

# **Appendix A**

## **Analytical Summary Memos**

# Memorandum

---

Date: 10/25/05

To: Jeff Hubbard, USACE  
Greg Goepfert, USACE

CC: Tony Sheeran, Shaw  
Tony Perretta, Shaw  
Guy Gallelo, Shaw

From: Tom Mathison  
Shaw Environmental

RE: Schenectady Army Depot (Project # 838360)  
AOC 2 Analytical Results for Areas B & C

---

Jeff/Greg,

The purpose of this memo is to summarize the analytical results for Areas B and C at AOC-2 at the former Schenectady Army Depot.

The soils and debris removed from these areas has been staged adjacent to the excavated areas for future offsite disposal. Upon removal of the visually contaminated soils and debris, confirmation samples were collected to confirm that all the contaminated soil had been removed. Based on the results from the initial sampling, several areas were required to be re-excavated and sampled to ensure that all contaminated material had been removed.

Due to the current conditions at the site, it is necessary to obtain approval from the USACE and NYDEC to backfill Areas B and C as soon as possible. The main reasons are as follows:

- In order to perform the drum removal activities in Area D, Areas B & C must be backfilled to create a safe working platform for this work. Currently, it is very difficult to access area D with equipment and personnel due to the adjacent excavations.
- The backfilling of Areas B & C will eliminate the water handling which is currently being conducted at the site due to the persistent rain that is occurring. The excavated areas continue to fill with water which must be pumped to storage tanks and then will be disposed of offsite.

Soil results in Area B and C for metals indicate values exceeding the NYDEC RSCO and/or site background for several metals including aluminum, barium, beryllium, chromium, cobalt, copper, iron, potassium, and vanadium. In all cases these metals are present in concentrations below the Eastern US Background values, contained in TAGM 4046. Concentrations for two metals, mercury and nickel, exceeded the RSCO and applicable background levels in Areas C and B. This is true even in locations where additional excavation was performed. A non-parametric bootstrap comparison to the 2002 site-background data; Parsons, was performed for mercury and nickel. This evaluation indicates that mercury concentrations in Area B are indicative of site background. Mercury values in Area C could not be attributed to background. However, since all of the

contaminated soils containing high mercury levels will be removed in order to access the drums in Area D, this impacted soil will be removed. Although the nickel concentrations in Areas B and C cannot be statistically determined to be from site background conditions, it is obvious from the data, especially over-excavation results, that nickel concentrations have reached a point where further excavation will have little or no effect on soil concentrations.

#### **Area B**

Area B was excavated and the approximately 300-325 cubic yards of soils and tar bucket debris was staged for future disposal. Confirmation samples were collected for comparison to NYDEC RSCO and TAGM 4046 and sent to GPL Laboratories for analysis.

- 8 samples were collected from the sidewalls of the excavation
- 8 samples were collected from the floors area of the excavation
- The samples were analyzed for metals, VOC, SVOC, PCBs, Pesticides and Herbicides.
- 15 of the 16 samples collected failed for Nickel
- Samples EX-B-1 and EX-B-5 failed for Mercury and sample EX-B-15 failed for lead. All other results were within the NYDEC requirements.

The areas of the failed results were then re-excavated and again samples were collected.

- All the re-sample locations failed the NYDEC RSCO criteria for nickel (Refer to discussion above)
- Sample EX-B-1RE again failed for mercury. Sample EX-B-5RE had a result equal to the NYDEC requirement for mercury.
- Sample EX-B-15RE passed the requirement for lead

#### **Proposed Path Forward for Area B**

- In area B, the side wall in the area of sample B1 will re-excavated.
- Samples will be collected to confirm the contaminated soil has been removed at B1.
- Plastic sheeting will be placed over the side wall in the area of sample location B1 so backfilling of Area B can commence. Additional soils will be removed in the area of the sheeting until satisfactory results are obtained.
- Backfill of the rest of Area B will commence

#### **Area C**

Area C was excavated and the approximately 150 cubic yards of soils and solidified paint debris was staged for future disposal. Confirmation samples were collected and sent to GPL Laboratories for analysis.

- 7 samples were collected from the sidewalls of the excavation
- 6 samples were collected from the floors area of the excavation
- The samples were analyzed for metals, VOC, SVOC, PCBs, Pesticides and Herbicides
- 12 of the 13 samples collected failed for Nickel
- Samples EX-C-1 and EX-C-2, EX-C-7, EX-C-8, EX-C-9, and EX-C-10 failed various constituents including Mercury, lead and chromium. All other results were within the NYDEC requirements.

The areas of the failed results were then re-excavated and again samples were collected.

- All the re-sample locations failed the NYDEC RSCO criteria for nickel (Refer to discussion above)
- Sample EX-C-1RE, EX-C-7RE and EX-C-8RE again failed for mercury.

#### **Proposed Path Forward for Area C**

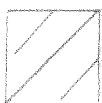
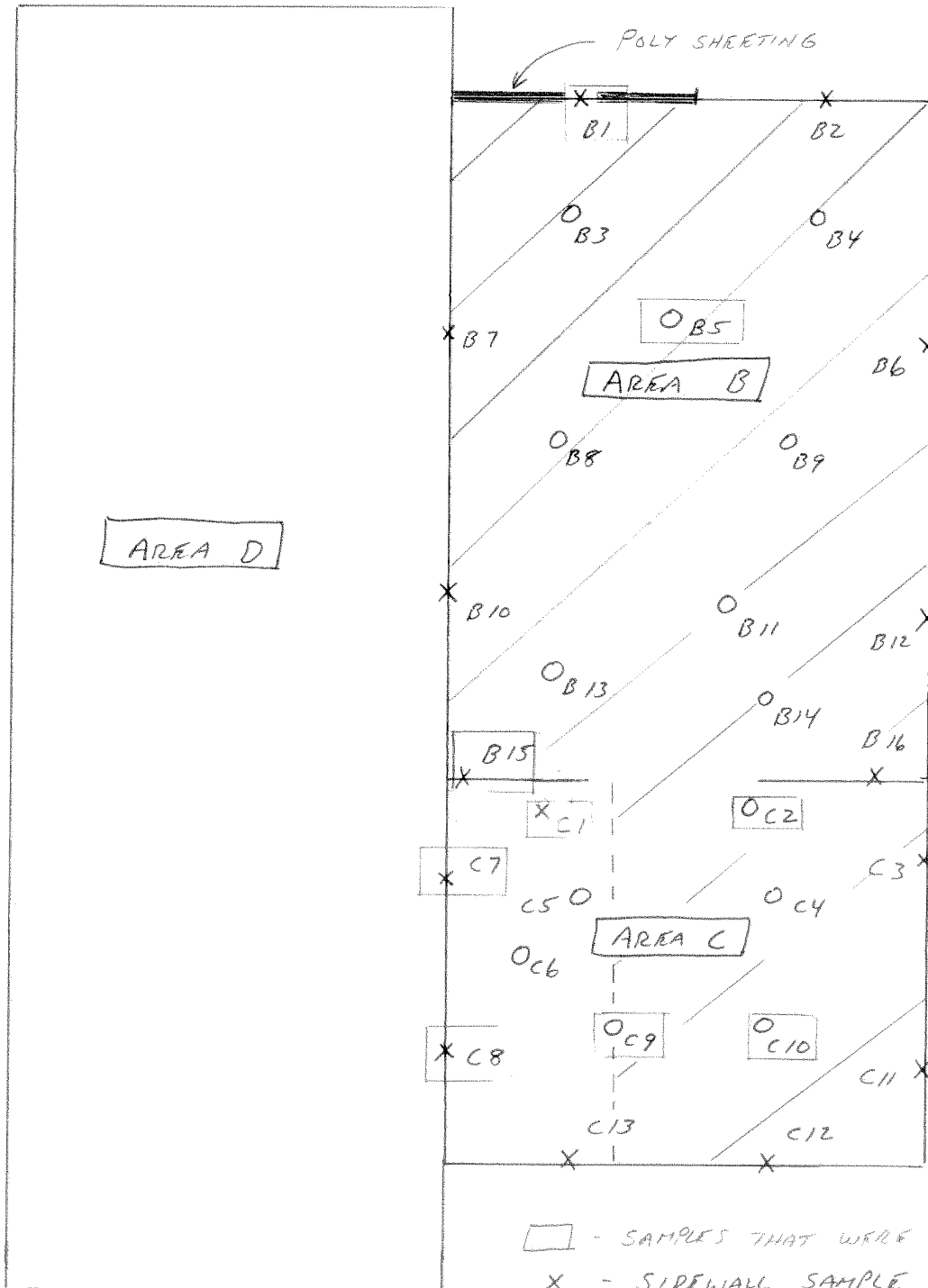
- The sidewall area of EX-C-1 was a sidewall sample, however this soil has subsequently been removed and has been added to the pile for offsite disposal. The sample EX-C-1RE was collected on the floor in the area of EX-C-1 and therefore additional soils will need to be removed in this area.
- Samples EX-C-7RE and EX-C-8RE are in the sidewall adjacent to Area D. This sidewall and the location of EX-C-1RE will be eventually removed as part of the remedial activities of Area D and no further excavation will be performed in this area at this time.
- Backfill of the rest of Area C will commence except for the areas mentioned above.

