

cc: J. Hill AFCEE
S. Absolom, SEDA
C. Boes, USAEC
T. Battaglia, USACE, NY District
Air Force email (letter only)
K. Hoddinott, USACHPPM
R. Battaglia, USACE, NY District
J. Fellinger, TechLaw
J. Nohrstedt, CENHC

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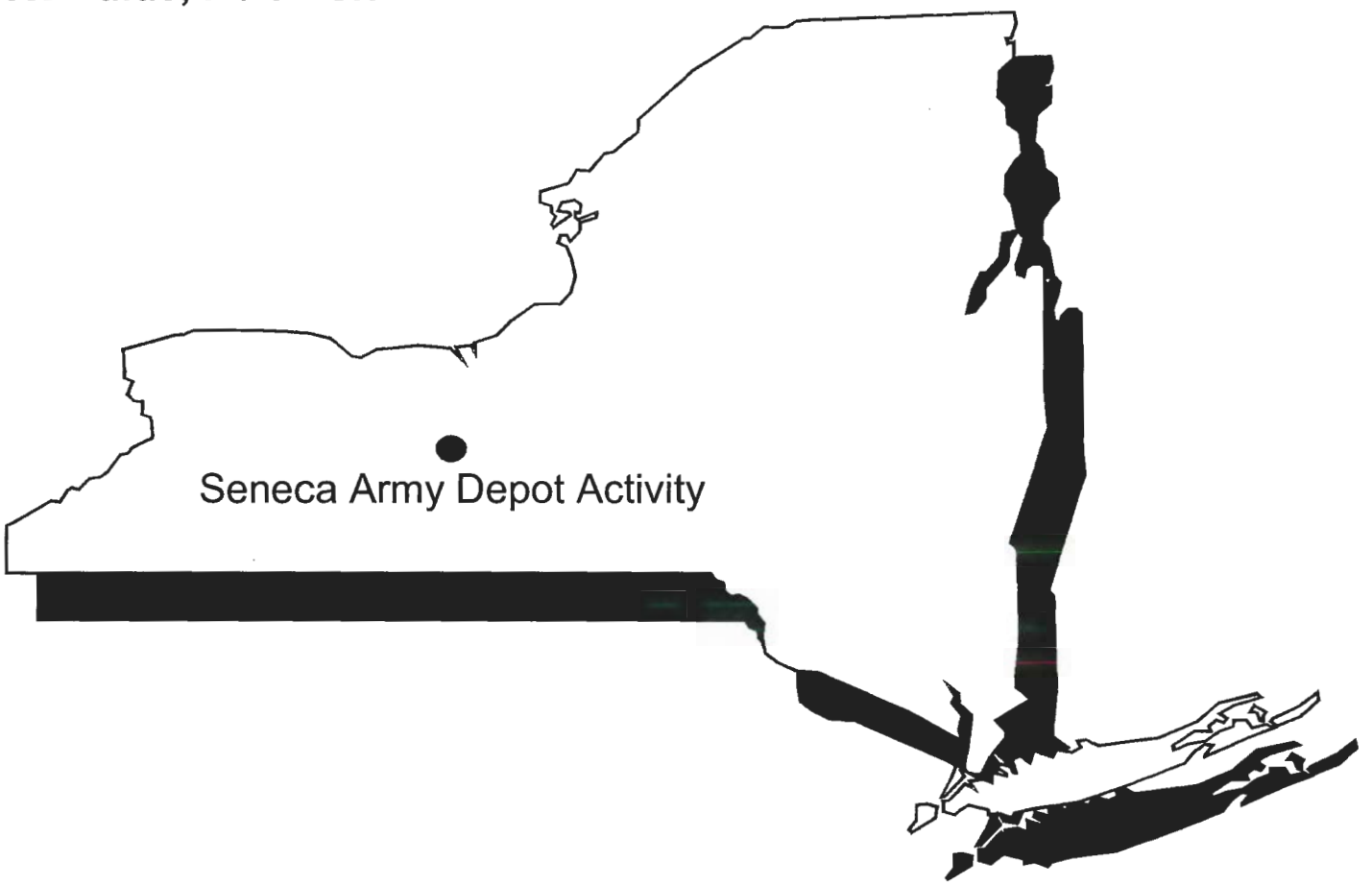
US Army Corps of Engineers

Air Force Center for Environmental Excellence

Seneca Army Depot Activity
Romulus, New York



DRAFT FINAL PROPOSED PLAN

TWO AREAS OF CONCERN (AOCs) REQUIRING LAND USE CONTROLS (LUCs) SWMUs SEAD-121C, THE DEFENSE REUTILIZATION AND MARKETING OFFICE YARD, AND SEAD-121I, THE RUMORED COSMOLINE OIL DISPOSAL AREA 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

PARSONS

APRIL 2007

Proposed Plan – Draft Final

Two Areas of Concern (AOCs) Requiring Land Use Restrictions (LUCs), SWMUs SEAD-121C, the Defense Reutilization and Marketing Office (DRMO) Yard, and SEAD-121I, the Rumored Cosmoline Oil Disposal Area at the SENECA ARMY DEPOT ACTIVITY (SEDA) Romulus, New York

April 2007

This Proposed Plan describes the remedial alternative selected for two areas of concern (AOCs), SEAD-121C (the former Defense Reutilization and Marketing Office [DRMO] Yard) and SEAD-121I (the Rumored Cosmoline Oil Disposal Area) at the Seneca Army Depot Activity (SEDA or Depot) Superfund Site, located in Seneca County, New York. This Proposed Plan was developed by the U.S. Army (Army) and the U.S. Environmental Protection Agency (EPA) in consultation with the New York State Department of Environmental Conservation (NYSDEC). The Army and the EPA are issuing this Proposed Plan as part of their public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Action (CERCLA) of 1980, as amended, and Sections 300.430(f) and 300.435(c) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The nature and extent of the contamination at the two AOCs is described in the April 2006 Remedial Investigation (RI) Report. The Army, EPA, and NYSDEC encourage the public to review this document to gain a more comprehensive understanding of the AOCs, the site and the Superfund activities that have been completed.

This Proposed Plan is being provided as a supplement to the RI Report to inform the public of the Army's, EPA's and NYSDEC's preferred remedy for the AOCs and to solicit public comments pertinent to the selected remedies. The preferred remedy for both AOCs is to formally impose and implement Land Use Controls (LUCs) that prohibit the use of the designated land for residential activities, and to prohibit access to and use of groundwater. Additionally, at SEAD-121I, the Army will maintain existing engineering controls (security fences) that surround strategic stockpiles of ore until this mission is terminated. The identified LUCs were previously established for three other AOCs (i.e., SEADs 27, 64A, and 66) that are located in proximity to SEADs 121C and 121I. At the time of the Army's, EPA's and NYSDEC's final determination for the other three SEADs, all parties agreed that the identified LUCs should be imposed on all land within the Planned Industrial / Office Development and Warehousing (PID) Area at the former Depot due to the anticipated future use of the land and the similarity of its known past uses by the Army and predecessors.

The remedy described in this Proposed Plan is the preferred remedy for both of the AOCs. Changes to the preferred remedy, or a change from the preferred remedy to another remedy, may be made if public comments or additional data indicate that such a change will result in a more appropriate remedial action. The final decision regarding the selected remedies will be made after the Army and the EPA have taken all public comments into consideration. The Army and the EPA are soliciting comments because the Army, EPA and NYSDEC may select a remedy other that the preferred remedy for either or both of the AOCs.

MARK YOUR CALENDAR

[Date] – [Date]:
Public comment period related to this Proposed Plan.

[Date] at 7:00 P.M.: Public meeting at the Seneca County Office Building, Village of Waterloo New York

The Army, EPA, and NYSDEC rely on public input to ensure that the concerns of the community are considered in selecting an effective remedy for each Superfund site. To this end, the RI Report and this proposed plan have been made available to the public for a public comment period which begins on Date and concludes on Date 2.

A public meeting will be held during the public comment period at the Seneca County Office Building on Date 3 at 7:00 p.m. to present the conclusions of the RI, to elaborate further on the reasons for selecting the preferred remedy, and to receive public comments.

Comments received at the public meeting, as well as written comments, will be documented in the Responsiveness Summary Section of the Record of Decision (ROD), the document that formalizes the selection of the remedy.

Written comments on the Proposed Plan should be addressed to:

Mr. Stephen M. Absolom
BRAC Environmental Coordinator
Seneca Army Depot Activity
Building 123, P.O. Box 9
5786 State Route 96
Romulus, NY 14541-0009

SCOPE AND ROLE OF ACTION

The primary goal of this action is to enable the Army to transfer or lease the land occupied by the identified AOCs to other private or public parties for beneficial reuse. The historic use of this land was industrial and warehousing. The planned future use for land contained in these AOCs is Planned Industrial/Office Development/Warehousing, and these uses are consistent with the Town of Romulus' current zoning of the land within the PID Area.

Prior to transfer or lease of any property at the SEDA, the Army is required to ensure that the property is suitable for reuse. Information exists for SEADs 121C and 121I that indicates that hazardous substances are still present at these AOCs that pose potential risks to selected populations. Risk assessments based on exposure scenarios that are consistent with the planned future use of the land in the AOCs indicate that such uses are possible and appropriate given the residual levels of hazardous substances that remain at the AOCs. Therefore, the Army has determined that LUCs prohibiting residential activities, and access to and use of groundwater are needed to minimize any potential future health and environmental impacts at both AOCs. In addition, the Army has determined that existing engineering controls (i.e., security fences) that surround the strategic stockpiles of ferro-manganese ore must be maintained until the stockpile mission at the Depot is terminated.

SITE BACKGROUND

Site and AOC Descriptions

The SEDA previously occupied approximately 10,600 acres of land located in the Towns of Varick and Romulus in Seneca County, New York. The former military facility was owned by the U.S. Government and operated by the Army between 1941 and approximately 2000, when SEDA's military mission ceased. Prior to the Army's occupation of the land, this land was used for farming, agricultural and residential purposes. The SEDA's historic military mission included receipt, storage, distribution, maintenance, and demilitarization of general supplies, conventional ammunition, explosives and special weapons.

SEDA is located in an uplands area, which forms a divide separating two of New York's Finger Lakes; Cayuga Lake on the east and Seneca Lake on the west. Ground surface elevations are generally higher along the eastern and southern borders of the Depot, and lower along the northern and western borders. The approximate elevation at the southeastern corner of the SEDA site is 740 feet (ft), while the approximate elevation at the southwestern and northeastern corners is 650 ft. The approximate elevation at the southwestern corner of the Depot is 590 ft. Given this topographic profile, the primary direction of surface water flow throughout the SEDA is to the west towards Seneca Lake. Isolated portions of the Depot drain to the northeast (Seneca-Cayuga Canal) and east (Cayuga Lake). Primary surface water flow conduits to Seneca Lake are Reeder, Kendaia, Indian, and Silver Creeks, while Kendig Creek flows to the northeast and an unnamed creek flows away from the southeast corner of the Depot towards the east. Comparably, the predominant groundwater flow direction is to the west and southwest, although local variations exist at specific location throughout the Depot.

SEAD-121C and SEAD-121I are both located in the east-central portion of the former SEDA. Both AOCs are within the greater PID Area. Both AOCs are located at elevations above 720 ft.

SEAD-121C, the former DRMO Yard

SEAD-121C is a triangularly-shaped gravel lot located roughly 4,000 ft southwest of the former Depot's main entrance off State Route 96. The DRMO Yard is surrounded by a chain-linked fence and access into the AOC is controlled through a single, normally locked gate located at its southeast corner. The surface of the DRMO Yard is graded to allow surface water to drain toward the man-made ditches that bound the AOC on its northwest and south sides. The major pathway of surface water flow is to these drainage ditches, which then flow to the west towards a wetland area and the headwaters of Kendaia Creek.

Several other man-made features are prominent within the DRMO Yard; these include: one storage building; an earthen-bottomed, open storage cell in the southwest corner of the AOC; a rectangular-shaped, earthen-bottomed open, storage cell immediately adjacent to, and located halfway along the northwest perimeter fence of the AOC; and a multi-chambered, concrete slab, storage cell adjacent to the east perimeter fence, near the northern-most point of the DRMO Yard.

The DRMO Yard was used by the Army to store material that was no longer needed for national defense, or did not comply with legislative and regulatory requirements. The Activity using the yard was responsible for property reuse (including resale), hazardous property disposal (off-site, at licensed/permitted facilities), precious metals recovery and recycling program support.

SEAD-121I, the Rumored Cosmoline Oil Disposal Area

SEAD-121I consists of four rectangular-shaped, open grass and dirt covered areas that are bounded by 3rd and 7th Streets (north and south ends, respectively) and Avenues C and D (west and east sides, respectively). The northern end of SEAD-121I is located roughly 4,500 ft south-southwest of the Depot's main entry off State Route 96. The AOC extends roughly 2,500 to 3,000 ft to the south from this point, and the AOC measures approximately 300 to 400 ft in width throughout its length. This AOC is located 2,000 to 4,000 ft northwest of the topographic high point within the Depot.

