

NEW YORK STATE SUPERFUND CONTRACT

Interim Remedial Investigation Data Report

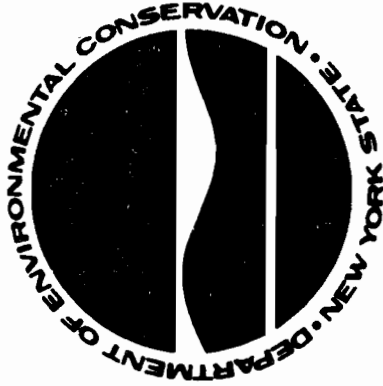
Volume I • Report

United Plating Site
Remedial Investigation/Feasibility Study

Site No. 447018

Work Assignment No. D002676-10

DATE: September 1995



Prepared for:

**New York State
Department of
Environmental Conservation**

50 Wolf Road, Albany, New York 12233
Michael Zagata, *Commissioner*

Division of Hazardous Waste Remediation
Michael J. O'Toole, Jr., P.E., *Director*

By:
Lawler, Matusky & Skelly Engineers

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VOLUME I - REPORT

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CHAPTER 1

INTRODUCTION AND BACKGROUND

1.1 SITE LOCATION AND DESCRIPTION

The United Plating (UP) site is located at 1776 Foster Avenue in the City of Schenectady, New York (Figure 1-1). The site is approximately 1.7 acres, half of which is covered by the building footprint. UP operated as a metal plating facility from 1945 until 1990. The site is bounded by Seneca Street to the north, Foster Avenue to the west, a vacant field to the east, and residential housing to the south. A children's playground lies to the southeast of the site. The west side of the property consists of a parking area in front of Building 1 and an overgrown area in front of Building 2. The east side of the property consists of a graveled road, concrete pads, and an area of mostly grass and weeds. A chain link fence fitted with three-strain barbed wire runs from the northeast corner of Building 1 along the entire eastern property line and ends at the southeast corner of Building 2. Access to the facility is through a locked gate off of Seneca Street. The Mohawk River lies approximately 0.25 mile to the northwest of the site. The natural topography drains to the northwest toward the Mohawk River.

The site is occupied by two buildings, the first containing the remnants of the plating operations and offices and the second containing the treatment facility. The building footprint occupies approximately 26,195 ft². Building 1 is a five-story brick building, which at the time of the site reconnaissance contained metallic and other debris. Building 2 is a two-story metal structure; the roof on the south end has collapsed. At the time of the site reconnaissance Building 2 contained some vats or tanks used for treatment. Also during the site reconnaissance, the area to the east of the building was covered with metal and other debris.

1.2 SITE BACKGROUND

1.2.1 Site History

UP operated as a metal plating corporation from 1945 until 1990. The facility had a pretreatment system through which the generated wastes were processed prior to discharge to the City of Schenectady Anthony Street Treatment Plant. According to the records, the pretreatment system consisted of cyanide, chromium, and acid/alkaline waste treatment systems (UP 1986).



QUADRANGLE LOCATION

0 2000 ft

SCALE
1 in. = 2000 ft

Figure 1-1

Site Location

UNITED PLATING CORPORATION
NYSDEC I.D. No. 447018

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

Map source: USGS 7.5 minute quadrangle map, Schenectady, NY, 1954.

10911USGS-LOC.d54

In the cyanide system the waste was collected in a 500-gal sump tank from which it was then pumped to the No. 1 treatment tank. The tank was continuously mixed and the pH maintained at 11 with the use of sodium hydroxide. Sodium hypochlorite was added to oxidize the cyanide. The waste was then discharged to tank No. 2, where the pH was lowered to 8 with sulfuric acid. The overflow was discharged into tank No. 5, where a polynucleolyte flocculent was added. The waste was discharged to a clarifier for settling and then the wastewater was discharged to the sewer (UP 1986).

The chromium treatment system consisted of a 500-gal sump tank from which waste was pumped to tank No. 3, where the pH was maintained at 2 with sulfuric acid. Sodium metabisulfite was added to convert the hexavalent chromium to trivalent chromium. The waste was discharged to tank No. 4, where the pH was raised to 8 with sodium hydroxide. The mixture was discharged to tank No. 5, where flocculent was added and then allowed to settle in the clarifier. From the clarifier the wastewater was discharged to the sewer (UP 1986).

The waste to the acid/alkaline destruct system did not contain either cyanide or chromium and was collected in a 500-gal sump tank. The waste was fed into the No. 5, tank where the pH was maintained at 8 and flocculent was added and then allowed to settle in the clarifier. From the clarifier the wastewater discharged to the sewer (UP 1986).

The City of Schenectady issued a permit to UP to discharge their pretreated waste to the sewer system. From 1984 to 1989 either UP or the City of Schenectady analyzed samples of the discharge to the sewer; the results are summarized on Table 1-1 (City of Schenectady 1984-1989).

Three hazardous waste manifests were found and reviewed. On 3 January 1989, 13,590 lb of F006 (wastewater treatment sludges from electroplating operations) in 11 burlap, plastic, or paper bags were picked up and delivered to WRC Processing Company in Pottsville, Pennsylvania. On 28 March 1989, 1076 lb of F006 waste in one burlap, plastic or paper bags were delivered to the same facility. On 20 June 1989, 7252 lb of F006 waste in six burlap, plastic, or paper bags were also delivered to the same facility (UP 1989a).

On 26 October 1988 the City of Schenectady informed UP that any subsequent violations of the limits would be fined at the rate of \$1000 per violation; a hearing was set for 16 November 1988 (City of Schenectady 1988).

WASTEWATER DISCHARGES

United Plating Site

PARAMETER	UNITS	6/13/84	7/11/84	8/30/85	12/31/85	3/15/86	4/11/86	6/5/86	DISCHARGE
SAMPLER		CITY	CITY	UP	UP	CITY	UP	UP	LIMITS
Cadmium	mg/l	0.82	1.5	0.03	0.48	0.91	0.03	0.01	0.40
Chromium	mg/l	4.2	2.63	20.5	2.19	7.00	0.15	0.03	4.0
Copper	mg/l	4.4	0.40	0.96	0.41	0.74	0.22	0.16	0.5
Iron	mg/l	5.9	29.0	2.14	3.82	1.76	3.2	0.97	NL
Lead	mg/l	0.16	0.50	0.54	0.79	< 0.01	0.05	< 0.03	0.20
Mercury	mg/l	< 0.0005	< 0.0005	< 0.0001	< 0.0001	0.0004	< 0.0002	< 0.0001	0.05
Nickel	mg/l	1.5	0.75	0.17	0.12	2.00	25.0	1.3	4.0
Silver	mg/l	NR	NR	0.10	0.04	< 0.01	0.02	< 0.01	0.20
Zinc	mg/l	4.8	8.0	1.46	3.35	1.08	0.80	0.32	2.0
Hexavalent chromium	mg/l	NR	NR	NR	NR	NR	NR	NR	0.2
TOC	mg/l	12	17	NR	NR	NR	NR	NR	NL
pH	units	NR	2.5	7.6	7.6	7.31	NR	NR	NL
Total Cyanide	mg/l	NR	0.44	1.8	0.52	3.8	0.096	0.008	1.6
Chloroform	ug/l	NR	NR	NR	4.7	NR	NR	NR	NL
1,1,1 Trichloroethane	ug/l	NR	NR	NR	3.4	NR	NR	NR	NL
Trichloroethylene	ug/l	NR	NR	NR	4.8	NR	NR	NR	NL
Bromodichloromethane	ug/l	NR	NR	NR	2.8	NR	NR	NR	NL
Phenol	ug/l	NR	0.4	NR	NR	NR	NR	NR	NL

NL - No limit.
NR - Not run.

Numbers in bold exceed limits.

WASTEWATER DISCHARGES

United Plating Site

PARAMETER	SAMPLER	UNITS	10/2/86 EFFLUENT	10/15/86 EFFLUENT	10/29/86 EFFLUENT	11/20/86 EFFLUENT	12/29/86 EFFLUENT	2/3/87 EFFLUENT	3/26/87 EFFLUENT	DISCHARGE LIMITS
Cadmium	mg/l	0.01	0.04	0.027	0.33	0.13	4.8	< 0.01		0.40
Chromium	mg/l	0.64	0.11	3.5	7.8	1.6	0.21	0.11		4.0
Copper	mg/l	0.12	0.45	0.40	1.6	0.24	0.33	0.29		0.5
Iron	mg/l	0.30	2.6	2.9	18.0	0.63	16.0	0.11		NL
Lead	mg/l	0.05	0.18	0.028	NR	0.07	< 0.03	0.04		0.20
Mercury	mg/l	< 0.0002	< 0.0002	< 0.0004	< 0.0002	< 0.0002	< 0.0002	< 0.0002		0.05
Nickel	mg/l	0.24	1.7	0.63	3.4	0.14	0.61	< 0.03		4.0
Silver	mg/l	< 0.01	< 0.01	0.086	0.08	< 0.01	< 0.01	< 0.01		0.20
Zinc	mg/l	NR	0.40	0.95	2.6	0.48	4.5	0.06		2.0
Hexavalent chromium	mg/l	0.18	NR	2.46	NR	1.0	< 0.02	0.11		0.2
TOC	mg/l	NR	NR	NR	NR	NR	NR	NR		NL
pH	units	0.019	0.024	7.50	NR	7.5	7.2	6.6		NL
Total Cyanide	mg/l	NR	NR	0.05	0.2	0.145	2.40	< 0.005		1.6
Chloroform	ug/l	NR	NR	2.9	NR	NR	NR	NR		NL
1,1,1Trichloroethane	ug/l	NR	NR	< 1	NR	NR	NR	NR		NL
Trichloroethylene	ug/l	NR	NR	3.5	NR	NR	NR	NR		NL
Trichloroethylene	ug/l	NR	NR	< 1	NR	NR	NR	NR		NL
Bromodichloromethane	ug/l	NR	NR	NR	NR	NR	NR	NR		NL

NL - No limit.
NR - Not run.

Numbers in bold exceed limits.

WASTEWATER DISCHARGES

United Plating Site

PARAMETER	SAMPLER	UNITS	6/7/87	6/8/87	7/20/87	7/30/87	8/16/87	10/2/87	3/14/88	DISCHARGE
Cadmium	mg/l	1.9	< 0.01	0.05	0.07	0.78	0.21	0.62	0.069	0.40
Chromium	mg/l	0.12	0.61	0.04	0.28	2.99	22.0	3.32	0.5	0.5
Copper	mg/l	0.09	0.22	0.09	23.0	1.21	NR	1.0	NL	NL
Iron	mg/l	0.06	< 0.03	< 0.03	< 0.03	0.12	0.60	0.16	0.20	0.20
Lead	mg/l	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0004	< 0.0002	0.05	0.05
Mercury	mg/l	0.09	0.08	< 0.03	0.05	0.61	0.43	0.07	4.0	4.0
Nickel	mg/l	< 0.01	0.10	0.28	0.62	1.95	3.20	6.47	2.0	2.0
Silver	mg/l	< 0.02	NR	NR	NR	NR	NR	NR	1.6	1.6
Hexavalent chromium	mg/l	7.7	7.9	7.8	6.3	3.1	7.83	7.4	NL	NL
Total Cyanide	mg/l	4.0	0.005	5.83	0.107	2.8	2.6	0.2	0.2	0.2

NL - No limit.
NR - Not run.

Numbers in bold exceed limits.

TABLE 1-1 (Page 4 of 9)

WASTEWATER DISCHARGES

United Plating Site

PARAMETER	SAMPLER	EFFLUENT EFFLUENT EFFLUENT EFFLUENT EFFLUENT EFFLUENT										LIMITS
		3/17/88	6/5/88	5/10/88	6/16/88	6/17/88	7/7/88	8/30/88	DISCHARGE			
Cadmium	mg/l	0.28	0.388	0.405	1.71	0.78	0.54	5.99	0.40			
Chromium	mg/l	40.0	1.24	0.58	0.68	0.6	3.06	1.07	4.0			
Copper	mg/l	8.1	0.95	3.78	1.53	1.8	0.96	3.16	0.5			
Iron	mg/l	NR	0.25	0.04	0.15	0.10	0.52	3.66	NL			
Lead	mg/l	0.87	< 0.03	< 0.03	< 0.03	0.04	< 0.03	< 0.03	0.20			
Mercury	mg/l	0.0027	< 0.0002	< 0.0002	< 0.0002	< 0.0004	< 0.0006	NR	0.05			
Nickel	mg/l	0.86	0.05	0.55	0.26	4.4	0.03	0.43	4.0			
Silver	mg/l	0.07	< 0.01	< 0.01	< 0.01	< 0.03	< 0.01	< 0.01	0.20			
Zinc	mg/l	0.54	18.3	2.4	18.8	2.4	18.0	176.0	2.0			
Hexavalent chromium	mg/l	28.0	0.49	< 0.02	< 0.02	NR	0.09	0.01	0.2			
pH	units	8.62	7.2	7.5	7.7	8.26	7.1	7.0	NL			
Total Cyanide	mg/l	< 0.01	0.2	< 0.005	< 0.005	< 0.01	< 0.005	< 0.005	1.6			

NL - No limit.
NR - Not run.

Numbers in bold exceed limits.

WASTEWATER DISCHARGES

United Plating Site

PARAMETER	SAMPLER	UNITS	8/30/88 UP	10/6/88 CITY	10/25/88 UP	11/12/88 UP	12/31/88 UP	1/14/89 UP	DISCHARGE LIMITS
Cadmium		mg/l	0.309	8.6	0.009	0.07	0.027	1.14	0.40
Chromium		mg/l	6.16	0.88	0.13	3.61	6.97	1.47	4.0
Copper		mg/l	2.61	2.9	10.02	8.3	0.9	1.79	0.5
Iron		mg/l	1.29	NR	0.23	8.6	2.04	0.14	NL
Lead		mg/l	< 0.03	< 0.01	< 0.03	0.07	0.1	0.05	0.20
Mercury		mg/l	NR	< 0.0004	NR	NR	NR	NR	0.05
Nickel		mg/l	0.03	0.56	< 0.03	< 0.03	< 0.03	0.1	4.0
Silver		mg/l	< 0.01	0.008	< 0.01	0.04	< 0.01	0.02	0.20
Zinc		mg/l	15.7	1.0	0.05	4.74	6.44	93.3	2.0
Hexavalent chromium		mg/l	< 0.02	< 0.01	< 0.2	0.57	< 0.02	< 0.02	0.2
pH		units	7.6	NR	8.6	9.3	7.6	5.7	NL
Total Cyanide		mg/l	< 0.005	0.03	18.0	< 0.005	0.25	< 0.005	1.6
Chloroform		ug/l	NR	NR	NR	NR	14	NR	NL

NL - No limit.
NR - Not run.

Numbers in bold exceed limits.

TABLE 1-1 (Page 6 of 9)

WASTEWATER DISCHARGES

United Plating Site

PARAMETER	SAMPLER	UNITS	2/5/89	2/9/89	2/26/89	3/9/89	3/16/89	3/24/89	DISCHARGE LIMITS
	EFFLUENT	EFFLUENT	EFFLUENT	EFFLUENT	EFFLUENT	EFFLUENT	EFFLUENT	EFFLUENT	
Cadmium	mg/l	0.2	0.097	0.022	0.061	< 0.03	0.02	0.039	0.40
Chromium	mg/l	5.28	2.43	0.6	0.46	0.49	2.77	0.12	4.0
Copper	mg/l	1.19	3.52	0.81	1.67	0.52	0.94	0.54	0.5
Iron	mg/l	2.43	1.18	0.16	0.37	0.05	0.37	0.27	NL
Lead	mg/l	< 0.03	< 0.03	< 0.03	0.06	< 0.03	0.07	0.08	0.20
Mercury	mg/l	NR	NR	NR	NR	NR	NR	NR	0.05
Nickel	mg/l	0.03	< 0.03	< 0.03	0.05	< 0.03	0.05	1.56	4.0
Silver	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.20
Zinc	mg/l	NR	NR	NR	NR	0.5	1.17	0.33	2.0
Hexavalent chromium	mg/l	0.32	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05	0.2
pH	units	7.5	7.6	7.4	7.6	6.3	8.5	7.8	1.6
Total Cyanide	mg/l	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	NR	< 0.005	NL

NL - No limit.
NR - Not run.

Numbers in bold exceed limits.

WASTEWATER DISCHARGES

United Plating Site.

PARAMETER	SAMPLER	UNITS	4/12/89 UP	6/2/89 UP	6/9/89 UP	6/29/89 CITY	8/2/89 CITY	8/8/89 CITY	8/17/89 CITY	DISCHARGE LIMITS
Cadmium	mg/l	0.455	0.1	0.644	0.77	0.03	< 0.005	0.23		0.40
Chromium	mg/l	0.05	0.33	0.21	14.0	8.7	60.0	11.0		4.0
Copper	mg/l	0.83	4.64	0.91	6.6	0.83	21	12.0		0.5
Iron	mg/l	< 0.04	0.27	0.5	NR	24	4.2	5.8		NL
Lead	mg/l	< 0.03	0.13	0.1	0.56	0.11	0.05	0.43		0.20
Mercury	mg/l	NR	NR	NR	NR	NR	NR	NR		0.05
Nickel	mg/l	0.12	0.08	0.09	3.2	1.9	1.5	17.0		4.0
Silver	mg/l	< 0.01	< 0.01	< 0.01	0.01	< 0.005	0.04	0.02		0.20
Zinc	mg/l	4.96	5.64	3.81	32.0	0.46	0.33	0.82		2.0
pH	units	8.2	8.2	8.1	7.0	8.42	NR	6.76		NL
Total Cyanide	mg/l	< 0.005	11.6	< 0.005	0.01	NR	12.0	120		1.6
Hexavalent chromium	mg/l	< 0.02	< 0.02	0.03	< 0.01	NR	52.0	7.4		0.2
1,1,1 Trichloroethane	ug/l	NR	NR	NR	NR	NR	NR	2.8,3.7		NL
Trichloroethylene	ug/l	NR	NR	NR	NR	NR	NR	2.0,2.5		NL
Toluene	ug/l	NR	NR	NR	NR	NR	NR	1.7,1.8		NL
Bromodichloromethane	ug/l	NR	NR	NR	NR	NR	NR	1.7,2.7		NL

NL - No limit.
NR - Not run.

Numbers in bold exceed limits.

WASTEWATER DISCHARGES

United Plating Site

PARAMETER	SAMPLER	UNITS	8/25/88 EFFLUENT	8/29/88 EFFLUENT	9/6/89 EFFLUENT	9/12/88 EFFLUENT	9/29/88 EFFLUENT	10/5/88 EFFLUENT	10/11/88 EFFLUENT	DISCHARGE LIMITS
Cadmium		mg/l	< 0.005	0.02	0.038	0.018	0.02	0.009	0.01	0.40
Chromium		mg/l	2.4	31.0	7.8	6.4	1.7	1.0	25.0	4.0
Copper		mg/l	1.3	1.2	0.60	5.3	0.12	0.04	0.21	0.5
Iron		mg/l	0.23	0.43	1.7	0.38	0.41	0.03	0.12	NL
Lead		mg/l	< 0.01	0.04	0.18	0.025	< 0.01	< 0.01	< 0.01	0.20
Mercury		mg/l	NR	NR	NR	NR	NR	NR	NR	0.05
Nickel		mg/l	0.19	0.20	0.02	0.21	0.04	0.03	0.16	4.0
Silver		mg/l	< 0.005	< 0.005	< 0.005	0.017	< 0.005	< 0.01	< 0.01	0.20
Zinc		mg/l	0.04	0.12	0.20	0.08	0.22	0.04	0.34	2.0
pH		units	8.64	NR	7.59	8.08	8.06	7.77	NR	NL
Hexavalent chromium		ug/l	2.1	32.0	7.6	5.0	1.6	1.1	27.0	0.2
Total Cyanide		mg/l	0.92	1.1	0.24	6.0	0.03	< 0.01	< 0.01	1.6

NL - No limit.
NR - Not run.

Numbers in bold exceed limits.

WASTEWATER DISCHARGES

United Plating Site

PARAMETER	SAMPLER	UNITS	EFFLUENT	EFFLUENT	EFFLUENT	EFFLUENT	EFFLUENT	INFLUENT	EFFLUENT	DISCHARGE
			10/18/89	10/18/89	10/18/89	10/19/89	10/24/89	10/25/89	10/25/89	10/20/89
			EFFLUENT	EFFLUENT	EFFLUENT	EFFLUENT	EFFLUENT	INFLUENT	EFFLUENT	DISCHARGE
Cadmium	mg/l	0.02	0.05	0.01	0.06	0.05	0.06	0.06	0.06	< 0.005
Chromium	mg/l	17.0	1.0	9.5	23.0	0.06	7.2	9.0	4.0	0.5
Copper	mg/l	0.30	0.09	0.14	0.08	0.09	0.07	X	0.5	NL
Iron	mg/l	0.38	6.3	0.40	0.18	1.5	0.16	X	0.20	0.05
Lead	mg/l	< 0.01	0.14	< 0.01	0.01	< 0.01	< 0.01	NR	< 0.0002	0.05
Mercury	mg/l	NR	NR	NR	NR	NR	NR	NR	0.09	4.0
Nickel	mg/l	0.07	0.06	0.05	0.12	0.03	0.09	X	0.20	2.0
Silver	mg/l	< 0.01	< 0.005	< 0.01	< 0.01	< 0.01	< 0.01	X	0.20	NL
Zinc	mg/l	0.27	0.65	0.12	0.12	0.11	0.08	X	1.9	0.2
pH	units	7.74	8.14	7.87	7.96	NR	8.07	NR	0.07	9.1
Total Cyanide	mg/l	0.094	0.07	0.055	NR	NR	NR	NR	0.07	9.1
Hexavalent chromium	mg/l	19.0	0.80	10.0	26.0	< 0.01	8.8	9.1	0.07	9.1

x NL - Can't read data.
- No limit.
- Not run.
Numbers in bold exceed limits.

On 2 March 1989 a search warrant was issued and samples collected from various areas on the site. Two soil, one sludge, one ash, and seven liquid samples were collected and analyzed. The data are summarized on Table 1-2 (NYSDEC 1989b).

On the basis of the inspection, on 3 March 1989 the New York State Department of Law (NYSDEL) contacted UP's attorney, Whiteman, Osterman & Hanna (WOH), and requested that UP cease all untreated hazardous waste discharges, cease all surface discharges, identify all hazardous waste stored on the site, and contract for a complete facility environmental compliance audit (NYSDEL 1989). WOH responded on 7 March 1989 and indicated that Dr. William Carter had been retained by UP for auditing (WOH 1989).

On 13 September 1989 the New York State Department of Environmental Conservation (NYSDEC) conducted an inspection of the site and collected one groundwater and one soil sample. The results are provided on Table 1-3 and 1-4, respectively (NYSDEC 1989c).

On 22 September 1989 UP signed a consent order with the City of Schenectady. The consent order issued a temporary discharge permit and required extensive monitoring of the discharge by UP (City of Schenectady 1984-1989). On 29 September 1989 UP submitted a Baseline Monitoring Report to the City of Schenectady. The report described the operations at the site, production rates, and flow rates to the treatment system (UP 1989b). On 23 October 1989 the City of Schenectady rescinded the permit because UP did not comply with the consent order. UP was ordered to cease discharge to the sewer system (City of Schenectady 1989). Subsequently, the City of Schenectady sealed off the outfall pipe from UP to the city sewer. On 15 November 1989 NYSDEC conducted an inspection of the UP site after a reported spill. Samples of the spill were taken and analyzed. The results are summarized on Table 1-5 (NYSDEC 1989d).

On 16 May 1990 the New York State Department of Health (NYSDOH) collected seven surficial soil samples from the playground southeast of the site. The samples were analyzed for Hazardous Substance List (HSL) metals and cyanide. Table 1-6 summarizes the results (NYSDOH 1990).

On 7 June 1990 a fire occurred at the site (City of Schenectady 1990a); a subsequent inspection was conducted by NYSDEC (NYSDEC 1990a). On 19 June 1990 another inspection was performed by NYSDEC and City of Schenectady officials (NYSDEC 1990b). The inspection found unlabeled tanks and containers of hazardous waste, incompatible materials stored adjacent to each other, and haphazard storage of all containers. The inspection team stated that a drum

NYSDEC SAMPLE COLLECTION (MARCH 1989)
United Plating Site

TABLE 1-2 (Page 1 of 3)

PARAMETER	150 ft East of building SOIL (mg/kg) A30-01	Adjacent to building SOIL (mg/kg) A30-02	EASTERN USA BACKGROUND SOIL CONCENTRATIONS (c)	NYSDEC SOIL CLEANUP OBJECTIVE (c)
Antimony	< 8.6	< 4.6	0.6-10(n)	SB
Arsenic	9.9	11	3-12	7.5 or SB
Beryllium	0.72	0.66	0-1.75	0.16 or SB
Cadmium	2.7	4.5	0.1-1	1 or SB
Chromium	25	20	1.5-40	10 or SB
Copper	32	23	1-50	25 or SB
Lead	63	32	4-61-200-500	SB
Mercury	0.08	0.10	0.001-0.2	0.1
Nickel	23	30	0.5-25	13 or SB
Silver	< 1.2	2.4	0.1-5.0(n)	SB
Zinc	115	660	9-50	20 or SB
Total Cyanide	23	0.63	N/A	-

NOTE: Bold numbers exceed maximum background concentrations (Eastern USA).

- Depends on pH.
- (c) - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94
- (n) - Dragun, J., The Soil Chemistry of Hazardous Materials.
- a - Rural area.
- b - Metropolitan area.
- N/ - Not available.
- SB - Site background.