Please contact me with any questions you may have regarding this matter.



By TPM Date 10/24/05 Subject SCHENKLEWAY AOC 2 Sheet No. \_\_\_\_\_ of \_\_\_\_\_

Chkd. By \_\_\_\_\_ Date \_\_\_\_\_ SAMPLE LOCATIONS Proj. No. 838360  
 .25 in. X .25 in.



- AREA TO BE BACKFILLED

□ - SAMPLES THAT WERE RE-COLLECTED

X - SIDEWALL SAMPLE

O - FLOOR SAMPLE

NOT TO SCALE

Metal	NYDEC (mg/kg)	East US BG	Site BG (mg/kg)	EX-B-1	EX-B-2	EX-B-3	EX-B-4	EX-B-5	EX-B-6	EX-B-7	EX-B-8	EX-B-9	EX-B-10	EX-B-11	EX-B-12	EX-B-13	EX-B-14	EX-B-15	EX-B-16	EX-B-DUP	EX-B-IRE	EX-B-SRE	EX-B-SRE
Aluminum	SB	33000	7080-12800	10/4/2005	10/4/2005	10/4/2005	10/4/2005	10/4/2005	10/4/2005	10/4/2005	10/4/2005	10/4/2005	10/4/2005	10/4/2005	10/4/2005	10/4/2005	10/4/2005	10/4/2005	10/4/2005	10/4/2005	10/13/2005	10/13/2005	10/13/2005
Antimony	SB	7.5-12	4.3-16.4	0.50-J	0.50-J	0.50-J	0.50-J	0.50-J	0.50-J	0.50-J	0.50-J	0.50-J	0.50-J	0.50-J	0.50-J	0.50-J	0.50-J	0.50-J	0.50-J	0.50-J	0.50-J	0.50-J	0.50-J
Barium	SB	300-1500	33-104	74.3	82.7	80.5	72.9	67.9	75.6	58.5	60.2	67	79.3	81.4	58.3	81.5	70.7	88.8	79.6	77.9	65.1	71.4	61.2
Beryllium	SB	0.16-1.75	0.28-0.67	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J
Cadmium	SB	10-1.75	0.21-0.52	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J	0.062-J
Calcium	SB	130-35000	1280-46600	4300	10100	16200	28100	2400	36700	922	20600	20300	2410	30600	1780	24900	24100	3100	1730	21900	2150	2510	2240
Chromium	SB	101.5-40	9.3-17.5	53.1	26	22.3	22.6	23.0	21.7	24.6	19.7	22.9	23.4	22.6	25.5	23.5	22.2	36.4	25.3	23.6	25.8	26.2	24
Cobalt	SB	302.5-60	5.3-12.2	13.3	15.3	12.8	13.4	12.3	21.7	11.4	13.7	13.6	15.2	10.5	10.5	10.5	14.2	14.9	13.2	16.4	12.6	12.6	13.7
Copper	SB	25-150	13.4-26.9	38.5	49.5	45.7	42.7	40.1	42.6	43.0	37.3	41.1	40.0	37.4	26.0	45.2	41.4	40.9	34.3	47.8	34.6	40.7	29.1
Iron	SB	2000-2000-55000	14100-25100	33000	38000	33000	32400	31100	31700	35000	30300	33600	33000	31100	30000	34200	33900	34500	29300	34800	34300	31000	31000
Lead	SB	NA	16.5-60.8	204	17.5	14.7	14	19.1	14.4	15.3	13.7	14.4	16.5	13.1	39.9	16.1	14.5	489	24.7	17	24.6	19	47.8
Magnesium	SB	100-5000	2190-13100	6470	7980	8290	8070	5350	8440	5920	7610	8080	5730	8760	4880	8760	7600	5960	5670	8340	5400	5500	5100
Manganese	SB	50-5000	197-875	30.5	636	415	552	443	521	349	605	610	717	415	484	599	608	607	335	830	525	461	507
Mercury	SB	0.10-0.01-0.2	0.038-0.095	0.22	0.05	0.034	0.023	0.20	0.031	0.024	0.034	0.057	0.030	0.022	0.043	0.036	0.036	0.026	0.042	0.035	0.27	0.1	0.05
Nickel	SB	13.0-5.25	10.6-24.8	30.5	37.7	30.9	31.3	26.4	30.9	27.4	31.0	32.0	31.7	28.2	23.5	36.1	33.4	33.6	29.2	37.2	25.6	29.1	24.1
Potassium	SB	8500-43000	443-1660	1850	1990	1900	2060	1700	2100	1780	1720	1990	1770	2330	1350	2300	2160	2130	1770	1770	1590	1700	1410
Selenium	SB	2.01-3.9	0.44-1.2	0.25-J	0.25-J	0.25-J	0.25-J	0.25-J	0.25-J	0.25-J	0.25-J	0.25-J	0.25-J	0.25-J	0.25-J	0.25-J	0.25-J	0.25-J	0.25-J	0.25-J	0.25-J	0.25-J	0.25-J
Silver	SB	NA	0.16-0.17	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Titanium	SB	150-1300	13.7-24	0.33-J	0.33-J	0.33-J	0.33-J	0.33-J	0.33-J	0.33-J	0.33-J	0.33-J	0.33-J	0.33-J	0.33-J	0.33-J	0.33-J	0.33-J	0.33-J	0.33-J	0.33-J	0.33-J	0.33-J
Vanadium	SB	150-1300	13.7-24	29.3	30.2	25.4	26.5	28.8	26.1	29.8	22.9	27.4	29	26.6	29.4	28	27.6	31.6	36.3	28.2	33.5	31.6	28.8
Zinc	SB	20-9-30	45-134	178	90.6	76.9	80.9	71.9	79.1	77.1	67.2	77.8	79	72.1	69.9	79.9	77.7	121	89.5	84.8	74.6	88.3	80.2