Buried reinforced concrete storm drains convey runoff storm water from east to west through the AOC along 3rd St., 4th St., 5th St., 6th St., and 7th St.

A railroad spur line enters SEAD-121I from the south and extends to the northern end of the AOC where it terminates near the intersection of 3rd St. and Avenue C. Two sidings branch off the main spur line; one terminates in the first (north to south) block and the other terminates in the third (north to south) block. There are concrete loading docks located in the first and third blocks next to the railroad lines.

The Army indicates that the rail spur and sidings were used for delivery of equipment and machinery that was frequently packed in Cosmoline (oil). Cosmoline oil is a commonly used substance that prevents corrosion on metal parts and components. During delivery and unpacking of the equipment and machinery, oil from the packing may have been deposited on the ground.

The U.S. Government has historically staged strategic stockpiles of ferro-manganese ore in portions of SEAD-121I, and these stockpiles were present during the EBS and RI sampling events. These strategic stockpiles were located in the second and fourth blocks (north to south) of the AOC, along the western edge of the AOC close to Avenue C. Parallel rows of warehouses border the eastern and western sides of the AOC, across the bounding north-south running Avenue C and Avenue D.

Seneca Army Depot History

The U.S. Government purchased land for the Seneca Army Depot in Varick and Romulus, New York from approximately 150 families during June 1941. This land previously was used primarily for family homesteads, farming and agriculture. Once land was obtained, a work force numbering more than 7,000 at the peak of construction built the infrastructure of the Depot which included roads and rail lines; storage igloos; numerous buildings and structures that were used for administrative, maintenance, recreational, training, living, and support functions; and surrounded the entire facility with more than 20 miles of perimeter security fence, much of which was completed prior to the US's entry into World War II (WWII). The Depot began its primary mission of receipt, maintenance and supply of ammunition in 1943. After the end of WWII, the Depot's mission shifted from supply to storage, maintenance and disposal of ammunition.

On July 14, 1989, the EPA proposed the SEDA for inclusion on the National Priorities List (NPL). The EPA recommendation was approved and finalized on August 30, 1990, when the SEDA was listed in Group 14 of the Federal Facilities portion of the NPL.

Once listed on the NPL, the Army, EPA, and NYSDEC identified 57 solid waste management units (SWMUs)

where data or information suggested, or evidence existed to support, that hazardous substances or hazardous wastes had been handled and where releases to the environment may have occurred. Each of these sites was identified in the "*Federal Facilities Agreement under CERCLA Section 120; Docket Number: II-CERCLA-FFA-00202*" (FFA) signed by the three parties in 1993. The number of SWMUs was subsequently expanded to include 72 AOCs once the Army completed the required "*SWMU Classification Report.*"

The SEDA was a generator and treatment, storage and disposal facility (TSDF) for hazardous wastes and thus, subject to regulation under the Resource Conservation and Recovery Act (RCRA). Under the RCRA permit system, corrective action is required at all SWMUs, as needed. Remedial goals are the same for CERCLA and RCRA; thus, once the 72 SWMUs were listed, the Army recommended that they be identified as either areas requiring No Action or as Areas of Concern (AOCs). SWMUs listed as AOCs were scheduled for investigations based upon data and potential risks to the environment.

In 1995, the SEDA was designated for closure under the Department of Defense's (DoD's) 1995 Base Realignment and Closure (BRAC) process. In accordance with requirements of BRAC, the Army prepared an Environmental Baseline Survey (EBS) for SEDA. Under the EBS, all areas at the Depot were evaluated and subdivided into one of seven standard environmental categories consistent with the Community Environmental Response Facilitation Act (CERFA – Public Law 102-426) guidance and the DoD's "*BRAC Cleanup Plan Guidebook*" (DoD, 1993). Based on the findings and conclusions of the EBS, SEAD-121C and SEAD-121I were both designated as AOCs where additional information and data were required before the land could be offered for transfer and reuse.

Once SEDA was added to the 1995 BRAC list, the Army's primary objective expanded from performing remedial investigations and completing necessary remedial actions to include the release of non-affected portions of the Depot to the surrounding community for their reuse for other, non-military purposes (i.e., industrial, municipal, and residential). The designated future use of land within the SEDA was first defined and approved by the Seneca County Local Redevelopment Authority in 1996. The planned use for various portions of the SEDA has been modified by Seneca County Industrial Development Agency (SCIDA) since 1996.

Since 1995, approximately 8,000 acres of the former Depot has been released to the SCIDA. An additional 250 acres of land at the Depot has been transferred to the U.S. Coast Guard for continued operation of a LORAN[i] Station. Finally, other property still owned by the federal government has been leased to private parties for beneficial reuse.

PREVIOUS INVESTIGATIONS AND ACTIVITIES

Two environmental investigations were conducted at SEAD-121C and SEAD-121I to characterize conditions present. First, the Army conducted a limited Environmental Baseline Survey (EBS) in 1998 and 1999 at each AOC to assess if hazardous substances were likely to be present. This work is summarized in the report "*Final Investigation of Environmental Baseline Survey Non-Evaluated Sites [SEAD-119A, SEAD-122 (A, B, C, D, E), SEAD-123 (A, B, C, D, E, F), SEAD-46, SEAD-68, SEAD-120 (A, B, C, D, E, F, G, H, I, J), and SEAD-121 (A, B, C, D, E, F, G, H, I)].*" Based on the results of the EBS, the Army subsequently conducted remedial investigations (RIs) at both AOCs during 2002 and 2003. The results of the RI are summarized in the report "*Remedial Investigation Report for Two EBS Sites in the Planned Industrial Development Area (SEAD-121C and SEAD-121I.*" As a result of these investigations, samples of soil (surface, subsurface, and ditch), surface water and groundwater were collected from one or both of the AOCs and analyzed for the full suite of Target Compound and Target Analyte List (TCL and TAL, respectively) parameters.

During the investigations, analytical data collected were compared to the prevailing state and federal standards and guidance criteria. Cleanup criteria and standards considered included New York's: Technical and Guidance Memorandum (TAGM) No. 94-HRW-4046 soil cleanup

objectives; Class GA Groundwater Quality Standards; and, Class C Surface Water Ambient Water Quality Standards. Federal criteria considered included EPA Region IX Preliminary Remediation Goals (PRGs) for residential soils and PRGs for Tap Water, as well as Maximum Contaminant Limits (MCLs) and Secondary Drinking Water Standards for Drinking Water. The state's TAGM #4046 values for soil have recently been superseded by a new set of soil cleanup criteria including: protection of groundwater; protection of ecological resources; unrestricted use; and four levels of restricted use (i.e., residential, restricted residential, commercial, and industrial). State guidance for hazardous waste sites requires that response actions evaluated for possible implementation include the no action alternative, one that focuses on returning the location to pre-use conditions (i.e., unrestricted use), and others as may be appropriate.

During the prior investigations, the Army determined that metals in the soil are the primary hazardous substances present at both of the AOCs. Concentrations identified for specific metals were shown to exceed cleanup objectives and guidance values defined by the federal and state government. Additionally, other selected organic chemicals have also been found at both AOCs at lower frequency, but at concentrations that exceed defined cleanup objectives and guidance values. Finally, groundwater at SEAD-121C, and episodic surface water flows at both SEAD-121C and SEAD-121I has been shown to contain hazardous substances at concentrations that exceed state standards and federal guidance values.

Specific hazardous substances of concern at SEAD-121C include benzene; the seven carcinogenic polycyclic hydrocarbons (cPAHs); dieldrin; three Aroclor congeners (1242, 1254, and 1260); and the metals arsenic, copper, lead and iron. Hazardous substances identified at SEAD-121I include the seven cPAHs; dieldrin and heptachlor epoxide; and the metals arsenic, chromium, iron, manganese, and thallium.

SEAD-121C, the DRMO Yard

Soil Investigations

Hazardous substances found in the soil at SEAD-121C, the DRMO Yard are listed and compared to applicable state and federal cleanup objectives in **Table 1**. This table also identifies the maximum concentration identified for a contaminant in the AOC soils, and the 95th Upper Confidence Limit on the Mean (95th UCL) value computed for the soil data set based on EPA's ProUCL Methodologies.

Hazardous Substance	95th UCL of the Mean (mg/Kg)*	NYSDEC Industrial Use (mg/Kg)*	Region IX Industrial Soil PRGs (mg/Kg)*
Benzene	0.18	89	1.4
Ethylbenzene	2.44	780	400
Benzo(a)anthracene	1.91	11	2.1
Benzo(a)pyrene	1.99	1.1	0.21
Benzo(b)fluoranthene	2.64	11	2.1
Benzo(k)fluoranthene	1.38	110	21
Chrysene	1.83	110	210
Dibenz(ah)anthracene	0.31	1.1	0.21
B(a)P Toxicity Equiv.	2.66	NA	NA
4,4`-DDD	0.006	180	10
4,4`-DDE	0.015	120	7
4,4`-DDT	0.015	94	7
Aldrin	0.004	1.4	0.1
Aroclor-1254	0.13	25	21
Aroclor-1260	0.03	25	21
Dieldrin	0.007	2.8	0.11
Endrin	0.004	410	1800
Arsenic	5.69	16	1.6
Barium	400	10000	67000
Cadmium	9.9	60	450
Chromium	27.0	6800	100000
Copper	1575	10000	41000
Lead	2278	3900	800
Mercury	0.11	5.7	NA
Nickel	44.3	10000	20000
Silver	3.6	6800	5100
Zinc	800	10000	100000

Key: * mg/Kg = milligrams per Kilogram; NA = Not Available

Forty-eight (48) surface soil (0 – 0.2 ft), 10 ditch soil (0 – 2 ft.) and 20 subsurface soils (> 2 ft.) were collected and analyzed as part of the investigation of soil at SEAD-121C. Soil samples showed levels of two volatiles organic compounds, six carcinogenic polycyclic aromatic

hydrocarbons (cPAHs), six pesticides, two PCBs, and 14 metals that exceeded the varying federal or state criteria values.

Generally, only trace levels of volatile organic compounds were found in soil samples at SEAD-121C. Concentrations noted for several of the identified compounds were consistent with laboratory contaminant levels. Benzene and ethylbenzene were both found in a single subsurface sample at elevated concentrations.

The cPAHs were found in all soils evaluated (i.e., surface, subsurface, and ditch), but the higher concentrations were generally detected in the surface soils. Three sample locations to the east of the DRMO Yard, along the access road, and one located halfway along the northwestern boundary fence that separates the DRMO Yard from the abutting drainage ditch showed the highest concentrations of cPAHs.

The highest concentrations of metals were generally collocated in surface soil samples collected from locations in the northeastern and southwestern corners of the former yard, where scrap metal collection areas were previously located. Metal species identified at the yard that could have pose potential risks to human health included arsenic, copper, iron and lead; subsequent risk assessments indicated that potential risks were within EPA's acceptable range.

Groundwater Investigation

Two temporary groundwater monitoring wells (i.e., MW121C-1 and MW121C–2) were installed and sampled using bailers during the EBS in 1998. Four permanent monitoring wells were installed, and two rounds (i.e., February and May of 2003) of groundwater samples were collected and analyzed at three of the permanent wells (MW121C-3, MW121C-4, and MW121C-6) using low flow sampling techniques during the RI. Samples could not be collected from the fourth permanent monitoring well (i.e., MW121C-5) during either of the 2003 sampling events because the well was found to be dry. Data collected during the EBS is considered suspect because bailers were used. Sampling with bailers is a more aggressive technique that stirs up silt and soil that is commonly found in wells, which can lead to false positive results for many compounds.

Groundwater data developed for SEAD-121C was compared to federal and state criteria including New York State Class GA Groundwater Standards, federal Maximum Contaminant Levels (MCLs), federal Secondary Drinking Water Standards (SEC), and EPA Region IX PRGs for Tap Water. The federal MCLs, SECs and the Region IX PRGs are considered TBC criteria because they pertain specifically to drinking water, and the groundwater at SEAD-121C is not used as a source of drinking water at the Depot. There is a separate municipal water distribution system within the PID area. The results of the groundwater sampling at SEAD-121C are presented in **Table 2**, below.

Table 2
Comparison of Measured Groundwater Concentrations at SEAD-121C and Cleanup Objectives

Hazardous Substance	EBS Maximum Groundwater Concentration (µg/L)*	RI Maximum Groundwater Concentration (µg/L)*	NYSDEC GA Groundwater Standard (µg/L)*	Federal MCL or Secondary Drinking Water Standard (µg/L)	EPA Region IX PRG for Tap Water (µg/L)*	Maximum Seneca Background Concentration (µg/L)*
1,2-Dichloro-Benzene	36	ND	3	0.6	370	NA
4,4'-DDD	0.81	ND	0.3	NA	0.28	NA
4,4'-DDE	0.3	ND	0.2	NA	0.2	NA
4,4'-DDT	0.56	ND	0.2	NA	0.2	NA
Alpha-BHC	0.059	ND	0.1	NA	0.011	NA
Beta-BHC	0.33	ND	0.04	NA	0.037	NA
Delta-BHC	0.16	ND	0.04	NA	NA	NA
Dieldrin	0.2	ND	0.004	NA	0.0042	NA
Heptachlor	0.14	ND	0.04	0.4	0.015	NA
Heptachlor epoxide	0.11	ND	0.03	0.2	0.0074	NA
Aluminum	5350	588	NA	50	36000	42400
Antimony	NA	8.4	3	6	15	52.7
Iron	5620	869	300	300	11000	69400
Manganese	1365	297	300	50	880	1120
Sodium	95200	58400	20000	NA	1200000	59400

Key: µg/L = micrograms per Liter; NA = Not Available; ND = Not Detected.