NYSDEC SAMPLE COLLECTION (MARCH 1989)
United Plating Site

TABLE 1-2 (Page 2 of 3)

PARAMETER	A30-03	A30-04	A30-05	A30-06	A30-07
Bin in SLUDGE (mg/kg)	Bin in ASH (mg/kg)	Open pit adjacent to building (ug/l)	Floor drain (ug/l)	Floor drain (ug/l)	Drain in 1st floor of building (ug/l)
Antimony	< 16	297	< 60	< 60	< 60
Arsenic	38	< 1.1	15	< 10	34
Beryllium	< 1.1	< 0.34	< 5.0	< 5	< 5
Cadmium	2,060	117	46	28	182
Chromium	33,300	230	15,400	18,600	666
Hexavalent chromium	-	-	-	-	-
Copper	14,000	2,030	1,660	1,950	1,060
Lead	52	158	62	20	1,750
Mercury	< 0.39	< 0.04	< 0.20	< 0.20	< 0.20
Nickel	294	166	72	< 40	384
Silver	< 5.1	1.7	< 10	< 10	12
Zinc	29,000	828	1,080	386	2,820
Total cyanide	1,280	-	-	< 10	90
pH units	-	-	-	-	-

NYSDEC SAMPLE COLLECTION (MARCH 1989)
United Plating Site

TABLE 1-2 (Page 3 of 3)

PARAMETER	A30-08 LIQUID (mg/l) Floor drain in chrome plating room	A30-09 LIQUID (ug/l) Drum "DEC#1"	A30-10 LIQUID (ug/l) Drum "DEC#2"	A33-1 LIQUID (ug/l) tank in building
Antimony	-	< 1,640	< 3,280	-
Arsenic	-	< 444	629	-
Beryllium	-	< 124	< 248	-
Cadmium	-	< 124	< 134	-
Chromium	270,000	33,200	979	-
Hexavalent chromium	120,000	-	5,880	5,000
Copper	-	133,000	-	-
Lead	-	627	< 134	-
Mercury	-	< 5.1	< 5.0	-
Nickel	-	< 993	< 1,990	-
Silver	-	< 444	< 243	-
Zinc	-	638	170,000	-
Total cyanide	-	6,400	-	-
pH units	0.30	13	13	5.9

TABLE 1-3

NYSDEC GROUNDWATER SAMPLING (SEPTEMBER 13 1989)
United Plating Site

Area: Looking From Footing Hole Ajaent and South of East Entrance Ramp

PARAMETER	RESULTS	NYSDEC GROUNDWATER STANDARDS
Antimony	< 25.5	3 GV
Arsenic	4.5 B	25
Beryllium	< 0.30	3 GV
Cadmium	17.5	1.0
Chromium	23.1	50
Copper	140	200
Lead	495	25
Mercury	< 1.0	2
Nickel	62.8	NS
Selenium	0.90 B	10
Silver	4.0 B	50
Thallium	0.90 B	4 GV
Zinc	354	300

B - Value is less than the contract-required detection limit but greater than the instrument detection limit.

GV

NS

- Guidance value.

- No standard.

Bold numbers exceed groundwater standards.

TABLE 1-4

NYSDEC SOIL SAMPLING (SEPTEMBER 1989)
United Plating Site

Area: 75 Feet East of Building

PARAMETER	RESULTS mg/kg	EASTERN USA BACKGROUND(c)	NYSDEC CLEANUP OBJECTIVES(c)
Aluminum	124	33,000	SB
Antimony	9.0 B	0.6-10(n)	SB
Arsenic	0.89 B	3-12	7.5 or SB
Barium	5.9 B	15-600	300 or SB
Cadmium	36	0.1-1	1 or SB
Calcium	854 B	130-35000	SB
Chromium	45	1.5-40	10 or SB
Cobalt	9.2 B	2.5-60	30 or SB
Copper	115	1-50	25 or SB
Iron	8,940	2,000 - 550,000	2000 or SB
Lead	715	4-61 ^a 200-500 ^b	SB
Magnesium	133 B	100-5000	SB
Manganese	106	50-5000	SB
Nickel	62	0.5-25	13 or SB
Silver	8.2	0.1-5.0(n)	SB
Sodium	195 B	6000-8000	SB
Vanadium	0.84 B	1-300	150 or SB
Zinc	102	9-50	20 or SB

NOTE: Bold numbers exceed maximum background concentrations (Eastern USA).

(c) - NYSDEC Division Technical and Administrative

Guidance Memorandum (TAGM), 1/94

(n) - Dragun, J., The Soil Chemistry of Hazardous Materials.

^a - Rural area.

^b - Metropolitan area.

B - Value is less than the contract-required detection limit but greater than the instrument detection limit.

SB - Site background.

**NYSDEC TRENCH SAMPLING
14 and 15 November 1989**

United Plating Site

TABLE 1-5

PARAMETER	TRUCK	EXCAVATION	SUMP	WATER FROM DITCH	WATER FROM SUMP	DITCHWATER	NYSDEC GROUNDWATER STANDARDS
Chromium	200	14	3.5	-	-	-	0.05
Silver	1.4	< 0.05	< 0.05	-	-	-	0.025
Lead	0.77	< 0.1	0.90	-	-	-	0.025
Hexavalent Chromium	230	16	< 0.02	-	-	-	0.05
Cyanide	0.25	-	-	0.25	33	0.2	0.2
Cadmium	< 0.05	< 0.05	0.12	-	-	-	0.01

All results in mg/l.
Bold numbers exceed groundwater standards.

TABLE 1-6

NEW YORK STATE DEPARTMENT OF HEALTH SHALLOW SOIL SAMPLES (MAY 1990)
United Plating Site

SITE BACKGROUND									
PARAMETER	SS #1	SS #2	SS #5	SS #3	SS #4	SS #6	SS #7	SS #8	SS #9
Sand Box									
Jet Swing									
End of count									
Lot Path									
Blue Swing									
Home plate									
Home plate									
SS #1	2,700	4,460	5,860	15,600	14,300	13,700	14,000	5.5	33,000
Arsenic	< 1.0	1.3	1.4	5.1	3.3	4.4	5.5	3-12	SB
Barium	11	18	20	123	94	122	114	15-600	300 or SB
Beryllium	< 0.40	< 0.40	< 0.40	0.60	0.40	0.40	0.50	0-1.75	0.16 or SB
Cadmium	< 2.0	< 2.0	< 2.0	4.0	2.9	2.6	2.1	0.1-1	1 or SB
Calcium	4,470	19,100	8,310	14,700	10,400	8,490	10,800	130-25,000	SB
Chromium	3.3	6.0	7.0	30	21	26	29	1.5-40	10 or SB
Cobalt	< 2.0	< 2.0	2.3	8.6	7.8	8.6	8.8	2.5-60	30 - SB
Copper	< 2.0	4.6	5.9	39	17	31	34	1-50	25 - SB
Iron	6,990	10,700	11,500	27,900	30,200	27,300	27,000	2,000-550,000	2000 or SB
Lead	4.6	2.6	8.0	102	75	162	123	4.0-61 200-500	SB
Magnesium	1,730	3,420	2,070	6,120	5,460	5,640	6,780	100-5000	SB
Manganese	82	171	180	502	468	463	526	50-5,000	SB
Mercury	< 0.04	< 0.04	< 0.04	0.17	0.10	0.17	0.18	0.001-0.2	SB
Nickel	2.4	5.2	6.6	28	18	23	22	0.5-25	13 - SB
Potassium	450	960	790	8,080	3,120	2,710	2,850	8,500-43,000	SB
Strontium	< 20	45	23	54	28	22	30	-	-
Titanium	177	169	124	68	310	193	148	-	-
Vanadium	8.6	14	15	32	44	37	35	1-300	150 or SB
Zinc	16	46	30	137	257	222	128	9.0-50	20 or SB
Cyanide	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	N/A	-

All results in (mg/kg)
NOTE: Bold numbers exceed the site background concentrations.
- Depends on pH.
- NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94
(c)

a - Rural area.
b - Metropolitan area.
N/A - Not available.
SB - Site background.

removal action may be needed at the site and prepared papers for submission to add the site to the New York State Registry of Inactive Hazardous Waste Sites.

The Schenectady County Grand Jury indicted UP in May 1990, and in July 1990 the state obtained a court order closing the plant until the operation complied with all Environmental Conservation Laws (ECLs) (NYSDEC 1990h).

On 3 July 1990 NYSDEC conducted an inspection of the site to inventory the material stored in the building. According to the inspection report the cyanide room contained over 7000 gal of mostly cyanide salts, over a dozen drums of unknowns, and 2000 gal of unknown materials in open-top tanks. The chromium room contained two drums of chromic acid, two drums of chromic acid fluoride, two 5-gal containers of dry chromic acid, one drum labeled "old chrome," two tanks containing chrome plating solutions, and six unlabeled tanks. The copper plating area had five open tanks, with one tank containing 350 gal of an unknown, one with 2000 gal of sludge/liquid, one with 1500 gal of cyanide, one with 1500 gal of acid, and one tank with an unknown and no volume noted. The room also had four drums of hydrochloric acid, two drums of oil, one 25-gal carboy labeled corrosive, two drums of unknowns, 13 tanks used for copper plating operations, eight tanks used for other plating, one drum of 3% nitric acid, five drums of electroless nickel solution, one drum of ammonia, one drum of hydroacetic acid, one drum of chromic acid, and one 20-gal container of an unknown. Two other plating lines were observed - one with eight tanks and the other with four tanks. The waste treatment room contained wastewater stored in six tanks, 1 ft³ of sludge, another plating line for nickel, nine drums of sodium hydroxide, four drums of sulfuric acid, one drum of flocculent, and a container with 1 ft of sludge awaiting dewatering. A storage room off the waste treatment room contained 76 gal of hydrofluoric acid, 11 15-gal containers of chromic acid, 14 20-gal containers of acid, 19 containers of unknowns, 142 containers of varying sizes of a number of chemicals, and bottle of laboratory chemicals (NYSDEC 1990d).

The second floor contained the aluminum anodizing operation, which consisted of 11 tanks. The room also had several 5-gal carboys of hydrofluoric and glacial acetic acid. A storage room on the second floor contained 47 containers (~2000 gal) of various acids, eight drums of finishing agents, one drum of black dye, one drum of hydrogen peroxide, seven drums of chrome, four leaking drums of sodium hydroxide, and 80-lb bags of copper sulfate. On the third floor were 35 drums of alcohols, oils, solvents, rust preventatives, and 1-1-1-trichloroethane (1,1,1-TCA). The fourth floor had three 5-lb boxes of lead acetate and also had a small smelter (NYSDEC 1990d).

On 25 July 1990 the NYSDEC Division of Environmental Enforcement (DEE) conducted a sampling trip. According to the report, two samples were collected for extraction procedure (EP) toxicity metals, one sample was taken for EP toxicity metals and total cyanide, one sample was collected for identification, and one sample was collected for corrosivity analysis. The results were not available in the file (NYSDEC 1990c).

On the 9 October 1990 the City of Schenectady requested that NYSDEC remove the drums containing hazardous waste from the site using state Superfund money (City of Schenectady 1990b) On 26 October 1990 NYSDEC responded to the request by the City of Schenectady by stating that all options were being considered for cleanup of the site (NYSDEC 1990e).

On 10 October 1990 UP advised NYSDEC that they no longer had funds to continue operating (UP 1990). Bankruptcy of UP was confirmed by the State Supreme Court on 1 November 1990 (NYSDEC 1990h).

On 7 November 1990 NYSDEC conducted an inspection of the site and found several hundred drums of acids, bases, cyanides, alcohols, solvents, and plating solutions (NYSDEC, 1990f). On 15 November 1990 NYSDEC requested that the U.S. Environmental Protection Agency (EPA) undertake a removal action (RA) (NYSDEC 1990g).

A preliminary assessment (PA) was conducted by EPA on 17 November 1990. This inspection revealed approximately 30,000 gal of bulked liquids contained in various tanks and open plating baths. An estimated 750 drums and 2000 laboratory containers were stored haphazardly, regardless of their contents or condition. During EPA's PA the following hazardous substances were tentatively identified at the facility: copper cyanide, nickel cyanide, zinc cyanide, nitric acid, sulfuric acid, hydrochloric acid, trichloroethane, and hydrogen fluoride. The identification of these compounds was based on container, tank, and drum labels. Containers and drums were located throughout the facility (EPA 1992).

Phase I of the RA consisted of site stabilization measures, which included segregating incompatibles, sampling containers, performing compatibility analyses, bulking small quantity containers (< 25% full), transferring all vat liquids and solids into drums, and laboratory packing and disposing of all laboratory chemicals. Phase II activities included coordination of transport and disposal of all substances deemed to be hazardous as per the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA) (EPA 1992).

From early September 1991 through October 1991, 20 truck loads with approximately 70 drums per truck load were shipped off-site to RCRA-permitted and CERCLA-approved treatment, storage, and disposal facilities (TSDF). The last shipment was sent on 18 November 1991 (EPA 1992).

The following hazardous wastes were shipped and disposed of through wastewater treatment: oxidizing acid - 26 drums; acid cyanide - 3075 gal + 242 drums; oxidizing liquid - 27 drums; alkaline cyanide - 268 drums; oxidizing alkaline cyanide - 42 drums; reactive cyanide - 20 drums; cyanide liquid - 22 drums; cyanide solids - 16 drums; hazardous solid - 24 drums; alkaline solid - 134 drums; corrosive liquid - 22 drums; and acid solid - 34 drums. The following hazardous wastes were shipped and disposed of through fuel burning: base neutral liquid - 67 drums; flammable organic liquids - 46 drums; flammable liquid - two drums; and flammable solid - eight drums (EPA 1992).

Samples of dust from the floor inside the building taken on 27 February 1991 revealed high levels of total lead. The results are shown on Table 1-7 (EPA 1991).

On 17 September 1992 the owner of the site was sentenced to 1-3 years in prison for violation of the Environmental Conservation Law (ECL), and the UP Corporation was fined \$150,000, also for violation of the ECL and for reckless endangerment (NYSOL 1992a, 1992b).

On 14 April 1994 an inspection of the facility conducted by Clean Harbors, Inc., for NYSDEC confirmed that there were no hazardous wastes remaining on the site (NYSDEC 1994b).

On December 1994 NYSDEC contracted with Lawler, Matusky & Skelly Engineers (LMS) to conduct a remedial investigation/feasibility study (RI/FS) of the UP site under terms of the Standby Contract.

1.2.2 Previous Investigations

Other than the EPA PA conducted on 17 November 1990, no other hazardous waste investigations have been conducted of the UP site to date. Samples have been collected of soil, sludge, wastewater, groundwater, etc. The results are discussed in the following paragraphs.

1.2.2.1 *Wastewater.* Table 1-1 presents the data collected from the discharge of the pretreatment system to the City of Schenectady from 1984 to 1989. The City of Schenectady imposed discharge limits as follows: cadmium - 0.2 mg/l; total chromium - 4.0 mg/l; hexavalent chromium - 0.2 mg/l; copper - 0.5 mg/l; cyanide - 1.6 mg/l; lead - 0.2 mg/l;

NEW YORK STATE DEPARTMENT OF HEALTH

Dust Samples
27 February 1991 United Plating Site

TABLE 1-7

SAMPLE NO.	TOTAL LEAD (mg/kg)
1	13,000
2	43,800
3A	20,600
3B	9,360

mercury - 0.05 mg/l; nickel - 4 mg/l; silver - 0.2 mg/l; and zinc - 2.0 mg/l. Bold numbers on the table indicate where violations of the permit occurred.

1.2.2.2 Soil, Sludge, and Ash. On 2 March 1989 NYSDEC collected two soil samples and one sludge and one ash sample at the UP site; the results are shown on Table 1-2. The NYSDEC-recommended cleanup objectives for soil and the eastern U.S. background soil concentrations are also provided on the table (NYSDEC 1994a). The numbers in bold on the table exceed the cleanup objectives; all the values were less than an order of magnitude greater than the objective. No criteria or guidance exists to compare the sludge and ash sample concentrations. However, the sludge sample contained 3.3% chromium, 1.4% copper, and 3.0% zinc; these numbers strongly suggest that the sludge is hazardous.

On 13 September 1989 NYSDEC took one soil sample from the UP property. The results are shown on Table 1-4. Again, the NYSDEC cleanup objectives are provided on the table; bolded numbers show exceedances of the criteria. The cadmium was roughly seven times higher than the previous samples and much higher than the objective. Chromium and nickel were twice as high and copper was almost four times higher as previously observed. Arsenic was an order of magnitude less than the previous sample.

On 16 May 1990 NYSDOH took six samples from the playground northeast of the UP site and one sample from the vacant yard adjacent to the site. The results are shown on Table 1-6 along with the cleanup objectives and background soil concentrations. The results can be subdivided into two groups, with samples 1, 2, and 5 representing site-specific background levels, and samples 3, 4, 6, and 7 representing those areas affected by contamination. Results for the former group were on average four to six times less than those for the latter group. Cadmium values in the contaminated group ranged from two to four times higher than the objective and more than twice as high as the background group. Likewise, the chromium values were two to three times higher than the objective and background levels. The nickel results were approximately twice as high as the objective and three to five times higher than the site-specific background samples. The copper levels in three of the contaminated samples were higher than the objective and background levels; the lead levels, although within the range of metropolitan area background, were more than 10 times higher than the site-specific background levels in the other three samples. Magnesium levels were also above background in the same four samples, as was mercury; mercury results were also above the cleanup objective in these four samples. Zinc was over six times higher than the objective and five times higher than the site-specific background levels. It is not known for certain whether the contamination is from the UP site; however, it is very likely as these same metals were found on the site.

1.2.2.3 *Groundwater.* Table 1-3 presents data collected by NYSDEC on 13 September 1989 from one groundwater sample; The groundwater standards are also shown. The cadmium, lead, and zinc values all exceeded the standard (NYSDEC 1991).

1.2.2.4 *Process Liquids.* Tables 1-2 and 1-4 present data collected from various tanks, drums, and drains on the site and from a spill that occurred in November 1989, respectively. The tank, drum, and drain samples were collected by NYSDEC on 2 March 1989. One floor drain had 27% chromium and 12% hexavalent chromium; it is unknown where the floor drain discharged. The other two floor drains had high levels of chromium, copper, lead, and zinc. An open pit adjacent to the building had high levels of chromium, copper, and zinc. Drum No. 1 had high levels of total cyanide, chromium, and copper, whereas drum No. 2 had high levels of hexavalent chromium and zinc. A tank in the building had 5000 µg/l of hexavalent chromium.

On 14 November 1989, during construction of a trench at the UP site, a spill of liquid material was observed. NYSDEC took samples on 14 and 15 November 1989. A sample of the liquid in the trench had 14 mg/l of chromium and 16 mg/l of hexavalent chromium. A sump sample had 3.5 mg/l of chromium and a sample from the truck containing the spilled material had 200 mg/l of chromium and 230 mg/l of hexavalent chromium. Water in the ditch had low levels of cyanide, whereas water from the sump had 33 mg/l of cyanide. This spill and the results of sampling from the floor drains show that in the past discharges to the sewer system and possibly to the groundwater of process material with high levels of contaminants occurred at the UP site.

1.2.2.5 *Dust Samples.* NYSDOH collected four dust samples from inside the building on 27 February 1991 and analyzed the samples for total lead. The results are shown on Table 1-7. The lead content of the dust was very high in all samples, ranging from 9360 to 43,800 mg/kg.

1.3 REPORT ORGANIZATION

This data report presents the results of Task 2a - Initial Site Characterization conducted for the UP site. Chapter 2 presents the field investigation procedures and Chapter 3 summarizes the data collected during the investigation. Chapter 4 presents recommendations for changes to the Task 2B - Detailed Site Characterization and Task 3 - Development of Alternatives (First Phase Feasibility Study) work scope. The data from Subtask 2.5 - Interior Drainline and Sump Reconnaissance and Subtask 2.8 - Contaminant Area Delineation, contained in this report have been validated; the remaining data were not validated.

CHAPTER 2

FIELD INVESTIGATION PROCEDURES

2.1 INTRODUCTION

The objectives of the Initial Site Characterization Task were to remove and dispose of the debris outside the building, to collect enough samples to characterize the contamination of the buildings and the equipment and debris inside the building, to determine the discharge locations of the drainlines and sumps within the building and to characterize the material within the sumps, to characterize the contamination of the shallow and subsurface soils surrounding the site and groundwater beneath the site, and to determine the groundwater flow and elevation at the site. The location of contamination as identified by the subsurface soil and groundwater samples and the water table elevations would be used to locate the monitoring wells required under Task 2b.

The building, equipment, and debris contamination was identified using a combination of wipe samples, sweep samples, concrete chip samples, wood chip samples, and paint chip samples. In addition, the ability to decontaminate the equipment and debris was assessed by steam cleaning the equipment and collecting before and after wipe samples. Shallow soil samples were collected at locations throughout the property and on the adjoining property. A probe was used throughout the property to collect subsurface soil and groundwater samples. At several locations, piezometers were installed and used to construct the water table. Smoke testing was used to identify the discharge locations of the drainlines and sumps, and samples of water and sediment were collected from the sumps within and outside the building to characterize the material. The sediment and surface water samples were not included in the original (March 1995) work plan.

2.2 DEBRIS REMOVAL

A three-day debris removal activity was conducted from 3 to 5 May 1995. The objective of this debris removal was to remove various scrap, plastic, wood, and former brewery kettles from the rear yard of the facility to clean the site and allow access for sampling and drilling equipment. The removal efforts were completed by Pollution Solutions of Vermont under direct supervision of LMS. The debris was sorted as to type: metallic and nonmetallic. Small items were placed directly into rollofts with a backhoe, while larger items were crushed or cut into a manageable size. Four rollofts of metallic debris were removed to a scrap dealer and approximately 5 tons of miscellaneous nonmetallic debris were sent off-site for landfilling. LMS originally estimated that the debris removal could be completed in one day using two

rolloffs. It was quickly realized that a much larger volume and tonnage of debris had to be removed. With NYSDEC approval, the level of effort was expanded to ensure that enough debris was removed to adequately clean the site and to provide access for other field activities. The debris was removed from the site under the assumption that it was uncontaminated; during removal, no heavily stained items, metallic plating wastes, or process chemicals were found, with the exception of a small plating basket that appeared to contain metallic balls. This item was set aside and not removed from the site.

2.3 BUILDING AND ANCILLARY EQUIPMENT CONTAMINATION

To assess the building and ancillary equipment contamination, 200 samples were collected within the building. The samples consisted of wipes, sweeps, concrete chips, wood chips, and paint chips. The locations were selected based on the detailed site reconnaissance and approved by the NYSDEC project manager.

The wipe samples were collected throughout the building area from dirty or grime-covered equipment, floors, and walls. A total of 84 locations were sampled. Appendix A contains the sampling logs describing the sampling locations in detail.

At each wipe location a dedicated stainless steel template was first placed over the sampling location to ensure that the wiped area was 100 cm². A sterile gauze pad was then wet with distilled water and wiped with firm strokes over the entire 100-cm² area in one direction and then the other direction. The pad was then placed into Ziplock plastic bags and labeled with the location, date, and time of sample collection. The samples were then submitted to E3I Laboratories for analysis for target analyte list (TAL) metals and cyanide using NYSDEC Analytical Services Protocol (ASP) (December 1991). Ten of the original pieces of equipment where wipe samples were taken were removed from the building and steam cleaned until visibly clean. Another wipe sample was then taken to assess the effectiveness of steam cleaning.

The sweep samples were collected throughout the building area where sufficient quantities of dust, dirt, or residual process material was found. A total of 50 locations were sampled. Appendix A contains the sampling logs describing the sampling locations in detail. At each location the material was swept into a pile using a dedicated soft-bristle brush. The material was then transferred into the appropriate sample container with a dedicated foil-covered dustpan. At each location notable features such as color, texture, and swept area were recorded on the sampling logs. The samples were submitted to E3I Laboratories under chain-of-custody protocol for TAL metals and cyanide analysis and toxicity characteristic leaching procedure (TCLP) metals using NYSDEC ASP (December 1991).

Three types of chip samples were collected - floor concrete chips, wood chips, and paint chips. These samples were taken to assess the actual building contamination.

Floor chips were collected by using a hammer drill and a diamond bit. At each location, the drill was used to drill into the concrete 2-5 mm. The chips and dust were then manually swept into small piles and transferred to the laboratory-supplied sampling containers. Each location was noted on the sampling log and the bottles were appropriately labeled and shipped overnight via chain-of-custody protocols to E3I Laboratories for TAL metals and cyanide and TCLP metals analysis.

The wood chips were collected using hammers and chisels to gently chip away the top 2-3 mm of material. Many of the wood chip samples were taken from the ceiling of the main plating room. In these locations a battery-powered manlift was used to reach the sampling locations. In other areas a extension ladder was used.

As the wood chips were being taken they were allowed to fall onto dedicated foil-wrapped dustpans and then transferred to the laboratory-supplied sample containers. A total of 16 locations were sampled. Each location was noted on the sampling log (see Appendix A) and the bottles appropriately labeled and shipped using chain-of-custody protocols to E3I Laboratories for TAL metals and cyanide analysis. TCLP metals were analyzed on eight of the samples.

The paint chips were collected using a metal paint scraper. A total of 20 samples were collected. At each location the scraper was used to scrape off a known area. As the chips were scraped off they were collected into dedicated foil-wrapped dustpans and transferred to the laboratory-supplied sample containers. The location and physical features (consisting of paint and color) were noted on the sampling logs and the bottles were appropriately labeled and shipped overnight via chain-of-custody protocols to E3I Laboratories for total lead analysis.

2.4 INTERIOR SUBSURFACE DRAINLINE AND SUMP INVESTIGATION

The City of Schenectady was contacted on three occasions regarding any plans or sketches showing the building and the water and sewer lines. Based on their search of current and historical records, no specific plans of the building could be found. The city did provide their current maps for the sewers and water lines. Without specific plans showing the various connections, smoke testing and visual reconnaissance of the existing piping was conducted.

Smoke tests were carried out at the site on 9 and 10 August 1995. Prior to conducting the smoke test, LMS notified city police, fire, and sewer departments. Local citizens were notified

by the NYSDEC project manager. The smoke tests were carried out by lowering a commercial non-toxic smoke bomb on a short length of rope. Once ignited the smoke bombs produce large quantities of a aerosol smoke. At this point, a fan or manhole blower was used to push the smoke outward from the ignition point. All testing was done from known discharge locations or connections on-site. LMS and NYSDEC personnel were stationed at suspected connections and at the manholes along Foster Avenue to monitor for the presence of any smoke.