Metal	NYDEC (mg/kg)	East US BG	Site BG (mg/kg)	East US BG																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
				EX-C-1 9/28/2005 18300 19	EX-C-2 9/28/2005 18000 16	EX-C-3 9/28/2005 18200 18	EX-C-4 9/28/2005 18900 16	EX-C-5 9/28/2005 17000 15	EX-C-6 9/28/2005 17500 18	EX-C-7 9/28/2005 19900 17	EX-C-8 9/28/2005 18500 17	EX-C-9 9/28/2005 18400 18	EX-C-10 9/28/2005 15600 14	EX-C-11 9/28/2005 18100 15	EX-C-12 9/28/2005 19200 17	EX-C-13 9/28/2005 18700 18	EX-C-1RE 10/13/2005 16300 17	EX-C-2RE 10/13/2005 15400 15	EX-C-7RE 10/13/2005 18500 17	EX-C-8RE 10/13/2005 16100 17	EX-C-9RE 10/13/2005 14000 17	EX-C-10RE 10/13/2005 15800 17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Aluminum	753-12	33000	7080-12800	97.4	104	150	75.5	76	72	9.9	77	91	76	96	9	8.3	8.4	8.8	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0

Values in *italics* exceed one or more criteria  
Values in **bold** face exceed all criteria

# Memorandum

---

Date: 10/31/05

To: Jeff Hubbard, USACE  
Greg Goepfert, USACE

CC: Tony Sheeran, Shaw  
Tony Perretta, Shaw  
Guy Gallelo, Shaw

From: Tom Mathison  
Shaw Environmental

RE: Schenectady Army Depot (Project # 838360)  
AOC 2 Analytical Results for Area F

---

Jeff/Greg,

The purpose of this memo is to summarize the analytical results for Area F at AOC-2 at the former Schenectady Army Depot.

The soils and debris removed from area F has been staged for future offsite disposal. Upon removal of the visually contaminated soils and debris, confirmation samples were collected to confirm that all the contaminated soil had been removed.

Area F is located in the low part of the site adjacent to the wetland area.

## **Area F**

Area F was excavated and the approximately 80 cubic yards of soils and glass jar debris was staged for future disposal. Confirmation samples were collected for comparison to NYDEC RSCO and TAGM 4046 and sent to GPL Laboratories for analysis.

- 4 samples were collected from the sidewalls of the excavation
- 9 samples were collected from the floors area of the excavation
- The samples were analyzed for metals, VOC, SVOC, PCBs, Pesticides and Herbicides.
- 4 of the 13 samples collected failed for barium and zinc
- 3 of the 13 samples collected failed for nickel; however these have been determined to be background concentrations.
- All other results were within the NYDEC requirements, with the exception of aluminum and iron, which were above the site background but with the Eastern US Background values, contained in TAGM 4046.

Soil results after the initial excavation in Area F for metals indicate values exceeding the NYDEC RSCO and/or site background for several metals including aluminum, barium, iron, nickel, and zinc. In some cases, for example, aluminum and iron are present in concentrations below the Eastern US



Background values, contained in TAGM 4046. Concentrations for three metals, barium, nickel, and zinc exceeded the RSCO and applicable background levels in Areas F. .

Based on the results from the initial sampling, the north end of the excavation was re-excavated and sampled to ensure that all contaminated material had been removed. The area re-excavated was the north end of the area as detailed on the sample location map. A composite sample (Area F North Composite) was collected of the north area to confirm the remaining concentrations. After the north end was re-excavated, the concentration for zinc remained above the Eastern US Background value

In order to remove the area of the high zinc levels (adjacent to sample point location 4, 5, and 6), additional excavation was performed. During this re-excavation task, drums were discovered at a depth of approximately 7-8 feet below the ground surface. Due to the depth of the drums, the decision was made to collect a few samples of the soil/drum contents and have analyzed. These two samples (EX-F-Supp 1 and EX-F Supp 2) were analyzed for metals and both exhibited high concentrations of zinc.

#### **Proposed Path Forward for Area F**

- Backfill of the south portion of Area F will commence to the location as indicated on the sample location map.
- The drums that have been identified will be removed and staged for disposal.
- If additional drums are located during the initial removal effort, these drums will also be removed if possible or the process will be stopped and the extent of the remaining drums will be assessed.

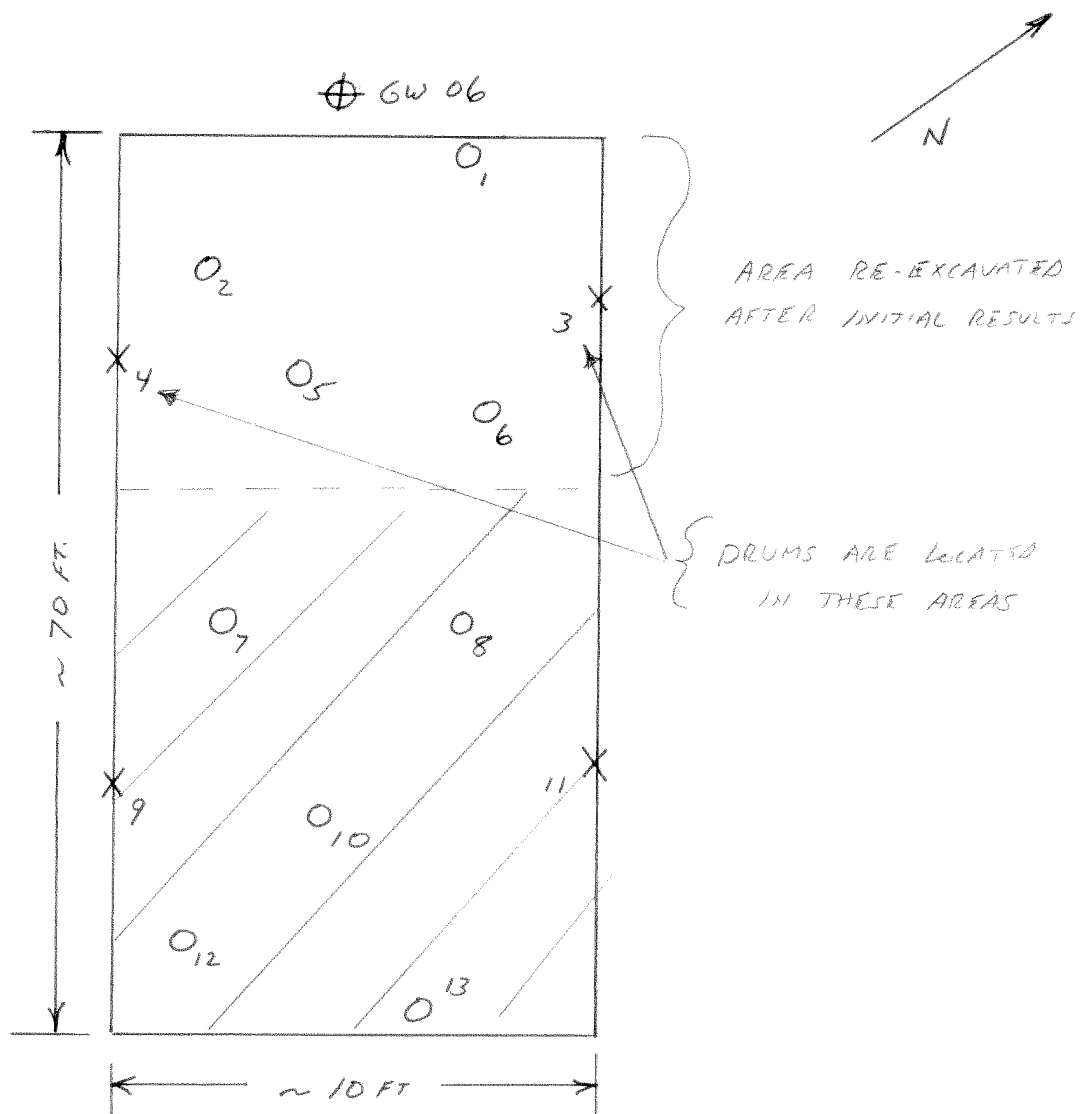
Please contact me with any questions you may have regarding this matter.