VOCs, pesticides and PCBs were not detected in groundwater samples characterized during the RI sampling program. Two SVOCs were detected in groundwater samples collected during the RI, but neither

was found at a concentration above any comparative criteria.

Nineteen (19) metals were detected in samples collected from the permanent wells at SEAD-121C during the RI. Aluminum, antimony, iron, manganese, and sodium exceeded their respective comparative criteria in at least two of the six groundwater samples characterized during the RI sampling events.

Surface Water Investigation

No permanent surface water body is located within the bounds of SEAD-121C. Drainage ditches are located exterior to the AOC, along its southern and northwestern bounds. The man-made drainage ditches convey storm and snow-melt runoff waters away from land located within the SEDA's former administrative, maintenance and warehousing areas, which are located to the north-northeast, east, and south-southeast, of SEAD-121C to Kendaia Creek that is located to the west. Surface water flow in the abutting drainage ditches is an episodic event; thus, there is no NYSDEC designation assigned to surface water (i.e., runoff) found in the channels. For comparative purposes, analytical results compiled for surface water samples were compared to New York State's Class C Ambient Water Quality Standards (AWQS) and to the EPA's Region IX PRGs for Tap Water for comparative purposes. The results of this comparison are shown in **Table 3**.

Table 3
Comparison of Measured Surface Water Concentrations at SEAD-121C and Cleanup Objectives

Hazardous Substance	Maximum Surface Water Concentration (µg/L)*	NYSDEC Class C Surface Water Standard (µg/L)*	EPA Region IX PRG for Tap Water (µg/L)*
Bis(2-ethylhexyl)phthalate	4.2	0.6	4.8
Aluminum	8760	100	36000
Arsenic	50.3	150	0.045
Barium	423	NA	2600
Beryllium	0.86	1100	73
Cadmium	19.5	3.84	18
Calcium	166000	NA	25000
Chromium	129	139.45	110
Cobalt	47	5	730
Copper	1160	17.32	1500
Iron	110000	300	11000
Lead	839	1.46	15
Magnesium	26200	NA	40000
Manganese	2380	NA	880
Mercury	2.1	0.0007	11
Nickel	154	99.92	730
Potassium	5350	NA	700000
Selenium	4.6	4.6	180
Silver	8	0.1	182
Sodium	123000	NA	1200000
Thallium	6.3	8	2.4
Vanadium	233	14	36
Zinc	6910	159.25	11000

Key: µg/L = micrograms per liter; NA = Not Available; ND = Not Detected.

Surface water samples were collected from 10 locations during the SEAD-121C RI; nine of these samples were collected exterior to SEAD-121C, while the last was collected from a puddle that accumulated after a storm event within the AOC.

Neither VOCs nor pesticides/PCBs were detected in any of the surface water samples collected near SEAD-121C. The SVOC bis(2-ethylhexyl)phthalate was detected in one sample collected from a location that is upgradient of, exterior to, and southwest of the AOC. The reported concentration of 4.2 µg/L exceeds New York's Class C AWQS, but is less than Region IX's PRG for tap water.

Twenty-two metals were detected in surface water samples collected from the vicinity of the DRMO Yard. Of the 22 metals detected, 10 were detected in every sample

analyzed, while two others (i.e., arsenic and selenium) were only observed in one sample each. Antimony was not detected in any surface water sample. Eleven of the detected metals exceeded their respective Class C AWQS for surface water. Eight metals exceeded their respective Region IX PRGs for tap water.

SEAD-121I, Rumored Cosmoline Oil Disposal Area

Samples of surface soil, ditch soil and surface water were collected and analyzed as part of the EBS and RI at SEAD-121I, the Rumored Cosmoline Oil Disposal Area. The sampling and analyses were performed in 2002 and 2003; the results of this effort were reported in the "*Remedial Investigation Report for Two EBS Sites in the Planned Industrial Development Area (SEAD-121C and SEAD-121I).*" The combined analytical results of the EBS and the RI are summarized and discussed below.

Soil Investigations

Fifty-one (51) soil samples, including 12 ditch soil samples, 34 surface soil samples (i.e., 0 – 2 inches bgs) and five soil samples collected from soil borings, but from depths of less than 2 ft. bgs, were collected and analyzed as part of the investigation of soil at SEAD-121I. A summary of the soil data for SEAD-121I compared to pertinent criteria is provided in **Table 4**.

Table 4
Comparison of Measured Soil Concentrations at SEAD-121I to Soil Cleanup Objective Criteria

Hazardous Substance	95th UCL of the Mean (mg/Kg)*	NYSDEC Restricted Commercial Use (mg/Kg)*	NYSDEC Restricted Industrial Use (mg/Kg)*	Region IX Industrial Soil PRGs (mg/Kg)*
Acetone	0.061	500	1000	54000
Benzo(a)anthracene	9.25	5.6	11	2.1
Benzo(a)pyrene	8.42	1	1.1	0.21
Benzo(b)fluoranthene	10.43	5.6	11	2.1
Benzo(k)fluoranthene	9.40	56	110	21
Chrysene	12.00	56	110	210
Dibenz(ah)anthracene	1.26	0.56	1.1	0.21
Indeno(123-cd)pyrene	4.47	5.6	11	2.1
B(a)P Toxicity Equiv.	13	NA	NA	NA
4,4`-DDE	0.014	62	120	7
4,4`-DDT	0.013	47	94	7
Aldrin	0.0059	0.68	1.4	0.1
Dieldrin	0.011	1.4	2.8	0.11
Endrin	0.0048	89	410	1800
Heptachlor epoxide		NA	NA	0.19
Antimony	3.3	NA	NA	410
Arsenic	26	16	16	1.6
Cadmium	2.5	9.3	60	450
Chromium	73	1500	6800	10000
Copper	65	270	10000	41000
Iron	21111	NA	NA	100000
Lead	54	1000	3900	800
Magnesium	11000	NA	NA	NA
Manganese	89533	10000	10000	19000
Mercury	0.039	2.8	5.7	NA
Nickel	96	310	10000	20000
Selenium	41	1500	6800	5100
Silver	2.4	1500	6800	5100
Thallium	45	NA	NA	67
Zinc	163	10000	10000	100000

Key: * mg/Kg = milligrams per Kilogram; NA = Not Available

Eight VOCs, including acetone, benzene, ethyl benzene, met/para xylene, methyl ethyl ketone, methylene chloride, ortho xylene, and toluene, were detected in the 45 surface soil samples collected and analyzed from SEAD-121I. Acetone was the only VOC found at concentrations that was found at concentrations that are above normal laboratory contaminant levels.

Twenty-eight SVOCs, including mainly PAHs, cPAHs, and mixed phthalates were detected in the soil samples collected from SEAD-121C. Generally, the seven cPAH compounds were found most frequently. The seven cPAH

compounds were also the only substances observed to exceed state or federal comparative values. Three samples exhibited BTEQ concentrations in excess of NYSDEC's guidance value 10 mg/Kg.

Seven pesticides and two PCBs were detected in the soils at SEAD-121I. Five pesticides (i.e., 4,4`-DDE, 4,4`-DDT, aldrin, dieldrin and endrin) were found at concentrations that exceeded one of their respective comparative cleanup objectives.

Twenty-three metals were detected in the 45 soil samples collected at or around SEAD-121I. Thirteen metals (arsenic, antimony, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, thallium, and zinc) were found at concentrations that exceeded one of their respective comparative cleanup criteria.

The metals exhibiting concentrations above comparative cleanup objective levels were generally located in close proximity to the ore piles. As such, the stockpiles are presumed to be the source of the elevated levels of these metals in the AOC soils.

Groundwater Investigation

Groundwater was not encountered in any of the soil borings advanced at SEAD-121I. Each of these borings was terminated once the underlying bedrock surface was encountered. Therefore, groundwater was not evaluated as a media of concern at SEAD-121I.

Surface Water Investigation

Seven (7) surface water samples were collected and analyzed as part of the investigation of SEAD-121I.

Table 5
Comparison of Measured Surface Water Concentrations at SEAD-121I and Cleanup Objectives

Hazardous Substance	Maximum Surface Water Concentration (µg/L)*	NYSDEC Class C Surface Water Standard (µg/L)*	EPA Region IX PRG for Tap Water (µg/L)*
Aluminum	2050	100	36000
Iron	3410	300	11000
Lead	26.3	1.46	15
Zinc	190	159.25	11000

Key: µg/l = micrograms per liter; NA = Not Available; ND = Not Detected.

No VOCs or pesticide/PCB compounds were detected in the surface water samples collected for SEAD-121I. Two SVOCs (butylbenzylphthalate and fluoranthene) were detected in one surface water sample each, at SEAD-121I. Neither of these values exceeded their respective cleanup objective levels (i.e., NYS Class C AWQS or Region IX tap water PRGs).

Eighteen metals were detected in the surface water at SEAD-121I, of these 18, seven (i.e., aluminum, calcium, magnesium, manganese, potassium, sodium, and zinc) were found in every sample. Four of the identified metals [aluminum (3 times), iron (2 times), lead (4 times), and zinc (1 time)] exceeded their respective AWQS Class C standards; however, only lead was found at a concentration that exceeded its Region IX tap water cleanup objective.

Based on the data, the Army has concluded that hazardous substances do exist at both of the AOCs at concentrations above defined cleanup objectives and occasionally standards. There is no strong and direct correlation between the hazardous substances found in AOC-specific soils and groundwater as no definitive plumes have been identified at SEAD 121C, and no groundwater was encountered at SEAD-121I. There is some evidence that identified hazardous substances have been mobilized by overland flow of storm-event water.

Risk Assessment Methodology

Risk assessments are performed at sites where hazardous substances have been detected to identify if the concentrations of the species found will pose potential adverse threats to current or future human or ecological receptors if they are allowed to remain at the site. Risk assessments are inherently conservative, purposely biased to prompt an action if potential risk is identified.

Human health risk assessments follow a four-step process, which includes hazard identification, exposure assessment, toxicity assessment and risk characterization. These four steps are used to assess potential site-related human health risk for reasonable maximum exposure scenarios that do or could exist at the site no action were taken to eliminate or mitigate them

Hazard Identification: Chemicals of Concern (COCs) in the various media at the site are identified and selected based on factors such as their toxicity, concentrations detected relative to regulatory standards and guidelines, frequency of occurrence, fate and transport in the environment, mobility, persistence and bioaccumulation.

Exposure Assessment: Different exposure pathways through which existing or future receptors might be exposed to the COCs are evaluated. Possible exposure pathways include ingestion, dermal contact, or inhalation. Factors relating to the exposure assessment include concentrations that receptors may encounter, and the duration and frequency of the potential exposure. The reasonable maximum exposure scenario is calculated to estimate the highest level that could be expected to occur at the site.

Toxicity Assessment: The types of adverse effects associated with exposure to COCs, and the relationship between the magnitude of the exposure and the severity of potential effects are determined. Potential effects are COC-specific and may include risks of developing cancer or other changes in normal functions of organs (non-carcinogenic effects).

Risk Characterization: The level of potential risk present is assessed by combining the outputs of the exposure and toxicity assessment components. Carcinogenic and non-carcinogenic risk are estimated. Current guidelines for acceptable individual lifetime excess cancer risk are established as 1 in 10,000 to 1 in 100,000 or less (10^{-4} to 10^{-6}, or less). The non-cancer risk, expressed as a "hazard index" (HI), represents the sum of individual exposure levels to corresponding reference doses. A non-cancer HI threshold level of less than 1 is set as the reference point.

Screening-Level Ecological Risk Assessments (SLERAs) are conservative assessments that provide a high level of confidence in determining a low probability of adverse risk, and they incorporate uncertainty in a precautionary manner. The purpose of the SLERA is to assess the need, and if necessary the level of effort necessary, to conduct a detailed, baseline ecological risk assessment for a site. Principal components of the SLERA are the Screening-Level Problem Formulation and Ecological Effects Evaluation, Screening-Level Exposure Estimate and Risk Calculation and the Scientific Management Decision Point (SMDP) with four possible decisions:

- There is adequate information to conclude that ecological risks are negligible and therefore there is no need for remediation on the basis of ecological risks;
- The information is not adequate to make a decision at this point and the ERA process should continue to a baseline ERA;
- The information indicates a potential for adverse ecological effects, and a more thorough assessment is warranted; or
- In cases where contamination has sharply defined borders or where the extent of contamination is limited, it may be preferable to cleanup the area to the screening values rather than spending time and resources determining a less conservative cleanup number.

The results of the SLERA indicate which contaminants found at the AOC can be eliminated from further consideration and which should be evaluated further. The refinement of COCs helps streamline the overall ERA process by considering additional components early in the baseline ERA.