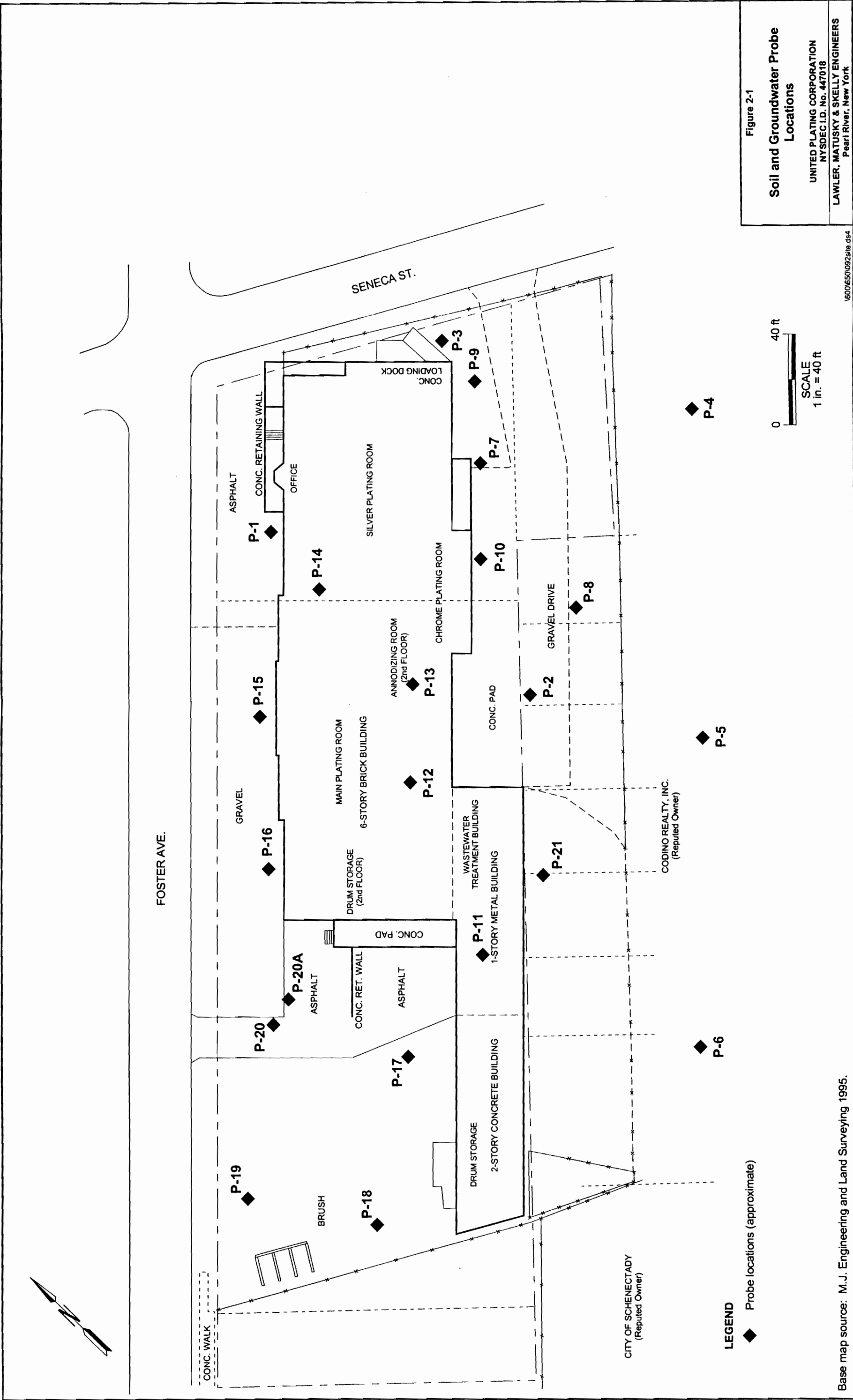
2.5 PROBE SOIL SCREENING

Between 31 May and 13 June 1995 the soil probe sampling was completed (see Figure 2-1). This part of the field investigation consisted of a total of 22 probes, which were advanced at the site to determine background levels of contamination and to identify any possible on-site disposal areas. Three were installed inside Building 1 (P-12 to P-14) and one was placed inside Building 2 (P-11). Three probes were advanced in the field upgradient (east) of the site, and 15 were installed in close proximity to the building. During the collection of these probes the probehole, cuttings, and samples were scanned with a Photovac Microtip photoionization detector (PID) to determine whether vapors were emanating from the soils.

The soil probes were advanced by LMS using a Concord 9200 truck-mounted drill rig, which hydraulically pushes a sampler directly into the ground, generating little or no cuttings. Two types of samplers were used that are similar with the exception of size. The macro-core sampler is 4 ft long with an inside diameter (I.D.) of about 1.5 in., and is generally used at shallow depths (see Figure 2-2). The large-bore sampler is 2 ft in diameter with a 1-in. I.D. and can typically be driven to greater depths than the macro-core sampler. When the macro-core sampler was refused, the boring was continued with the large-bore sampler until refusal was encountered again. The sampler is fitted with a disposable acetate liner, from which the samples are taken. After removal from the probe, both ends of the acetate liner were capped and holes were driven into the liner to facilitate scanning for organic vapors.

To prevent cross contamination of soil samples and soil sampling horizons, all equipment that came in contact with the soil was steam cleaned on the decontamination pad between samples. The equipment was then allowed to air dry before being advanced again.

Typically the soil probes reached refusal at depths of about 12 ft or less. Only boring P-20, advanced to 26 ft, was driven past 12 ft before reaching refusal. Most of the probes revealed glacial till at or very near the surface to the end depth of the boring. This till was brown to brownish gray near the surface due to weathering, grading to dark gray below the weathered layer. The composition of the glacial till deposit is generally silt and fine gravel, with small



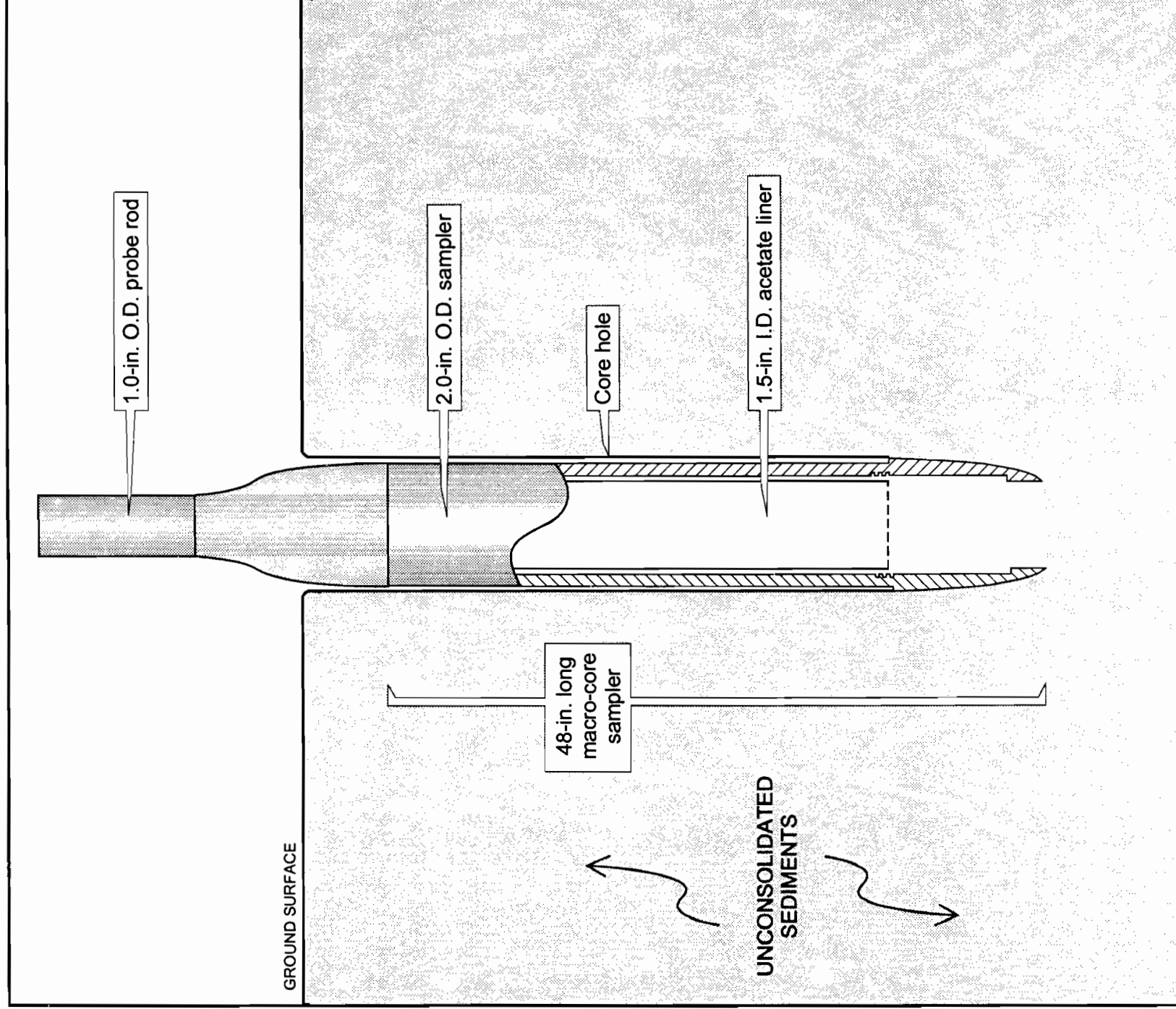


Figure 2-2

Macro Core Sampling Cross Section

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Pearl River, New York

NOT TO SCALE

amounts of clay. (For a detailed description, see the attached probe logs contained in Appendix B.) The recovered till samples were extremely dense, compact, and coherent, particularly when there was a small amount of moisture in the soil. When the till was dry, the recovery was crumbly and broken along the horizontal plane, giving it a slate-like appearance.

At each probe, where the PID readings were highest a discrete sample was collected for full analysis of target compound list (TCL) volatile organic compounds (VOCs). A grab sample was also collected at each boring for TAL metals plus cyanide analysis. As the amount of material recovered was minimal, no additional material could be collected to use for matrix spike/matrix spike duplicate (MS/MSD) and spike and spike duplicate analyses. All samples were placed in appropriate laboratory-supplied containers, labeled, and placed in coolers maintained at 4°C. The coolers were then shipped under chain-of-custody protocol to E3I Laboratories in Somerville, Massachusetts, via Federal Express.

2.6 PROBE WATER QUALITY SCREENING

At probe locations where groundwater was encountered, a mill slot was advanced to the sampling depth. A mill slot is a section of probe rod that has thin, vertically oriented slots that allow for the recovery of groundwater at a specific interval. Dedicated polyethylene tubing with a bottom check valve was then inserted through the probe rods to recover the sample. For the collection of samples submitted for VOC analysis, a valve with a checkvalve was placed on the downhole end of the tubing and the groundwater was gently surged manually. Collection of groundwater for all other samples was done using a peristaltic pump. For the filtered samples, groundwater was collected in dedicated filtering vessels and filtered through an in-line filter. Due to the very low groundwater yields in the probes, it was necessary in some cases to retrieve some of the filtered and unfiltered metals samples from the piezometers that were installed within some of the probe holes.

Based on our observations of the test borings, the groundwater table was not clearly defined at the site. The till deposit that makes up most of the overburden contains fine sediments that are too consolidated to allow groundwater flow at a significant rate. At those locations where sand lenses were discovered within the till groundwater was abundant, but the majority of borings yielded only small quantities of water, usually between 3 and 5 ft below grade. Samples taken from borings advanced in Building 1 and near Building 1 along Foster Avenue were greenish yellow, even after being filtered.

At those borings where there was enough groundwater, samples were collected for the analysis of TCL VOCs, TAL metals (unfiltered) and cyanide (unfiltered), and TAL metals (filtered) and

cyanide (filtered). At borings that did not yield enough water for analysis of all five parameters, samples were collected in the order listed above. For quality assurance/quality control (QA/QC) purposes two MS/MSDs, one spike and spike duplicate, one field blank, and nine trip blanks were collected.

2.7 SHALLOW SOIL SAMPLING

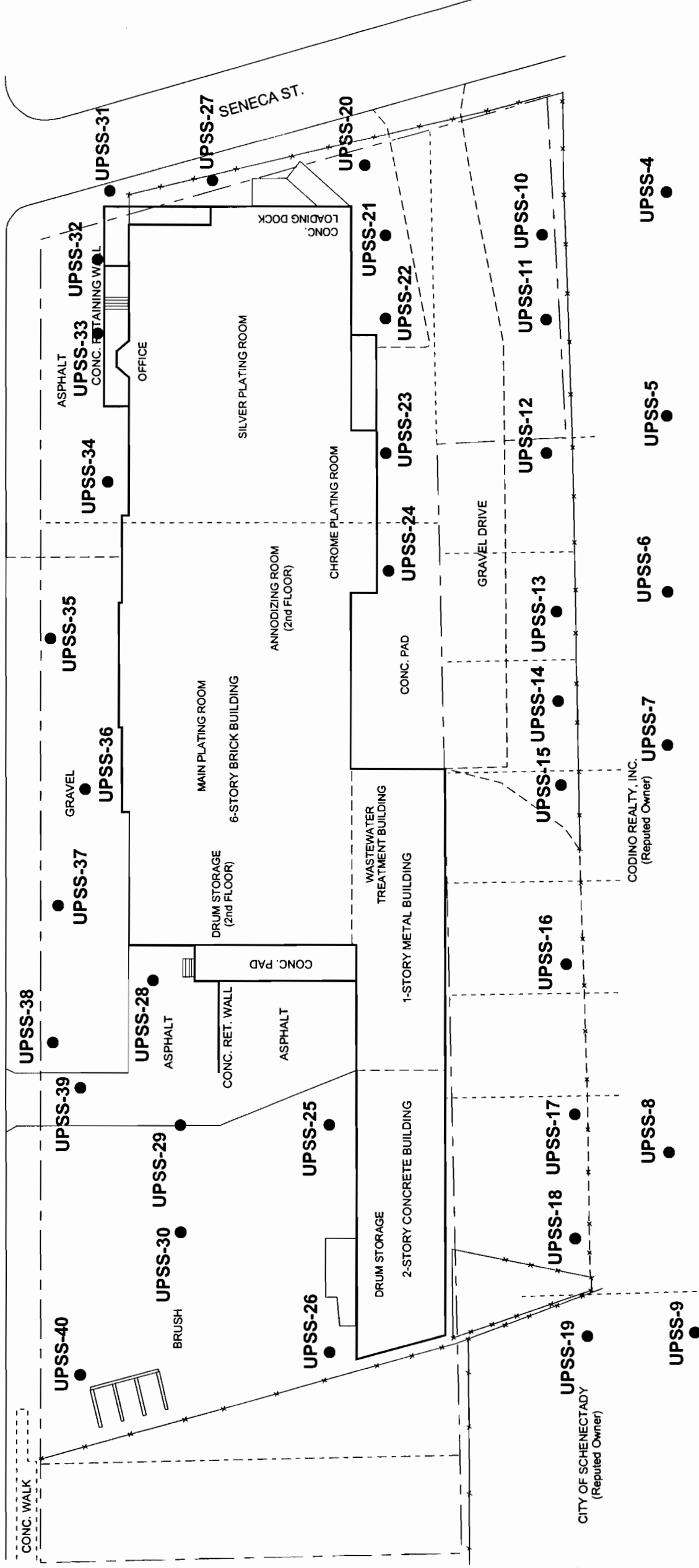
On 31 May and 1 and 2 June 1995 LMS collected 40 shallow soil samples at the UP site. Thirty of the locations were situated on the UP property; the locations were based on a grid that covered the open areas surrounding the buildings. The remaining 10 locations were located in the vacant lot and playground areas to the east and southeast of the property. The sampling locations were discussed with and approved by NYSDEC oversight personnel prior to sample collection. All locations were chosen based on possible exposure through dermal contact, ingestion of contaminated soil, or inhalation of contaminated dust. The sample locations are shown on Figure 2-3.

The shallow soil samples were collected from the first 3 in. of soil at all locations. Where necessary, the locations were first cleared of grass, surface debris, or gravel before the 0-3 in. sample interval was collected. The sample locations were dug to the proper depth with a stainless steel spoon; the material was placed in a stainless steel bowl for homogenization and placed in the proper sample containers for analysis. In areas where the ground was hard packed a field-decontaminated steel shovel was used to dig out the hole to the appropriate depth. A stainless steel spoon was used to collect the material into the bowl from the sides of the hole. The sample for analysis for VOCs was collected directly from the hole without homogenization. The sample bottles were labeled with the site name, job number, sample identification, date, time, and parameters for analysis. The sample containers were placed in iced coolers under chain-of-custody protocols for shipment to the analytical laboratory. The field sampling logs are provided in Appendix A.

Surface soil samples were analyzed for the full TCL organics and TAL inorganics using NYSDEC ASP (December 1991) methods by E3I. A field blank was performed on a set of the sampling equipment and analyzed to monitor for possible routes of contamination during the sample acquisition process. Field blank water, provided by E3I, was poured over the sample collection equipment into a clean set of sample containers. At two sample locations extra soil was collected so that the laboratory could perform MS/MSD analyses for QA/QC purposes.



FOSTER AVE.



LEGEND

- Soil sampling locations (approximate) (UPSS-1 to UPSS-40)

SCALE
1 in. = 40 ft



Figure 2-3

Shallow Soil Sampling Locations

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2.8 SURFACE WATER/SEDIMENT SAMPLING

Surface water samples were taken from several locations inside Building 1 where there was standing water, i.e., drains and sumps. Dedicated stainless steel ladles and spoons were used to transfer the samples to laboratory-cleaned bottles. Surface water was field analyzed for conductivity, pH, turbidity, and temperature. Sediment was collected from under floor drains and in sumps inside Building 1 and Building 2 where there was sufficient material to sample. Long-handled, dedicated stainless steel spoons and ladles were used to collect the sediment and place it in laboratory-cleaned sample bottles. The sample bottles were labeled with the site name, job number, sample identification, date, time, and parameters for analysis. The sample containers were placed in iced coolers under chain-of-custody protocols for shipment to the analytical laboratory. The field sampling logs are provided in Appendix A and the locations are shown on Figure 2-4.

The surface water and sediment samples were analyzed for TAL metals plus cyanide. In addition, three of the sediment samples were analyzed for TCLP metals. The required analysis were completed by E3I. Several QA/QC samples were collected, including a field blank for the sediment and surface water sampling equipment and a spike and spike duplicate for the both the surface water and sediment samples.

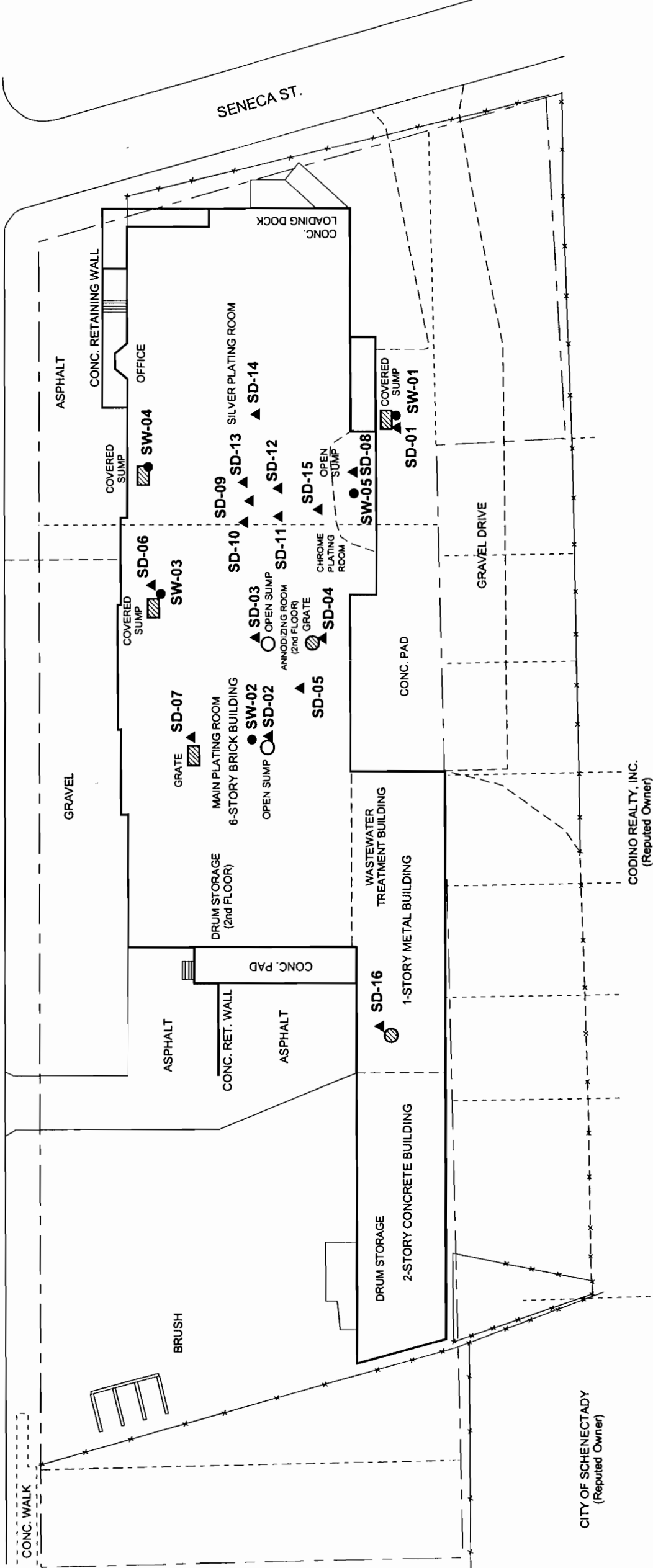
2.9 PIEZOMETER INSTALLATION

A total of 14 probe locations were converted into piezometers (see Figure 2-5). The piezometers were constructed from 2.5-ft lengths of 0.75-in. outside diameter (O.D.) schedule 40 PVC screen (slot width: 0.010 in.) coupled with an appropriate length of schedule 40 PVC riser. The annulus was filled with #1 Morie sand to a depth of 0.5 ft above the screen. Bentonite pellets were placed above the sand and hydrated to seal the screened interval. Piezometers located outdoors were flush mounted to grade with curb boxes set in cement. Piezometers located within the building were completed with flush-mounted curb boxes in trafficked areas or finished 6 in. abovegrade with a PVC end cap in nontrafficked areas.

Once each piezometer was completed it was pumped dry and allowed to recover a minimum of two times. This was done to ensure that the screened section was not clogged and provided a true and accurate water level reading. Most of the piezometers had a minimal yield and were slow to recover. Water level readings on the piezometers were then taken as described in Section 3.8.2.2



FOSTER AVE.



LEGEND

- ▲ Sediment sample location
- Surface water sample location

NOTE: Locations are approximate

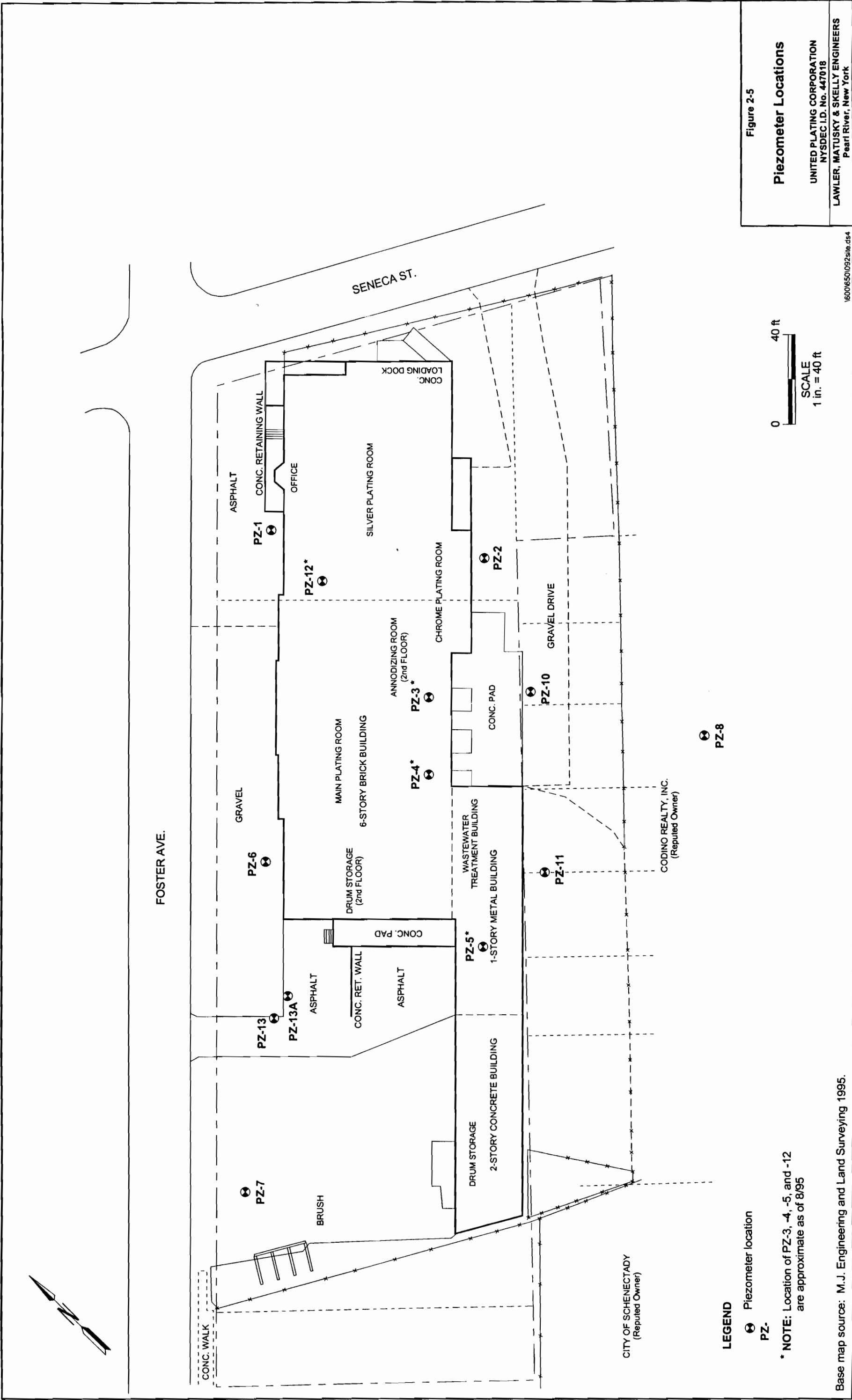


Figure 2-4

Surface Water and Sediment Sampling Locations

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Pearl River, New York



2.10 SITE SURVEY

A site survey and boundary map of the site was prepared by M.J. Engineering and Land Surveying, P.C., of Clifton Park, New York. The initial site survey included all relevant site features such as the building footprints, fencing, roadways, and several control points within the building with which to reference the interior sample locations. The surveyor also established the locations and elevations of the piezometers and the elevations of several additional water level monitoring points, including the chromium sump, main plating room sumps, and the two rectangular sumps toward the front (west) of the building.