By TPM Date 10/10/05 Subject SCHENECTADY A.D. - AOC 2 Sheet No. \_\_\_\_\_ of \_\_\_\_\_

Chkd. By \_\_\_\_\_ Date \_\_\_\_\_ AREA F SAMPLE LOCATIONS Proj. No. \_\_\_\_\_

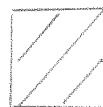
.25 in. X .25 in.



X - SIDEWALL SAMPLE

O - FLOOR SAMPLE

⊕ - MONITORING WELL



- AREA TO BE BACKFILLED

NOT TO SCALE

# Memorandum

---

Date: 11/28/2005

To: Jeff Hubbard, USACE  
Greg Goepfert, USACE

CC: Tony Sheeran, Shaw  
Tony Perretta, Shaw  
Tom Mathison, Shaw

From: Guy Gallelo  
Shaw Environmental

RE: Schenectady Army Depot (Project # 838360)  
AOC 2 Analytical Results for Area D

---

Jeff/Greg,

The purpose of this memo is to summarize the analytical results following additional over-excavation at Area D within AOC-2 at the former Schenectady Army Depot.

The soils and debris removed from area D has been staged for ongoing offsite disposal. The approximately 75 drums are staged in over-packs awaiting final disposal. These drums contain varying quantities of flammable mercury containing liquid/sludge material that will require off-site thermal destruction. Upon removal of the drums, visually contaminated soils and debris, confirmation samples were collected to confirm that all the contaminated soil had been removed. These samples indicated that soils contaminated with VOCs remained within the excavated area. Additional soils were subsequently removed throughout the original footprint and along the sidewalls of the excavated area. Following the additional removal samples were collected from the same locations as those that had failed the criteria previously and analyzed for VOCs.

Area D is located in the southwestern part of the site to the west of Areas B and C.

## **Area D**

The drums, contaminated soils, and non-recoverable drum carcasses and waste materials were removed from Area D in late October and early November. These activities resulted in approximately 75 intact drums; with flammable mercury containing liquid/sludge material and about 400 cubic yards of contaminated soil, waste and debris. The intact drums were over-packed and staged for disposal. Non-debris laden soils were stockpiled for future disposition and debris containing materials were placed into roll-offs for future disposal. Waste profile samples collected from the stockpiled soils demonstrate these materials are non-hazardous. The debris/waste/soil material in the roll-offs was profiled as a flammable and mercury characteristic waste and will require off-site thermal destruction, as will the drummed liquid/sludge material.

Confirmation samples were first collected from Area D on November 2, 2005 for comparison to NYDEC RSCO and TAGM 4046 and sent to GPL Laboratories for analysis. See figure 1.

- 14 samples (EX-D-1 through EX-D-15) were collected from the sidewalls of the excavation
- 7 samples (EX-D-16 through EX-D-22) were collected from the floors area of the excavation
- The samples were analyzed for metals, VOC, SVOC, PCBs, Pesticides and Herbicides.
- 15 of the samples failed for nickel; however these concentrations were determined to be background concentrations through statistical and associated mineral metal concentration comparisons
- 3 of the samples (EX-D-12, EX-D-15, EX-D-20) failed for mercury
- All other results were within the NYDEC requirements, with the exception of aluminum and iron, which were above the site background but within the Eastern US Background values, contained in TAGM 4046.

Since the metals results were made available prior to the VOC data due to laboratory issues, additional soil was removed from the areas representing the failed mercury locations and confirmation samples were collected for metals analysis on November 11, 2005. See figure 2.

- 4 samples (EX-D-23 through EX-D-26) were collected from the sidewalls of the excavated area
- 2 samples (EX-D-27 and EX-D-28) were collected from the floor of the excavated area

The results for all of these samples were below criteria for mercury and all other metals. The VOC results were provided by the laboratory on November 12, 2005 and the results indicated VOC failures within areas of the excavation that had not been over-excavated for mercury contamination, as well as for samples that had failed for mercury. A total of six samples failed for VOCs.

- 1 sample, EX-D-12, which had been collected from the excavation sidewall
- 5 samples (EX-D-17, EX-D-19, EX-D-20, EX-D-21, EX-D-22) collected from the floor of the excavation

Based upon this data, additional soil removal was performed throughout the Area D footprint and along the sidewalls. Following this over-excavation confirmation samples were collected on November 21, 2005 and submitted to Adirondack Laboratories for VOC analysis. See figure 3.

- 1 sample, EX-D-32, was collected from the sidewall of the excavated area
- 5 samples (EX-D-27 through EX-D-31) were collected from the floor of the excavation

The results for VOCs contained no VOCs above the NYDEC RSCOs in TAGM 4046, indicating that the excavated area does not contain VOCs above the limits. Since the metals results from the November 11, 2005 sampling showed there to be no metals failures, the excavation footprint has been shown to meet TAGM 4046 requirements. Therefore, approval for backfill of Area D should be pursued.

Please contact me with any questions you may have regarding this matter.



