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SEAD 11

PARSONS ENGINEERING SCIENCE, INC.

30 Dan Road • Canton, Massachusetts 02021-2809 • (781) 401-3200 • Fax (781) 401-2575

September 21, 2000

Mr. Julio F. Vazquez, Project Manager
U.S. Environmental Protection Agency, Region II
Superfund, Federal Facilities Section
290 Broadway, 18th Floor
New York, NY 10007-1866

Mr. Steven Paszko
Bureau of Eastern Remedial Action
Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
50 Wolf Road, Room 208
Albany, NY 12233-7010

Subject: **Additional Sampling Program for an Engineering Evaluation/Cost Analysis (EE/CA) at the Old Construction Debris Landfill (SEAD-11) at Seneca Army Depot Activity (SEDA)**

Dear Mr. Vazquez and Mr. Paszko:

Parsons Engineering Science, Inc. (Parsons) is preparing to conduct additional sampling at SEAD-11, the Old Construction Debris Landfill, at the Seneca Army Depot Activity. This sampling program will include installing three (3) monitoring wells, excavating ten (10) test pits, and collecting soil and groundwater samples to supplement data collected during the Expanded Site Inspection (ESI). This data and the ESI data will be used to prepare an EE/CA for the site.

The ESI was conducted at SEAD-11 in 1993 and included a geophysical survey, soil gas survey, installation of four monitoring wells, and excavation of four test pits. The analytical results of this study are presented in the *Expanded Site Inspection for Three Moderate Priority SWMUs – SEAD-11, 13, and 57* (Parsons, 1995).

Based on the results of the ESI, the *Project Scoping Plan for Performing a Cercla RI/FS Study at the Construction Debris Landfill (SEAD-11) and Garbage Disposal Areas (SEAD-64A and SEAD-64D)* (Parsons, September 1997) was prepared. Subsequent to the submittal of the Scoping Plan, the Army requested that Parsons conduct mini-risk assessments for SEADs-64A and 64D and prepare a Decision Document for these two sites instead of performing a RI/FS. The Army proposed an EE/CA for SEAD-11 and the decision was discussed at a recent BCT meeting at SEDA. NYSDEC requested that (1) additional test pits be excavated to confirm that the geophysical anomalies detected during the ESI are not buried drums, and (2) additional monitoring wells be installed to investigate potential pathways of migration on the downgradient side of the landfill.

ESI Results

Soil Gas Survey Results

As part of the ESI, a 39-point soil gas survey was conducted in order to locate areas on and in the immediate vicinity of the Construction Debris Landfill that have been impacted by VOCs. Soil gas concentrations were expressed as TCE in parts per million by volume (ppmv). Two locations in the southwestern portion of the landfill were identified with elevated concentrations of VOCs in soil gas. The highest of the two concentrations was located at point SG2-3 (14.6 ppmv as TCE). The next highest concentration was located at SG2-1 (6.6 ppmv as TCE) which is approximately 200 feet west of SG2-3. Up to five individual compounds were identified in the two soil gas samples, although more peaks were present. The positively identified compounds that were present in sample SG2-3 included vinyl chloride, 1,2-dichloroethene, trichloroethene, toluene, and ethylbenzene. Sample SG2-1 contained mostly 1,2-dichloroethene and trichloroethene. The data indicate that the west-central portion of the landfill has been impacted by VOCs.

Geophysical and Test Pit Results

An EM-31 survey was conducted at SEAD-11 as part of the geophysical investigation of the ESI. Based on the results of the EM-31 survey, the landfill can be divided into two parts, the northeastern and southwestern portions. The northeastern portion has a higher concentration of buried metallic debris than the southwestern portion.

Four test pits were excavated to characterize the types of geophysical anomalies present within the landfill (**Figure 1**). Test pit TP11-1 was located in the northeastern portion of the landfill in the center of the zone showing a high concentration of buried metallic debris. Test pits TP11-3 and TP11-4 were located over the two highest VOC concentration anomalies (SG2-3 and SG2-1) detected from the soil gas survey. These two test pits were located in the southwestern portion of the site. Test pit TP11-2 was located between TP11-3 and TP11-4.