CHAPTER 3

TASK 2a SAMPLING RESULTS

3.1 INTRODUCTION

This chapter contains the data collected during the Task 2a field investigation. Only the shallow soil, surface water, and sediment samples were validated; none of the other samples were required to be validated by the work plan (LMS 1995). The data have been used to determine any changes to the Task 2b field work and to recommend whether an Interim Remedial Measure (IRM) is needed of the building and its contents. The data are presented by Task 2a subtask.

3.2 BUILDING AND ANCILLARY EQUIPMENT CONTAMINATION

Under this subtask wipe, sweep, concrete chip, wood chip, and paint chip samples were collected from equipment and debris inside the building and from various surfaces within the building. The laboratory analytical data sheets are contained in Appendix C. None of the samples were validated; however, the usability report is contained in Appendix D.

3.2.1 Wipe Samples

Eighty-four wipe samples were taken inside the building, with 64 samples taken of equipment and debris and 20 taken from the building floor. In addition, 10 wipes were taken after 10 pieces of equipment and debris were decontaminated. All wipe samples were analyzed for TAL metals and cyanide. The results of the wipe sampling are provided on Table 3-1. Also shown on the table is the U.S. Department of Housing and Urban Development (HUD) clearance criteria used after lead-based paint abatement has been completed in order to determine whether the levels of residual dust remaining are acceptable for reoccupancy of residential units. Although the clearance criteria were developed to assess abatement and postabatement cleaning, these criteria were used by EPA in the development of its "Guidance on Residential Lead-Based Paint, Lead-Contaminated Dust, and Lead-Contaminated Soil" (EPA 1994). As no other criteria or guidance exist regarding allowable levels of metals in buildings or on equipment, these criteria were used in evaluating the data. Three criteria exist: floor - 200 $\mu\text{g}/\text{ft}^2$, window sill - 500 $\mu\text{g}/\text{ft}^2$, and window well - 800 $\mu\text{g}/\text{ft}^2$. The most appropriate criterion to use on the UP site is the floor criterion. Because the laboratory data were reported in terms of $\mu\text{g}/100 \text{ cm}^2$ the floor criterion was converted to the same units; this results in a value of 21.5 $\mu\text{g}/100 \text{ cm}^2$. This

TABLE 3-1 (Page 1 of 10)

WIPE SAMPLE DATA SUMMARY (MAY 1995)
United Plating Site

PARAMETER	UPWP01	UPWP02	UPWP03	UPWP04	UPWP05	UPWP06	UPWP07	UPWP08
TAL METALS (µg/100cm ²)								
Aluminum	434 E	1,130 E	210 E	1,320 E	3,230 E	12,100 E	156 B E	1,320 E
Antimony	ND N	ND N	ND N	12 B N	74 N	ND N	ND N	ND N
Arsenic	ND	21	82	6.5 B	5.4 B	ND	ND	4.0 B
Barium	142 B	52 B	74 B	62 B	145 B	9.0 B	23 B	300
Beryllium	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	18	34	23	35	29	39	3.7 B	12
Calcium	2,580 B E	4,500 E	5,730 E	4,310 E	3,200 B E	2,120 B E	889 B E	4,220 E
Chromium	1,070 E	2,640 E	347 E	6,640 E	4,710 E	66 E	280 E	1,490 E
Cobalt	38 B	62	10 B	627	4,080	ND	ND	67
Copper	257	1,890	2,330	357	346	2,080	266	539
Iron	19,000 E	172,000 E	277,000 E	47,200 E	11,000 E	2,210 E	1,010 E	4,720 E
Lead ^a	140	355	48	379	1,460	80	226	371
Magnesium	590 B	1,660 B	990 B	926 B	1,110 B	324 B	289 B	567 B
Manganese	99 E	773 E	3,190 E	297 E	67 E	34 E	7.1 B E	50 E
Mercury	0.25 N	0.58 N	0.55 N	0.13 N	0.17 N	ND N	ND N	0.37 N
Nickel	860	81	169	170	907	19 B	11 B	40
Potassium	435 B E	874 B E	859 B E	520 B E	750 B E	9,680 E	128 B E	460 B E
Selenium	ND	ND	ND	ND	ND	3.2 B	2.9 B	ND
Silver	138 E	461 E	854 E	113 E	306 E	714 E	53 E	106 E
Sodium	3,200 B E	3,470 B E	3,210 B E	3,720 B E	4,960 E	96,900 E	2,410 B E	3,110 B E
Thallium	ND	ND	ND	ND	12	ND	ND	ND
Vanadium	ND	9.4 B	13 B	3.9 B	2.9 B	ND	ND	ND
Zinc	418	1,310	361	714	827	301	153	1,690
Cyanide	477 N	562 N	602 N	118 N	143 N	2,900 N	147 N	1,130 N

NOTE: Bold numbers exceed lead dust criteria (21.5 µg/100cm²).
 a - USEPA Guidance on Residential Lead-Based Paint, Lead-Contaminated Soil, and Lead-Contaminated Dust, 1994.
 B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
 E - Value estimated due to interference.
 N - Spiked sample recovery is not within control limits.
 ND - Not detected at analytical detection limit.

TABLE 3-1 (Page 2 of 10)

WIPE SAMPLE DATA SUMMARY (MAY 1995)
United Plating Site

PARAMETER	UPWP09	UPWP10	UPWP10D	UPWP11	UPWP12	UPWP13	UPWP14	UPWP15	UPWP16
TAL METALS ($\mu\text{g}/100\text{cm}^2$)									
Aluminum	1,840 E	398 E	218	1,560 E	ND E	671 E	252 E	246 E	17 B E
Antimony	6.9 B N	ND N	ND	ND N	ND N	ND N	ND N	24 B N	ND N
Arsenic	ND	ND	ND	10	ND	9.5	ND	ND	3.7 B
Barium	122	12 B	9.7 B	2,240	4.3 B	626	21 B	73 B	2.0
Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	26	3.8 B	ND	1,130	1.9 B	38	7.6	54	ND
Calcium	2,120 B E	1,030 B E	1,200 B	5,140 E	741 B E	2,250 B E	1,310 B E	1,810 B E	1,460 B E
Chromium	1,640 E	1,800 E	99	ND E	29 E	806 E	ND E	130 E	739 E
Cobalt	352	929	149	39 B	6.8 B	35 B	32 B	9.7 B	ND
Copper	451	71	11 B	3,310	8.7 B	270	152	5,090	32
Iron	5,800 E	12,200 E	2,460	23,000 E	ND E	378,000 E	4,120 E	8,890 E	270 E
Lead ^a	710	40	10	5,150	7.5	2,300	145	311	75
Magnesium	433 B	234 B	259 B	1,440 B	ND	737 B	ND	305 B	ND
Manganese	33 E	25 E	12 B	2,080 E	2.2 B E	1,500 E	12 B E	54 E	1.6 B E
Mercury	0.18 N	ND N	ND	0.14 N	ND N	0.75 N	ND N	ND N	ND N
Nickel	195	158	18 B	256	ND	1,630	27 B	246	ND
Potassium	475 B E	ND E	132 B	14,600 E	ND E	216 B E	127 B E	6,110 E	179 B E
Selenium	ND	ND	ND	ND	3.2 B	ND	ND	ND	ND
Silver	28 E	4.3 B E	2.0 B	894 E	42 E	33 E	29 E	1,240 E	4.2 B E
Sodium	23,700 E	1,500 B E	1,260 B	106,000 E	1,820 B E	6,600 E	2,040 B E	21,900 E	1,740 B E
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	ND	ND	ND	13 B	ND	12 B	ND	ND	ND
Zinc	568	91	38	9,170	26	1,120	131	433	15 B
Cyanide	214 N	49 N	ND	1,250 N	22 N	100 N	180 N	751 N	17 N

NOTE: Bold numbers exceed lead dust criteria ($21.5 \mu\text{g}/100\text{cm}^2$).
 a - USEPA Guidance on Residential Lead-Based Paint, Lead-Contaminated Dust, and Lead-Contaminated Soil, 1994.
 B - Value is less than the contract-required detection limit but greater than the instrument detection limit.

E - Value estimated due to interference.
 N - Spiked sample recovery is not within control limits.
 ND - Not detected at analytical detection limit.

WIPE SAMPLE DATA SUMMARY (MAY 1995)
United Plating Site

PARAMETER	UPWP17	UPWP18	UPWP19	UPWP20	UPWP21	UPWP21D	UPWP22	UPWP23	UPWP24
TAL METALS (µg/100cm ²)									
Aluminum	206 E	3,610 E	6.1 B N	100 B E	146 B E	130 B	73 B E	ND E	1,360 E
Antimony	ND N	ND N	ND	101 N	10,500 N	1,280	7.4 B N	ND N	47 B N
Arsenic	21	16	ND	13	5.4 B	ND	ND	ND	7.0 B
Barium	44 B	4.4 B	11 B	1,930	39 B	5.1 B	6.7 B	9.5 B	622
Beryllium	ND	ND	ND	ND	7.1	ND	ND	ND	ND
Cadmium	2.5 B	9.4	2.4 B	ND	1.8 B	ND	2.1 B	ND	57
Calcium	236 B E	737 B E	902 B E	755 B E	719 B E	685 B	472 B E	479 B E	21,700 E
Chromium	157 E	424 E	1,450 E	7,130 E	ND E	16	788 E	721 E	1,240 E
Cobalt	5.4 B	29 B	ND	ND	6.4 B	ND	ND	ND	7.9 B
Copper	24	359	86	28	16 B	4.8 B	74.0	70	3,100
Iron	265 E	329,000 E	2,250 E	612 E	3,270 E	107	429 E	281 E	32,300 E
Lead ^a	26	215	919	3,760	16,000	1,550	217	427	3,330
Magnesium	ND	432 B	ND	ND	263 B	193 B	ND	ND	2,100 B
Manganese	7.4 B E	2,240 E	14 E	8.6 B E	46 E	3.4 B	5.0 E	4.6 B E	630 E
Mercury	ND N	0.12 N	ND N	ND N	ND N	ND	ND N	ND N	ND N
Nickel	ND	41	ND	ND	14 B	ND	ND	ND	101
Potassium	99 B E	140 B E	119 B E	96 B E	860 B E	116 B	ND E	99 B E	277 B E
Selenium	19	ND	ND	ND	ND	ND	ND	ND	ND
Silver	3.7 B E	2.5 B E	3.7 B E	39 E	9.2 E	2.5 B	58 E	166 E	17 E
Sodium	1,920 B E	1,610 B E	1,900 B E	1,920 B E	47,500 E	3,190 B	1,580 B E	1,430 E	29,200 E
Thallium	22 B	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	3.0 B	12 B	ND	ND	2.7 B	ND	ND	ND	ND
Zinc	33	74	40.2	7.2 B	ND	21	16,300	72	1,050
Cyanide	23 N	14 N	14 N	9.3 N	9.6 N	ND	2.5 N	4.4 N	42 N

NOTE: Bold numbers exceed lead dust criteria (21.5 µg/100cm²).
 a - USEPA Guidance on Residential Lead-Based Paint, Lead-Contaminated Dust, and Lead-Contaminated Soil, 1994.

E - Value estimated due to interference.
 N - Spiked sample recovery is not within control limits.
 ND - Not detected at analytical detection limit.

WIPE SAMPLE DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER	UPWP25	UPWP26	UPWP27	UPWP28	UPWP29	UPWP30	UPWP30D	UPWP31	UPWP32
TAL METALS (µg/100cm ²)									
Aluminum	2,060 E	2,600 E	868 E	272 E	ND E	ND E	115 B	ND E	24,500 E
Antimony	12 B N	9.4 B N	18 B N	ND N	ND N	52 N	5.6 B	ND N	ND N
Arsenic	ND	52	4.6 B	ND	3.6 B	22	ND	ND	59
Barium	118 B	13 B	74 B	9.4 B	51 B	596	14 B	80 B	1,240
Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	1.7 B
Cadmium	9.0	140	94	29	196	2,620	19	14	508
Calcium	1,410 B E	1,790 B E	2,770 B E	2,660 B E	18,700 E	57,900 E	684 B	4,470 E	76,500 E
Chromium	748 E	11,100 E	1,030 E	104 E	73 E	2,940 E	36	203 E	1,150 E
Cobalt	7.2 B	74	18 B	ND	8.8 B	40 B	ND	ND	25 B
Copper	114	1,810	1,090	79	673	12,100	27	43	12,400
Iron	24,700 E	503,000 E	24,900 E	2,240 E	21,600 E	113,000 E	688	5,000 E	347,000 E
Lead ^a	21,600	1,380	2,010	286	161	6,410	43	309	1,650
Magnesium	226 B	1,390 B	1,010 B	196 B	6,830	12,500	237 B	701	25,500
Manganese	119 E	2,210 E	121 E	17 E	294 E	934 E	6.1 B	0.23 N	3,630 E
Mercury	2.9 N	0.71 N	0.13 N	ND N	0.15 N	0.56 N	ND	0.28 N	0.28 N
Nickel	13 B	1,930	70	42	1,880	4,210	12 B	25 B	180
Potassium	224 B E	504 B E	389 B E	140 B E	155 B E	3,340 B E	ND	347 B E	52,100 E
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	32 E	9.6 E	296 E	1.9 B E	ND E	116 E	ND	1.9 B E	9.5 E
Sodium	1,920 B E	5,140 E	2,320 B E	1,310 B E	2,110 B E	46,700 E	1,110 B	1,850 E	24,700 E
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	2.8 B	30 B	7.6 B	ND	9.7 B	29 B	ND	3.1 B	79
Zinc	128	505	668	226	1,120	15,100	145	95	3,210
Cyanide	8.5 N	18 N	140 N	16 N	20 N	205 N	12	158 N	1,360 N

NOTE: Bold numbers exceed lead dust criteria (21.5 µg/100cm²).
^a - USEPA Guidance on Residential Lead-Based Paint, Lead-Contaminated Dust, and Lead-Contaminated Soil, 1994.

E - Value estimated due to interference.
 N - Spiked sample recovery is not within control limits.
 ND - Not detected at analytical detection limit.
 B - Value is less than the contract-required detection limit but greater

WIPE SAMPLE DATA SUMMARY (MAY 1995)
United Plating Site

PARAMETER	UPWP33	UPWP34	UPWP35	UPWP36	UPWP36D	UPWP37	UPWP37D	UPWP38	UPWP39	UPWP40	UPFB01
TAL METALS (µg/100cm²)											
Aluminum	8,940 E	3,320 E	12,500 E	11,200 E	174	25,400 E	193	875 E	3,880 E	128 B E	ND E
Antimony	ND N	ND N	271 N	ND N	ND	ND N	ND	ND N	6.7 B N	ND N	ND N
Arsenic	21	9.5	163	48	5.5 B	43	ND	ND	ND	ND	ND
Barium	1,080	221	21 B	28 B	5.9 B	314	4.1 B	20 B	126 B	6.2 B	2.7 B
Beryllium	0.62 B	ND	0.51 B	ND	1.5 B	ND	ND	0.58 B	ND	ND	ND
Cadmium	9,620	245	28,100	56,200	4,080	4,570	74	19	6.5	5.5	ND
Calcium	291,000 E	28,500 E	5,450 E	15,100 E	1,120 B	82,900 E	958 B	855 B E	1,190 B E	1,650 B E	411 B E
Chromium	1,030 E	653 E	ND E	2,500 E	124	46,200 E	805	431 E	108 E	17 E	3.9 B E
Cobalt	5.9 B	15 B	9.8 B	31 B	ND	24 B	ND	ND	ND	ND	ND
Copper	7,370	966	9,430	7,900	620	2,380	174	80	32	16 B	ND
Iron	321,000 E	211,000 E	32,300 E	467,000 E	33,500	90,600 E	1,080	3,570 E	1,410 E	638 E	73 B E
Lead ^a	1,510	2,480	1,230	2,280	2,530	1,200	24	113	130	56	24
Magnesium	13,000	3,330 B	8,500	2,170 B	345 B	15,800	296 B	48 B	391 B	360 B	68.7 B
Manganese	1,360 E	1,040 E	1,390 E	1,590 E	157	809 E	10 B	7.6 B E	8.4 B E	7.1 B E	2.0 B E
Mercury	0.24 N	0.31 N	2.6 N	0.27 N	ND	0.74 N	ND	ND N	ND N	0.5 N	ND N
Nickel	118	149	457	19,200	746	590	25.9 B	70	15 B	6.8 B	ND N
Potassium	5,230 E	ND E	7,650 E	1,160 B E	118 B	7,170 E	ND	184 B E	256 B E	306 B E	ND E
Selenium	32	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	14 E	5.5 B E	245 E	36 E	36	16 E	ND	1.5 B E	1.6 B E	35 E	ND E
Sodium	4,790 E	ND E	10,100 E	85,300 E	2,320 B	23,300 E	1,130 B	1,910 B E	1,780 B E	1,740 B E	1,730 B E
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	178	ND	ND
Vanadium	48	23 B	99	12 B	92	2.9 B	37	487	ND	6.3 B	ND
Zinc	1,740	652	ND	3,020	311	918	1,320 N	188 N	132	ND	13 B
Cyanide	362 N	253 N	431 N	4,650 N	230	39	39	208 N	189 N	ND N	ND N

NOTE: Bold numbers exceed lead dust criteria (21.5 µg/100cm²).
 a - USEPA Guidance on Residential Lead-Based Paint, Lead-Contaminated Dust, and Lead-Contaminated Soil, 1994.

B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
 E - Value estimated due to interference.
 N - Spiked sample recovery is not within control limits.
 ND - Not detected at analytical detection limit.

WIPE SAMPLE DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER UPWP41 UPWP42 UPWP43 UPWP44 UPWP45 UPWP45D UPWP46 UPWP47 UPWP48 UPWP49 UPWP50 UPWP51

TAL METALS (µg/100cm ²)	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead ^a	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Cyanide
246	ND N	ND	ND	1,290	ND	1.8 B	2,680 B	14	ND	5.9 B	547E	30 N	197 B	7.5 B	ND	ND	185 B	ND	ND	1,570 B	ND	ND	599	3 N
259	ND N	ND	ND	17 B	ND	888	3,400 B	156	ND	473	2,950 E	67 N	575 B	48	ND	960	335 B	3.6 B	2.2 B	2,620 B	ND	ND	21,600	825 N
1,660	38 B N	20	ND	2,500	ND	61	20,300	1,380	123	499	5,240 E	8,450 N	2,210 B	149	0.62	163	943 B	ND	17	3,280 B	ND	14 B	11,300	34 N
561	15 B N	ND	55 B	0.49 B	ND	11	2,250 B	157	ND	46	9,600 E	254 N	262 B	62	ND	51	162 B	ND	2.4 B	2,140 B	ND	3.7 B	230	25N
1,670	838 N	ND	57 B	57 B	ND	155	3,140 B	1,630	223	777	201,000 E	3,240 N	1,700 B	508	0.55	248	824 B	ND	8.3	1,590 B	ND	17 B	10,200	5.4 N
833	466	ND	29 B	104 B	ND	28	2,620 B	2,690	49	195	66,900	608	670 B	30	ND	63	970 B	ND	1.4 B	2,330 B	4.9 B	6.2 B	4,230	ND
237	ND N	ND	36 B	1.2 B	11,500	103	20,900	110	ND	27	2,120 E	80 N	415 B	60	ND	44	118 B	2.5 B	ND	4,870	ND	ND	133	374 N
15,700	196 N	57	36 B	1.1 B	1,500	103	28,600	62,300	21 B	1,800	136,000 E	31,800 N	8,630	1,090	0.58	174	4,650	ND	17	43,400	9.7 B	43	3,370	95 B N
53 B	ND N	ND	2.2 B	6.9 B	ND	6.8	452 B	44	ND	20 B	57 B E	19 N	177 B	2.5	ND	ND	ND	ND	ND	1,380 B	ND	ND	12 B	ND N
67 B	ND N	ND	6.9 B	11 B	ND	1.8 B	543 B	9.3	ND	3.5 B	ND E	5.9 N	196 B	3.1 B	ND	4.8 B	ND	ND	ND	2,200 B	ND	ND	17	ND N
120 B	ND N	ND	11 B	2.7 B	ND	ND	1,370 B	23	ND	7.4 B	ND E	9.9 N	251 B	4.1 B	ND	7.3 B	152 B	ND	ND	2,500 B	ND	ND	38	14 N
10,400	ND N	5.0 B	2.7 B	ND	2.1 B	637 B	25	25	ND	14 B	ND E	18 N	191 B	6.3 B	ND	ND	188 B	ND	ND	151,000	ND	ND	42	8.6 N

NOTE: Bold numbers exceed lead dust criteria (21.5 µg/100cm²).
 a - US EPA Guidance on Residential Lead-Based Paint, Lead-Contaminated Dust, and Lead-Contaminated Soil, 1994.
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E - Value estimated due to interference.
 N - Spiked sample recovery is not within control limits.
 ND - Not detected at analytical detection limit.

WIPE SAMPLE DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER UPWP52 UPWP53 UPWP54 UPWP55 UPWP56 UPWP57 UPWP58 UPWP59 UPWP60 UPWP61 UPWP62 UPWP62D

TAL METALS (µg/100cm²)	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead ^a	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Cyanide
1,940	99 N	ND N	ND	22 B	ND	2.0 B	714 B	20,200	11 B	639	391,000 E	414 N	5,350	470	0.24	63	594 B	ND	411	12,700	ND	14 B	54	17 N
262	ND N	ND	ND	4.6 B	ND	1.5 B	2,470 B	25,400	16 B	56	198 E	312 N	350 B	3.6 B	ND	ND	100 B	ND	2.1 B	2,200 B	ND	ND	21	2.8 N
206	ND N	ND	ND	4.7 B	ND	55	2,470 B	919	21	56	198 E	13 N	2,760 B	160	0.44	143	97 B	ND	ND	1,770 B	ND	ND	23	2.9 N
5,680	17 B N	ND N	ND	5.2 B	ND	1.0 B	4,480	20	ND	3,260	22,000 E	676 N	505 B	4.2 B	ND	5.3 B	ND	943 B	ND	1,170 B	ND	ND	14 B	2.1 N
125 B	ND N	ND N	ND	57 B	ND	ND	6,050	22	ND	3.7 B	483 E	29 N	3,550 B	5.0 B	0.14	ND	ND	ND	ND	3,010 B	ND	7.1 B	9.1 B	ND N
328	188 N	ND N	22	134 B	ND	23	115,000	1,920	ND	25	4,830 E	8,520 N	3,720 B	106	ND	7.4 B	1,020 B	ND	ND	2,800 B	ND	59	253	105 N
1,790	ND N	ND N	ND	9.4 B	ND	ND	7,670	16	ND	3.5 B	164 E	32 N	1,260 B	5.2 B	ND	ND	ND	ND	ND	1,520 B	ND	3.0 B	9.9 B	2.2 N
129	ND N	ND N	ND	53 B	ND	1.3 B	108,000	28	ND	25	5,780 E	88 N	4,660	85	ND	6.5 B	423 B	ND	ND	1,600 B	ND	3.1 B	107	4.3 N
1,250	ND N	ND N	ND	9.2 B	ND	9.2	1,120 B	73	ND	56	53,400 E	78 N	405 B	186	ND	17 B	166 B	ND	ND	2,090 B	ND	ND	53	2.6 N
846	ND	12 B N	38	36 B	ND	33	3750 B	2,760	34 B	1,570	8,300 E	290 N	746 B	53	0.32	5,380	ND	ND	71	ND	5.4 B	704	824 N	
ND	ND	ND	4.4 B	ND	ND	4.9	854 B	667	12 B	309	1,450	28	233 B	10.2 B	ND	1,720	ND	ND	ND	1,560 B	ND	2.6 B	164	320

NOTE: Bold numbers exceed lead dust criteria (21.5 µg/100cm²).
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 B - Value is less than the contract-required detection limit but greater than the instrument detection limit.

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 N - Spiked sample recovery is not within control limits.
 ND - Not detected at analytical detection limit.