Figure 1

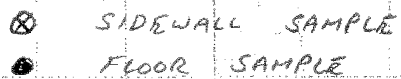
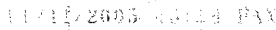
Original Sample Locust + 1025

11/02/2005

By TPM Date 11/11/05 Subject ACC-2 Sheet No. \_\_\_\_\_ of \_\_\_\_\_

Chkd. By \_\_\_\_\_ Date \_\_\_\_\_ AREA D - SAMPLER LOCATIONS Proj. No. \_\_\_\_\_

NOT TO SCALE



## Figure 2



SAMPLE FOLLOWING OVER-EXCAVATION  
METALS ONLY - 11/11/2005

By TPM Date 11/11/05 Subject ACC-2 Sheet No. \_\_\_\_\_ of \_\_\_\_\_  
Chkd. By \_\_\_\_\_ Date \_\_\_\_\_ AREA D - SAMPLE LOCATIONS Proj. No. \_\_\_\_\_

25 in. X 25 in.

NOT TO SCALE

11/11/2005 15:18 FAX

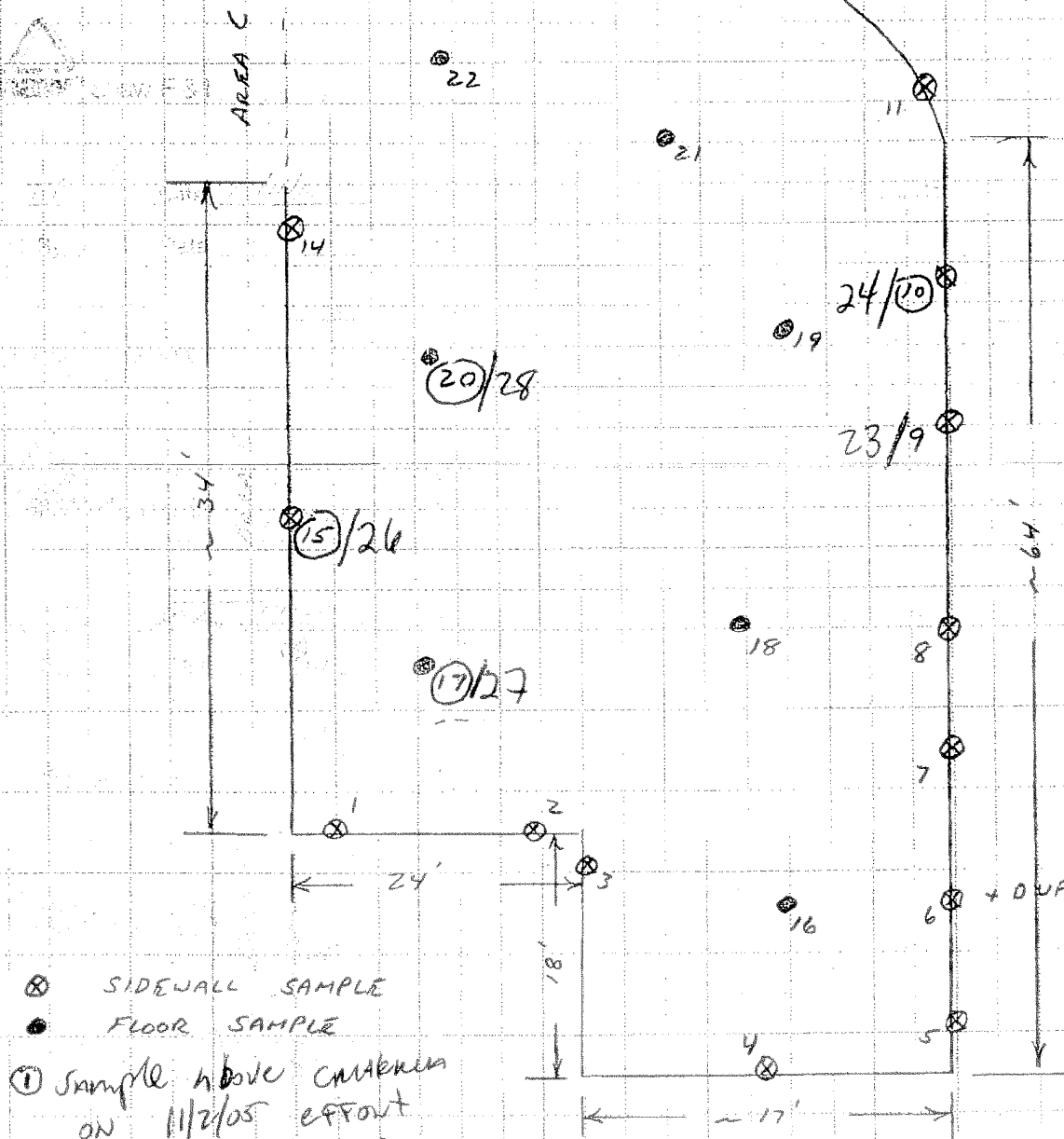
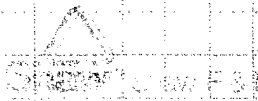


Figure 3



Shaw E &amp; I

Resampled following ADDITIONAL Removal  
11/21/2005 VOCs ONLY

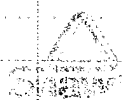
By TPM Date 11/11/05 Subject ACC-2 Sheet No. \_\_\_\_\_ of \_\_\_\_\_

Chkd. By \_\_\_\_\_ Date \_\_\_\_\_ AREA D SAMPLE LOCATIONS Proj. No. \_\_\_\_\_

25 in. X 25 in.