Site Risks

Human health (HHRA) and ecological risk assessments were performed for both SEAD-121C and SEAD-121I to assess potential effects that could result due to the human or ecological species exposure to hazardous substances identified at the AOCs. The baseline HHRAs were conducted in accordance with the USEPA's "*Risk Assessment Guidance for Superfund* (RAGS)" and the supplemental guidance and updates to the RAGS. Technical judgment, consultation with EPA staff, and recent publications were used in the development of the risk assessment. The overall objective of the HHRAs were to assess potential risks to current and reasonably anticipated future human receptors resulting from the release of, and exposure to, hazardous substances at SEAD-121C and SEAD-121I. The reasonable maximum exposure (RME) was evaluated during the HHRAs.

Screening-level ecological risk assessments (SLERAs) were also performed for SEAD-121C and SEAD-121I to evaluate whether hazardous substances found at either of the AOCs have the potential to cause adverse effects to ecological resources. The SLERAs were conducted in accordance with several USEPA and NYSDEC guidance documents.

Human Health Risk Assessment

The land at SEAD-121C previously was used as the Defense Reutilization and Marketing Office Yard where scrap, hazardous materials and substances, excess and retired equipment, and other materials were staged pending sale or recycle. SEAD-121I was used as an equipment and material receiving and shipping area, where transported materials were brought into or dispatched from the Depot. The future use of both of these sites has been defined as planned industrial / office development.

The HHRA began by identifying contaminants of concern (COCs) for the various media found in the AOCs. The COCs identified for SEAD-121C included:

- Benzene (soil)
- PAHs (soil)
- Pesticides/PCBs (soil)
- Metals (soil and surface water)

The COCs identified for SEAD-121I included:

- PAHs (soil)
- Pesticides/PCBs (soil)
- Metals (soil and surface water)

Both AOCs are in an area that is serviced by municipal water; therefore it is unlikely that groundwater underlying the AOCs will be used for potable purposes in the future. However, New York views all groundwater as a drinking water source, so potential exposure to groundwater was evaluated for SEAD-121C, where groundwater was found and samples were characterized. COCs identified for SEAD-121C groundwater included 1,2-dichlrobenzene, pesticides and metals which were found at concentrations above NYS AWQSs. Groundwater was not considered at SEAD-121I where it was not identified or sampled.

Receptors considered in the HHRA included industrial workers, construction workers and adolescent trespassers. Exposure pathways considered included inhalation of dusts, dermal contact with and ingestion of soil, and dermal contact with surface water.

SEAD-121C Risk Results

A review of the carcinogenic risks for reasonable maximum exposures (RMEs) to the soils and surface water at SEAD-121C showed that all levels were within EPA's acceptable range (i.e., 10^{-4} to 10^{-6} or less). The industrial work exhibited the highest potential risk at 3 $x10^{-5}$, with all other potential risk levels found at 2 x 10^{-6} or less.

Non-cancer risk levels (HIs) for all exposure scenarios evaluated were less than EPA's threshold of one. The largest HI found was 0.8 for the construction worker.

Lead was identified as a COC in soil and surface water at SEAD-121C. The lead risk for industrial workers and adolescent trespassers for heterogeneous and homogeneous populations were all below EPA's target PbB level of 10 μg/dL.

SEAD-121I Risk Results

A review of the carcinogenic risks for RMEs to the soils and surface water at SEAD-121I showed that all levels were within EPA's acceptable range (i.e., 10^{-4} to 10^{-6} or less). The industrial work exhibited the highest potential risk at 7 $x10^{-5}$, with all other potential risk levels found at levels of 2 x 10^{-5} or less.

RME HIs calculated for the construction worker and industrial worker at SEAD-121I are all above 1. The significant contributing COC for both receptors and exposure pathways is manganese. Arsenic and iron also contribute to the elevated HI noted for the construction worker. Locations identified at SEAD-121I with the most significant concentrations of each of these dominant COCs were in the immediate vicinity of the strategic stockpiles of ferro-manganese ore, where visual evidence exists to indicate that fines and dusts from the ore are present.

The HI identified for the adolescent trespasser was less than 1.

Lead was identified as a COC in surface water at SEAD-121I; however, there is no reliable model for quantifying risk from lead due to dermal contact to surface water.

Ecological Risk Assessment

AOC-specific ecological evaluations were not conducted at SEADs 121C and 121I. Both AOCs are generally void of characteristics and attributes that would make them attractive habitats for ecological receptors. As is indicated, the DRMO Yard is a gravel-covered lot where historic short- to long-term storage of materials occurred. It is surrounded by a chain-linked fence with a single access gate to control vehicular and human traffic. Isolated growths of weed plants are present at numerous locations immediately along the fence line and randomly at other locations within the Yard. Similarly, SEAD-121I is a relatively flat, open area that is located between parallel strips of bordering warehouses, roads, and railroad lines. There are intermixed areas of dirt and grass/weed vegetative growths within each block of the AOC, and evidence of wear due to vehicular traffic.

Animals that have been identified within the greater Depot during various other ecological surveys include the beaver, eastern coyote, deer, red and gray fox, eastern cottontail rabbit, muskrat, raccoon, gray squirrel, striped skunk, and the woodchuck. Other smaller mammals (mice, shrews, voles, etc) are also likely. Bird species identified include the blue jay, black-capped chickadee, American crow, mourning dove, northern flicker, ruffed grouse, ring-billed gull, red-tailed hawk, northern junco, American kestrel, white breasted nuthatch, ring-necked pheasant, American robin, eastern starling, turkey vulture, and pileated woodpecker.

There are no permanent lakes, ponds, streams or wetlands in SEAD-121C or SEAD-121I. Surface water only exists intermittently in man-made drainage ditches that abut or underlie the AOCs; thus, it does not directly support aquatic life.

No known occurrences of federal- or state-designated threatened or endangered plant or animal species within a 2-mile radius of the AOCs are identified in NYSDEC's Natural Heritage Program Biological and Conservation Data System. No species of special concern are documented within the Depot property.

The results of the SLERA indicated that there are potential ecological risks associated with the hazardous substances that are present at SEAD-121C and SEAD-121I. Potential ecological risks were found for a variety of avian and mammalian receptors that could be periodically found in and around the AOCs.

Subsequently, during the refinement of ecological COC analysis, no final COCs were identified in any medium found at the AOCs. Some of the COCs identified as contributing to the ecological risk are present at levels consistent with background concentrations found throughout the Depot. Additionally, some of the risk is associated with the on-going mission of storage of strategic stockpiles at SEAD-121I. Finally, both AOCs are in an area where the planned future land use is industrial/warehousing/office development, and therefore is not expected to be an attractive wildlife habitat.

Given these additional considerations and information, it is unlikely that the conditions identified at the AOCs will significantly impact ecological receptors and no further action is warranted for either SEAD-121C or SEAD-121I based on the ecological risk assessment.

Summary of Human Health and Ecological Risks

The results of the HHRA completed for SEAD-121C indicate that there are no unacceptable human health non-cancer or carcinogenic risks present at the AOC. Data is available to indicate that potential risk may exist due to hazardous substances contained in the groundwater, but this risk is mitigated because there is an alternative source of potable water present. The ERA indicates that potential risks are possible to wildlife; however, this AOC is an area previously and currently designated for industrial/warehousing/office development usage, and thus this AOC is not likely to be an attractive habitat.

Comparably, the results of the HHRA completed for SEAD-121I indicate that there are unacceptable non-cancer risks to potential industrial and construction workers at the AOC. These risks arise due to concentrations of manganese, iron and arsenic likely to be found in soil and dusts at the AOC. These hazardous substances are found in locations associated with the ongoing strategic stockpile mission at the Depot. Non-cancer risks are not found for the adolescent trespasser. Additionally, no carcinogenic risk is identified for any human receptor at the AOC. The ERA indicates that potential risks are possible to wildlife; however, this AOC is an area previously and currently designated for industrial/warehousing/office development usage, and thus this AOC is not likely to be an attractive habitat.

Based on the results of the site investigations and risk assessments completed, the Army and EPA had determined that actual or threatened releases of hazardous substances from the AOCs, if not addressed by the preferred remedy of some other remedial alternative, may present a threat to human health or the environment.

REMEDIAL ACTION OBJECTIVES

Remedial action objectives are specific goals to protect human health and the environment. These objectives are based on available information and standards, including consideration of applicable or relevant and appropriate requirements (ARARS), TBC guidance and site-specific risk-based levels.

The following remedial action objectives were established for SEAD-121C and SEAD-121I:

- Reduce or eliminate future user direct contact, ingestion and the inhalation threats to soils containing hazardous substances; and,

- Protect human health by prohibiting exposures of future users to groundwater that may contain hazardous substances.

Tables 1 – 3 identify soil groundwater and surface water cleanup objectives, standards, and standards, respectively.

SUMMARY OF REMEDIAL ALTERNATIVES

CERCLA § 121(b)(1), 42 U.S.C. §9621(b)(1) mandates that remedial actions must be protective of human health and the environment, cost effective, comply with ARARs and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable.

Alternatives

Alternative 1: No Action

The Superfund program requires that the "no-action" alternative be considered and serve as the baseline by which other alternatives evaluated are compared. The no-action remedial alternative for soil does not include the design or implementation of any physical remedial measures to address types of contamination identified at the AOCs. The "no-action" alternative (Alternative 1) is identical for work that might be considered for either SEAD-121C or SEAD-121I.

Application of this alternative would result in hazardous substances at concentrations above levels that allow for unrestricted use and unlimited exposures remaining in the soils at both AOCs. As such, CERCLA requires that the AOCs be reviewed at least once every five years to assess changes in conditions found at the AOCs. If justified by the periodic reviews, subsequent remedial actions may be implemented to remove, treat or contain the contaminated soils.

A municipal, potable water distribution system, which derives its raw water from a non-groundwater source, is present within the PID Area. The presence of this alternative supply of water system eliminates any reason to consider use of groundwater for domestic purposes. Groundwater was not encountered in the vicinity of SEAD-121I. A poor yielding supply of groundwater does exist beneath SEAD-121C, and it is known to contain chemical contaminants at concentrations in excess of New York GA standards for groundwater quality. However, these concentrations are consistent with the background water

quality found to exist at the Depot. Given these facts, the Army has opted to impose a groundwater access and use restriction on all groundwater that is located in the PID Area. The no action alternative for groundwater will apply to all remedial action alternatives considered within this propose plan.

SEAD-121C and SEAD-121I, Alternative 1 Costs

Capital Cost:	$0
Annual Operation, Maintenance, and Monitoring (OM&M) Costs (soil):	$3,000
OM&M Costs (groundwater)	$3,000
Present-Worth Costs:	$74,460
Construction Time:	0 months

Alternative 2: Excavation of Contaminated Soil to Achieve Unrestricted Use Cleanup Objectives, Off Site Treatment/Disposal and Soil Backfill.

SEAD-121C, the DRMO Yard

This alternative involves the excavation of soil containing substances at levels in excess of the NYSDEC's Unrestricted Use Soil Clean-up Objective levels (see Title 6 New York Code of Rules and Regulations, Part 375-8). A summary listing of hazardous substances identified in current surface, subsurface and ditch soils at SEAD-121C at concentrations in excess of NYSDEC's Unrestricted Use Soil Cleanup Objectives is provided in **Table 6**.

TABLE 6
Comparison of Hazardous Substance Concentrations found in SEAD-121C Soil Versus NYSDEC's Unrestricted Use Soil Cleanup Objectives

Hazardous Substance	Units	95th UCL of the Mean Concentrations	NYSDEC 's Unrestricted Use Value	Number of Concentrations Above Criteria	Is the 95th UCL Above Criteria (Y/N)?
Benzene	µg/Kg	181	60	1	Y
Ethylbenzene	µg/Kg	2444	1000	2	Y
Benzo(a)anthracene	µg/Kg	1908	1000	6	Y
Benzo(a)pyrene	µg/Kg	1986	1000	7	Y
Benzo(b)fluoranthene	µg/Kg	2640	1000	9	Y
Benzo(k)fluoranthene	µg/Kg	1379	800	7	Y
Chrysene	µg/Kg	1834	1000	6	Y
Dibenz(ah)anthracene	µg/Kg	312	330	3	N
Indeno(1,2,3-cd)pyrene	µg/Kg	319	500	5	N
B(a)P Equivalents	µg/Kg	2659	10000	2	N
4,4'-DDD	µg/Kg	6.4	3.3	5	Y
4,4'-DDE	µg/Kg	14.8	3.3	19	Y
4,4'-DDT	µg/Kg	15.7	3.3	15	Y
Aldrin	µg/Kg	3.6	5	4	N
Aroclor-1254	µg/Kg	134	100	5	Y
Aroclor-1260	µg/Kg	32.5	100	1	N
Dieldrin	µg/Kg	6.9	5	2	Y
Endrin	µg/Kg	4.1	14	3	N
Barium	mg/Kg	400	350	7	Y
Cadmium	mg/Kg	9.9	2.5	16	Y
Chromium	mg/Kg	27	30	15	N
Copper	mg/Kg	1575	50	21	Y
Lead	mg/Kg	2278	63	27	Y
Mercury	mg/Kg	0.11	0.18	4	N
Nickel	mg/Kg	44	30	51	Y
Silver	mg/Kg	3.6	2	9	Y
Zinc	mg/Kg	800	109	39	Y

Analysis of the available analytical data indicates that hazardous substances are found at concentrations exceeding NYSDEC's unrestricted use cleanup objective in most surface soil samples collected from SEAD-121C. Further, hazardous substances at concentrations that exceed the Unrestricted Use Cleanup levels are present in many samples collected from the 2 to 6 foot depth range. Given this distribution of contaminants in the soil, the Army anticipates that six feet of excavation over the DRMO yard surface would be required to achieve unrestricted use standards. Based on these dimensions, the estimated volume of contaminated soil requiring excavation at the DRMO Yard is 173,600 cubic yards (CY).