WIPE SAMPLE DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER	UPWP63	UPWP63D	UPWP64	UPWP65	UPWP66	UPWP67	UPWP68	UPWP69	UPWP70	UPWP71	UPWP72	UPWP73
TAL METALS (µg/100cm ²)												
Aluminum	374	165	62 B	93 B	884	1,330	25,200	13,400	157 B	1,860	1,290	351
Antimony	17 B N	9.2 B	ND N	ND N	ND N	32 B N	12 B N	12 B N	7.1 B N	ND N	14 B N	12 B N
Arsenic	23	7.4 B	ND	ND	ND	51	37	ND	ND	4.7 B	ND	39
Barium	31 B	6.5 B	2.3 B	2.2 B	31 B	125 B	614	101 B	5.6 B	26 B	20	27,100
Beryllium	ND	ND	ND	ND	ND	ND	1.9 B	ND	ND	ND	ND	ND
Cadmium	23	5.8	ND	ND	7.3	46	64	19	ND	1.1 B	2.8 B	11
Calcium	1,940 B	972 B	1,160 B	568 B	236,000	6,220	111,000	17,800	7,560	162,000	49,200	21,700
Chromium	25,500	6,380	35	13	899	60,900	15,400	204	13	206	413	23
Cobalt	22 B	6.3 B	ND	ND	42	57	ND	ND	ND	ND	ND	10 B
Copper	758	300	5.9 B	5.9 B	756	286,000	8,570	250	30	67	79	26
Iron	151,000 E	26,600	124 E	99 E	962 E	12,700 E	62,600 E	46,900 E	331 E	2,480 E	1,400 E	1,400 E
Lead ^a	327 N	61.4	2.6 N	3.1 N	109 N	3,230 N	6,240 N	300 N	14 N	42 N	1,260 N	9,580 N
Magnesium	722 B	336 B	242 B	192 B	1,640 B	1,790 B	18,700	2,220 B	394 B	4,080	3,400 B	1,100 B
Manganese	523	113	2.3 B	2.2 B	102	100	742	263	5.9 B	96	77	43
Mercury	0.15	ND	ND	ND	0.080 B	1.0	0.31	0.33	ND	0.09	ND	ND
Nickel	161	27 B	ND	ND	18 B	18,900	611	60	ND	9.6 B	13 B	5.1 B
Potassium	334 B	130 B	ND	ND	1,030 B	988 B	12,600	470 B	110 B	923 B	1,030 B	292 B
Selenium	ND	16	ND	ND	ND	ND	ND	55	ND	ND	ND	ND
Silver	20	16	ND	ND	ND	56	29	ND	ND	ND	ND	ND
Sodium	1,470 B	1,130 B	1,450 B	1,360 B	2,140 B	5,700	10,400	1,580 B	1,100 B	2,680 B	3,810 B	1,650 B
Thallium	ND	ND	ND	ND	ND	14	ND	ND	ND	ND	ND	ND
Vanadium	8.1 B	2.7 B	ND	ND	39 B	11 B	59	37 B	ND	68	20 B	ND
Zinc	184	77	12 B	28	192	1,070	1,880	414	34	140	198	30,700
Cyanide	7.6 N	5.3	86 N	41 N	9.8 N	5,510 N	189 N	25 N	2.4 N	6.6 N	4.6 N	ND N

NOTE: Bold numbers exceed lead dust criteria (21.5 µg/100cm²).
 a - USEPA Guidance on Residential Lead-Based Paint, Lead-Contaminated Dust, and Lead-Contaminated Soil, 1994.
 B - Value is less than the contract-required detection limit but greater than the instrument detection limit.

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 ND - Not detected at analytical detection limit.

WIPE SAMPLE DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER UPWP74 UPWP75 UPWP75D UPWP76 UPWP76D UPWP77 UPWP78 UPWP79 UPWP80 UPWP81 UPWP82 UPWP83 UPWP84

TAL METALS (µg/100cm ²)												
Aluminum	4,650	4,100	203	189	79 B	429	100 B	6,300	114 B	90 B	532	7,900
Antimony	ND N	21 B N	ND	ND	ND N	ND N	ND N	ND N	ND N	18 B N	66 N	ND N
Arsenic	15	12	ND	ND	ND	3.9 B	ND	ND	ND	ND	ND	3.5 B
Barium	212	417	6.0 B	130 B	7.4 B	16 B	103 B	16,300	104 B	104 B	53 B	41 B
Beryllium	0.81 B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	209	306	8.0	894	107	6.0	2.1 B	2.2 B	23	4.8	24	37
Calcium	18,200	25,600	852 B	3,930 B	2,970	2,650 B	1,220 B	906 B	1,900 B	920 B	7,700	59,100
Chromium	1,340	5,440	250	140	299	438	ND	26	124	35	317	1,760
Cobalt	74	9.5 B	ND	ND	5.4 B	ND	ND	ND	ND	ND	ND	6.4 B
Copper	1,050	1,720	80	188	4,930	271	12 B	14 B	56	335	354	8,830 E
Iron	714,000 E	46,600 E	400	15,800 E	38,400 E	1,870 E	16,500 E	350 E	954 E	4,060 E	8,830 E	8,830 E
Lead ^a	4,150 N	1,950 N	42	106 N	37 N	174 N	2,620 N	88 N	1,490 N	3,980 N	245 N	245 N
Magnesium	4,800	9,720	296 B	406 B	529 B	909 B	270 B	389 B	240 B	1,510 B	12,400	12,400
Manganese	2,540	409	9.9 B	78	110	20	62	57	6.2 B	9.9 B	73	73
Mercury	1.2	2.1	ND	0.22	ND	ND	ND	0.10	ND	0.09	0.81	0.81
Nickel	452	263	22 B	54	13 B	22 B	26 B	112 B	12 B	64	843	843
Potassium	1,800 B	1,800 B	105 B	278 B	114 B	331 B	1,590 B	117 B	580 B	1,340 B	1,340 B	1,340 B
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	34	81	ND	2.6 B	8.1	ND	ND	ND	ND	48	8.7	8.7
Sodium	3,990 B	3,450 B	1,110 B	2,610 B	1,240 B	1,920 B	1,580 B	4,130	1,560 B	2,560 B	7,890	7,890
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	56	55	ND	2.0 B	3.6 B	6,560	ND	ND	ND	4.2 B	11 B	11 B
Zinc	2,020	2,200	105	200	12,300	6,560	83	83	6,490	38	422	422
Cyanide	111 N	2,020	111 N	2,020	111 N	2,020	111 N	2,020	111 N	2,020	111 N	2,020

NOTE: Bold numbers exceed lead dust criteria (21.5 µg/100cm²).
 a - USEPA Guidance on Residential Lead-Based Paint, Lead-Contaminated Dust, and Lead-Contaminated Soil, 1994.
 B - Value is less than the contract-required detection limit but greater than the instrument detection limit.

E - Value estimated due to interference.
 N - Spiked sample recovery is not within control limits.
 ND - Not detected at analytical detection limit.

WIPE SAMPLE DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER	GAUZE1	GAUZE2	BLANK
TAL METALS ($\mu\text{g}/100\text{cm}^2$)			
Aluminum	17 B	43	92 B
Antimony	ND N	ND N	ND
Arsenic	ND	ND	ND
Barium	ND	2.0	2.70 B
Beryllium	0.41 B	ND	ND
Cadmium	ND	ND	ND
Calcium	524 B	365	436 B
Chromium	ND	ND	ND
Cobalt	ND	ND	ND
Copper	ND	ND	ND
Iron	ND E	16 B E	91
Lead ^a	ND N	2.5 B N	ND
Magnesium	179 B	ND	149 B
Manganese	2.4 B	1.5 B	1.7 B
Mercury	ND	ND	ND
Nickel	ND	ND	ND
Potassium	ND	ND	ND
Selenium	3.2 B	ND	ND
Silver	ND	ND	ND
Sodium	2,510 B	2,330	1,800 B
Thallium	ND	ND	ND
Vanadium	ND	ND	ND
Zinc	ND	ND	9.5 B
Cyanide	ND N	ND N	ND

NOTE: Bold numbers exceed lead dust criteria ($21.5 \mu\text{g}/100\text{cm}^2$).

a - USEPA Guidance on Residential Lead-Based Paint, Lead-Contaminated Dust, and Lead-Contaminated Soil, 1994.

B - Value is less than the contract-required detection limit but greater than the instrument detection limit.

E - Value estimated due to interference.

N - Spiked sample recovery is not within control limits.

ND - Not detected at analytical detection limit.

value has been included on Table 3-1 and any lead values exceeding this limit are in bold. All but 10 samples, or 88 %, exceed the clearance criterion.

The 10 wipe samples taken after steam cleaning are shown on Table 3-1 after the wipe sample taken prior to cleaning. The samples are indicated by the letter "D" after the sample number. The percent removal of the major contaminants of concern at the site, i.e. cadmium, chromium, copper, lead, and zinc, was calculated to be ~75%. Thus, it can be expected that steam cleaning the equipment and debris will remove approximately 75% of the surface contamination.

3.2.2 Sweep Samples

Fifty sweep samples were collected inside the building and analyzed for TAL metals and cyanide and TCLP metals. The results are provided on Table 3-2 for metals and cyanide and 3-3 for TCLP metals along with the TCLP limits. The bolded values exceed the TCLP limits, which means that the dust is considered hazardous. Thirty-three of the 50 samples collected were hazardous (exceeded TCLP limits for either cadmium, chromium, or lead). The TCLP limits for cadmium, chromium, and lead were exceeded in 26, 11, and 10 samples, respectively. Chromium exceeded the limit in one sample by three orders of magnitude; that sample also contained 27% chromium.

3.2.3 Concrete Chip Samples

Twenty concrete chip samples were collected and analyzed for TAL metals and cyanide and TCLP metals. The results are provided on Table 3-4 for metals and cyanide and 3-5 for TCLP metals along with the TCLP limits. The bolded values exceed the TCLP limits, which means that the concrete is considered hazardous. One sample, UPFC-17, for chromium, and one sample, UPFC-20, for cadmium, exceeded the TCLP limits.

3.2.4 Wood Chip Samples

Sixteen wood chip samples were collected and analyzed for TAL metals and cyanide; the results are provided on Table 3-6. In addition, eight of these samples were analyzed for TCLP metals; the results are provided on Table 3-7 along with the TCLP limits. The bolded values exceed the TCLP limits, which means that the wood is considered hazardous. Two samples, UPWC-13 and UPWC-14, exceeded the TCLP limits for chromium. In addition, the TCLP limit for selenium was exceeded in sample UPWC-14.

TABLE 3-2 (Page 1 of 6)

SWEEP SAMPLE DATA SUMMARY (MAY 1995)
United Plating Site

PARAMETER	UPSP1	UPSP2	UPSP3	UPSP4	UPSP5	UPSP6	UPSP7	UPSP8	UPSP09
TAL METALS (mg/kg)	4,630 E	10,200 E	6,130 E	5,000 E	224 E	9,070 E	4,610 E	12,300 E	6,150 E
Aluminum	6.8 B N	59 N	246 N	55,000 N	20 N	87 N	ND N	32 N	6.1 B N
Antimony	ND	ND	5.3	84	ND	ND	ND	ND	24 N
Arsenic	460 N	175 N	138 N	1,450 N	284 N	1,190 N	62 N	661 N	1,970 E N
Barium	0.31 B	0.64 B	0.80 B	0.22 B	ND	0.5 B	0.35 B	0.82 B	0.40 B
Beryllium	133 E	163 E	1,050 E	80 E	16 E	195 E	588 E	197 E	129 N
Calcium	15,900 E	17,000 E	13,900 E	26,500 E	5,300 E	37,600 E	4,970 E	20,800 E	24 B
Chromium	3,030	3,100	717	5,670	50,500	23,200	268	1,930	45 E N
Cobalt	30	193	32	253	3.4 B	16,900	17	199	31 N
Copper	934 E	885 E	701 E	3,770 E	64 E	907 E	440 E	1,550 E	895 E
Iron	240,000 E	90,700 E	49,100 E	161,000 E	639 E	39,500 E	346,000 E	71,000 E	27,700 E
Lead	728	7,470	1,810	2,750	243	6,900	569	4,170	367 E N
Magnesium	3,410 E	6,200 E	3,900 E	2,270 E	529 B E	5,180 E	3,420 E	7,620 E	4,290 E
Manganese	851 N	688 N	526 N	609 N	15 N	325 N	1,000 N	479 N	1.3 E N
Mercury	1.3 N	0.35 N	0.30 N	0.89 N	0.18 N	1.8 N	0.19 N	0.2 B N	0.69
Nickel	95 N	210 N	121 N	394 N	93 N	1,400 N	101 N	255 N	241 N
Potassium	2,880 E	5,850 E	3,680 E	2,590 E	150 B E	5,580 E	1,610 E	10,500 E	4,230 E
Selenium	ND N	ND N	ND N	ND N	1.2 N	ND N	2.8 N	ND N	1.2 B N
Silver	74 E	239 E	185 E	221 E	22 E	258 E	80 E	320 E	ND
Sodium	15,400 E	72,600 E	4,220 E	5,090 E	591 B E	32,800 E	84,000 E	69,900 E	22,400 E
Thallium	ND	ND	ND	ND	ND	71	ND	ND	ND N
Vanadium	32	33	17	22	4.7 B	22	20	33	53 N
Zinc	8,360 E	3,940 E	61,900 E	7,960 E	168 E	17,100 E	25,400 E	2,250 E	7,650 E
Cyanide	792	478	433	776	ND	1,970	634	544	96 B

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SWEEP SAMPLE DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER	UPSP10	UPSP11	UPSP12	UPSP13	UPSP14	UPSP15	UPSP16	UPSP17	UPSP18
TAL METALS (mg/kg)									
Aluminum	2,690 E	7,710 E	2,850 E	16,200 E	8,550 E	28,400 E	2,740 E	659 E	6,380 E
Antimony	ND N	326 N	5.9 B N	111 N	968 N	19 N	1,520 N	186 N	27 N
Arsenic	5.3	7.7	ND	1.4 B	22	ND	13	81	4.5
Barium	321 N	443 N	917 N	164 N	345 N	295 N	373 N	51 N	308 N
Beryllium	ND	0.52 B	0.10 B	2.6	0.80	1.8	0.17 B	ND	0.39 B
Cadmium	20 E	656 E	258 E	132 E	367 E	57 E	303 E	77 E	156 E
Calcium	63,900 E	23,100 E	24,400 E	16,200 E	26,500 E	7,520 E	14,400 E	9,200 E	34,800 E
Chromium	133	8,720	2,120	31,700	13,100	5,900	26,300	3,030	1,910
Cobalt	11	220	231	43	176	17	47	22	23
Copper	134 E	6,820 E	625 E	1,270 E	2,950 E	306 E	7,010 E	33,300 E	593 E
Iron	63,000 E	67,000 E	46,900 E	36,100 E	77,700 E	19,500 E	89,300 E	ND E	48,800 E
Lead	4,280	45,500	1,290	14,700	53,700	1,180	69,000	2,810	5,860
Magnesium	3,130 E	7,400 E	3,170 E	10,300 E	6,000 E	13,700 E	1,620 E	3,350 E	3,450 E
Manganese	443 N	729 N	457 N	373 N	743 N	417 N	807 N	1,740 N	342 N
Mercury	3.3 N	1.1 N	0.31 N	0.42 N	1.8 N	ND N	0.86 N	0.49 N	1.9 N
Nickel	48 N	997 N	132 N	361 N	591 N	211 N	1,680 N	298 N	931 N
Potassium	898 B E	2,870 E	2,040 E	2,880 E	2,140 E	3,900 E	1,000 E	329 B E	2,730 E
Selenium	ND N	ND N	0.85 B N	ND N	ND N	2.5 N	ND N	ND N	1.3 N
Silver	4.4 E	136 E	233 E	353 E	175 E	185 E	182 E	36 E	35 E
Sodium	970 E	5,490 E	3,110 E	541 B E	595 B E	2,980 E	1,280 E	6,270 E	1,340 E
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	16	27	14	58	37	67	19	16	22
Zinc	7,440 E	2,650 E	979 E	3,280 E	2,970 E	269 E	1,970 E	405 E	1,780 E
Cyanide	70	175	47	103	50	118	96	27	61

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TABLE 3-2 (Page 3 of 6)

SWEEP SAMPLE DATA SUMMARY (MAY 1995)
United Plating Site

PARAMETER	UPSP19	UPSP20	UPSP21	UPSP22	UPSP23	UPSP24	UPSP25	UPSP26	UPSP27
TAL METALS (mg/kg)									
Aluminum	11,400 E	5,140 E	5,850 E	4,340 E	11,700 E	7,440 E	7,380 E	6,520 E	18,900 E
Antimony	1.3 B N	52 N	78 N	48 N	ND N	ND N	37 N	127 N	ND N
Arsenic	8.2	6.6	4.7	8.2	1.1 B	ND	4.5	5.1	ND
Barium	172 N	256 N	3,210 N	1.8 B N	769 N	421 N	1,180 N	888 N	0.22 B N
Beryllium	0.66 B	0.43 B	0.21 B	ND	1.0	0.81 B	0.43 B	0.34 B	2.1
Cadmium	165 E	520 E	2,640 E	618 E	46 E	523 E	1,190 E	484 E	26 E
Calcium	56,500 E	24,100 E	26,200 E	628 B E	38,600 E	20,600 E	30,900 E	32,900 E	79,900 E
Chromium	580	2,500	4,790	2,310	435	826	15,000	5,100	956
Cobalt	17	45	171	15	5.7 B	9.2 B	56	38	21
Copper	954 E	2,470 E	4,850 E	3,900 E	29,900 E	2,110 E	7,560 E	82,100 E	660 E
Iron	48,900 E	86,100 E	197,000 E	622 E	34,300 E	21,300 E	83,700 E	159,000 E	89,100 E
Lead	1,340	8,330	8,860	1,400	196	836	11,900	20,800	268
Magnesium	6,270 E	6,270 E	5,370 E	39 B E	16,000 E	9,930 E	4,800 E	5,840 E	31 B E
Manganese	443 N	664 N	957 N	3.3 N	818 N	411 N	841 N	963 N	6.1 N
Mercury	1.3 N	2.8 N	3.0 N	1.9 N	5.4 N	0.92 N	1.4 N	1.5 N	1.3 N
Nickel	620 N	10,400 N	3,290 N	1,510 N	49 N	370 N	14,000 N	689 N	52 N
Potassium	3,120 E	2,800 E	2,900 E	2,820 E	58,600 E	3,450 E	2,040 E	3,100 E	981 E
Selenium	ND N	ND N	ND N	ND N	6.1 N	1.6 N	ND N	ND N	14 N
Silver	12 E	145 E	63 E	0.98 B E	26 E	12 E	43 E	59 E	4.3 E
Sodium	602 B E	2,910 E	21,900 E	1,390 E	33,700 E	137,000 E	3,560 E	3,290 E	1,280 E
Thallium	ND	ND	ND	ND	ND	11	ND	ND	ND
Vanadium	44	34	27	ND	47	35	32	26	22
Zinc	3,320 E	2,610 E	19,400 E	2,140 E	1,110 E	2,050 E	4,720 E	5,460 E	1,360 E
Cyanide	49	224	230	206	2,750	37	609	207	8.7

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TABLE 3-2 (Page 4 of 6)

SWEEP SAMPLE DATA SUMMARY (MAY 1995)
United Plating Site

PARAMETER	UPSP28	UPSP29	UPSP30	UPSP31	UPSP32	UPSP33	UPSP34	UPSP35	UPSP36
TAL METALS (mg/kg)									
Aluminum	19,000 E	8,750 E	7,630 E	9,040 E	9,030 E	4,770 E	7,420 E	3,860 E	9,660 E
Antimony	ND N	7.6 B N	51 N	736 N	8.1 B N	38 N	14 N	ND N	ND N
Arsenic	ND	7.7	9.3	87	6.7	ND	5.4	4.0 N	21 N E
Barium	0.38 B N	545 N	1,160 N	433 N	568 N	241 N	258 N	608 E N	535 E N
Beryllium	ND	0.18 B	0.25 B	0.75 B	0.63 B	0.62 B	0.44 B	0.22 B	0.59
Cadmium	20 E	156 E	319 E	97 E	69 E	83 E	80 E	20 N	307 N
Calcium	117,000 E	143,000 E	42,500 E	53,400 E	48,700 E	31,800 E	48,900 E	88,200	54,200
Chromium	589	1,750	1,800	13,600	11,300	145,000	45,100	1,160 E N	1,060 E N
Cobalt	3.6 B	12	32	22	18	15	16	7.5 N	21 N
Copper	1,610 E	5,520 E	1,130 E	2,670 E	326 E	3,150 E	337 E	589 E	1,800 E
Iron	46,200 E	51,200 E	153,000 E	63,400 E	47,200 E	30,000 E	29,700 E	12,900 E	175,000 E
Lead	1,030	2,480	16,300	3,050	2,170	11,600	3,940	7,340 E N	10,300 E N
Magnesium	94,700 E	6,540 E	4,030 E	7,890 E	9,790 E	4,430 E	4,770 E	3,990 E	7,000 E
Manganese	1.1 B N	450 N	755 N	426 N	573 N	229 N	271 N	189 E N	910 E N
Mercury	0.55 N	3.2 N	0.89 N	0.22 N	0.35 N	0.10 N	0.28 N	2.3	0.23
Nickel	87 N	237 N	341 N	2,870 N	401 N	491 N	973 N	42 N	212 N
Potassium	1,520 E	1,600 E	2,020 E	8,720 E	10,300 E	18,900 E	4,760 E	1,690 E	3,000 E
Selenium	8.0 N	1.1 N	ND N	ND N	15 N	ND N	1.2 N	ND N	ND N E
Silver	0.46 B E	192 E	225 E	16 E	35 E	12 E	13 E	4.0	32
Sodium	1,020 E	718 B E	1,360 E	13,300 E	5,810 E	20,800 E	15,400 E	1,380 E	796 B E
Thallium	ND	ND	ND	ND	ND	ND	ND	ND N	ND N
Vanadium	1.9 B	37	34	37	51	22	29	27 N	23 N E
Zinc	516 E	2,340 E	4,510 E	1,060 E	874 E	1,200 E	13,500 E	477 E	2,300 E
Cyanide	449	202	100	104	51	47	41	0.49 B	25

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TABLE 3-2 (Page 5 of 6)

SWEEP SAMPLE DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER	UPSP37	UPSP38	UPSP39	UPSP40	UPSP41	UPSP42	UPSP43	UPSP44	UPSP45
TAL METALS (mg/kg)									
Aluminum	6,720 E	8,720 E	9,670 E	8,270 E	270 E	9,090 E	789 E	5,410 E	8,790 E
Antimony	1,060 N	84 N	1.5 B N	ND N	16 N	ND N	ND N E	13 N	1.4 B N
Arsenic	84 N	10 N	2.1 N	12 N	ND N E	11 N	ND N E	18 N	6.9 N
Barium	64 E N	818 E N	610 E N	771 E N	26 B E N	474 E N	185 E N	267 E N	457 E N
Beryllium	1.1 B	0.52 B	0.40 B	0.37 B	ND	0.55 B	ND	0.50 B	0.54 B
Cadmium	2.9 N E	81 N	306 N	40 N	ND N E	2,200 N	52 N	92 N	1,120 N
Calcium	4,570	101,000	32,200	83,200	1,090 B	63,400	5,470	37,300	29,200
Chromium	270,000 E N	4,820 E N	333 E N	896 E N	281 E N	194 E N	458 E N	59,800 E N	12,900 E N
Cobalt	9.3 B N	13 N	9.4 N	11 N	127 N	9.8 N	14 N	8.8 B N	202 N
Copper	2,550 E	4,940 E	418 E	509 E	150 E	5,100 E	197 E	1,290 E	3,660 E
Iron	28,300 E	37,000 E	54,000 E	44,600 E	2,340 E	49,500 E	725,000 E	62,400 E	51,400 E
Lead	154 E N	6,420 E N	1,820 E N	1,420 E N	ND E N	894 E N	2,500 E N	1,020 E N	2,580 E N
Magnesium	4,330 E	6,030 E	4,800 E	8,030 E	1,500 E	7,520 E	1,760 E	6,370 E	7,670 E
Manganese	405 E N	366 E N	346 E N	404 E N	14 E N	385 E N	1,750 E N	400 E N	393 E N
Mercury	0.11	3.0	0.23	0.77	0.87	0.45	0.19	ND	0.20
Nickel	195 N	220 N	91 N	105 N	177,000 N	400 N	87 N	108 N	3,440 N
Potassium	3,290 E	5,980 E	3,510 E	8,610 E	507 B E	6,060 E	403 B E	1,500 E	3,120 E
Selenium	ND N E	ND N E	ND N	ND N E	ND N E	ND N E	ND N E	ND N	ND N E
Silver	3.8	9.0	219	128	0.72 B	8.6	3.4	22	56
Sodium	1,560 E	13,600 E	2,220 E	7,480 E	2,100 E	17,000 E	1,100 B E	792 B E	2,530 E
Thallium	9.5 N E	ND N E	ND N	ND N	ND N E	ND N E	2.5 B E N	ND N E	ND N E
Vanadium	66 N	18 N	30 N	44 N	2.0 B N	19 N	31 N	23 N	25 N
Zinc	ND E	900 E	638 E	794 E	147 E	729 E	856 E	392 E	4,690 E
Cyanide	ND		88 B	76	56 B	170	ND	41	737

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SWEEP SAMPLE DATA SUMMARY (MAY 1995)

United Plating Site

UPFB04	UPSP50	UPSP49	UPSP48	UPSP47	UPSP46	PARAMETER
(µg/l)						
21 B	5,930 E	6,300 E	11,800 E	5,290 E	3,290 E	Aluminum
11 B	ND N	ND N E	ND N	18 N	2.7 B N	Antimony
ND	0.89 B N	21 N E	ND N	46 N	17 N	Arsenic
ND	464 E N	1,220 E N	189 E N	1,940 E N	2,340 E N	Barium
ND	0.20 B	0.29 B	1.1 B	0.39 B	0.35 B	Beryllium
ND	1,080 N	6,140 N	2,750 N	209 N	41 N	Cadmium
1,100	20,000	15,400	6,220	62,600	85,000	Calcium
15	2,900 E N	618 E N	165 E N	1,550 E N	257 E N	Chromium
ND	31 N	47 N	ND N	47 N	12 N	Cobalt
ND	1,460 E	558 E	40 E	334 E	135 E	Copper
60 B	95,000 E	412,000 E	78,300 E	58,400 E	9,350 E	Iron
ND	2,870 E N	1,330 E N	278 E N	13,200 E N	4,370 E N	Lead
ND	5,270 E	3,780 E	10,000 E	4,530 E	2,920 E	Magnesium
ND	1,990 E N	1,300 E N	619 E N	334 E N	177 E N	Manganese
ND	0.10	0.27	ND	1.9	1.5	Mercury
ND	479 N	495 N	10 N	377 N	61 N	Nickel
ND	1,940 E	4,780 E	2,720 E	2,440 E	6,210 E	Potassium
ND	ND N E	ND N E	ND N E	ND N	ND N	Selenium
ND	5.1	6.7	71	17	14	Silver
238 B	14,500 E	15,900 E	73,200 E	6,910 E	3,460 E	Sodium
ND	ND N E	ND N E	4.6 N E	ND N	ND N	Thallium
ND	26 N	43 N	27 N	94 N	68 N	Vanadium
13 B	2,580 E	5,940 E	68,300 E	15,600 E	4,190 E	Zinc
20 B	56	189	3,920	79	41	Cyanide