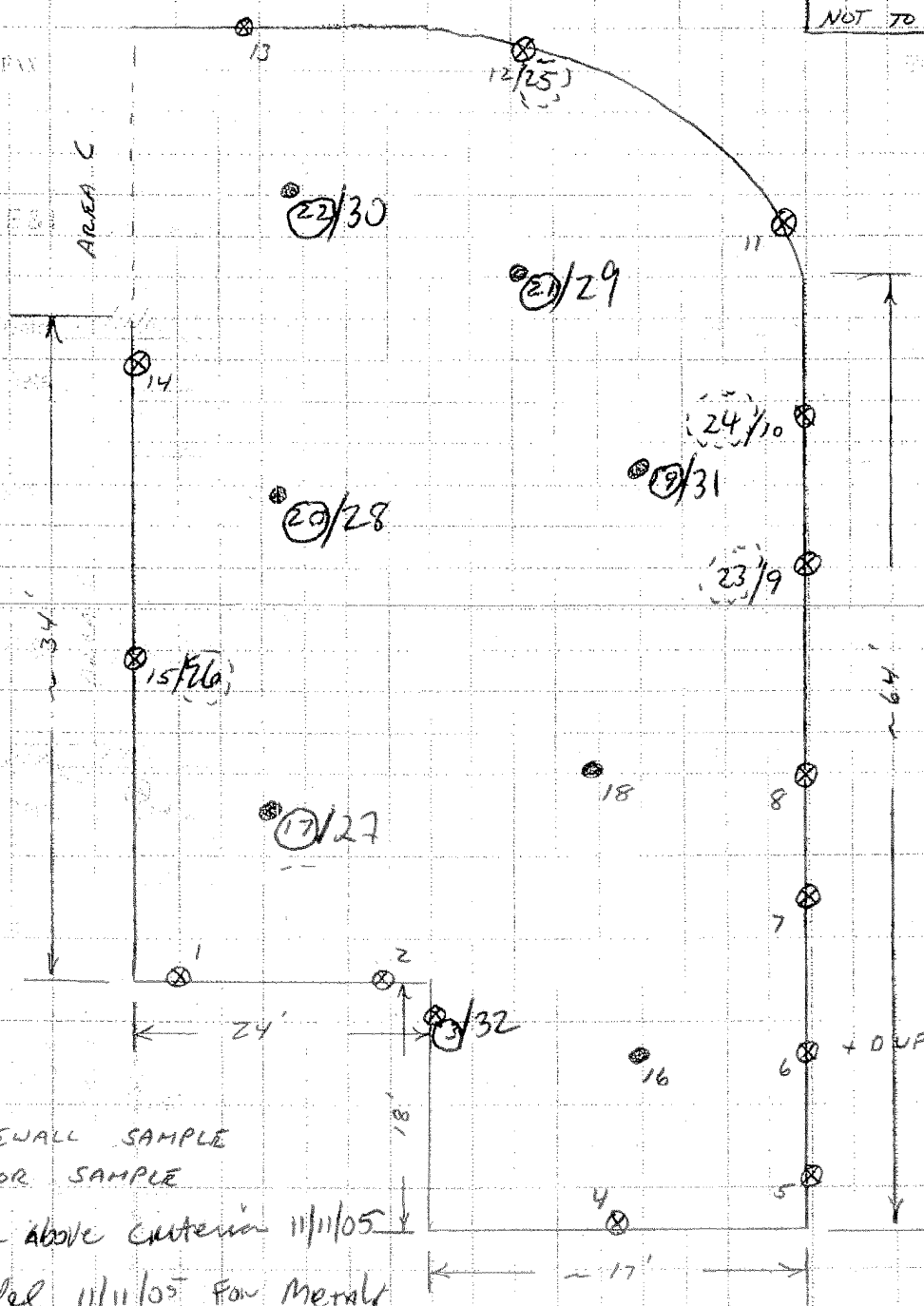
NOT TO SCALE

11/11/2005 15:18 FAX



Shaw E &amp; I

AREA C



Area D Confirmation  
VOC Results

Compound	NYDEC RSCO											
	(mg/kg)	EX-D-1 11/2/2005	EX-D-2 11/2/2005	EX-D-3 11/2/2005	EX-D-4 11/2/2005	EX-D-5 11/2/2005	EX-D-6 11/2/2005	EX-D-7 11/2/2005	EX-D-8 11/2/2005	EX-D-9 11/2/2005	EX-D-10 11/2/2005	EX-D-11 11/2/2005
1,1,1-Trichloroethane		0.8 <0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
1,1,2,2-Tetrachloroethane		0.6 <0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
1,1,2-Trichloroethane	NS	0.055 <0.0058	<0.0059	0.29 <0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
1,1-Dichloroethane		<0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
1,1-Dichloroethene		<0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
1,2-Dichlorobenzene		7.9 <0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
1,2-Dichloroethane		<0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
1,3-Dichlorobenzene		1.6 <0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
1,2-Dichloropropane		<0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
1,4-Dichlorobenzene		8.5 <0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
trans-1,2 Dichloroethene		0.3 <0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
2-Butanone (MEK)		0.3 <0.012	<0.012	<0.012	<0.011	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
4-Methyl-2-Pentanone (MIBK)		1 <0.012	<0.012	<0.012	<0.011	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Acetone		0.2 <0.012	<0.012	0.02 <0.012	<0.011	<0.012	<0.012	<0.012	<0.012	<0.012	0.15 <0.012	<0.012
Benzene		0.06 <0.0058	<0.0059	0.022 <0.012	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
Bromomethane	NS	<0.012	<0.012	<0.012	<0.011	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Carbon Disulfide		2.7 <0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
Carbon Tetrachloride		0.6 <0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
Chlorobenzene		1.7 <0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
Chloroethane		1.9 <0.012	<0.012	<0.012	<0.011	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Chloroform		0.3 <0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
Chloromethane	NS	<0.012	<0.012	<0.012	<0.011	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Dibromochloromethane	NS	<0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
Ethylbenzene		5.5 0.02 <0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
Freon 113		6 <0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
Methylene Chloride		0.1 <0.012	0.0031-J	0.0045-J	<0.011	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Styrene	NS	0.0015-J	<0.0059	0.057 <0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
Tetrachloroethene		1.4 <0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
Toluene		1.5 <0.0058	<0.0059	0.22 <0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
Trichloroethene		0.7 <0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059
Vinyl Chloride		0.2 <0.012	<0.012	<0.012	<0.011	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Xylenes		1.2 0.055 <0.0058	<0.0059	<0.0058	<0.0056	<0.0059	<0.006	<0.0061	<0.0061	<0.0059	<0.0061	<0.0059

Values in **bold** exceed RSCO



Values in bold exceed RSCO

Compound	NYDEC		RSC0		EX-D-22		EX-D-27		EX-D-28		EX-D-29		EX-D-30		EX-D-31		EX-D-32		EX-D	
	(mg/kg)	11/2/2005	EX-D-22	Duplicate 2	11/2/2005	11/2/2005	11/2/2005	11/2/2005	11/2/2005	11/2/2005	11/2/2005	11/2/2005	11/2/2005	11/2/2005	11/2/2005	11/2/2005	11/2/2005	11/2/2005	Duplicate 4	11/2/2005
1,1,1,-Trichloroethane	0.8	<0.056		<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2,2-Tetrachloroethane	0.6	<0.056		<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2-Trichloroethane	NS		1.1	<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	0.2	<0.056		<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichlorobenzene	7.9	<0.056		<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,2-Dichloroethane		<0.056		<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,3-Dichlorobenzene	1.6	<0.056		<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,2-Dichloropropane		<0.056		<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,4-Dichlorobenzene	8.5	<0.056		<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
<i>trans</i> -1,2 Dichloroethene	0.3	<0.056		<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Butanone (MEK)	0.3	<0.110		<0.120		<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
4-Methyl-2-Pentanone (MIBK)	1	<0.110		<0.120		<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Acetone	0.2		0.18		0.41	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzene	0.06		<b>0.065</b>		<b>0.094</b>	<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bromomethane		<0.110		<0.120		<0.025	<0.005	<0.005	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Carbon Disulfide	2.7	<0.056		<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Carbon Tetrachloride	0.6	<0.056		<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlorobenzene	1.7	<0.056		<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroethane	1.9	<0.110		<0.120		<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Chloroform	0.3	<0.056		<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloromethane		<0.110		<0.120		<0.050	<0.010	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Dibromochloromethane	NS	<0.056		<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Ethylbenzene	5.5		<b>6.7</b>		0.46	0.13	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Freon 113	6	<0.056		<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methylene Chloride	0.1	0.023-J		0.025-J		0.033	<0.005	<0.005	<0.005	<0.005	<0.006	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	0.006
Styrene	NS		0.45		0.46	<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tetrachloroethene	1.4	<0.056		<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	1.5		0.49		0.14	0.03	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Trichloroethene	0.7	<0.056		<0.062		<0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Vinyl Chloride	0.2	0.022-J		<0.120		<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Xylenes	1.2		<b>170</b>		<b>620</b>	<b>1.03</b>	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.012	<0.005	<0.005	<0.005	<0.005	<0.005

# Memorandum

---

Date: 10/06/2006

To: Jeff Hubbard, USACE  
Greg Goepfert, USACE

CC: Mike Mulready, Shaw  
Drew Graham, Shaw  
Tom Mathison, Shaw

From: Guy Gallelo  
Shaw Environmental

RE: Schenectady Army Depot (Project # 115215)  
AOC 2 Analytical Results and status- Area F

---

Jeff/Greg,

The purpose of this memo is to summarize the activities and final analytical results at Area F at Area F within AOC-2 at the former Schenectady Army Depot.