As part of the construction work, the soil exterior to three permanent buildings (Buildings 316, 360 and 355) would need to be excavated, as would soil adjacent to, but not beneath, two railroad tracks that service this portion of the former Depot. Extra care and time would be required during the excavations around these structures to ensure that their structural integrity was not impacted by the work

or backfill operations. Local utility lines servicing this portion of the former Depot would need to be diverted or possibly eliminated during the planned excavation. The temporary storage pads and cells, their surrounding walls or barriers, and the security fence surrounding the yard would be dismantled or demolished, and materials would be decontaminated and disposed, or recycled, as necessary and appropriate. Further, episodic water flow through four drainage ditches surrounding the Yard would need to be diverted during the construction process to preclude inflow of storm-event run-off water into the excavation. Finally, air and fugitive dust monitoring would need to be performed during the active phases of excavation, waste soil and debris loading and transport, and excavation backfill.

All excavated soil and demolition debris would be characterized and transported for disposal at off site landfills. Water generated from the collection of storm event water if the open excavations would be captured and treated on site, as necessary. It would be discharged to the Seneca County Wastewater Treatment Facility in conformance with their requirements.

Once the excavation was completed and its extent confirmed by the collection and analysis of confirmatory samples, the area of the excavation would need to be backfilled, compacted, and graded.

Once this action was completed, the land excavated would be appropriate for unrestricted use and unlimited exposures, and no further land use restriction would be imposed on the soil found in this area.

SEAD-121C Alternative 2 Costs

Capital Cost	$17,600,000
Annual OM&M Cost (soil)	$0
Annual OM&M Cost (groundwater)	$3,000
Present-Worth Costs:	$17,637,230
Construction time	12 Months
Completion Time	24 Months

SEAD-121I, the Rumored Cosmoline Oil Disposal Area

Alternative 2 for soil at SEAD-121I is essentially identical to that which is discussed above for SEAD-121C. This alternative involves the excavation of soil containing hazardous substances at levels in excess of the NYSDEC's Unrestricted Use Soil Clean-up Objective levels. A summary listing of the hazardous substances found in surface and ditch soils at SEAD-121I where measured concentrations exceed NYSDEC's Unrestricted Use Soil Cleanup Objectives is provided in **Table 7**.

TABLE 7
Comparison of Hazardous Substance Concentrations found in SEAD-121I Soil Versus NYSDEC's Unrestricted Use Soil Clean Up Objectives

Hazardous Substance	Units	95th UCL of the Mean Concentrations	NYSDEC 's Unrestricted Use Value	Number of Concentrations Above Criteria	Is the 95th UCL Above Criteria (Y/N)?
Acetone	µg/Kg	61	50	3	Y
Benzo(a)anthracene	µg/Kg	9252	1000	14	Y
Benzo(a)pyrene	µg/Kg	8419	1000	16	Y
Benzo(b)fluoranthene	µg/Kg	10431	1000	16	Y
Benzo(k)fluoranthene	µg/Kg	9405	800	17	Y
Chrysene	µg/Kg	11998	1000	17	Y
Dibenz(ah)anthracene	µg/Kg	1263	330	10	Y
Indeno(1,2,3-cd)pyrene	µg/Kg	4468	500	14	Y
Phenol	µg/Kg	759	330	1	Y
B(a)P Equivalents	µg/Kg	13000	10000	2	Y
DDE	µg/Kg	14	3.3	5	Y
DDT	µg/Kg	13	3.3	2	Y
Aldrin	µg/Kg	5.9	5	3	Y
Dieldrin	µg/Kg	11	5	2	Y
Endrin	µg/Kg	4.8	14	1	N
Arsenic	mg/Kg	26	13	6	Y
Cadmium	mg/Kg	2.5	2.5	4	Y
Chromium	mg/Kg	73	30	7	Y
Copper	mg/Kg	65	50	5	Y
Lead	mg/Kg	54	63	8	N
Manganese	mg/Kg	89533	1600	13	Y
Nickel	mg/Kg	96	30	19	Y
Selenium	mg/Kg	41	3.9	7	Y
Silver	mg/Kg	2.4	2	3	Y
Zinc	mg/Kg	163	109	14	Y

Analysis of available analytical data indicates that one or more of the identified hazardous substances are found in most soil samples collected and characterized during the RI at levels that exceed the Unrestricted Use Cleanup Objective levels. The identified hazardous substances identified were found in shallow soils (0 to 2 feet) because only a thin layer of soil exists above the underlying bedrock in this portion of the Depot.

Based on this distribution of hazardous substances, most of the four blocks that define the Rumored Cosmoline Oil Disposal Area would require excavation to an average depth of 2 feet. The area across the bounding road surfaces to the front face of the parallel, north-south oriented rows of facing warehouses that constrict the

extent of this AOC would not be excavated. The Army believes that the roads are a physical barrier that bound the limit of the AOC and limit the extent of excavation. The area surrounding the Rumored Cosmoline Oil Disposal Area and not associated with a release of hazardous substances would remain with the existing land use control for industrial use only. Since most soil samples collected from the warehouse area contained one or more contaminants that exceeded an unrestricted use cleanup objective, the Army believes that the entire warehouse area that surrounds the exterior of the Rumored Cosmoline Oil Disposal Area would have the existing LUC remain.

Based on this excavation area, 45,425 CY of soil and roadway would need to be excavated, characterized, treated (as necessary), transported and disposed of off site at a non-hazardous waste landfill.

The area's underlying stormwater collection and conveyance system may be compromised, requiring subsequent repair or replacement. Further, buried utility lines that run through the area (telephone, electricity, gas and water) would possibly need to be addressed. Finally, the railroad line and sidings servicing the warehouse area could also have to be removed, limiting reuse potentials

Silt fencing would be erected around the excavation site to minimize storm water run-on and runoff and to limit the transport of soil via erosion. Episodic storm water run on flows into excavation areas would be captured, tested, treated as necessary, and then discharged to the Seneca County Wastewater Authority system. All excavated soil and associated demolition debris would be characterized and transported for disposal at off site landfills.

The area of the excavation would need to be backfilled with clean fill, the fill would be compacted, and the site would be regraded. As a result of this action, the land excavated would be appropriate for unrestricted use and unlimited exposures, and no further land use restriction for soil would be imposed on the area.

SEAD-121I, Alternative 2 Costs

Capital Cost	$4,542,500
Annual OM&M Cost (soil)	$0
Annual OM&M Cost (groundwater)	$3,000
Present-Worth Costs:	$4,579,730
Construction time	15 Months
Completion Time	27 Months

Alternative 3: Excavation of Contaminated Soil to Achieve Industrial Use Cleanup Objectives, Off Site Treatment/Disposal and Soil Backfill.

SEAD-121C, the DRMO Yard

This alternative involves the excavation of soil containing hazardous substances at levels that exceed the NYSDEC's Industrial Use Soil Clean-up Objective levels. A summary listing of hazardous substances found in surface, subsurface and ditch soils at SEAD-121C at concentrations exceeding NYSDEC's Industrial Use Soil Cleanup Objectives is provided in **Table 8**.

TABLE 8
Comparison of Hazardous Substance Concentrations found in SEAD-121C Soil Versus NYSDEC's Industrial Use Soil Clean Up Objectives

Hazardous Substance	Units	95th UCL of the Mean Concentrations	NYSDEC 's Restricted Industrial Use Value	Number of Concentrations Above Criteria	Is the 95th UCL Above Criteria (Y/N)?
Benzo(a)pyrene	µg/Kg	1986.1	11000	7	Y
Benzo(b)fluoranthene	µg/Kg	2640.2	1100	1	N
B(a)P Equivalents	µg/Kg	2658.9	11000	2	N
Lead	Mg/Kg	2278.1	3900	3	N

Three separate areas of the former DRMO Yard would be excavated to remove soil containing hazardous substances above industrial cleanup objective levels under this alternative. The first area centers around an isolated, surficial (approximately 1 foot) detection of benzo(a)pyrene exceeding the industrial use standard that is located partway along the northwest facing fence line that separates the yard from the abutting drainage ditch. Approximately 1,315 cubic yards of soil would be removed from this location.

The second excavation area defined by three elevated detections of lead that were found in the shallow soil in the northern portion of the DRMO Yard, where the former debris pile, storage pad and storage cells were located. Approximately 1,620 cubic yards of soil would be excavated. The last excavation area would be located to the east and almost entirely outside the former DRMO Yard where soil samples indicate that levels of benzo(a)pyrene exceeding industrial standards are present in soils to a depth of at least two feet. This area is approximated by results from three samples along the southern edge investigated area and one near the former storage cells that are located to the north of Building 316 inside the DRMO Yard. Approximately 12,000 CY of soil would be excavated from this area.

The total excavation volume for this alternative is approximately 14,900 CY.

As part of the construction work, the soil exterior to two permanent buildings will be excavated, as will soil in the vicinity of two railroad spur lines that service this portion of the former Depot. A portion of the storage cells and security fence surrounding the yard would be dismantled or demolished, and materials would be decontaminated as necessary. All excavated soil and demolition debris would be characterized and transported for disposal at an off-site non-hazardous landfill. If any of the soil was found to be hazardous, on site treatment would be used prior to transport to the off site landfill. Water generated from the collection of runoff would be captured and treated on site, as necessary. It would be discharged to the Seneca County Wastewater Treatment Facility in conformance with their requirements.

The area of the excavation would need to be backfilled, compacted, and graded. As a result of this action, the land comprising the former DRMO Yard would be appropriate for future industrial use. Institutional controls in the form of an environmental easement would be used to prohibit the use of the property for non-industrial activity purposes.

Because this alternative would result in hazardous substances remaining on site above levels that allow for unrestricted use and unlimited exposure, CERCLA requires that the site be reviewed at least once every five years. If justified by the review, further remedial actions may be implemented to remove or treat the identified wastes.

SEAD-121C, Alternative 3 Costs

Capital Cost	$1,490,000
Annual OM&M Cost (soil)	$3,000
Annual OM&M Cost (groundwater)	$3,000
Present-Worth Costs:	$1,564,460
Construction time	9 Months
Completion Time	21 Months

SEAD-121I, the Rumored Cosmoline Oil Disposal Area

Soil containing hazardous substances at levels in excess of the Commercial Use Soil Objective levels would be excavated from SEAD-121I, characterized, treated on site, as necessary, and then transported off site for disposal at a licensed landfill. A summary listing of hazardous substances found in surface and ditch soils at SEAD-121I at concentrations in excess of NYSDEC's Commercial Use Soil Cleanup Objectives is provided in **Table 9**.

TABLE 9
Comparison of Hazardous Substance Concentrations found in SEAD-121I Soil Versus NYSDEC's Commercial Use Soil Clean Up Objectives

Hazardous Substance	Units	95th UCL of the Mean Concentrations	NYSDEC 's Restricted Commercial Use Value	Number of Concentrations Above Criteria	Is the 95th UCL Above Criteria (Y/N)?
Benzo(a)anthracene	µg/Kg	9252	5600	6	Y
Benzo(a)pyrene	µg/Kg	8419	1000	16	Y
Benzo(b)fluoranthene	µg/Kg	10431	5600	8	y
Dibenz(ah)anthracene	µg/Kg	1263	560	6	Y
Indeno(1,2,3-cd)pyrene	µg/Kg	4468	5600	3	N
B(a)P Equivalents	µg/Kg	13000	10000	3	Y
Arsenic	mg/Kg	26	16	5	Y
Manganese	mg/Kg	89533	10000	8	Y
Nickel	Mg/Kg	96	310	2	N

Based on a review of analytical data collected at SEAD-121I, the Army estimates that approximately 5,500 CY of soil would be excavated from southern most block of the AOC; another 2,850 CY would be excavated from next block; over 8,520 CY would need to be excavated from the third block of the AOC; and, roughly 4,760 CY would be

excavated from the northern most block of the AOC. Each excavation would be extended to an average depth of 2 feet below grade. The existing roadways would again serve as physical barriers that bound to outward extent of all of the proposed excavations.

Approximately 21,630 CY of soil would be excavated, characterized, treated (as necessary), transported and disposed of off site at a non-hazardous waste landfill.

During the construction work, uses of the warehouse facilities affected by the excavation would need to be interrupted or terminated. As part of the construction work, many of the adjacent roadways surfaces would be removed, and the integrity of the underlying storm water diversion system may be compromised, requiring subsequent repair or replacement. Further, the railroad line and sidings servicing the warehouse area would also be removed, requiring replacement.