At TP11-1, much of the excavated material was metallic debris, including various scrap metal rods and metallic webbing. The dominant type of fill at TP11-2 was nonmetallic, including soil, large concrete slabs and fragments, and asphalt. The debris material observed at TP11-3 and TP11-4 were construction debris including glass, concrete, and nails. Neither excavation at TP11-3 or TP11-4 uncovered any material that could be pinpointed as the source of the volatiles detected in the soil gas survey.

Soil Chemistry

As part of the ESI, soil samples were collected from the four test pits located within the landfill.

The results of the ESI indicate that soil at the site has been primarily impacted by SVOCs and metals. Other constituents that were detected, but are considered less significant, include VOCs, pesticides, PCBs, herbicides, nitroaromatics, and nitrate/nitrite nitrogen. These constituents are not considered to be significant because they are either present at low concentrations and/or only a small number of samples exceed or slightly exceed their respective TAGM values.

Six VOCs were detected, however none were detected at concentrations above the associated TAGM. A maximum concentration of trichloroethene (460 ug/kg) was found in Test Pit 11-1. The compound tetrachloroethene was found at a maximum concentration of 370 ug/kg in Test Pit 11-3. 1,2-Dichloroethene was found in only in Test Pit 11-3 at a maximum estimated concentration of 4 ug/kg.

A total of 19 SVOCs were found at varying concentrations in the surface and subsurface soil samples analyzed. With the exception of bis(2-ethylhexyl)phthalate, all of the SVOCs detected were PAHs. The occurrence and distribution of PAHs were similar in the surface as well as the subsurface soil samples.

Of the 22 metals reported in the soil samples analyzed, 16 of these were found in one or more samples at concentrations above the associated TAGM values. Of particular note are the metals chromium, copper, lead, mercury, zinc, where a significant percent of the samples exceed the TAGM value. The maximum concentration of copper (1090 mg/kg) was identified in the soil sample TP11-3.1. This sample also had an elevated concentration of zinc (1250 mg/kg). TP11-3 is located in the southwestern portion of the landfill at the soil gas point SG2-1. The maximum concentration of zinc (7980 mg/kg) was identified in soil sample TP11-1.2, while the sample collected directly above, TP11-1.1, had the highest concentration of lead reported (4050 mg/kg). TP11-1 is located in the northeastern portion of the site.

Groundwater Chemistry

Groundwater at the site appears to have been impacted by metals. The results of the groundwater sampling program at SEAD-11 indicate that aluminum, iron, lead, magnesium and sodium were present in individual wells at concentrations above the TAGM values. No VOCs, SVOCs, pesticides and PCBs, herbicides, nitrate/nitrite, and nitroaromatics were above TAGMs. Other than lead, the four remaining metals are not considered to represent a significant health risk. Lead was detected in MW11-3 at an estimated concentration of 33.7 ug/L, which is above the GA standard of 25 ug/L. TPH was detected in both monitoring wells, MW11-3 and MW11-4. Monitoring wells MW11-3 and MW11-4 are located downgradient of the landfill.

Additional Sampling Program

Field work for the additional sampling program is scheduled to begin on October 23, 2000. **Figure 1** shows the location of the site at SEDA.

A total of 10 test pits were proposed in the Scoping Plan and 10 test pits will be excavated for this additional sampling program. Test pits (TP11-5 to TP11-14) have been located within the landfill based upon geophysical anomalies identified during the ESI performed at SEAD-11 (**Figure 2**). The test pits will be excavated within the landfill so that a visual evaluation of the geophysical anomalies can be made and also for the purpose of collecting soil samples for chemical testing. Test pits will be dug to the bottom of the fill. The bedrock surface (if encountered) and bottom of the fill material will be documented at each test pit location. Two (2) soil samples will be collected from each pit. One 0-2" surface soil sample will be collected and submitted for chemical testing. One sample will be collected at depths where there is evidence of impacts based upon visual observations and field screening procedures. If no impacts are evident in the test pit, the samples will be collected from the floor of the pit and at depth of the wall of the excavation.