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SWEEP SAMPLE DATA SUMMARY
United Plating Site

PARAMETER	UPSP1	UPSP2	UPSP3	UPSP4	UPSP5	UPSP6	UPSP7	UPSP8	UPSP9	STANDARDS
TCLP										
TCPLP METALS (mg/l)										
Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	0.068 B N	5.0
Barium	0.21 B E	0.20 B E	0.43 B E	0.11 B E	0.54 B E	0.13 B E	0.25 B E	0.17 B E	ND	100
Cadmium	0.77 E	0.12 E	5.7 E	0.38 E	0.76 E	2.1 E	0.024 B E	0.066 E	ND	1.0
Chromium	1.8 E	14 E	0.069 B E	49 E	2,336 E	4.3 E	0.083 B E	2.7 E	4.7	5.0
Lead	0.034	1.8	0.035	ND	ND	1.1	ND	0.51	ND E	5.0
Mercury	0.017 N	0.0093 N	0.0055 N	0.020 N	0.0031 N	0.018 N	ND N	0.0036 N	0.0011	0.2
Selenium	ND	ND	ND	ND	ND	ND	0.037 B	0.052	ND	1.0
Silver	1.4 N E	3.1 N E	1.2 N E	1.4 N E	0.16 N E	0.94 N E	0.062 B N E	3.4 N E	ND	5.0

NOTE: Numbers in bold exceed TCLP standards.
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TABLE 3-3 (Page 2 of 6)

SWEEP SAMPLE DATA SUMMARY
United Plating Site

TCLP METALS (mg/l)									
Arsenic	ND	0.53 B E	0.83 B E	ND	ND	0.62 B E	1.6 B E	ND	0.39 B E
Barium	0.15 E	16 E	4.8 E	2.0 E	4.4 E	1.7 E	7.1 E	0.33 B E	0.14 B E
Cadmium	0.097 B E	4.2 E	0.88 E	0.78 E	ND E	1.38 E	1.5 E	0.18 E	0.15 E
Chromium	9.7	18	0.78	55	5.8	20	144	4.4	0.21
Lead	ND N	0.00059 N	0.00092 N	ND N	0.00020 B N	0.0013 N	0.0011 N	0.00054 N	0.00021 N
Mercury	ND	ND	ND	ND	0.22	ND	ND	0.032 B	ND
Selenium	ND N E	ND N E	0.44 N E	ND N E	ND N E	0.32 N E	0.026 B N E	ND N E	ND N E
Silver	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0

PARAMETER	UPSP10	UPSP11	UPSP12	UPSP13	UPSP14	UPSP15	UPSP16	UPSP17	UPSP18	TCLP STANDARDS

NOTE: Numbers in bold exceed TCLP standards.
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SWEEP SAMPLE DATA SUMMARY
United Plating Site

PARAMETER										TCLP STANDARDS
UPSP19	UPSP20	UPSP21	UPSP22	UPSP23	UPSP24	UPSP25	UPSP26	UPSP27		
TCLP METALS (mg/l)										
Arsenic	ND	0.14	ND	ND	ND	ND	ND	ND	5.0	
Barium	0.35 B E	ND E	0.11 B E	1.7 B E	0.41 B E	0.21 B E	ND E	0.15 B E	0.25 B E	100
Cadmium	2.4 E	ND E	17 E	3.1 E	ND E	5.3 E	7.1 E	20 E	0.032 B E	1.0
Chromium	0.044 B E	0.56 E	2.0 E	0.44 E	0.52 E	0.59 E	13 E	1.3 E	ND E	5.0
Lead	0.47	0.073 B	0.75	0.59	0.075	0.69	ND	26	ND	5.0
Mercury	0.0015 N	0.0026 N	0.0060 N	0.0082 N	0.00071 N	0.0017 N	0.011 N	0.0094 N	0.0085 N	0.2
Selenium	ND	ND	ND	ND	0.11	ND	ND	ND	ND	1.0
Silver	ND N E	0.017 B N E	ND N E	0.21 N E	0.29 N E	0.14 N E	0.39 N E	ND N E	ND N E	5.0

NOTE: Numbers in bold exceed TCLP standards.
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 ND - Not detected at analytical detection limit.

TABLE 3-3 (Page 4 of 6)

SWEEP SAMPLE DATA SUMMARY
United Paving Site

PARAMETER	UPSP28	UPSP29	UPSP30	UPSP31	UPSP32	UPSP33	UPSP34	UPSP35	UPSP36	STANDARDS
TCLP										
TCLP METALS (mg/l)	ND	ND	ND	ND	ND	0.36	ND N	ND N	0.38 B	5.0
Arsenic	0.16 B E	0.093 B E	0.24 B E	0.22 B E	0.079 B E	0.079 B E	0.13 B E	0.22 B	0.38 B	100
Barium	0.17 E	0.92 E	3.7 E	1.2 E	0.44 E	0.90 E	1.5 E	0.090	1.1	1.0
Cadmium	0.060 B E	0.087 E	0.91 E	56 E	36 E	164 E	11 E	2.0	0.030 B	5.0
Chromium	0.73	0.65	11	2.9	0.082	0.61	ND	0.91 E	2.2 E	5.0
Lead	0.0088 N	0.0089 N	0.0056 N	0.00043 N	0.0014 N	0.00038 B N	0.00095 N	ND	ND	0.2
Mercury	ND	ND	ND	ND	ND	0.38	ND	ND	ND	1.0
Selenium	ND N E	ND N E	0.45 N E	ND N E	ND N E	0.023 B N E	0.018 B N E	ND	ND	5.0
Silver	ND N E	ND N E	ND N E	ND N E	ND N E	0.023 B N E	0.018 B N E	ND	ND	5.0

NOTE: Numbers in bold exceed TCLP standards.
 B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
 E - Value estimated due to interference.
 N - Spiked sample recovery is not within control limits.
 ND - Not detected at analytical detection limit.

SWEEP SAMPLE DATA SUMMARY **United Plating Site**

TABLE 3-3 (Page 5 of 6)

TCLP METALS (mg/l)										
PARAMETER	UPSP37	UPSP38	UPSP39	UPSP40	UPSP41	UPSP42	UPSP43	UPSP44	UPSP45	TCLP STANDARDS
Arsenic	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	5.0
Barium	0.081 B	0.083 B	ND	0.47 B	0.30 B	0.26 B	0.33 B	0.17 B	0.11 B	100
Cadmium	0.38	1.0	ND	6.1	1.2	6.2	1.1	7.1	0.53	1.0
Chromium	5.082	0.98	0.85	3.8	1.2	0.24	0.025 B	108	2.2	5.0
Lead	ND E	0.67 E	ND E	0.23 E	54 E	ND E	55 E	0.065 E	2.7 E	5.0
Mercury	0.0024	0.0060	0.0017	0.00094	0.0037	0.0038	ND	ND	0.0016	0.2
Selenium	ND	ND	0.52	ND	ND	0.61	ND	ND	ND	1.0
Silver	0.035 B	ND	ND	0.032 B	ND	0.031 B	ND	0.15	ND	5.0

NOTE: Numbers in bold exceed TCLP standards.
 B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
 E - Value estimated due to interference.
 N - Spiked sample recovery is not within control limits.
 ND - Not detected at analytical detection limit.

TABLE 3-3 (Page 6 of 6)

SWEEP SAMPLE DATA SUMMARY
United Plating Site

PARAMETER		UPSP46	UPSP47	UPSP48	UPSP49	UPSP50	TCLP STANDARDS
TCLP METALS (mg/l)							
Arsenic	0.071 B N	0.045 N	ND N	ND N	ND N	ND N	5.0
Barium	0.0093 B	0.14 B	0.16	0.091 B	0.84 B		100
Cadmium	0.035 B	1.1	14	0.75	0.94		1.0
Chromium	0.17	0.80	0.22	0.21	0.28		5.0
Lead	ND E	2.1 E	ND E	ND E	1.5 E		5.0
Mercury	ND	0.00063 B	ND	0.00026 B	ND		0.2
Selenium	ND	ND	ND	ND	ND		1.0
Silver	ND	ND	ND	ND	ND		5.0

NOTE: Numbers in bold exceed TCLP standards.
 B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
 E - Value estimated due to interference.
 N - Spiked sample recovery is not within control limits.
 ND - Not detected at analytical detection limit.

CONCRETE CHIP DATA SUMMARY (MAY 1995) United Plating Site

PARAMETER	UPFC01	UPFC02	UPFC03	UPFC04	UPFC05	UPFC06	UPFC07	UPFC08	UPFC09	UPFC10
TAL METALS (mg/kg)										
Aluminum	6,600 E	6,770 E	6,270 E	6,350 E	6,980 E	8,120 E	6,930 E	8,740 E	10,000 E	9,200 E
Antimony	ND N	ND N	ND N	ND N	242 N	75 N	8.2 B N	ND N	ND N	5.5 B N
Arsenic	3.1 B	5.3	5.7	3.9	5.1	3.5 B	3.7	3.0	7.6	1.1 B
Barium	108 E	94 E	2,080 E	121 E	462 E	258 E	127 E	105 E	121 E	183 E
Beryllium	0.64 B	0.42 B	0.36 B	0.30 B	0.44 B	0.37 B	0.41 B	0.41 B	0.63 B	0.36 B
Cadmium	12	14	17	97	244	169	355	84	840	162
Calcium	122,000 E	148,000 E	108,000 E	123,000 E	51,400 E	106,000 E	114,000 E	112,000 E	171,000 E	71,300 E
Chromium	272 E	183 E	206 E	433 E	27,400 E	4,820 E	1,110 E	411 E	1,230 E	662 E
Cobalt	21	7.8 B	24	14	88	22	17	10	12	12
Copper	378 E	620 E	483 E	530 E	1,890 E	4,730 E	990 E	1,200 E	1,400 E	5,910 E
Iron	133,000	15,000	13,000	12,700	50,100	26,200	22,000	14,600	44,600	20,700
Lead	87 E	116 E	212 E	314 E	26,500 E	8,720 E	3,510 E	800 E	1,680 E	2,270 E
Magnesium	12,900 E	11,400 E	6,980 E	7,610 E	6,710 E	7,990 E	9,270 E	6,500 E	7,410 E	4,440 E
Manganese	855 E	283 E	263 E	262 E	456 E	382 E	347 E	288 E	455 E	286 E
Mercury	ND N	ND N	ND N	0.11 N	0.60 N	0.19 N	0.37 N	0.46 N	0.52 N	0.21 N
Nickel	152 E	21 E	1,960 E	43 E	409 E	177 E	338 E	156 E	9,460 E	1,140 E
Potassium	3,450 E	4,650 E	3,290 E	3,320 E	1,390 E	2,980 E	3,310 E	4,210 E	1,290 E	3,280 E
Selenium	ND	2.2	ND	ND	ND	ND	ND	ND	ND	ND
Silver	169 E	221 E	64 E	16 E	47 E	44 E	52 E	27 E	50 E	9.6 E
Sodium	3,410	5,780	3,000	7,700	822 B	3,890	2,540	10,500	1,190	546 B
Thallium	ND	ND	ND	ND	ND	2.2	ND	ND	ND	ND
Vanadium	30 E	24 E	19 E	17 E	35 E	20 E	20 E	15 E	27 E	14 E
Zinc	332 E	158 E	1,040 E	2,160 E	1,360 E	1,230 E	1,640 E	1,830 E	7,800 E	951 E
Cyanide	97	438	316	48	41	110	198	151	1,150	366

B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
 E - Value estimated due to interference.
 N - Spiked sample recovery is not within control limits.
 ND - Not detected at analytical detection limit.

TABLE 3-4 (Page 2 of 2)

CONCRETE CHIP DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER	UPFC11	UPFC12	UPFC13	UPFC14	UPFC15	UPFC16	UPFC17	UPFC18	UPFC19	UPFC20	UPFB03
TAL METALS (mg/kg)	7,740 E	3,210 E	4,330 E	10,800 E	10,900 E	11,500 E	9,120 E	7,410 E	5,990 E	6,780 E	17 B
Aluminum	39 N	ND N	ND N	ND N	ND N E	ND N	ND N	ND N	ND N	ND N	ND
Antimony	ND	3.1	ND	ND	4.2 N	2.7 N	3.6 N	3.5 N	2.0 N	ND	ND
Arsenic	ND	213 E	89 E	72 E	209 E	76 E N	159 E N	62 E N	89 E N	72 E N	ND
Barium	0.30 B	0.16 B	0.20 B	0.37 B	0.35 B	0.42 B	0.35 B	0.41 B	0.31 B	0.16 B	ND
Beryllium	1,190	13	5.8	3.0	14	2.4 N	14 N	87 N	7.1 N	18 N	ND
Calcium	58,000 E	271,000 E	226,000 E	122,000 E	115,000 E	155,000	104,000	264,000	109,000	75,800	1120 B
Chromium	2,090 E	103 E	376 E	266 E	1,390 E	24 E N	278 E N	1,620 E N	142 E N	429 E N	2.0 B
Cobalt	9.0 B	3.7 B	2.4 B	5.7 B	6.7 B	4.9 B N	5.0 B N	30 N	19 N	75 N	ND
Copper	1,520 E	185 E	291 E	24 E	51 E	32 E	118 E	764 E	60 E	88 E	ND
Iron	45,600	7,490	13,400	12,500	13,100	10,800 E	11,200 E	13,600 E	11,100 E	18,400 E	22 B
Lead	1,610 E	339 E	190 E	90 E	2,590 E	102 E N	892 E N	40 E N	202 E N	136 E N	ND
Magnesium	3,920 E	11,900 E	7,990 E	6,510 E	9,690 E	4,600 E	10,300 E	10,300 E	10,300 E	3,990 E	ND
Manganese	417 E	101 E	98 E	291 E	294 E	239 E N	218 E N	260 E N	227 E N	122 E N	ND
Mercury	0.19 N	0.12 N	0.20 N	ND N	ND N	ND	0.39	ND	0.26	ND	ND
Nickel	357 E	32 E	39 E	15 E	16 E	9.3 N	45 N	70 N	61 N	105 N	ND
Potassium	3,670 E	1,410 E	1,440 E	6,050 E	7,570 E	6,580 E	4,740 E	3,660 E	3,650 E	4,480 E	658 B
Selenium	ND	ND	ND	ND	ND	ND N	ND N	ND N	ND N	ND N	ND
Silver	55 E	12 E	18 E	3.4 E	3.4 E	8.0	2.7	1.7 B	2.3	27	ND
Sodium	1,020	9,830	1,180	4,180	4,750	3,620 E	4,590 E	3,090 E	10,000 E	6,470 E	276 B
Thallium	1.6 B	ND	ND	ND	ND	ND N E	ND N	ND N	ND N E	ND N E	ND
Vanadium	19 E	39 E	50 E	15 E	15 E	14 N	13 N	17 N	15 N	13 N	ND
Zinc	2,860 E	119 E	103 E	103 E	239 E	1,750 E	225 E	217 E	654 E	596 E	ND
Cyanide	41	0.52	7.8	1.8 B	7.5	1.5	11	22	46	57	ND

B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
 E - Value estimated due to interference.
 N - Spiked sample recovery is not within control limits.
 ND - Not detected at analytical detection limit.

TABLE 3-5

CONCRETE CHIP SAMPLE DATA SUMMARY (MAY 1995) United Plating Site

TCLP										
PARAMETER	UPFC01	UPFC02	UPFC03	UPFC04	UPFC05	UPFC06	UPFC07	UPFC08	UPFC09	UPFC10
STANDARDS										
TCLP METALS (mg/l)										
Arsenic	ND	0.18	ND	ND	ND	ND	ND	ND	ND	0.050 B
Barium	0.49 B E	ND E	0.11 B E	0.29 B E	0.38 B E	0.21 B E	0.24 B E	0.30 B E	0.16 B E	0.084 B E
Cadmium	ND	ND	ND	ND	0.015 B	0.35	0.36	0.33	0.19	0.14
Chromium	ND	0.76	0.15	2.2	1.6	1.2	1.6	1.9	1.3	1.5
Lead	ND	ND	ND	ND	ND	ND	0.16	0.23	ND	ND
Mercury	ND	0.0028	0.00054 B	0.00095	0.0026	0.0016	0.00088 B	0.0049	ND	0.00024
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ND	0.028 B	ND	3.6	0.63	0.11	0.099 B	0.079 B	0.15	0.17

TCLP										
PARAMETER	UPFC11	UPFC12	UPFC13	UPFC14	UPFC15	UPFC16	UPFC17	UPFC18	UPFC19	UPFC20
STANDARDS										
TCLP METALS (mg/l)										
Arsenic	ND	ND	ND	ND	ND	0.019 N	0.012 N	ND N	ND N	ND N
Barium	0.44 B E	0.42 B E	0.17 B E	0.06 B E	0.070 B E	0.092 B	0.13 B	0.18 B	0.068 B	0.15 B
Cadmium	ND	ND	ND	0.051	0.014 B	ND	0.042 B	ND	0.057	1.1
Chromium	5.0	0.15	0.022 B	4.0	27	ND	1.1	3.6	0.10	0.10
Lead	ND	ND	ND	0.035	ND	ND E	ND E	ND E	ND E	2.1 E
Mercury	ND	ND	ND	0.00025	ND	ND	ND	ND	ND	0.00036 B
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	0.29	0.099	0.099	ND	ND	ND	ND	ND	ND	ND

NOTE: Numbers in bold exceed TCLP standards.
 B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
 E - Value estimated due to interference.
 N - Spiked sample recovery is not within control limits.
 ND - Not detected at analytical detection limit.

TABLE 3-6 (Page 1 of 2)

WOOD CHIP SAMPLE DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER UPWC01 UPWC02 UPWC03 UPWC04 UPWC05 UPWC06 UPWC07 UPWC08 UPWC09 UPWC10									
TAL METALS (mg/kg)									
Aluminum	750	6,440	3,000	1,130	4,650	2,910	1,940	4,080	3,460
Antimony	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N
Arsenic	2.1	3.7	2.0 B	1.7 B	ND	1.0 B	1.2 B	0.93 B	3.6
Barium	11 B	11 B	14 B	5.5 B	20 B	22 B	14 B	6.5 B	7.8 B
Beryllium	0.55 B	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	0.74 B	ND	0.26 B	ND	0.3 B	4.7	0.3 B	0.86 B	ND
Calcium	30,500	40,800	78,300	720 B	487 B	16,600	8,830	15,900	18,000
Chromium	17 N	5.7 N	9.0 N	1.1 B N	3.6 N	30 N	6.0 N	16 N	3.4 N
Cobalt	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	16	4.7	5.6	3.7 B	4.1 B	24	3.8 B	9.2	3.9 B
Iron	218 E	177 E	211 E	46 E	173 E	289 E	130 E	205 E	138 E
Lead	31 E N	13 E N	8.7 E N	3.8 E N	2.7 E N	80 E N	83 E N	9.4 E N	0.77 E N
Magnesium	6,560 E	17,800 E	40,600 E	201 B E	208 B E	4,330 E	1,790 E	7,710 E	4,170 E
Manganese	228 N	93 N	133 N	127 N	116 N	266 N	72 N	66 N	65 N
Mercury	0.32 N	3.0 N	ND N	ND N	ND N	6.5 N	4.8 N	2.2 N	0.12 N
Nickel	25	1.0 B	ND	20	2.6 B	15	1.8 B	2.5 B	ND
Potassium	1,150 E	2,390 E	976 E	904 B E	688 B E	535 B E	1,030 E	1,310 E	1,550 E
Selenium	ND	0.94	ND	0.7 B	ND	ND	0.85 B	ND	0.91 B
Silver	0.85 B	0.48 B	ND	1.1 B	ND	1.3 B	ND	0.73 B	ND
Sodium	2,590 E	6,810 E	8,030 E	5,240 E	6,420 E	1,430 E	2,880 E	5,630 E	7,220 E
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1.8 B	5.7 B	3.1 B	1.3 B	4.0 B	3.7 B	2.1 B	4.1 B	4.2 B
Zinc	66 E	15 E	18 E	ND E	ND E	146 E	19 E	23 E	15 E
Cyanide	1.4	3.3	5.4	6.1	8.5	7.0	8.4	7.0	7.6
	6.1								6.1

B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
 E - Value estimated due to interference.
 N - Spiked sample recovery is not within control limits.
 ND - Not detected at analytical detection limit.

WOOD CHIP SAMPLE DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER	UPWC11	UPWC12	UPWC13	UPWC14	UPWC15	UPWC16	UPFB2
TAL METALS (mg/kg)	51	34 B	2,210	367	60	589	17 B
Aluminum	7.2 B N	4.3 B N	9.6 B N	24 N	6.6 B N	33 N	ND
Antimony	20	7.6	14	38	23	79	ND
Arsenic	5,280	3,100	5,950	6,620	5,860	3,400	14 B
Barium	ND	ND	ND	0.21 B	ND	0.41 B	ND
Beryllium	26	13	21	56	32	110	ND
Cadmium	1,900	1,120	1,880	2,620	1,490	2,450	ND
Calcium	27 N	42 N	125 N	314 N	24 N	309 N	2.8 B
Chromium	1.4 B	ND	2.7 B	2.2 B	4.4 B	3.8 B	ND
Cobalt	3.1 B	3.1 B	12	8.2	5.7	11	ND
Copper	473 E	341 E	546 E	2,000 E	592 E	2,130 E	27 B
Iron	7,460 E N	6,790 E N	16,000 E N	36,800 E N	7,390 E N	41,600 E N	55
Lead	367 B E	213 B E	306 B E	1,410 E	291 B E	466 B E	ND
Magnesium	312 N	99 N	135 N	261 N	212 N	402 N	ND
Manganese	ND N	ND N	0.11 N	0.37 N	ND N	0.36 N	ND
Mercury	ND	ND	1.3 B	1.4 B	10	2.0 B	ND
Nickel	463 B E	184 B E	358 B E	755 B E	428 B E	783 B E	ND
Potassium	0.89 B	0.94 B	1.6	1.3	2.2	1.8	ND
Selenium	0.79 B	0.6 B	1.2 B	2.1	1.2 B	4.8	ND
Silver	68 B E	83 B E	567 B E	925 B E	647 B E	208 B E	179 B
Sodium	ND	ND	ND	ND	ND	ND	ND
Thallium	ND	ND	0.9 B	1.2 B	0.47 B	1.6 B	ND
Vanadium	7,610 E	4,170 E	13,600 E	30,300 E	7,420 E	43,500 E	74
Zinc	6.2	15	ND	ND	ND	ND	ND
Cyanide							

B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
 E - Value estimated due to interference.
 N - Spiked sample recovery is not within control limits.
 ND - Not detected at analytical detection limit.

WOOD CHIP SAMPLE DATA SUMMARY (MAY 1995)

United Piling Site

TABLE 3-7

TCLP METALS (mg/l)										
PARAMETER	UPWC01	UPWC02	UPWC06	UPWC08	UPWC09	UPWC11	UPWC13	UPWC14	STANDARDS	
Arsenic	0.055 B N	0.058 B N	ND N	ND N	0.14 N	0.063 B N	0.071 B N	5.0	100	5.0
Barium	0.46	0.41 B	0.52 B	0.44 B	0.32 B	0.70 B	0.35 B	0.44	1.0	1.0
Cadmium	0.055	ND	0.027 B	0.015 B	ND	ND	0.44	0.56	5.0	5.0
Chromium	1.2	0.11	0.21	0.29	0.046 B	ND	0.10	0.20	5.0	5.0
Lead	0.89	0.057	0.57	0.13	0.031	0.29	125	97	5.0	5.0
Mercury	0.00055	0.0014	0.0047	0.0020	0.00064	ND	ND	ND	0.2	0.2
Selenium	ND	0.039 B	0.030 B	0.042 B	0.030 B	0.48	2.3	ND	1.0	1.0
Silver	ND	ND	ND	ND	ND	ND	0.055 B	ND	5.0	5.0

NOTE: Numbers in bold exceed TCLP standards.
 B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
 N - Spiked sample recovery is not within control limits.
 ND - Not detected at analytical detection limit.

3.2.5 Paint Chip Samples

Twenty paint chip samples were collected and analyzed for total lead. The results are shown on Table 3-8 along with the definition of lead-based paint (LBP) of 5000 mg/kg, or 0.5 %, lead. The values exceeding this limit are in bold on the table. Six of the samples exceeded the limit and thus are considered LBP. Two of the samples contained over 11 % lead, two of the samples over 4.4 % lead, and two of the samples 0.69 % lead.

3.3 DRAINLINE AND SUMP INVESTIGATION

The results of the smoke testing, inspection of the remaining interior piping, and the test pits (done as part of Task 2b) indicate that many of the suspected discharge locations are or were connected to the City of Schenectady sewer system. Although city records indicate that the sewer connections to the site were blocked by the sewer department, the smoke testing showed that this was not the case.

The existing piping within the building suggests that the plating lines in the main plating room, chrome plating room, and silver plating room were discharging into the chromium sump in the chrome plating room. It is not known whether the wastewater was then pumped to the wastewater treatment building or was simply allowed to infiltrate into the groundwater.

The smoke testing confirmed that the floor drains in the chrome plating room and the main plating room are connected to the rectangular metal-covered sumps along the Foster Avenue side of the building. It is not known where these sumps lead but it is believed that they tie into the city sewer system and may currently be blocked off.

Smoke testing conducted on the sewer cleanout located in the west corner of the main plating room showed that this line leads directly to the manhole located approximately 200 ft from the intersection of Foster Avenue and Seneca Street. It is not known what types of wastes were discharged to this line.

Several pipes were discovered during the test pitting operation. At UPTP-01 a perforated PVC pipe embedded in a coarse-stone fill was uncovered. This pipe led to the metal-covered sump adjacent to the building (see Figures 2-4 and 3-1). It is believed that the sump and lateral drains were used to prevent groundwater infiltration into the chromium sump within the building. Based on visual inspection and sampling it is not believed that process wastes were discharged to this sump. A similar pipe was found at UPTP-05, which leads west to the manhole in the concrete pad behind the building. It is not known what this pipe was used for. A 4-in.