Silt fencing would be erected around the area of excavation to minimize storm water run-on and runoff and to limit the amount of erosion that would occur. Episodic storm water run on flows into excavation areas would be captured, tested, treated as necessary, and then discharged to the Seneca County Wastewater Authority for final treatment and discharge. All excavated soil and associated demolition debris would be characterized and transported for disposal at off site landfills. Water generated from the collection of runoff would be captured and treated on site, as necessary.

The area of the excavation would need to be backfilled with clean fill and regraded. As a result of this action, the land excavated would be appropriate for commercial use.

Because this alternative would result in hazardous substances remaining on site above levels that allow for unrestricted use and unlimited exposure, CERCLA requires that the site be reviewed at least once every five years. If justified by the review, further remedial actions may be implemented to remove or treat the identified wastes.

SEAD-121I, Alternative 3 Costs

Capital Cost	$2,163,000
Annual OM&M Cost (soil)	$3,000
Annual OM&M Cost (groundwater)	$3,000
Present-Worth Cost:	$2,237,460
Construction time	12 Months
Completion Time	24 Months

Alternative 4: Land Use Control Alternative

SEAD-121C, the DRMO Yard

The Army conducted human health and ecological risk assessments based on sampling results for soil and surface water at SEAD-121C, in accordance with Superfund guidance. The results of this risk assessment indicate that SEAD-121C is suitable for the continued use as an industrial area.

Under this alternative, institutional controls in the form of land use restrictions that prohibit the use of the site for any purpose other than industrial activities would be implemented.

It is estimated that this alternative would take approximately one month to implement. This alternative would allow hazardous substances to remain at the site above levels that would allow for unrestricted use and unlimited exposures. Therefore, CERCLA requires that the site be reviewed at least once every five years. If justified by the review, further remedial actions may be implemented to remove or treat the identified wastes.

SEAD-121C, Alternative 4 Costs

Capital Cost	$0
Annual OM&M Cost (soil)	$3,000
Annual OM&M Cost (groundwater)	$3,000
Present Worth Cost	$74,460
Construction time	1 Month
Completion Time	1 Month

SEAD-121I, the Rumored Cosmoline Oil Disposal Area.

The Army conducted human health and ecological risk assessments for SEAD-121I. The SLERA indicated that no final ecological COCs were identified and that the area

is not an attractive habitat for ecological receptors. The human-health risk assessment indicated that the likely carcinogenic risks associated with the exposure to hazardous substances currently found in the soils at, and in the vicinity of the AOC, are within the EPA's recommended risk range of $10^{-4} - 10^{-6}$. The human-health risk assessment also indicated that residual levels hazardous substances found at the AOC did pose potential non carcinogenic risks to current and future receptors.

Non carcinogenic health risks were identified and are directly associated with residuals of the U.S. Government's strategic stockpiles of ferro-manganese ore that are located within the bounds of the Rumored Cosmoline Oil Disposal Area. The Government's stockpile mission continues at the SEDA, and will for the foreseeable future. Therefore, it is likely that non carcinogenic risks will persist, until such time as the residuals from the stockpiles are removed, and necessary mission termination actions are completed. As the strategic stockpile mission is ongoing, materials associated with them are not governed by CERCLA. The Army has notified parties responsible for the management and administration of the strategic stockpiles that risks exist due to the presence of hazardous substances in soils surrounding, and presumably underlying, the stockpiles. The administrators acknowledge that site cleanup will be required once the mission is terminated. In the interim it is the Army's intention to maintain the security fences that surround the stockpile locations to minimize potential inadvertent access into the affected areas. Further, appropriate warning signs will be posted on the security fences to notify potentially affected personnel of the hazards that are associated with the materials.

However, since hazardous substances remain at the AOC, the Army will also impose institutional controls in the form of land use restrictions that prohibit the use of the site for any purpose other than industrial activities at the AOC. It is estimated that this alternative would take approximately one month to implement.

Furthermore, since this alternative would allow hazardous substances to remain at the site above levels that would allow for unrestricted use and unlimited exposures, CERCLA requires that the site be reviewed at least once every five years. If justified by the review, further remedial actions may be implemented to remove or treat the identified wastes.

SEAD-121I, Alternative 4 Costs

Capital Cost	$0
Annual OM&M Cost (soil)	$3,000
Annual OM&M Cost (ore piles)	$1,000
Annual OM&M Cost (groundwater)	$3,000
Present Worth Cost	$86,870
Construction time	1 Month
Completion Time	1 Month

COMPARATIVE ANALYSIS OF ALTERNATIVES

The evaluation criteria are described below.

- Overall protection of human health and the environment assesses whether or not a remedy provides adequate protection and describes how risks posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced or controlled through treatment, engineering controls or institutional controls.

- Compliance with ARARs addresses whether or not a remedy would meet all of the applicable or relevant and appropriate requirements of other federal and state environmental statutes and requirements or provide grounds for invoking a waiver.

- Long-Term effectiveness and permanence refers to the ability of a remedy to maintain reliable protections of human health and the environment over time, once cleanup goals have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment residuals and/or untreated wastes.

- Reduction of toxicity, mobility, or volume through treatment is the anticipated performance of the treatment technologies, with respect to these parameters, a remedy may employ.

- Short-Term effectiveness address the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period until cleanup goals are achieved.

- Implementability is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.

- Cost includes the estimated capital and OM&M costs and net present-worth costs.

- State acceptance indicates if, based on tits review of the RI/FS and Proposed Plan, the state concurs with the preferred remedy at the present time.

- Community acceptance will be assessed in the ROD and refers to the public's general response to the alternatives described in the Proposed Plan and the RI/FS reports.

A comparative analysis of these alternatives based upon the evaluation criteria noted above is presented below. Since the remedial alternatives considered for both sites are identical, the following discussion applies to both AOCs, except where AOC specific variations are noted.

Overall Protectiveness of Human Health and the Environment

Alternative 1 would not be protective of human health or the environment since it would not address the soils that have been found to contain hazardous substances which pose risks to human and ecological receptors for unrestricted use. Alternative 2 is protective of human health and the environment as its objective is to removal all soil that contains hazardous substances in excess of levels that would allow for unrestricted use and unlimited exposures. Alternatives 3 and 4 are protective of future industrial scenario human health for the future site use as an industrial area. Alternative 3 is slightly more protective of human health than 4 since the highest contaminant concentrations are removed and replaced with material that is not yet affected by hazardous substance.

Compliance with ARARs

There are currently no promulgated federal standards for hazardous substance levels in soils, and risked based decisions are used to determine if cleanup is warranted or necessary. NYSDEC recently issued and enacted into state law cleanup objectives for five categories of future land use (i.e., unrestricted, residential, restricted-residential, commercial, and industrial) at waste sites located within its bounds and these are considered to be "relevant and appropriate" criteria to consider.

Alternative 1 does not comply with the NYSDEC's soil cleanup objectives. Alternatives 2 and 3 comply with NYSDEC's soil cleanup objectives for the future use of the site anticipated under each alternative. Although Alternative 4 does not comply with NYSDEC's industrial use cleanup objectives, a risk assessment performed using USEPA's risk assessment guidance demonstrated no human health risk for the future use of the site. LUCs will be implemented to maintain that future use.

EPA and the New York State Department of Health (NYSDOH) have promulgated health based protective criteria, which are enforceable standards for drinking water contaminants. Hazardous substances have been identified in the groundwater at SEAD-121C. The levels of metals identified are consistent with the Depot's background groundwater quality. Occasionally, organic contaminants have also been identified in the groundwater at SEAD-121C, but these appear to be associated result with releases from SEAD-27, which abuts the DRMO Yard. A separate ROD, approved by the Army, EPA, and NYSDEC, imposes a groundwater access and use restriction on all land within the PID area based on the data that is available from SEAD-27. Furthermore, the area of SEAD-121C is serviced by a municipal water supply source that is not directly derived from groundwater. Given these considerations, and the Army's and EPA's prior decision to impose a area wide access and use restriction on groundwater in the PID Area, the current proposed remedy does not consider any form of groundwater treatment.

However, since groundwater was identified at SEAD-121C and since all groundwater within the State of New York is considered a source of drinking water, the federal and state criteria health based criteria are applicable, and none of the proposed remedies proposed for SEAD-121C addresses this criteria.

Groundwater was not encountered in the unconsolidated soils above the shallow bedrock in SEAD-121I. The area of SEAD-121I is also served by a municipal source of potable water that is derived from a non-groundwater source location. Therefore, groundwater criteria are not applicable to the proposed remedy at SEAD-121I.

Reduction in Toxicity, Mobility, or Volume Through Treatment

Alternatives 1 and 4 would provide no reduction in the toxicity, mobility or volume of hazardous substances found in soil at either AOC. Under Alternative 2, soils containing hazardous substances in excess of the state's unrestricted use cleanup objectives would be excavated and transported off site for disposal. This would reduce the toxicity and mobility of hazardous substances left at the AOCs. Comparably, Alternative 3 would also reduce the toxicity and mobility of hazardous substances left at the AOCs, but not to the same extent as would be achieved under Alternative 2. In either case, if excavated soil needed to be stabilized prior to off site disposal, the volume of the material disposed at the off site facility would increase.

Short-Term Effectiveness

Alternatives 1 and 4 would not pose any additional short term hazards to workers at the AOCs or the community as physical construction is not included in either of these remedies. Alternatives 2 and 3 could both pose some additional short-term hazards to neighboring site workers and the community through dermal contact, ingestion or inhalation of hazardous constituents during the excavation, loading, transporting, and unloading operations that are needed to complete these construction efforts. Further, noise from the heavy equipment used for excavation, loading and hauling could also impact nearby employees of neighboring industries and companies, and local residents. Excavation noise levels at SEAD-121I are expected to be more significant because it is likely that the underlying bedrock will be encountered and repeatedly scraped during the work, and there are more industrial and residential units in close proximity to this AOC than SEAD-121C. In addition, interim and post remediation sampling activities would pose some risk to site workers. Potential risks to nearby employees of local companies and nearby residents could be controlled by developing and implementing sound engineering controls, health and safety procedures, monitoring practices.

Since soil and debris will be transported off site under alternatives 2 and 3, there will be an increase in traffic on the roads within and surrounding the Depot and the receiving landfills. This could translate into an increased likelihood of vehicular accidents, and potential releases of soil and debris containing hazardous constituents at other locations along the driving routes. Since more material is being excavated and disposed under Alternative 2, there is a greater potential under this option than Alternative 3. Alternatives 2 and 3 also require varying amounts of soil disturbance that could affect the surface water hydrology in the areas being excavated.

At SEAD-121C, Alternative 2, which involves the excavation of a larger amount of soil overall, and involves the excavation of soil from areas within or very close to four existing drainage ditches that service the greater PID Area, has a greater likelihood of impacting the surface water hydrology than does Alternative 3. At SEAD-121I, Alternative 2 also involves the excavation of more soil, and this is expected to include more soil to the depth of bedrock, and the exposure of bedrock may significantly impact surface water flow. Alternative 2's disturbance of soil across larger surfaces at both AOCs also increases the likelihood of soil erosion and transport, both via surface water flow and as fugitive dusts. Therefore, appropriate silt and dust containment measures will need to be implemented and monitored during the excavation, loading, and hauling activities. Lesser levels of controls would also need to be implemented, maintained and monitored during the work associated with Alternative 3.

Implementability

Alternative 1, the no-action alternative, would be the easiest alternative to implement, since there are no actions to undertake.

Alternative 4 will be slightly more difficult to implement than Alternative 1 because it requires the implementation, maintenance, oversight and annual reporting of the continuing effectiveness of land use controls and the preparation, submittal and approval of a land use control implementation plan. Additionally, at SEAD-121I, engineering controls (security fences and warning signs) would need to be continued and maintained in the vicinity of the ferro-manganese ore piles until the U.S. Government's continuing strategic stockpile mission was terminated at AOC.

The excavation; stabilization, as necessary; characterization; transport; and disposal of soil and debris excavated under either Alternatives 2 or 3 are readily available and mature technologies and can be accomplished. The increased volume of soil/debris requiring excavation under Alternative 2 at both AOCs would increase the difficulty of completing this alternative above those anticipated for Alternative 3.

Cost

The present worth cost associated with Alternatives 2, 3, 4 and G-1 is calculated using a discount rate of seven percent (7%) and a 30-year time interval. The estimated capital, operation, maintenance, and monitoring, and the present-worth costs are presented in **Table 10** below.

TABLE 10

Alternative	Capital Cost	Annual OM&M Costs	Total Present-Worth Costs
SEAD-121C and SEAD-121I, Separately			
Soil	$0	$3,000	$37,230
Groundwater	$0	$3,000	$37,230
SEAD-121C, the DRMO Yard			
2	$17,600,000	$3,000	$17,637,230
3	$1,490,000	$6,000	$1,564,460
4	$0	$6,000	$74,460
SEAD-121I, the Rumored Cosmoline Oil Disposal Area			
2	$4,542,500	$3,000	4,579,.730
3	$2,163,000	$6,000	$2,237,460
4	$0	$7,000	$86,870

Alternative 1 is the least expensive remedial action alternative at an estimated cost of $74,460. Alternative 2 is the most expensive remedial action alternative with respective AOC costs of $17,637,230 for SEAD-121C and $4,579,730 for SEAD-121I.