All personnel performing the test pit operation will be wearing Level B equipment to avoid possible exposure to vinyl chloride. The excavated soil will be monitored for VOCs and radiation during test pitting activities.

Unexploded ordnance (UXO) personnel will not be required during the test pit excavations. Based on the findings in the *Archives Search Report: Findings for Seneca Army Depot* (USACE, December 1998), no ordnance was placed in the SEAD-11 landfill.

The sampling program will consist of 20 soil samples collected from the test pits. Soil samples will be analyzed TCL volatile organic compounds and TAL metals according to the NYSDEC CLP SOW.

A total of 12 monitoring wells including six overburden and six bedrock monitoring wells were proposed for SEAD-11 in the Scoping Plan for the RI/FS. For this sampling program, three (3) overburden monitoring wells (MW11-5 to MW11-7) will be installed downgradient of the landfill to supplement the four (4) monitoring wells which were installed on the perimeter of SEAD-11 during the ESI program. The locations of the three overburden monitoring wells are shown in **Figure 2**.

The monitoring wells will be installed and developed according to the procedures outlined in the Field Sampling and Analysis Plan of the *Generic RI/FS Workplan* (Parsons, August 1995). The soil borings in which the monitoring wells will be installed will be advanced to auger refusal, which will represent the depth of the competent bedrock. A monitoring well will then be installed in the boring and screened over the entire depth of the overburden aquifer to a maximum of screen length of 10 feet.

Groundwater from the four existing and three new monitoring wells will be sampled twice and analyzed for TCL volatile organic compounds (Method 524.2 for Round 2), TCL semivolatile organic compounds, TCL pesticides/PCBs, TAL metals according to the NYSDEC CLP SOW, cyanide, explosive compounds by EPA Method 8330, pH, and nitrate/nitrogen by EPA Method 353.2.