TABLE 3-8

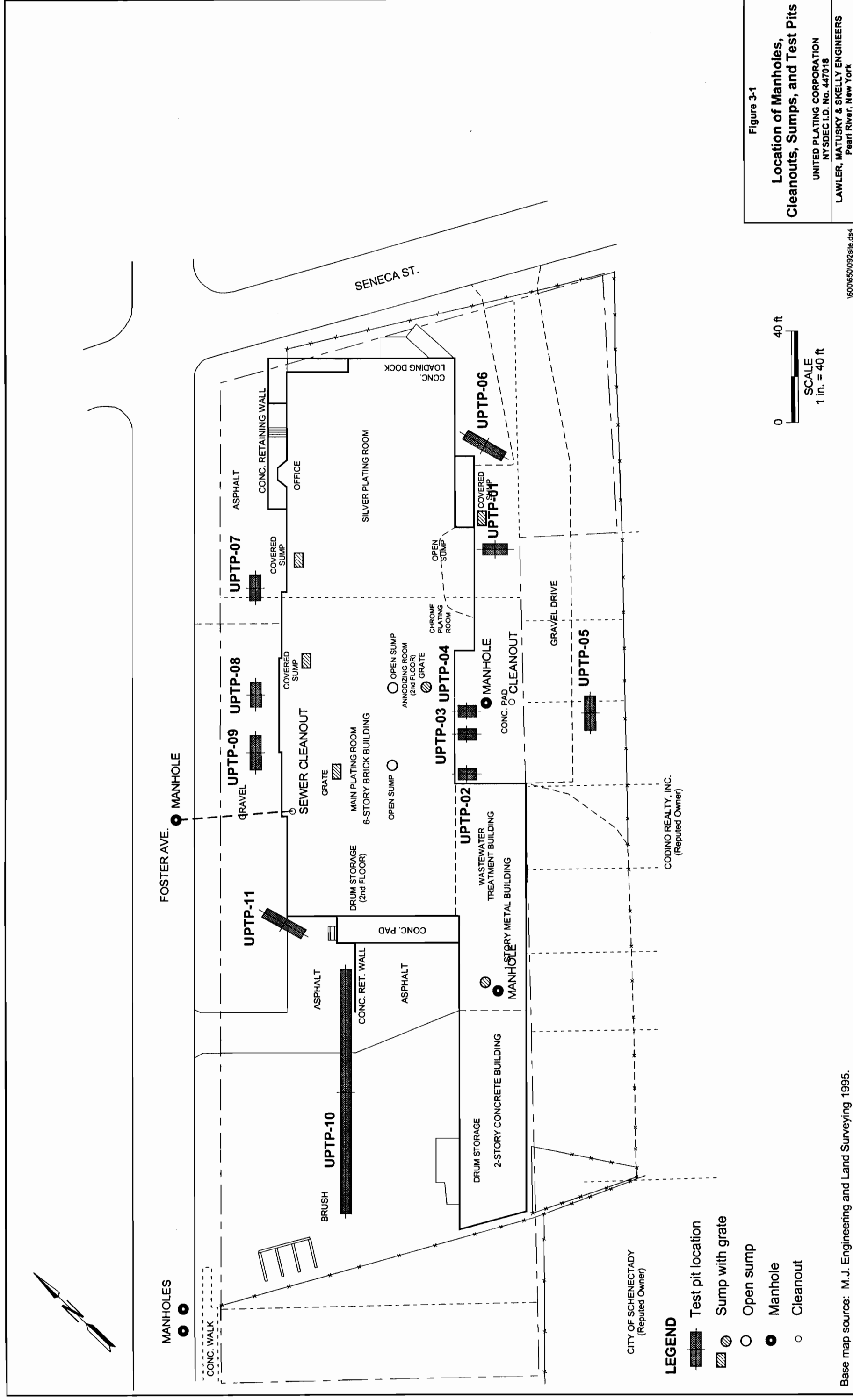
PAINT CHIP DATA SUMMARY (MAY 1995)
United Plating Site

LEAD-BASED PAINT DEFINITION	PARAMETER	UPPC1	UPPC2	UPPC3	UPPC4	UPPC5	UPPC6	UPPC7	LEAD-BASED PAINT DEFINITION
5,000	Lead (mg/kg)	145 E N	149,000 E N	263 E N	1,580 E N	55 E N	7,230 E N	107 E N	

LEAD-BASED PAINT DEFINITION	PARAMETER	UPPC8	UPPC9	UPPC10	UPPC11	UPPC12	UPPC13	UPPC14	LEAD-BASED PAINT DEFINITION
5,000	Lead (mg/kg)	119 E N	117,000 E N	314 E N	223 E N	478 E N	585 E N	95 E N	

LEAD-BASED PAINT DEFINITION	PARAMETER	UPPC15	UPPC16	UPPC17	UPPC18	UPPC19	UPPC20	UPFB05	LEAD-BASED PAINT DEFINITION
5,000	Lead (mg/kg)	61 E N	44,000 E N	348 E N	6,900 E N	1,230 E N	55,900 E N	ND	

NOTE: Numbers in bold exceed lead-based paint definition.
E - Value estimated due to interference.
N - Spiked sample recovery is not within control limits.
ND - Not detected at analytical detection limit.



masonry pipe containing water was uncovered at UPTP-02, UPTP-03, and UPTP-04, located adjacent to old sumps in the concrete pad at the corner of Buildings 1 and 2. At UPTP-04, above the masonry pipe, an empty 4-in. metal pipe was also found. Based on visual observations it appears that the holes cut into the concrete pad along the wall of the main building were originally constructed as footings for building additions. This addition was never built and the excavations were then used to discharge process wastewaters. These wastewaters could reach the city sewer system via the line discovered in UPTP-04 and shown to be connected to the city sewer during the smoke testing. In front of Building 2, at UPTP-10, a metal pipe was uncovered running from the gas main in the street to Building 2. No additional lines from the building to the street were found in front of the building. Several others are known to exit the front of the building and lead to Foster Avenue (see Figure 3-1).

Smoke testing conducted on the sewer clean-out in the wastewater building did not result in smoke being seen in any of the manholes along Foster Avenue. Smoke was noted from a small floor drain located several feet from the clean-out. Smoke from this test may have also exited through the roof of the building via a sanitary vent. This could not, however, be confirmed.

The site history (reports and photographs) and the test pitting show that any wastewater which was disposed of in the sumps along the east wall of the main plating room would have reached the City sewer system. This was confirmed with the smoke testing. When smoke was introduced into the manhole located in the concrete pad, smoke was noted in the unclofied drains in the pad, in the sump, and in the manhole on Foster Avenue. It is believed that process wastewaters were discharged to the sumps.

3.4 PROBE SOIL SCREENING

A total of 27 VOC and 31 metal samples were collected from 20 locations. The soil sample data are summarized on Table 3-9 and shown graphically on Figure 3-2. The table also shows the eastern U.S. background soil concentrations for metals and the NYSDEC soil cleanup objectives (NYSDEC 1994a). Results in bold exceed the cleanup objective/background levels. The laboratory analytical data sheets are contained in Appendix C. None of the samples were validated; however, the usability report is contained in Appendix D.

None of the VOC results exceeded the NYSDEC cleanup objective/background levels. Zinc exceeded the cleanup objective/background level in all 29 metals samples. Nickel exceeded the limit in 15 samples, cadmium in 11 samples, mercury in five samples, chromium and copper in four samples, and arsenic in two samples. The highest levels of contamination appeared to

TABLE 3-9 (Page 1 of 8)

PROBE SOIL SAMPLING DATA SUMMARY (MAY 1995) United Plating Site

PARAMETER	VOLATILE ORGANICS (mg/kg)											
	Methylene chloride	Acetone	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroform	Ethylbenzene	Styrene	1,2-Dichloroethane	1,1,1-Trichloroethane	Trichloroethylene	Tetrachloroethylene
UPOP1 (3 - 3.5 ft)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
UPOP2 (3 - 3.5 ft)	0.0020 b	0.0090	0.0020	ND	ND	ND	ND	ND	ND	ND	ND	ND
UPOP2 (6.5 - 7 ft)	ND	0.010 b	0.0010	ND	ND	ND	ND	ND	ND	ND	0.0030	0.0030
UPOP2 (6.5 - 7 ft)	ND	ND	0.0010	ND	ND	ND	ND	ND	ND	ND	0.0020	0.0020
UPOP3 (2.5 - 3 ft)	0.0050 b	0.012 b	ND	ND	0.0030	0.015	0.0020	0.0050	ND	ND	0.0040	0.0010
UPOP4 (2 - 4 ft)	ND	0.0070 b	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
UPOP4 (4 - 6 ft)	ND	0.0060 b	ND	ND	ND	ND	0.0010	ND	ND	ND	ND	ND
UPOP5 (5 - 5.5 ft)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NYSDEC SOIL CLEANUP OBJECTIVES (a)	0.1	0.2	2.7	0.6	1.7	0.3	5.5	NS	0.1	0.8	0.7	1.4
	1.2	1.5	1.2									
	N/A	N/A										
	0.0070	0.13	0.12	0.28	ND	ND	0.038	ND	0.053	ND	ND	ND
	Unknown	Cyclotetrasiloxane, octameth										

() - Number of compounds in total.
(a) - NYSDDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
b - Found in associated blanks.
- Estimated concentration; compound present below quantitation limit.
N/A - Not available.
ND - Not detected at analytical detection limit.
NS - No standard.
RE - Reanalysis.

TABLE 3-9 (Page 2 of 8)

PROBE SOIL SAMPLING DATA SUMMARY (MAY 1995) United Plating Site

PARAMETER	UPOP6 (4 - 5 ft)	UPOP6 (6 - 6.5 ft)	UPOP7 (3 - 4 ft)	UPOP8 (3.5 - 4 ft)	UPOP8 (5 - 6 ft)	UPOP8 (5 - 6 ft)	RE UPOP8 (5 - 6 ft)	UPOP9 (2 - 2.3 ft)	NYSDEC SOIL CLEANUP OBJECTIVES (a)
Chloromethane	ND	ND	ND	ND	ND	ND	ND	0.0030 b	NS
Methylene chloride	ND	0.0010	0.0030 b	0.0030 b	0.017 b	ND	ND	0.0040 b	0.1
Acetone	0.010 b	0.011 b	0.011 b	0.011 b	0.011 b	0.0090 b	ND	ND	0.2
Carbon disulfide	ND	ND	0.0010	ND	0.0040	ND	ND	ND	2.7
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	0.3
2-Butanone	ND	ND	ND	ND	ND	0.0030 b	ND	ND	0.3
Styrene	0.0020	0.0020	0.0020	ND	ND	ND	0.0020	ND	NS
1,1,1-Trichloroethane	ND	ND	ND	ND	0.027	0.011	ND	ND	0.8
Trichloroethylene	0.0030	0.0030	0.0040	0.0020	0.022	0.010	0.0060 b	0.0020	0.7
Tetrachloroethylene	0.0010	ND	ND	ND	0.0070	0.0040	0.0020	0.0020	1.4
Toluene	0.0010	ND	ND	ND	0.013	0.0060	0.0020	0.0020	1.5
Tentatively Identified Compounds (mg/kg)	0.13	0.25	0.77	0.036	0.051	0.028 (2)	0.027	N/A	N/A
Unknown	ND	ND	ND	ND	0.037	ND	ND	ND	ND
Cyclotetrasiloxane, octameth	ND	ND	ND	ND	ND	ND	ND	ND	ND

() - Number of compounds in total.
 (a) - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
 b - Found in associated blanks.
 ND - Not detected at analytical detection limit.
 N/A - Not available.
 NS - No standard.
 RE - Reanalysis.

TABLE 3-9 (Page 3 of 8)

PROBE SOIL SAMPLING DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER	UPP09 (3.8 - 4.2 ft)	UPP10 (3 - 4 ft)	RE UPP10 (3 - 4 ft)	UPP10 (5 - 7 ft)	RE UPP10 (5 - 7 ft)	UPP11 (3 - 3.5 ft)	UPP12 (4 - 4.5 ft)	UPP13 (4 - 4.5 ft)	UPP14 (3 - 4 ft)	NYSDEC SOIL CLEANUP OBJECTIVES (a)
VOLATILE ORGANICS (mg/kg)										
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
Chlorobenzene	0.0020	0.0020	0.0020	0.0030	0.0050 b	ND	ND	ND	0.0020	1.7
Methylene chloride	0.0020	0.0080	0.0030	0.0050 b	0.0050 b	ND	ND	ND	0.0020	0.1
Acetone	0.010 b	0.011	0.0060 b	0.021 b	0.018 b	0.0060	0.0090 b	ND	0.024 b	0.2
Ethylbenzene	0.0020	ND	ND	ND	ND	ND	ND	ND	ND	5.5
2-Butanone	ND	ND	ND	ND	ND	ND	0.0030 b	ND	0.0040 b	0.3
1,1,1-Trichloroethane	0.0020	0.012	0.0050 b	0.0090 b	0.0090	ND	ND	ND	0.0090	0.8
1,2-Dichloroethane	0.0020	ND	0.0020 b	ND	ND	ND	ND	ND	ND	0.1
Trichloroethylene	0.0090	0.026	0.017	0.0040	0.010	ND	0.013	0.067	0.033	0.7
Tetrachloroethylene	0.0030	0.0060	0.0040	ND	0.0040	ND	0.0010	ND	ND	1.4
Toluene	0.0020	0.0050	0.0030	0.0010	0.0040	ND	ND	ND	0.0020	1.5
Ethylbenzene	ND	0.0020	ND	ND	ND	ND	ND	ND	0.0070	5.5
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	ND	0.0060	1.2
Styrene	0.0060	0.0030	0.0030	ND	0.002	ND	0.0020	ND	ND	NS
Tentatively Identified Compounds (mg/kg)										
Unknown alkylbenzene	0.010	ND	ND	ND	ND	ND	ND	ND	0.027 (2)	N/A
Unknown benzene	ND	ND	ND	ND	ND	ND	ND	ND	0.0080	N/A
Unknown hydrocarbon	ND	ND	ND	ND	ND	ND	ND	ND	0.098 (2)	N/A
Unknown	ND	0.12	0.012	ND	ND	ND	0.012	ND	ND	N/A

(a) - Number of compounds in total.
 - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
 b - Found in associated blanks.
 - Estimated concentration; compound present below quantitation limit.
 N/A - Not available.
 ND - Not detected at analytical detection limit.
 NS - No standard.
 RE - Reanalysis.

TABLE 3-9 (Page 4 of 8)

PROBE SOIL SAMPLING DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER											
UPP15	(2.5 - 3.5 ft)	UPP16	(2.5 - 3 ft)	UPP17	(6.5 - 7 ft)	UPP18	(3.5 - 4 ft)	UPP19	(4 - 4.5 ft)	UPP20	(4 - 4.5 ft)
UPP20	(10 - 10.5 ft)	UPP20	(10 - 10.5 ft)	UPP20	(10 - 10.5 ft)	UPP20	(10 - 10.5 ft)	UPP20	(10 - 10.5 ft)	UPP20	(10 - 10.5 ft)
RE		RE		RE		RE		RE		RE	
NYSDC		NYSDC		NYSDC		NYSDC		NYSDC		NYSDC	
SOIL CLEANUP		SOIL CLEANUP		SOIL CLEANUP		SOIL CLEANUP		SOIL CLEANUP		SOIL CLEANUP	
OBJECTIVES (a)		OBJECTIVES (a)		OBJECTIVES (a)		OBJECTIVES (a)		OBJECTIVES (a)		OBJECTIVES (a)	
Chloromethane	ND	Chloromethane	ND	Chloromethane	ND	Chloromethane	ND	Chloromethane	ND	Chloromethane	ND
Methylene chloride	0.0020 b	Methylene chloride	ND	Methylene chloride	0.0020 b	Methylene chloride	0.0030 b	Methylene chloride	ND	Methylene chloride	ND
Acetone	0.0090 b	Acetone	0.0050 b	Acetone	0.0090 b	Acetone	0.011 b	Acetone	0.0060 b	Acetone	0.010 b
2-Butanone	ND	2-Butanone	0.0010 b	2-Butanone	ND	2-Butanone	ND	2-Butanone	ND	2-Butanone	ND
1,1,1-Trichloroethane	ND	1,1,1-Trichloroethane	ND	1,1,1-Trichloroethane	ND	1,1,1-Trichloroethane	ND	1,1,1-Trichloroethane	ND	1,1,1-Trichloroethane	ND
Trichloroethylene	0.0010	Trichloroethylene	0.0020 b	Trichloroethylene	ND	Trichloroethylene	ND	Trichloroethylene	0.0030	Trichloroethylene	ND
Toluene	ND	Toluene	ND	Toluene	ND	Toluene	ND	Toluene	ND	Toluene	ND
Ethylbenzene	ND	Ethylbenzene	ND	Ethylbenzene	ND	Ethylbenzene	ND	Ethylbenzene	0.028	Ethylbenzene	ND
Xylene (total)	ND	Xylene (total)	ND	Xylene (total)	ND	Xylene (total)	ND	Xylene (total)	0.021	Xylene (total)	ND
Tentatively Identified Compounds (mg/kg)											
Unknown alkylbenzene	ND	Unknown alkylbenzene	ND	Unknown alkylbenzene	ND	Unknown alkylbenzene	ND	Unknown alkylbenzene	ND	Unknown alkylbenzene	ND
Unknown benzene	ND	Unknown benzene	ND	Unknown benzene	ND	Unknown benzene	ND	Unknown benzene	ND	Unknown benzene	ND
Unknown hydrocarbon	ND	Unknown hydrocarbon	ND	Unknown hydrocarbon	0.0060	Unknown hydrocarbon	ND	Unknown hydrocarbon	ND	Unknown hydrocarbon	ND
Unknown cyclohexane, dimethyl	ND	Unknown cyclohexane, dimethyl	ND	Unknown cyclohexane, dimethyl	ND	Unknown cyclohexane, dimethyl	ND	Unknown cyclohexane, dimethyl	0.021	Unknown cyclohexane, dimethyl	ND
Unknown cyclohexane, ethylmet	ND	Unknown cyclohexane, ethylmet	ND	Unknown cyclohexane, ethylmet	ND	Unknown cyclohexane, ethylmet	ND	Unknown cyclohexane, ethylmet	0.0070	Unknown cyclohexane, ethylmet	0.0060
Unknown cyclohexane	ND	Unknown cyclohexane	ND	Unknown cyclohexane	ND	Unknown cyclohexane	ND	Unknown cyclohexane	ND	Unknown cyclohexane	ND
Unknown substituted alkane	ND	Unknown substituted alkane	0.0080	Unknown substituted alkane	ND	Unknown substituted alkane	ND	Unknown substituted alkane	0.56 (2)	Unknown substituted alkane	0.0060
Unknown substituted hydrocar	ND	Unknown substituted hydrocar	ND	Unknown substituted hydrocar	ND	Unknown substituted hydrocar	ND	Unknown substituted hydrocar	0.89 (5)	Unknown substituted hydrocar	ND
Unknown substituted cyclohex	ND	Unknown substituted cyclohex	ND	Unknown substituted cyclohex	ND	Unknown substituted cyclohex	ND	Unknown substituted cyclohex	0.17	Unknown substituted cyclohex	ND
Unknown benzene, methylethyl	ND	Unknown benzene, methylethyl	ND	Unknown benzene, methylethyl	ND	Unknown benzene, methylethyl	ND	Unknown benzene, methylethyl	0.068	Unknown benzene, methylethyl	ND

() - Number of compounds in total.

(a) - NYSDC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.

b - Found in associated blanks.

N/A - Estimated concentration; compound present below quantitation limit.

ND - Not available.

NS - Not detected at analytical detection limit.

RE - Reanalysis.

United Plating Site

PARAMETER	UPP01 (2.5 - 3 ft)	UPP02 (2.5 - 3 ft)	UPP02 (4.5 - 5.5 ft)	UPP03 (2.5 - 3 ft)	UPP04 (2 - 4 ft)	UPP04 (4 - 6 ft)	UPP05 (4 - 4.5 ft)	EASTERN USA BACKGROUND SOIL CONCENTRATIONS (b)	RECOMMENDED SOIL CLEANUP OBJECTIVE (b)
TAL METALS (mg/kg)									
Aluminum	9,950	8,810	11,100	8,060	7,670	5,940	8,250	33,000	SB
Antimony	ND	ND	ND	ND N	ND N	ND N	ND	0.6 - 10 (n)	SB
Arsenic	4.9	3.0	ND	6.5	5.7	2.7	7.9	3.0 - 12.0 (n)	7.5 or SB
Barium	78	61	82	50	49	34	65	15 - 600	300 or SB
Beryllium	0.64 B	0.55 B	0.64 B	0.49 B	0.38 B	0.34 B	0.58 B	0 - 1.75	0.16 or SB
Cadmium	0.74 B	0.65 B	0.52 B	0.66 B	0.57 B	0.65 B	0.72 B	0.1 - 1.0	1 or SB
Calcium	43,100	33,400	34,900	27,700	27,300	27,400	2,800	130 - 35,000 (n)	SB
Chromium	37	14	18	14	12	11	3.8	1.5 - 40.0 (n)	10 or SB
Cobalt	15	10	10	15	12	9.7 B	15	2.5 - 60.0 (n)	30 or SB
Copper	31 E	33 E	32 E	36	26	26	36 E	1.0 - 50.0	25 or SB
Iron	24,300 E	21,400	24,200	23,800 E	20,500 E	20,100 E	24,500 E	2,000 - 550,000	2,000 or SB
Lead	12	12	11	11	8.8	9.5	14	4.0 - 61 or 200 - 500*	SB*
Magnesium	10700 E	9,500	11,700	8,890 E	9,140 E	8,570 E	4,670 E	100 - 5,000	SB
Manganese	675	385	480	711 E	624 E	448 E	679 E	50 - 5,000	SB
Mercury	ND	ND	ND	ND N	0.12 N	ND N	ND	0.001 - 0.2	0.1
Nickel	28	23	23	29	23	21	31	0.5 - 25	13 or SB
Potassium	2,800	1,460 E	3,260 E	1,620 E	1,640 E	1,170 E	1,290	8,500 - 43,000 (n)	SB
Selenium	ND	ND	ND	ND	ND	ND	ND	0.1 - 3.9	2 or SB
Silver	ND	0.35 B	ND	0.41 B	0.51 B	50	ND	0.1 - 5.0 (n)	SB
Sodium	185 B	81 B	133 B	173 B	89 B	85 B	112 B	6,000 - 8,000	SB
Thallium	ND	1.6 B	ND	ND	ND	ND	ND	0.1 - 0.8 (q)	SB
Vanadium	ND	19	23	17	16	13	20	1.0 - 300	150 or SB
Zinc	73	59	70	76 E	60 E	60 E	80	9.0 - 50	20 or SB
Cyanide	ND N	ND	ND	ND	ND	ND	ND N	N/A	**

NOTE: Numbers in bold exceed soil cleanup objectives/background concentrations.

2b - New York State background concentration.
(b) - NYSDEC Division Technical and Administrative Guidance

(n) - Dragun, J., The Soil Chemistry of Hazardous Materials. Memorandum (TAGM), 1/94.

(g) - Bowman, H.J., Environmental Chemistry of the Elements.
B - Value is less than the contract-required detection limit but greater than the instrument detection limit.

E - Value estimated due to interference.