State Acceptance

NYSDEC concurs with the preferred remedial soil and groundwater alternatives

Community Acceptance

Community acceptance of the preferred alternative for SEAD-121C and SEAD-121I will be assessed in the ROD following review of the public comments received on the Proposed Plan.

SELECTED REMEDY

The selected remedy for any site should, at a minimum, eliminate or mitigate all significant threats to the public health or the environment presented by the hazardous substances or waste present at the site. Based on the data presented and summarized earlier within this Proposed Plan, the Army has selected to impose LUCs on land that is designated as SEAD-121C, the DRMO Yard, and SEAD-121I, the Rumored Cosmoline Oil Disposal Area. The Army's recommended LUCs will:

- Prohibit use of the land for residential activities including residential housing, elementary or secondary schools, child care facilities, playgrounds, etc.; and,
- Prohibit access to, and use of groundwater at the AOC.

Further, for portions of SEAD-121I only, the Army will maintain and secure existing engineering controls (security fences) around the strategic stockpiles of ferro-manganese ore to restrict the access to these portions of the AOC. These engineering controls will be maintained until the stockpiles of the strategic ores are removed, necessary post-stockpile actions are completed, and the ongoing mission is terminated by the governing authority.

Results of the site investigations and risk assessment performed using data developed from SEAD-121C and SEAD-121I indicate that hazardous substances have been identified to exist at, or in the vicinity of, the AOCs. Levels found are higher than NYS guidance values for unrestricted use, and it is likely that the identified concentrations would pose a threat to residential populations. Thus, the levels measured do not allow for unlimited exposure and unrestricted use of the land.

At SEAD-121C (DRMO Yard) levels of residual hazardous substances found in the soil do not pose a potential risk to the human receptors that are considered most likely to use the land (i.e., industrial worker, construction worker, adolescent trespasser) for the foreseeable future. Further, while hazardous substances were identified in the groundwater at concentrations above NYS AWQSs, an alternative potable water distribution supply exists throughout the PID Area, which minimizes the potential risks represented by contact or ingestion with this media.

At SEAD-121I (Rumored Cosmoline Oil Disposal Area) levels of residual hazardous substances found in the soil in proximity to the strategic stockpiles do pose a non-cancer risk to the industrial and construction workers. Therefore, there is a need to limit and restrict incidental human contact with the soil at these locations until such time as the piles are removed, dusts and debris associated with them are addressed, and the storage mission is terminated.

Further, the quality of the groundwater at SEAD-121I, while not found during the investigations completed, is unknown and thus suspect. Groundwater found at other locations within the PID area suggests that there is a regional poor quality of groundwater and the potential to have hazardous substances at concentrations in excess of NYS AWQSs could be present. Therefore, the Army believes it prudent to limit or restrict potential contact with or ingestion of this media until such time as sufficient data is available to clarify if possible risk exists. The presence of a potable water supply in the PID area again minimizes the potential impact of this decision.

Security fences already exist around the location of the stockpiles, and these will be maintained until such time as the mission is terminated.

Finally, since the area surrounding these sites has a land use control all ready existing on it, the sites should stay consistent with the surrounding land uses.

The residential use and groundwater access/use LUCs proposed as part of this remedy already have been proposed and implemented by the Army and the EPA throughout the PID Area. These LUCs result from conditions found at other AOCs (SEADs 27, 64A, and 66) and were implemented in September 2004. SEAD-27 is immediately adjacent to SEAD-121C. These LUCs may be lifted on a location-by-location basis at some time in the future, with the consent and approval of the Army, the USEPA, and the NYSDEC, if a future owner/user/occupant provides additional data that indicates that the selected location is suitable for unlimited exposure and unrestricted use.

The Army's recommended remedial actions for SEAD-121C, the DRMO Yard and SEAD-121I, the Rumored Cosmoline Oil Disposal Area discussed in this Proposed Plan include LUCs. To implement the Army's recommended remedy at the AOCs, a LUC Remedial Design (RD) will be prepared. The LUC RD Plan will include: a Site Description; the IC Land Use Restrictions; the LUC Mechanism to ensure that the land use restrictions are not violated in the future; implementation and maintenance actions, including periodic inspections;

and, Reporting/Notification requirements. In addition, the Army will prepare an environmental easement for the AOC, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York and the Army, which will be recorded at the time of transfer of the AOCs from federal ownership. A schedule for completion of the draft LUC RD covering the AOC will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the Federal Facilities Agreement (FFA). In accordance with the FFA and CERCLA §121(c), the remedial action (including ICs) will be reviewed no less often than every 5 years. After such reviews, modifications may be implemented to the remedial program, if appropriate.

The Army shall implement, inspect, maintain, report, and enforce the LUCs described in this ROD in accordance with the approved LUC RD. Although the Army may later transfer these responsibilities to another party by contract, property transfer agreement, or through other means, the Army shall retain ultimate responsibility for remedy integrity.

[i] LORAN – long range navigation.

SEAD 121

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November 4, 2004

Mr. Scott Bradley
U.S. Army Corps of Engineers
Engineering and Support Center, Huntsville
Attn: CEHNC-FS-IS
4820 University Square
Huntsville, AL 35816-1822

Subject: **Response to USEPA Comments on Draft Field Sampling Report for two EBS Sites in the Planned Industrial Development Area (SEADs 121C and 121I), Seneca Army Depot Activity**

Dear Mr. Bradley:

Parsons Engineering Science, Inc. (Parsons) is pleased to submit the response to USEPA comments received via email on March 24, 2004 on the Draft Field Sampling Report for Two EBS Sites in the Planned Industrial Development Area (SEADs 121C and 121I) at the Seneca Army Depot Activity located in Romulus, New York. At this time, the document will not be revised. The Draft Final Field Sampling Report will be submitted once a baseline risk assessment (BRA) is conducted. The results of the BRA and the response to comments will be incorporated into the Draft Final report.

The work was performed in accordance with the Scope of Work (SOW) for Delivery Order 30 to the Parsons Contract DACA87-95-D-0031.

Parsons appreciates the opportunity to provide the Army with this document. Should you have any questions, please do not hesitate to call me at (617) 457-7905 to discuss them.

Sincerely,

Todd Heino, P.E.
Program Manager

Enclosures

cc: Mr. S. Absolom, SEDA
Mr. R. Battaglia, CENAN
Mr. K. Hoddinott, USACHPPM
Mr. C. Boes, USAEC

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November 4, 2004

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

Mr. Joseph White
New York State Department of Environmental Conservation (NYSDEC)
Bureau of Eastern Remedial Action
Division of Hazardous Waste Remediation
625 Broadway 11th Floor
Albany, NY 12233-7015

Subject: **Response to USEPA Comments on Draft Field Sampling Report for two EBS Sites in the Planned Industrial Development Area (SEADs 121C and 121I), Seneca Army Depot Activity;**
EPA Site ID: NY0213820830 - NY Site ID: 8-50-006;

Dear Mr. Vazquez/Mr. White:

Parsons Engineering Science, Inc. (Parsons) is pleased to submit the response to USEPA comments received via email on March 24, 2004 on the Draft Field Sampling Report for Two EBS Sites in the Planned Industrial Development Area (SEADs 121C and 121I) at the Seneca Army Depot Activity located in Romulus, New York. At this time, the document will not be revised. The Draft Final Field Sampling Report will be submitted once a baseline risk assessment (BRA) is conducted. The results of the BRA and the response to comments will be incorporated into the Draft Final report.

Should you have any questions, please do not hesitate to call me at (617) 457-7905 to discuss them.

Sincerely,

Todd Heino, P.E.
Program Manager

Enclosures

cc: S. Absolom, SEDA
R. Battaglia, USACE
E. Kashdan
C. Boes, AEC
K. Hoddinott, USACHPPM
S. Bradley, USACE

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Army's Response to Comments from the US Environmental Protection Agency

Subject: Draft Field Sampling Report for SEAD 121C & 121I
Seneca Army Depot
Romulus, New York

Comments Dated: March 24, 2004 (received by email)

Date of Comment Response: November 4, 2004

Army's Response to Comments

I. GENERAL COMMENTS

Comment 1: The areas at SEAD-121C that are referred to frequently throughout the document as containment area," "storage cells," and the "former concrete storage pad" should be shown on all appropriate figures (i.e., Figure 1-3, Figure 3-1, etc..) Numerous references to, these objects relative to associated samples are made in the document, yet they are not shown on any figure. Provide additional documentation of these areas.

Response 1: Based on field notes collected during the 2002 field effort, and after review of GIS aerial photographs from 2000 obtained from the State of New York, storage cells, concrete barriers, and debris piles have been known to exist at the DRMO Yard. It should be noted that these features are transitory; changing as material has been moved into and out of the Yard. However, for the purposes of presentation, the approximate locations of these based on the 2000 photographs have been added.

As stated in response to USEPA comments on the Work Plan, there is no available information regarding the location of a rumored concrete pad. Therefore, this feature is not included on site figures.

Comment 2: The various discussions related to surface and subsurface soil samples are unclear and inconsistent. For example, four samples were collected at depths of 0 to 2 inches bgs at the DRMO Yard during the EBS sampling, and are described as soil borings (Page 3-2). However, the twenty samples collected from soil borings at locations in the DRMO Yard during the RI are considered to be surface samples, although they were collected from 0 to 2 feet bgs (Page 3-3). List the sample depths in Table 3-2 (or similar table) and revise callouts accordingly.

Response 2: The Army collected surface soil samples from a depth of 0 to 2 inches below grade surface or beneath the vegetative root ball/cover material. A split spoon was advanced to 2 ft., but the sample was collected from the top 2 inches of the spoon, where vegetative root material, asphalt, or cover materials were not found. The text has been clarified.

The depth of each sample has been added to the revised Table 3-2

Comment 3: Text indicates that the purpose of surface water sampling at SEAD-1211 was to determine background surface water concentrations at areas at the site that have not been impacted by site activities as well as to delineate the extent of contamination at the site. However, as described in Section 3.2.5, four surface water samples were collected immediately around the site (only two upgradient), while the other three were collected at a drainage ditch downgradient of the site that serves as the outfall for drainage from a large area. Therefore, it does not appear that sufficient surface water samples were collected upgradient of the site to provide a baseline for background (or areas not impacted by the site) to characterize background surface water concentrations. In addition, the three samples collected in the downgradient drainage ditch may contain runoff materials from other sites. Additional upgradient (background) samples and delineation samples should be collected.

Response 3: The Army wishes to emphasize that there is no continuous source of surface water located within the bounds of the Rumored Cosmoline Oil Disposal Area. All surface water located at this site is temporal, generally associated with either storm or snowmelt events. Surface water locations that are present within the bounds of the site are restricted to runoff ditches, culverts or infiltration galleries and buried stormwater sewers that convey storm event runoff to locations west of the warehousing area where it is discharged into the headwaters of Kendaia Creek. Additionally, the Army must reiterate that a work plan for this investigation was provided to the EPA prior to the initiation of this effort, and no comments were received indicating that the proposed sampling plan for surface water was insufficient.

Having said this, the Army believes that the surface water in the vicinity of the Rumored Cosmoline Oil Disposal Area has been adequately characterized. Two upgradient, three downgradient and two surface water samples from locations within the site were collected and characterized. No organic contaminants, including TPH, were identified in either of the upgradient samples, while a total of 14 different metals were found in one or more of the two upgradient samples. However, of the 14 metals detected, only lead and aluminum were found at levels above the New York Class C surface water standards, and these were both collocated in the same sample. Similarly, 14 metals and no organic contaminants or TPH, were found at the downgradient sample locations, but in this case none of the detected concentrations were found at levels exceeding the New York Class C standards. Finally, two organic, but not TPH, and up to 17 metal contaminants were identified in the temporal surface water samples that were collected from within the bounds of the Cosmoline oil site. Of these 19 identified contaminants, only four of the metals were found at levels exceeding the Class C surface water standards. Given this information, it is clear that there is no evidence of contaminant transport to

locations downgradient of the Cosmoline oil site. Therefore, the Army does not consider further surface water sampling necessary.

Comment 4: For reference, the New York State DEC Technical and Administrative Guidance Memorandum (TAGM) #4046 values should be included in the text where appropriate in Section 4. This will provide the information necessary while reviewing the site- and media- specific analytic results.

Response 4: For the purposes of comparison, the TAGM #4046 guidance value for each parameter and the number of times the TAGM value was exceeded have been added to the summary statistics tables for soils presented in Section 4 (Tables 4-1, 4-2, 4-6, 4-7, and 4-9).

II. SPECIFIC COMMENTS

Comment 1: Executive Summary, Page E-l: Include chemical oxygen demand (COD), alkalinity, ammonia, hardness, phosphates, and nitrate-nitrite/nitrogen in the list of chemical analyses performed, because these analyses were performed on samples collected during the RI portion of the investigation (as per Table 2-5).