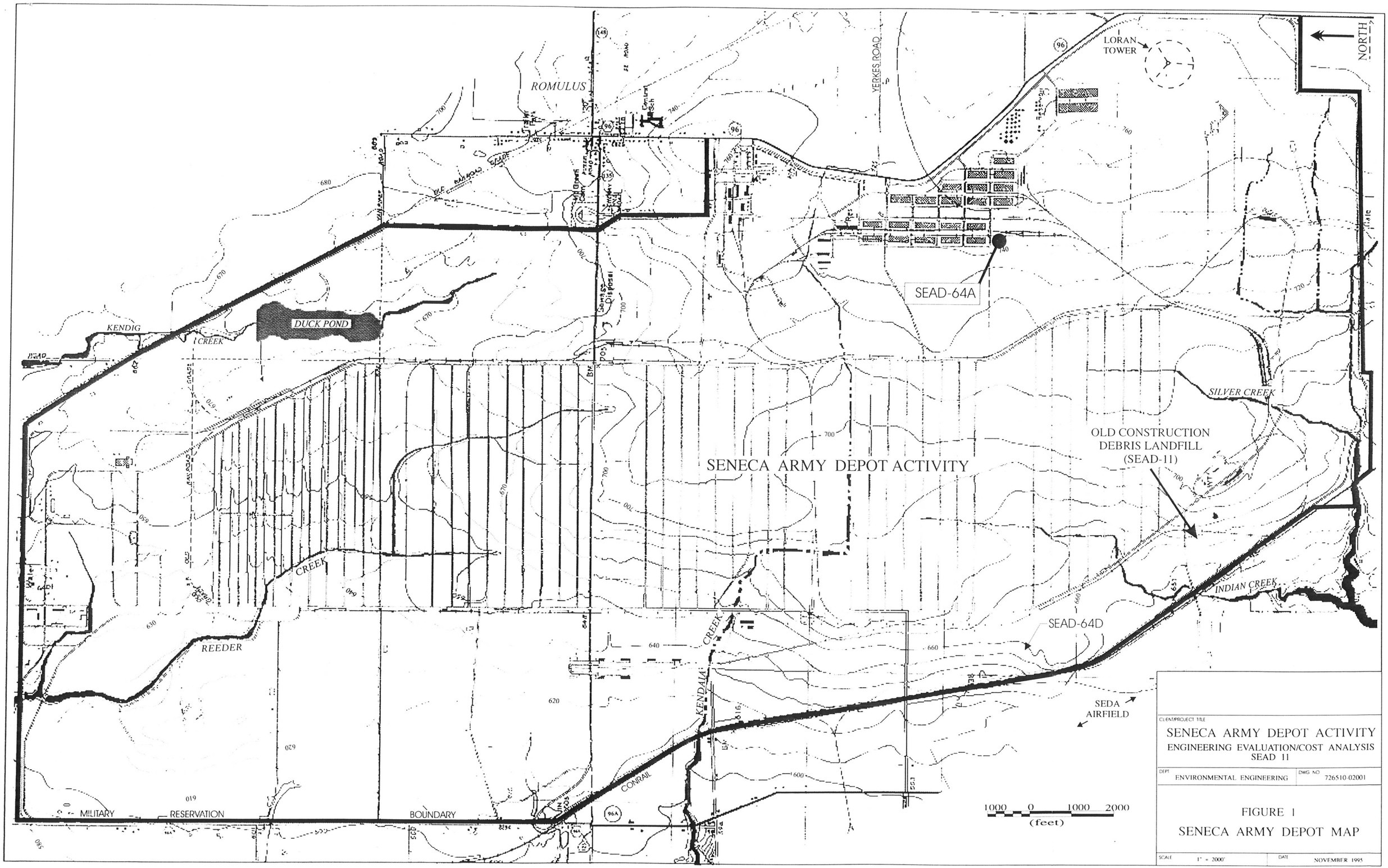
During the period between November 6 and 8, Parsons intends to collect the first round of groundwater samples from all monitoring wells at SEAD-11. The second round of sampling will occur approximately three months after the first round of sampling. The wells will be sampled using the latest version of the EPA groundwater sampling procedure, which is a low flow pump purging and sampling method.

If you wish to collect split-samples or audit sampling activities, please notify me at 781-401-2361.

Sincerely,
PARSONS ENGINEERING SCIENCE, INC.

Eliza Schacht, P.E.
Task Order Manager

c: distributed by email with follow-up mailing
Stephen Absolom, SEDA
Janet Fallo, USACOE
Kevin Healy, USACOE



CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY
ENGINEERING EVALUATION/COST ANALYSIS
SEAD 11

DEPT	DWG NO
ENVIRONMENTAL ENGINEERING	726510-02001

FIGURE 1
SENECA ARMY DEPOT MAP

SCALE	DATE
1" = 2000'	NOVEMBER 1995

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SEAD-11

SEAD-11A

MW11-2

MW11-5

MW11-4

MW11-6

MW11-7

MW11-3

MW11-1

TP11-1A,B,C,D

TP11-2A,B,C,D

TP11-3A,B,C,D

TP11-4A,B,C,D

TP11-5

TP11-6

TP11-7

TP11-8

TP11-9

TP11-10

TP11-11

TP11-12

TP11-13

TP11-14

LEGEND

- PAVED ROAD
- 680 GROUND CONTOUR AND ELEVATION
- WETLAND
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- RAILROAD
- EXISTING MONITORING WELL AND DESIGNATION
- EXISTING TEST PIT AND DESIGNATION
- PROPOSED MONITORING WELL AND DESIGNATION
- PROPOSED TEST PIT AND DESIGNATION

100 0 100 Feet

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SENECA ARMY DEPOT ACTIVITY

EE/CA

SEAD-11, CONSTRUCTION DEBRIS LANDFILL

FIGURE - 2
LOCATION OF PROPOSED AND EXISTING SAMPLING POINTS

SCALE	DATE	REV
1" = 100'		SHEET 1 OF 1

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