At the end of the 2005 site activities, reference the status memo dated November 16, 2005, Area F was partially backfilled and a liner was placed along the southwest wall where additional drums were known to exist. Excavation and removal of these drums and contaminated soils resumed in August 2006 and during this activity approximately 80 additional drums and drum carcasses were removed along with approximately 800 tons of soils, all of which have been properly disposed of in a regulated landfill. Upon removal of the visually contaminated soils and debris, confirmation samples were collected to confirm that all the contaminated soil had been removed. Since this work was an extension of the 2005 activities, these samples were analyzed for metals and VOCs only (the compounds present in the Area F soils during the 2005 actions). The first sampling effort indicated that soils contaminated with metals remained within the excavated area. Additional soils were subsequently removed throughout the footprint and along the sidewalls of the newly excavated area. These results met all applicable criteria and the Area F excavation was backfilled.

## **Area F-additional waste and soil removal**

The additional Area F excavation was completed over several days with samples collected on September 7<sup>th</sup> to 9<sup>th</sup> from locations along the excavation floor and sidewalls following waste and impacted soil removal. Confirmation samples were collected for comparison to NYDEC RSCO and TAGM 4046 and sent to GPL Laboratories for analysis.

- 5 samples (EX-F-23, EX-F-24, EX-F-25, EX-F-30, and EX-F-31) were collected from the floor of the excavation
- 5 samples (EX-F-26, EX-F-27, EX-F-28, EX-F-29, EX-F-32) were collected from the sidewall area of the excavation
- The samples were analyzed for metals, and VOCs.
- None of the samples failed for VOCs

- 4 of the samples (EX-F-24, EX-F-25, EX-F-26, EX-F-27) failed for antimony
- 3 of the samples (EX-F-24, EX-F-25, EX-F-30) failed for barium and cobalt with barium concentrations above 500mg/kg
- 5 of the samples (EX-F-24, EX-F-25, EX-F-30, EX-F-31, EX-F-32) failed for zinc
- All other results were within the NYDEC requirements, with the exception of copper and iron, which were above the site background but within the Eastern US Background values, contained in TAGM 4046.

Based upon this data, additional soil removal was performed throughout the additional Area F footprint and along the sidewalls. Following this over-excavation action samples were collected, on September 13<sup>th</sup>, from each of the previously failed locations and analyzed for metals only.

- Four samples (EX-F-24A, EX-F-25A, EX-F-30A, EX-F-31A) were collected from the excavation floor
- Two samples (EX-F-27A and EX-F-32A) were collected from the excavation sidewalls. The entire sidewall represented by EX-F-26 was removed during the over-excavation operation and therefore not re-sampled.

Results for these confirmation samples indicated no metals exceeding the TAGM 4046 RSCO values. As a result, the decision was made to proceed with backfilling of the Area F excavation. Those actions are now complete and Shaw believes that sufficient data exists for the pursuing of a No Further Action declaration from NYDEC.

Please contact me if you would like to discuss this memo further.

NYDEC RSC0												
Compound	(mg/kg)	EX-F-23	EX-F-24	EX-F-25	EX-F-26	EX-F-27	EX-F-28	EX-F-29	EX-F-30	EX-F-31	EX-F-32	
1,1,1-Trichloroethane	0.8	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
1,1,2,2-Tetrachloroethane	0.6	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
1,1,2-Trichloroethane	NS	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
1,1-Dichloroethane	0.2	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
1,2-Dichlorobenzene	7.9	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
1,3-Dichlorobenzene	1.6	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
1,4-Dichlorobenzene	8.5	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
trans - 1,2 Dichloroethene	0.3	0.12	<0.013	<0.011	<0.012	<0.011	<0.012	<0.013	<0.011	<0.011	<0.012	
2-Butanone (MEK)	1	<0.011	<0.013	<0.011	<0.012	<0.011	<0.012	<0.013	<0.011	<0.011	<0.012	
4-Methyl-2-Pentanone (MIBK)												
Acetone	0.2	<0.011	0.016	0.015	<0.012	<0.011	<0.012	<0.013	<0.011	<0.011	<0.012	
Benzene	0.06	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
Bromomethane	NS	<0.011	<0.013	<0.011	<0.012	<0.011	<0.012	<0.013	<0.011	<0.011	<0.012	
Carbon Disulfide	2.7	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
Carbon Tetrachloride	0.6	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
Chlorobenzene	1.7	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
Chloroethane	1.9	<0.011	<0.013	<0.011	<0.012	<0.011	<0.012	<0.013	<0.011	<0.011	<0.012	
Chloroform	0.3	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
Chloromethane	NS	<0.011	<0.013	<0.011	<0.012	<0.011	<0.012	<0.013	<0.011	<0.011	<0.012	
Dibromochloromethane	NS	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
Ethylbenzene	5.5	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
Freon 113	6	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
Methylene Chloride	0.1	0.01	0.008	0.01	0.007	0.006	0.006	0.008	<0.006	<0.006	0.011	
Styrene	NS	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
Tetrachloroethene	1.4	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
Toluene	1.5	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
Trichloroethene	0.7	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
Vinyl Chloride	0.2	<0.011	<0.013	<0.011	<0.012	<0.011	<0.012	<0.013	<0.011	<0.011	<0.012	
Xylenes	1.2	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	

## 838360 AOC-2

Metal	NYDEC (mg/kg)	East US BG	Site BG (mg/kg)	EX-F-31A	EX-F-32	EX-F-32A
				9/13/2006	9/9/2006	9/13/2006
Aluminum	SB	33000	7080-12800	11200	14900	12700
Antimony	SB	NA	0.2-0.59	<13.2/0.2	<14.9/0.2	<14.3/0.2
Arsenic	7.5	3-12	4.3-16.4	0.52-J	<1.24	0.12-J
Barium	300	15-600	33-104	113	511	62.3
Beryllium	0.16	0-1.75	0.38-0.67	0.60 J	0.67 J	0.99 J
Cadmium	1	0-1.75	0.21-0.52	<1.10	<1.24	<1.19
Calcium	SB	130-35000	1280-46600	23500	4300	3320
Chromium	10	1.5-40	9.3-17.5	19.9	20.9	21
Cobalt	30	2.5-60	5.3-12.2	24.0	58.8	14.9
Copper	25	1-50	13.4-26.9	32.4	19.3	42.4
Iron	2000	2000-550000	14100-25700	28400	18600	24900
Lead	SB	NA	16.5-60.8	<1.10	<1.24	<1.19
Magnesium	SB	100-5000	2150-13100	9190	4720	5380
Manganese	SB	50-5000	197-875	520	228	117
Mercury	0.1	0.001-0.2	0.039-0.095	<0.110	<0.124	<0.119
Nickel	13	0.5-25	10.6-24.8	0.23 J	<12.4	<11.9
Potassium	SB	8500-43000	443-1660	1280	1380	702
Selenium	2	0.1-3.9	0.44-1.2	<1.10	<1.24	<1.19
Silver	SB	NA	0.16-0.17	<4.39	<4.97	<4.75
Thallium	SB	NA	ND-0.67	<2.20	<2.48	<2.38
Vanadium	150	1-300	13.7-24	12.9	18.5	14.9
Zinc	20	9-50	46-134	63.8	<b>159</b>	64