Response 1: The text of the *Executive Summary* is correct, and the list of analytes included in Table 2-5 is in error. Analysis for COD, hardness, nitrate-nitrite/nitrogen, and TDS were not performed. Table 2-5 has been revised accordingly. In addition, Tables 2-2 through 2-4 were revised to accurately reflect the analysis performed for each media.

Comment 2: Section 1.3.2. Page 1-3: One goal of the investigation at SEAD-121I was to investigate the potential for contamination at the site resulting from Cosmoline. However, minimal description or discussion of this compound or its military use has been included in the text. Revise this section to describe the nature and use of Cosmoline, and potential contaminants associated with it.

Response 2: Cosmoline is a substance used to prevent corrosion, and it is commonly used to protect metallic components during shipment and storage. According to a material safety data sheet (MSDS) prepared by Goodson Shop Supplies, Cosmoline is composed of a complex mixture of petroleum hydrocarbons, severely hydrotreated heavy naphthenic distillate, Stoddard solvent, wool grease, and butyl stearate. No adverse chronic health effects have been reported due to exposure to Cosmoline. Acute health effects are generally limited to irritation, depending on the duration of the contact. A MSDS for Cosmoline has been included as Appendix D.

This information has been added to the text.

Comment 3: Section 2.2.1, Page 2-3: In the second paragraph of this section, revise text to read "This survey procedure was not employed during the EBS sampling program because the wells installed during this investigation were temporary."

Response 3: The text has been revised accordingly.

Comment 4: Section 2.2.3, Page 2-7: Include in this section the season(s) in which the surface water samples were collected at both SEAD-121C and SEAD-121I.

Response 4: The surface water samples were collected in the fall of 2002. This information has been added to the text.

Comment 5: Section 2.2.4.3, Page 2-11: The fifth full paragraph of this section indicates the sampling order for groundwater samples collected during the RI portion of the investigation. This order includes VOCs, SVOCs, metals, pesticides/PCBs, cyanide, and TOC/COD. Table 2-5 indicates that groundwater was also sampled for total petroleum hydrocarbons (TPH), hardness. nitrate-nitrite/nitrogen, and total dissolved solids (TDS). Revise the sampling order to include all analyses performed. The same comment applies to text in Section 4.1 on Page 4-2, which excludes these same analyses.

Response 5: The analyte list provided in this section was written in error. As discussed in Response to Specific Comment 1, analysis for TOC and COD were not performed, while analysis for TRPH was performed.

For groundwater, the correct sampling order is (1) VOCs, (2) SVOCs, (3) Metals, (4) pesticides/PCBs, (5) cyanide, and (6) TRPH. The text has been revised accordingly. Response 1 notes that Table 2-5 has been revised as well.

Section 4.1 is correct and does not require revision.

Comment 6: Section 3.1.4.1, Page 3-2: The text in the "RI Program" section contains should be revised. The sentence, "The sampling interval from 2-4 ft...as one sample" erroneously appears to refer to the four soil borings that contained large amounts of rock which was discussed in the previous sentence (SB121C-2, -8, -15, and -19), and which were sampled only from 0-2 ft bgs.

Revise discussion of sampling depths in the first paragraph, and discussion of sampling of borings SB121C-2, -8, -15, and -19. Clarify that the VOC samples in the composited 2-4 and 4-6 ft bgs sampling intervals were not composited.

Also, confirm that these four borings were sampled from 0 to 2 *feet* bgs, not 0 to 2 *inches* bgs as indicated in the fifth sentence of this section and also on Page 2-5 of Section 2.2.2.1.

Response 6: The text has been revised to state,

> "At these four soil borings, a substantial sample could not be collected from the deeper sampling interval; thus the interval from 0 to 2 ft. was the only one collected for analysis. At the other twelve soil borings, the sampling interval from 2-4 ft. bgs and 4-6 ft. bgs were composited at each hole location as a result of the high rock content and collected as one sample."

The VOC samples were not composited; rather, the soil samples for VOC analysis were collected from the depth interval of 2 – 4 ft. only.

The first interval is 0 to 2 feet. Thus, the text in this section has been revised to indicate *0 to 2 feet,* as shown above. The text on page 2-5 has been revised as well.

Comment 7: Section 3.1.4.2, Page 3-3: Include sample depths of surface soil samples in the text. Also clarify that these samples were the top interval of the soil borings described in the first portion of Section 3.1.4.1.

Response 7: The text has been clarified.

Comment 8: Section 3.5, Page 3-3; Confirm that ditch soil samples described in this section were collected from 0 to 2 inches bgs.

Response 8: The depth range for ditch soil is defined as 0 to 2 inches. In practice, ditch soil samples were collected from the top of the depth interval. Because the ditch soil samples did not seem to vary in character or nature from the surface soil samples (collected from 0 to 2 inches), the ditch soil samples were grouped as surface soil for the purpose of discussion. The text has been clarified.

Comment 9: Section 3.1.6, Page 3-4: Revise the first sentence to read that "There were *no* surface water... field program."

Response 9: The text has been revised accordingly.

Comment 10: Section 3.1.7.1, Page 3-6: The section entitled "RI Program" indicates that four wells with a designation starting with "MWDRMO" were installed in the DRMO Yard during the RI investigation. However, the groundwater sampling section, Section 3.1.7.3 refers to permanent well locations with designations starting with "MWI2IC." Additionally, wells with a designation "MWDRMO" are not included in Tables 3-1, 3-7, 3-8, 3-9, 3-10, or 3-11, all of which include information related to the permanent wells at the DRMO Yard. Clarify text if necessary to report on permanent wells installed at the DRMO Yard.

Response 10: The well designations should start with "MW121C" and not "DRMO". The text has been revised accordingly.

Comment 11: Section 3.1.8.1, Page 3-7: Text in this section indicates that the first round of elevation data was collected on the day of well development. For consistency, include the date of this activity (apparently mid-January 2003) in this section (as well as in Table 3-11) to facilitate comparison to the second, third, and final rounds of measurements.

Response 11: Groundwater elevations were collected on October 29, 2002, January 17, 2003, and February 2, 2003, and May 7, 2003. The text and Table 3-11 have been revised to include this information.

Comment 12: Section 3.2.4.2, Page 3-8: The text in this section indicates that five soil borings were completed at SEAD-121I during the RI investigation. Indicate in this section whether the borings were sampled, and if so, the number of samples collected per boring.

Response 12: A soil sample was collected from each boring at a depth interval of 0 to 2 ft. The text has been revised to incorporate this information. A soil boring was advanced and a sample was collected from the top interval at 0-2 inches in each of the five borings. The auger encountered refusal, therefore additional samples at greater depths were not collected.

Comment 13: Section 3.2.4.3, Page 3-8: Include the sample depths for the four surface soil samples collected at SEAD-121I during the EBS sampling round.

Response 13: The surface soil samples were collected from a depth range of 0 – 0.2 ft. This information has been added to the text.

Comment 14: Section 3.2.6, Page 3-11: The text in this section indicates that no groundwater monitoring wells were installed at SEAD-121I due to shallow refusal. In lieu of discussion of groundwater at this site, include a discussion of the nearest monitoring wells to SEAD121I and the results of any sampling of these wells that is applicable to SEAD-121I.

Response 14: There are no wells at SEAD-121I (as well as at the neighboring SWMU, SEAD-68) since the site is located very near, or at, the top of the apparent groundwater divide, and there is no saturated thickness in the overburden aquifer. A few wells are located downgradient of SEAD-121I, and they are associated with other SWMUs and are potentially impacted by CERCLA and non-CERCLA releases that have occurred in the overall PID Area. Therefore, any attempt to correlate offsite wells with conditions present at SEAD-121I would have many interferences that would make such comparisons virtually meaningless. Therefore, the Army will not provide any discussion of chemistry and will limit its discussion of offsite wells merely to the fact that they exist and do.

Comment 15: Section 4.2, Page 4-3: It appears as though discussion of cyanide results has been omitted from this section even though Tables 2-2 through 2-4 indicate that it was included in the sample analyses for soils, surface water, and ditch soil at SEAD-121C. Similarly, the groundwater section does not include results of COD, hardness, nitrite-nitrate/nitrogen, or TDS although these analyses were reportedly collected from wells at SEAD-I21C. Revise as appropriate.

Response 15: At the DRMO Yard, cyanide (total and amenable) was not detected in any surface soil, subsurface soil, surface water, and groundwater samples. Cyanide was detected once in ditch soil at SDDRMO-4 at an estimated concentration of 2.36 J mg/Kg. At SEAD-121I, total cyanide was detected at three surface soil locations, with a maximum concentration of 2.73 mg/Kg at SS121I-29. Cyanide was not detected in the surface water or ditch soil at SEAD-121I. Discussions of cyanide results for each media where cyanide was detected have been added to the text. As noted in previous responses, analysis for COD, hardness, nitrite-nitrate/nitrogen, and TDS was not performed. Any reference to these analyses has been removed from the text.

Comment 16: Section 4.2, Page 4-7: Signs of soil contamination beyond the boundaries of SEAD-121C are discussed throughout this section. However, those signs are dismissed as either anthropogenic background or source unrelated to SEAD-121C. Please note that any exceedances beyond EPA Region 9 preliminary remedial goals (PRGs) industrial screening levels need further investigation and/or remedial action as per CERCLA. Your anthropological background position has never been formally presented or accepted by the regulatory

agencies, and it is considered highly unlikely that such levels of contaminants would have found their way to these areas apart from Army-related operations.

Response 16: The Army has been unable to identify any promulgated standard or law that states that Region 9 PRGs trigger the need for further investigation or action. However, the Army has identified the October 1, 2002 EPA Region 9 PRG update, which states that chemical concentrations exceeding PRG levels do not "trigger a response action."

> "Exceeding a PRG suggests that further evaluation of the potential risks that may be posed by site contaminants is appropriate. Further evaluation may include additional sampling, consideration of ambient levels in the environment, or a reassessment of the assumptions contained in these screening-level estimates."

There is no mention that exceeding a PRG warrants remedial action. "The PRG table is specifically not intended as a . . . set of final cleanup or action levels to be applied at contaminated sites".

In the Sampling Report, the Army presented specific site conditions that could be potential sources for elevated chemical concentrations detected in locations beyond the boundary of the site. If EPA disagrees with this statement, the Army requests that they present an argument to that effect; EPA's statement that this contention "is considered highly unlikely" is insufficient and unsupported.

Comment 17: Figures 3-1 and 3-2: Include the direction of flow of surface water on these figures.

Response 17: The figures have been revised accordingly.

Comment 18: Table 2-5: The table summarizes the groundwater sampling completed at SEAD-121C, but the internal heading in the table refers to SEAD-121I. Revise accordingly.

Response 18: The table has been revised accordingly.

Comment 19: Tables 4-1, 4-2, 4-6, 4-7, 4-9: For consistency, revise these tables to include the appropriate TAGM #4046 values ("criteria") for each parameter as was done in Tables 4-3 through 4-5 and 4-8 (groundwater and Surface water).

Response 19: The TAGM #4046 values are guidance values or criteria to be considered (TBCs) and not ARARs. However, for the purposes of comparison, the TAGM #4046 guidance value for each parameter and the number of times the TAGM value was exceeded have been added to the summary statistics tables for soils presented in Section 4.

Comment 20: Section 4.3, Page 4-21: The second to last paragraph erroneously locates SD121I samples 1, 2 and 3 east of SEAD-121I.

Response 20: These samples are located to the west of the site. The text has been revised accordingly.

Comment 21: Section 4.3, page 4-7: See comment 16 above. This section presents the same types of justification for contaminants found outside the site boundaries.

Response 21: See response to comment 16 above.

Comment 22: Section 6.2, Page 6-1: We do not agree with the "no further investigation/no action" recommendation for this site. Section 4.2 shows significant levels of metal concentrations related to the existing ferrous-manganese ores at this site. Therefore, some kind of controls or remedial work seems to be needed at this site.

Response 22: The site that is the subject of this investigation is the Rumored Cosmoline Oil Disposal Area, and the BRAC program was tasked with investigating this site for contamination associated with Cosmoline oil. Contaminants detected at the site are not consistent with the presence of Cosmoline oil. According to information provided in the MSDS, the main components of Cosmoline oil are a mixture of complex hydrocarbons (e.g., Stoddard solvent), and naphthenic distillate. Naphthalene was detected in only 7 of 52 samples and never exceeded the TAGM level. If Cosmoline oil were present at the site, then it seems likely that heavy hydrocarbons would have been detected in the soils. As the best indicator, the TPH data was reviewed. TPH was detected at 14 locations in the surface soils at scattered locations across SEAD-121I. Due to the delocalized presence of TPH and the absence of significant levels of naphthalene, there is no evidence of a systemic release of Cosmoline oil at the site.

Currently, the location of SEAD-121I is being used as a staging site for planned strategic stockpiles of ferrous-manganese ore. All metals detected appear to be associated with these ore piles. The stockpiles are strategic materials; they are not a waste and are not covered under the CERCLA program. At the time that the strategic piles are removed, residues associated with the historic stockpiling activities will be addressed by the DoD through the authority responsible for management of the piles. Therefore, no further action is warranted for this site under CERCLA by the BRAC office.