Values in *italics* exceed one or more criteria

Values in **bold** face exceed all criteria

A designations indicate post re-excavation samples

# Memorandum

---

**Date:** September 7, 2006

**To:** Tom Mathison

**CC:**

**From:** Guy Gallelo, Jr

**RE:** Justification for limited analyses parameters-additional confirmation samples;  
Area F Schenectady AD AOC-2

---

The Area F waste materials were characterized during the 2005 activities and found not to contain any SVOCs, pesticides/PCBs, or herbicides. Also during these actions the first round of confirmation samples failed for VOCs and metals only; compared to the NYDEC TAGM 4046 criteria. With this in mind, all additional over-excavation confirmation samples were analyzed for VOCs and metals only and eventually for metals only as the boundaries expanded. When the excavation action was paused in 2005, drums containing the same previously characterized waste material remained in place and no other waste material appeared to be present within Area F.

The 2006 excavation activities are planned within the same area and based upon the previous work, the same waste materials are expected to be found. Therefore, based upon the 2005 data and the fact that no different materials have been encountered, it is justifiable to only perform confirmation sampling for VOCs and metals within the additional planned Area F zone. This will provide confirmation data focused on the known problem parameters and will provide extra cost-efficiency by not spending analytical dollars on unnecessary analyses. Of course, in the event that any drums and/or waste areas are encountered within Area F that does not match the previous material description; a full confirmation analysis effort would be required within the impacted area.

Please feel free to contact me if you have any questions or wish to discuss this further.

Guy Gallelo, Jr.  
AS&E Findlay  
Shaw Environmental, Inc.  
419-425-6080



Shaw Environmental & Infrastructure, Inc.

16406 US Route 224 East  
Findlay, OH 45840  
419-425-6080  
Fax: 419-425-6085

# Memorandum

---

Date: 10/19/2006

To: Jeff Hubbard, USACE  
Greg Goepfert, USACE

CC: Mike Mulready, Shaw  
Drew Graham, Shaw  
Tom Mathison, Shaw

From: Guy Gallelo  
Shaw Environmental

RE: Schenectady Army Depot (Project # 115215)  
AOC 2 Analytical Results and status- AOI-5

---

Jeff/Greg,

The purpose of this memo is to summarize the activities and final analytical results at AOI-5 within AOC-2 at the former Schenectady Army Depot. This memo also makes recommendation that AOI-5 be backfilled at this time.

In late 2005 the area known as AOI-5 was located and a test pit was dug in which containers and contaminated soils were found. At this time a sample of waste (TPAOI5-1) was analyzed for the TAGM list to determine the potential contaminants present within the waste material. Shaw did not remove this waste at time due to a temporary project shut-down.

In September 2006, Shaw returned to the site and the extent of visibly contaminated waste/soils was removed. A disposal profile sample (DS-AOI5-001) was collected at this time and used to develop a waste disposal profile and solicit facilities and to ascertain the parameters which required confirmation analysis. On September 11, 2006 confirmation samples were collected from the floor and sidewalls of the excavation and submitted to a State of New York certified laboratory for analysis. The results indicated that the soils were above RSCO for VOCs and metals in some locations and that pesticide compounds were present in low concentrations in others. An additional quantity (6-12-inches) of soils was removed and the entire excavation was re-sampled on October 6, 2006. Since this work was an extension of the previous activities, these samples were analyzed only for those parameters which had failed during the September sampling at each original location. These included metals on all samples, VOCs on two locations, and pesticides on one sample. VOC and pesticide results were below RSCO, while some metals, mainly nickel, were still above TAGM limits. However, as this memo will justify, the nickel concentrations appear to be background as was determined during the 2005 actions in the adjoining areas of the site (Areas B, C&D).



### Area of Interest-5 (AOI-5) Removal Activities

Approximately 400cy of waste/soil materials were removed from AOI-5, resulting in an approximately 70' x 25' excavation. On September 11, 2006 a total of nine confirmation samples and one duplicate were collected from locations along the excavation floor and sidewalls. The attached field sketch indicates the locations. The samples were submitted for analysis of metals, VOCs, SVOCs, and pesticides only at GPL Laboratories, based upon the compounds found to be present in an actual waste sample (DS-AOI5-001).

- 3 samples (EX-AOI5-006, EX-AOI5-007, and EX-AOI5-008) were collected from the floor of the excavation
- 6 samples (EX-AOI5-001, EX-AOI5-002, EX-AOI5-003, EX-AOI5-004, EX-AOI5-005, EX-AOI5-010) were collected from the sidewall areas of the excavation
- One of the samples (EX-AOI5-004) failed for VOCs-chloroform. Another sample (EX-AOI5-003) also contained this compound, but at a level below the TAGM 4046 RSCO
- One of the samples (EX-AOI5-003) also contained pesticides, at concentrations below the RSCOs
- All of the samples failed for nickel with concentrations ranging from 30.6 to 41.8 mg/kg
- All other results were within the NYDEC requirements, with the exception of aluminum and iron, which were above the site background but within the Eastern US Background values, contained in TAGM 4046.

Based upon this data, additional soil removal was performed throughout the AOI5 footprint and along the sidewalls. Following this over-excavation action samples were collected, on October 6<sup>th</sup> from each of the previously sampled locations and analyzed for metals and the location-specific previously failed parameters only.

- All samples were analyzed for metals
- Two samples (EX-AOI5-003A and EX-AOI5-004A) were analyzed for VOCs in addition
- One sample (EX-AOI5-003A) was also analyzed for pesticides

Results for these confirmation samples indicated no TAGM failures for VOCs and pesticides. However, all samples once again failed for nickel with concentrations ranging from 31.7 to 42.1 mg/kg. Although the data indicated a strong possibility of the nickel concentrations being in fact due to background, (see the AOI5 status memo dated 10/13/2006), it was decided to remove additional material and re-sample at the previous locations for nickel, iron, and aluminum only. This would allow further comparison of the nickel concentrations to natural minerals to further support the background argument if nickel levels were still above the TAGM limits. The additional removal was completed and the samples were collected on October 18, 2006 and submitted to AEL for analysis.

- One sample (EX-AOI5-004B) was just above the NYDEC criteria of 13mg/kg for nickel. However, this concentration was within both the site and Northeast US background levels
- All other samples contained nickel at concentrations below TAGM limits
- Iron and Aluminum concentrations were statistically unchanged from the previous values

Based upon the above Shaw recommends that the AOI5 excavation be backfilled with NYDEC concurrence and that a No Further Action declaration from NYDEC be pursued.

Please contact me if you would like to discuss this memo further.