PROBE SOIL SAMPLING DATA SUMMARY (MAY 1995) United Plating Site

RECOMMENDED	EASTERN USA	SOIL CLEANUP	OBJECTIVE (b)
UPP11	UPP11	UPP14	UPP14
PARAMETER	(3.5-4 ft)	(4.5-5 ft)	(2-3 ft)
UPP12	UPP12	UPP13	UPP13
UPP13	UPP13	UPP14	UPP14
UPP14	UPP14	UPP15	UPP15
UPP15	UPP15	UPP16	UPP16
UPP16	UPP16	UPP17	UPP17
UPP17	UPP17	UPP18	UPP18
UPP18	UPP18	UPP19	UPP19
UPP19	UPP19	UPP20	UPP20
UPP20	UPP20	UPP21	UPP21
UPP21	UPP21	UPP22	UPP22
UPP22	UPP22	UPP23	UPP23
UPP23	UPP23	UPP24	UPP24
UPP24	UPP24	UPP25	UPP25
UPP25	UPP25	UPP26	UPP26
UPP26	UPP26	UPP27	UPP27
UPP27	UPP27	UPP28	UPP28
UPP28	UPP28	UPP29	UPP29
UPP29	UPP29	UPP30	UPP30
UPP30	UPP30	UPP31	UPP31
UPP31	UPP31	UPP32	UPP32
UPP32	UPP32	UPP33	UPP33
UPP33	UPP33	UPP34	UPP34
UPP34	UPP34	UPP35	UPP35
UPP35	UPP35	UPP36	UPP36
UPP36	UPP36	UPP37	UPP37
UPP37	UPP37	UPP38	UPP38
UPP38	UPP38	UPP39	UPP39
UPP39	UPP39	UPP40	UPP40
UPP40	UPP40	UPP41	UPP41
UPP41	UPP41	UPP42	UPP42
UPP42	UPP42	UPP43	UPP43
UPP43	UPP43	UPP44	UPP44
UPP44	UPP44	UPP45	UPP45
UPP45	UPP45	UPP46	UPP46
UPP46	UPP46	UPP47	UPP47
UPP47	UPP47	UPP48	UPP48
UPP48	UPP48	UPP49	UPP49
UPP49	UPP49	UPP50	UPP50
UPP50	UPP50	UPP51	UPP51
UPP51	UPP51	UPP52	UPP52
UPP52	UPP52	UPP53	UPP53
UPP53	UPP53	UPP54	UPP54
UPP54	UPP54	UPP55	UPP55
UPP55	UPP55	UPP56	UPP56
UPP56	UPP56	UPP57	UPP57
UPP57	UPP57	UPP58	UPP58
UPP58	UPP58	UPP59	UPP59
UPP59	UPP59	UPP60	UPP60
UPP60	UPP60	UPP61	UPP61
UPP61	UPP61	UPP62	UPP62
UPP62	UPP62	UPP63	UPP63
UPP63	UPP63	UPP64	UPP64
UPP64	UPP64	UPP65	UPP65
UPP65	UPP65	UPP66	UPP66
UPP66	UPP66	UPP67	UPP67
UPP67	UPP67	UPP68	UPP68
UPP68	UPP68	UPP69	UPP69
UPP69	UPP69	UPP70	UPP70
UPP70	UPP70	UPP71	UPP71
UPP71	UPP71	UPP72	UPP72
UPP72	UPP72	UPP73	UPP73
UPP73	UPP73	UPP74	UPP74
UPP74	UPP74	UPP75	UPP75
UPP75	UPP75	UPP76	UPP76
UPP76	UPP76	UPP77	UPP77
UPP77	UPP77	UPP78	UPP78
UPP78	UPP78	UPP79	UPP79
UPP79	UPP79	UPP80	UPP80
UPP80	UPP80	UPP81	UPP81
UPP81	UPP81	UPP82	UPP82
UPP82	UPP82	UPP83	UPP83
UPP83	UPP83	UPP84	UPP84
UPP84	UPP84	UPP85	UPP85
UPP85	UPP85	UPP86	UPP86
UPP86	UPP86	UPP87	UPP87
UPP87	UPP87	UPP88	UPP88
UPP88	UPP88	UPP89	UPP89
UPP89	UPP89	UPP90	UPP90
UPP90	UPP90	UPP91	UPP91
UPP91	UPP91	UPP92	UPP92
UPP92	UPP92	UPP93	UPP93
UPP93	UPP93	UPP94	UPP94
UPP94	UPP94	UPP95	UPP95
UPP95	UPP95	UPP96	UPP96
UPP96	UPP96	UPP97	UPP97
UPP97	UPP97	UPP98	UPP98
UPP98	UPP98	UPP99	UPP99
UPP99	UPP99	UPP100	UPP100

TAL METALS (mg/kg)	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Cyanide
9,100	ND	6.0	63	60	0.58 B	0.68 B	29,900	18	16	33 E	26,300 E	13	8,690 E	761	ND	36	1,620	ND	ND	123 B	ND	20	77	ND N
9,330	ND	3.8	68	63	0.59 B	0.65 B	34,100	19	11	30 E	23,800 E	12	11,000 E	503	ND	23	2,630	ND	ND	142 B	ND	ND	66	ND N
10,100	ND	2.0	84	68	0.61 B	0.91 B	30,100	135	9.2 B	32	24,300	11	8,790	604	0.69	26	2,500	ND	0.51 B	232 B	ND	23	102	5.5
9,420	ND	1.6 B	84	144	0.54 B	0.76 B	324,600	31	14	32	23,300	15	10,600	638	0.77	34	1,970	ND	0.98 B	249 B	ND	22	67	ND
11,000	ND	3.3	102	70	0.60 B	0.82 B	38,100	29	9.6 B	32	25,300	12	9,750	432	0.78	21	2,440	ND	ND	297 B	ND	25	66	1.7
11,300	ND	4.4	102	70	0.69 B	0.69 B	9,360	27	12	34	24,100	25	4,940	505	ND	25	2,040	1.2	1.2 B	275 B	2.3	26	119	1.9
8,460	8,460	5.3	253	253	0.74 B	0.74 B	56,400	253	6.6 B	37	11,400	61	3,740	243	ND	33	1,400	ND	3.1	716 B	ND	22	163	23
		ND	130 - 35,000 mg	1.5 - 40.0 mg	2.5 - 60.0 mg	1.0 - 50.0	2,000 - 550,000	4.0 - 61 or 200 - 500*	100 - 5,000	50 - 5,000	0.001 - 0.2	0.5 - 25	8,500 - 43,000 mg	0.1 - 3.9	0.1 - 5.0 (m)	6,000 - 8,000	0.1 - 0.8 (g)	1.0 - 300	8.0 - 50	N/A				
		0.6 - 10 (n)	7.5 or SB	300 or SB	0.16 or SB	1 or SB	130 or SB	10 or SB	30 or SB	25 or SB	2,000 or SB	SB*	SB	SB	SB	SB	SB	2 or SB	SB	SB	SB	150 or SB	20 or SB	**

NOTE: Numbers in bold exceed soil cleanup objectives/background concentrations.

* - The rate of the corrosivity of steel at 131°F as determined by the NACE test.

** - New York State background concentration.

as - NYSDEC Draft Cleanup Policy and Guidelines, 10/91.

(b) - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.

(n) - Dragun, J., The Soil Chemistry of Hazardous Materials.

(q) - Bowman, H.J., Environmental Chemistry of the Elements.

B - Value is less than the contract-required detection limit but greater than the instrument detection limit.

E - Value estimated due to interference.

N - Spiked sample recovery is not within control limits.

N/A - Not available.

R - Duplicate analysis not within control limits.

ND - Not detected at analytical detection limit.

SB - Site background.

Pb - Background levels for lead range from 4 - 61 ppm in undeveloped, rural areas to 200 - 500 ppm in metropolitan or suburban areas or near highways.

CN - Some forms of Cyanide are complex and stable while other forms are pH dependent and hence are very unstable. Site-specific form(s) of Cyanide should be taken into consideration when establishing soil cleanup objectives.

PROBE SOIL SAMPLING DATA SUMMARY (MAY 1995) United Paving Site

PARAMETER	UPP15	UPP16	UPP17	UPP18	UPP19	UPP20	UPP20	EASTERN USA RECOMMENDED
(5-6 ft)	(5.8-6.2)	(9-10 ft)	(7.5-8 ft)	(6-7 ft)	(3.5-4 ft)	(10.5-11 ft)	BACKGROUND SOIL CONCENTRATIONS (b)	SOIL CLEANUP OBJECTIVE (b)
ALUMINUM	10,800	8,280	10,700	8,770	9,660	11,200	10,500	SB
ANTIMONY	ND	ND	ND	ND	ND	ND	ND	SB
ARSENIC	ND	ND	ND	16	ND	2.7	7.1	3.0-12.0 ug
BARIUM	45	58	82	59	67	81	49	15-600
BERYLLIUM	0.50 B	0.53 B	0.52 B	0.55 B	0.59 B	1.2	1.2	0-1.75
CADMIUM	0.82 B	0.76 B	0.71 B	0.54 B	0.64 B	1.3	1.4	0.1-1.0
CALCIUM	25,700	32,700	45,800	33,300	38,300	13,700	33,500	130-35,000 ug
CHROMIUM	27	34	17	15	16	24	19	1.5-40.0 ug
COBALT	10 B	13	12	11	13	12	16	2.5-60.0 ug
COPPER	25	30	26	28 E	30 E	35 E	44 E	1.0-50.0
IRON	23,800	24,400	22,200	22,300	23,200	27,400	29,300	2,000-550,000
LEAD	14	13	11	9.4	12	23	19	4.0-61 or 200-500*
MAGNESIUM	7,760	13,000	14,600	11,800	9,100	6,550	9,980	100-5,000
MANGANESE	378	511	413	474	560	576	541	50-5,000
MERCURY	ND	ND	ND	ND	0.41	ND	ND	0.001-0.2
NICKEL	21	26	24	22	26	42	37	0.5-26
POTASSIUM	1,660	1,570	3,540	1,950 E	2,220 E	1,870 E	2,340 E	8,500-43,000 ug
SELENIUM	ND	ND	1.4	ND	3.2	ND	ND	0.1-3.9
SILVER	ND	ND	0.46 B	ND	ND	0.76 B	1.3 B	0.1-5.0 (m)
SODIUM	187 B	109 B	158 B	101 B	106 B	132 B	105 B	6,000-8,000
THALLIUM	ND	1.3 B	2.6	ND	1.7 B	3.1	1.1 B	0.1-0.8 (g)
VANADIUM	21	19	23	18	20	24	20	1.0-300
ZINC	60	62	54	58	63	87	72	8.0-50
CYANIDE	ND	ND	ND	ND	ND	ND	ND	N/A

NOTE: Numbers in bold exceed soil cleanup objectives/background concentrations.

* - The rate of the corrosivity of steel at 131°F as determined by the NACE test.

** - NYSDEC Draft Cleanup Policy and Guidelines, 10/91.

as - New York State background concentration.

(b) - NYSDEC Division Technical and Administrative Guidance

(n) - Memorandum (TAGM), 1/94.

(q) - Dragun, J., The Soil Chemistry of Hazardous Materials.

B - Bowen, H.J., Environmental Chemistry of the Elements.

- Value is less than the contract-required detection limit but greater than the instrument detection limit.

E - Value estimated due to interference.

N - Spiked sample recovery is not within control limits.

R - Duplicate analysis not within control limits.

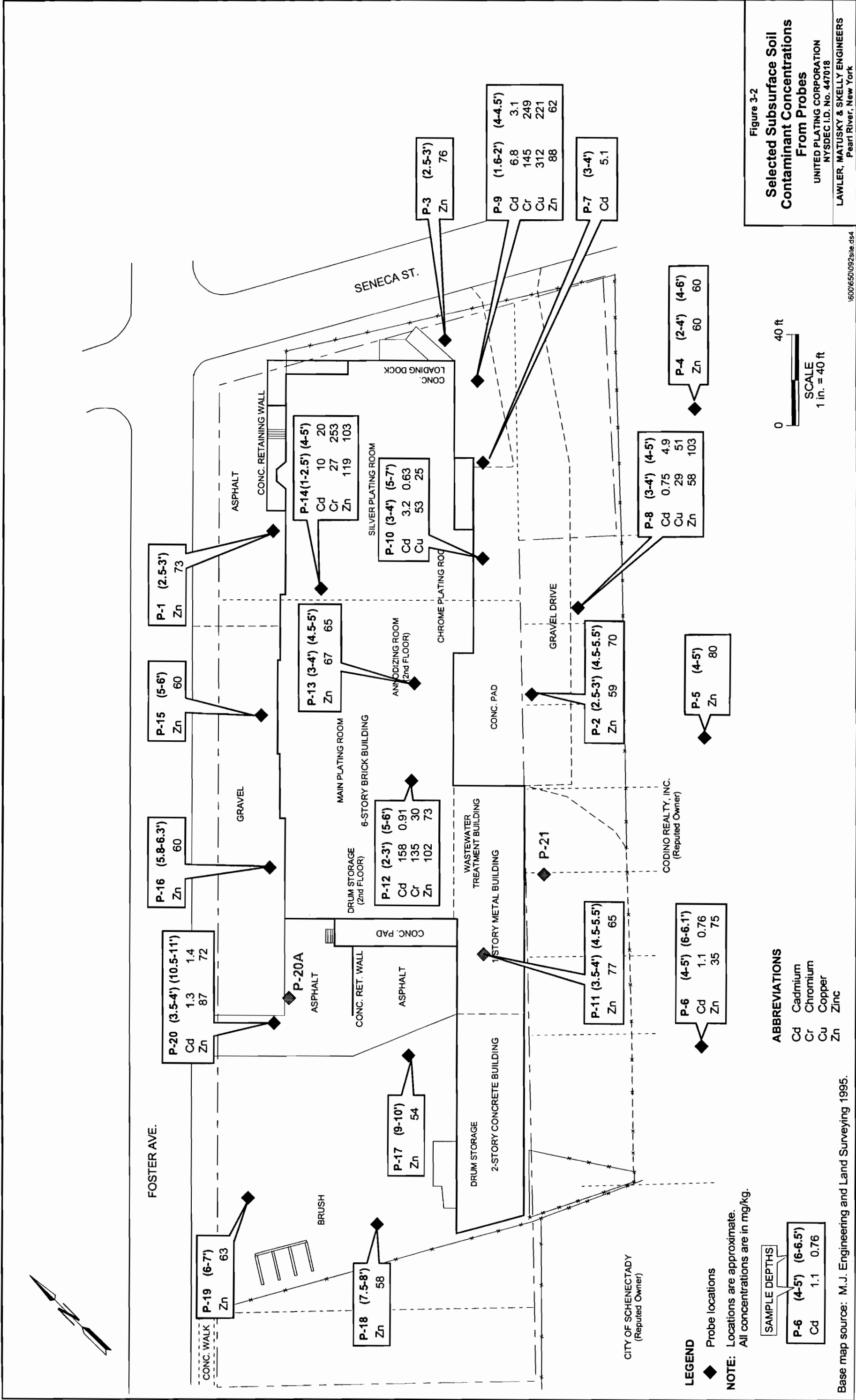
N/A - Not available.

ND - Not detected at analytical detection limit.

SB - Site background.

Pb - Background levels for lead range from 4 - 61 ppm in undeveloped, rural areas to 200 - 500 ppm in metropolitan or suburban areas or near highways.

CN - Some forms of Cyanide are complex and stable while other forms are pH dependent and hence are very unstable. Site-specific form(s) of Cyanide should be taken into consideration when establishing soil cleanup objectives.



be on the east and southeast side of the building. Cadmium and chromium were found above the limits in the highest percentage.

3.5 PROBE WATER QUALITY SCREENING

A total of 15 VOC, 11 filtered metal, and nine unfiltered metal samples were collected from 15 locations. No water was present at six locations; therefore, no sample could be collected. The water sample data collected are summarized on Table 3-10 and shown graphically on Figure 3-3. The table also shows the NYSDEC groundwater standards; results in bold exceed the groundwater standard (NYSDEC 1991). The laboratory analytical data sheets are contained in Appendix C. None of the samples were validated; however the usability report is contained in Appendix D.

Trichloroethylene (TCE) exceeded the groundwater standard in five samples, with the sample at UPP-15 having a concentration of 140 $\mu\text{g/l}$, which was 28 times the standard of 5 $\mu\text{g/l}$. The groundwater standard for 1,1,1-trichloroethane (1,1,1-TCA) was exceeded in three samples, with the highest concentration of 340 $\mu\text{g/l}$ found at UPP-15. Carbon tetrachloride was found above the groundwater standard at only one location, UPP-14. The samples with VOCs above the groundwater standard were located inside the building and just outside the downgradient northwestern side of the building, with the highest levels found outside the building.

In the filtered metal samples, antimony in one sample, chromium in seven samples, iron in six samples, manganese in three samples, sodium in 10 samples, thallium in three samples, and cyanide in three samples exceeded the groundwater standard. Magnesium in five samples exceeded the groundwater guidance value. The highest chromium value found was 38,100 $\mu\text{g/l}$ in UPP-13, located inside the building. The unfiltered metal samples generally had higher levels of metals with more exceedances than the filtered samples, indicating that the metals are tied to the soil. The highest levels of metals were found inside the building and downgradient of the northwestern side of the building.

3.6 SHALLOW SOIL SAMPLING

Shallow soil samples were collected from a total of 40 locations and analyzed for TCL organics and TAL metals and cyanide. Table 3-11 shows the results and Figure 3-4 summarizes the results graphically. The table also shows the eastern USA background soil metals concentrations and the NYSDEC soil cleanup objectives (NYSDEC 1994). Results in bold exceed the cleanup objective/background levels. The laboratory analytical data sheets are

TABLE 3-10 (Page 1 of 6)

PROBE WATER QUALITY DATA SUMMARY (MAY 1995)
United Plating Site

PARAMETER	VOLATILE ORGANICS (µg/l)														Unknown Compounds (µg/l)
	Methylene chloride	Acetone	2-Butanone	1,1,1-Trichloroethane	Carbon tetrachloride	Trichloroethylene	Tentatively Identified Compounds (µg/l)								
UPP01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
UPP02	2.0 b j	49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
UPP04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
UPP05	ND	8.0 j	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.0 j
UPP06	ND	1.7	4.0 j	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
UPP09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
UPP10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
UPP12	ND	ND	ND	ND	ND	6.0 j	30	52	140	98	24	ND	ND	ND	ND
UPP13	ND	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
UPP14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
UPP15	1.0 b j	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
UPP16	2.0 b j	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
UPP19	1.0 b j	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DL	[DL: 5:1]														
NYSDEC CLASS GA STANDARDS (a)	5	50 GV	5	5	5	5	5	5	5	5	5	5	5	5	50

[DL: 5:1]

e - Estimated concentration; exceeds GC/MS calibration range.
 GV - Guidance value.
 DL - Diluted sample analysis.
 ND - Not detected at analytical detection limit.
 NS - No standard.

a - NYSDEC Technical and Operational Guidance Series (1.1.1), Ambient Water Quality Standards and Guidance Values, October 1993.
 b - Found in associated blanks.
 j - Estimated concentration; compound present below quantitation limit.

PROBE WATER QUALITY DATA SUMMARY (MAY 1995)

United Plating Site

TABLE 3-10 (Page 2 of 6)

PARAMETER													
NYSDEC CLASS GA STANDARDS(a)													
UFP20 UFP20A UPTB01 UPTB02 UPTB04 UPTB05 UPTB06 UPTB07 UPTB08 UPTB09 UFPB07													
VOLATILE ORGANICS (µg/l)													
Methylene chloride	1.0 b]	ND	ND	1.0 b]	ND	ND	ND	ND	ND	1.0]	5	50 GV	5
Acetone	19	ND	ND	ND	ND	ND	ND	5.0 b]	ND	ND	5	50 GV	5
Styrene	2.0]	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	50 GV	5
Tentatively Identified Compounds (µg/l)													
Unknown substituted alkane	16 (3)]	ND	ND	ND	ND	ND	ND	ND	ND	ND	50		

a - NYSDEC Technical and Operational Guidance Series (1.1.1), Ambient Water Quality Standards and Guidance Values, October 1993.
 ♦ - Not analyzed.
 () - Number of compounds in total.
 b - Found in associated blanks.
] - Estimated concentration; compound present below quantitation limit.

PROBE WATER QUALITY DATA SUMMARY (MAY 1995) United Plating Site

PARAMETER	UPP02 [unfiltered]	UPP02 [filtered]	UPP05 [unfiltered]	UPP05 [filtered]	UPP06 [unfiltered]	UPP06 [filtered]	NATURAL AMBIENT GROUNDWATER RANGES (n)	CLASS GA STANDARDS
TAL METALS (µg/l)								
Aluminum	83,700	531 E N R	117,000 E N R	1,140 E N R	40,900 E	918 E	<5.0 - 1,000	NS
Arsenic	67	ND	ND	ND	ND	ND N	N/A	3.0 GV
Barium	812	23 B E	929 E	65 B E	224 E	52 B E	<1.0 - 30	25
Beryllium	4.5 B	ND	7.3	ND	2.2 B	ND	<10	3.0 GV
Cadmium	491	ND	12	ND	12	1.9 B	<1.0	10
Calcium	472,000	65,200 E	484,000 E	172,000 E	126,000 E	130,000 E	1,000 - 150,000	NS
Chromium	885	6.6 B	324	ND	53	ND	<1.0 - 5.0	50
Cobalt	215	ND	177	ND	54	11 B	<10	NS
Copper	1,140	9.6 B	508	4.3 B	131	4.3 B	<1.0 - 30	200
Iron	261,000 E	134 N R	303,000 N R	454 N R	66,100 E	188 E	10 - 10,000	300 (m)
Lead	1,790	ND	226	ND	99	ND	<15	25
Magnesium	109,000	48,400 E	184,000 E	50,300 E	54,800 E	39,400 E	1,000 - 50,000	35,000 GV
Manganese	5,610	557 E	11,000 E	571 E	2,830 E	1,670 E	<1.0 - 1,000	300 (m)
Mercury	ND N	ND	1.0	0.27	ND N R	ND N R	<1.0	2.0
Nickel	1,860	33 B E	2,070 E	508 E	406 E N	898 E N	<10 - 50	NS
Potassium	30,300	11,400	23,600	3,490 B	6,280	2,080 B	1,000 - 10,000	NS
Selenium	ND	ND	ND	ND	ND	ND	<1.0 - 10	10
Silver	26	ND	2.2 B	ND	4.5 B	ND	<5.0	50
Sodium	43,200	44,900	104,000 E	104,000 E	27,800 E	30,400 E	500 - 120,000	20,000
Thallium	8.3 B	ND	6.5 B	ND	ND	ND	N/A	4.0 GV
Vanadium	165	ND	238	ND	59	ND	<1.0 - 10	NS
Zinc	2,280	ND	1,110	ND	350 E N	5.6 B E N	<10 - 2,000	300
Cyanide	748 N	♦	ND N	ND N	ND N	ND N	N/A	100

Note: Bold numbers exceed standards.

- ♦ - Not analyzed.
- (m) - Iron and manganese not to exceed 500 µg/l.
- (n) - Dragun, J., The Soil Chemistry of Hazardous Materials.
- B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
- E - Value estimated due to interference.

- N - Spiked sample recovery is not within control limits.
- R - Duplicate analysis not within control limits.
- GV - Guidance value.
- ND - Not detected at analytical detection limit.
- N/A - Not available.
- NS - No standard.

PROBE WATER QUALITY DATA SUMMARY (MAY 1995) United Paving Site

NYSDEC NATURAL AMBIENT		GROUNDWATER		CLASS GA		STANDARDS	
PARAMETER	UFP09	UFP10	UFP12	UFP12	UFP12	RANGES (n)	STANDARDS
	[unfiltered]	[unfiltered]	[unfiltered]	[unfiltered]	[filtered]		
TAL METALS (µg/l)							
Aluminum	406,000	573	642,000	482 E N R	418,000	<5.0 - 1,000	NS
Antimony	ND	ND	ND	ND	ND	N/A	3.0 GV
Arsenic	589	ND	371	ND	127	<1.0 - 30	25
Barium	5,180	44 B	3,150	38 B E	2,670	10 - 500	1,000
Beryllium	21	ND	27	ND	20	<10	3.0 GV
Cadmium	570	ND	685	7.4	101	<1.0	10
Calcium	4,829,000	101,000	3,979,000	78,200 E	1,851,000	1,000 - 150,000	NS
Chromium	106,000	94	3,240	7.0 B	2,590	<1.0 - 5.0	50
Cobalt	777	ND	1,110	ND	670	<10	NS
Copper	109,000	55	4,140	20 B	1,660	<1.0 - 30	200
Iron	852,000 E	154 E	1,936,000 E	146 N R	1,294,000	10 - 10,000	300 (m)
Lead	2,810	ND	2,630	ND	548	<15	25
Magnesium	1,607,000	20,500	1,281,000	21,300 E	438,000	1,000 - 50,000	35,000 GV
Manganese	24,000	34	26,400	120 E	25,600	<1.0 - 1,000	300 (m)
Mercury	1.1 N	ND N	ND N	ND	2.0	<1.0	2.0
Nickel	4,650	ND	4,780	13 B E	3,650	<10 - 50	NS
Potassium	88,000	7,290	119,000	3,810 B	81,500	1,000 - 10,000	NS
Selenium	ND	ND	ND	ND	ND	<1.0 - 10	10
Silver	216	ND	28	ND	55	<5.0	50
Sodium	88,000	42,600	53,500	12,200 E	241,000	500 - 120,000	20,000
Thallium	16	10	242	ND	33	N/A	4.0 GV
Vanadium	717	ND	952	ND	700	<1.0 - 10	NS
Zinc	7,420	6.0 B	5,910	ND	2,780	<10 - 2,000	300
Cyanide	15	ND	18 N	18 N	1,020 N	N/A	100

Note: Bold numbers exceed standards.
 (m) - Iron and manganese not to exceed 500 µg/l.
 (n) - Dragun, J., The Soil Chemistry of Hazardous Materials.
 B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
 E - Value estimated due to interference.

N - Spiked sample recovery is not within control limits.
 R - Duplicate analysis not within control limits.
 GV - Guidance value.
 ND - Not detected at analytical detection limit.
 N/A - Not available.
 NS - No standard.

PROBE WATER QUALITY DATA SUMMARY (MAY 1995) United Plating Site

PARAMETER	Upp13	Upp13	Upp14	Upp14	Upp15	Upp15	NATURAL AMBIENT GROUNDWATER	STANDARDS CLASS GA
	[Unfiltered]	[Filtered]	[Unfiltered]	[Filtered]	[Unfiltered]	[Filtered]	RANGES (n)	NYSDEC
TAL METALS (µg/l)								
Aluminum	144,000	1,020	2,060	487	16,600	570 E	<5.0 - 1,000	NS
Arsenic	77	4.9 B	4.8 B	6.9 B	ND	9.9 B	N/A	3.0 GV
Barium	1,340	36 B	19 B	9.7 B	179 B E	28 B E	<1.0 - 500	1,000
Beryllium	8.0	ND	ND	ND	1.2 B	ND	<10	3.0 GV
Cadmium	26	ND	5.1	3.2 B	18	6.8	<1.0	10
Calcium	654,000	123,000	59,200	55,700	205,000	84,900	1,000 - 150,000	NS
Chromium	34,700	38,100	10,000	8,330	16,600 E	12,100 E	<1.0 - 5.0	50
Cobalt	204	18 B	12 B	12B	42 B	18 B	<10	NS
Copper	926	15 B	43	27	116	21 B	<1.0 - 30	200
Iron	476,000	1,610	3,410	469	41,800	519	10 - 10,000	300 (m)
Lead	258	ND	18	ND	162	ND	<15	25
Magnesium	180,000	45,200	6,410	5,940	59,300	11,800	1,000 - 50,000	35,000 GV
Manganese	8,390	86	54	11 B	909 E	29 E	<1.0 - 1,000	300 (m)
Mercury	0.92	ND	ND	ND	0.27	ND	<1.0	2.0
Nickel	1,590	97	19 B	14 B	242	38 B	<10 - 50	NS
Potassium	36,700	11,100	13,400	12,900	28,400 E	22,500 E	1,000 - 10,000	NS
Selenium	ND	3.0 B	ND	ND	3.1 B	ND	<1.0 - 10	10
Silver	17	ND	7.5 B	3.2 B	7.2 B	ND	<5.0	50
Sodium	242,000	233,000	48,600	47,900	100,000	91,200	500 - 120,000	20,000
Thallium	14	ND	ND	ND	ND	6.9 B	N/A	4.0 GV
Vanadium	288	ND	22 B	14 B	38	2.7 B	<1.0 - 10	NS
Zinc	1,270	8.8 B	60	24	216	69	<10 - 2,000	300
Cyanide	122 N R	185 N	163 N R	192 N R	139	96	N/A	100

Note: Bold numbers exceed standards.
 (m) - Iron and manganese not to exceed 500 µg/l.
 (n) - Dragun, J., The Soil Chemistry of Hazardous Materials.
 B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
 E - Value estimated due to interference.
 NS - No standard.
 N/A - Not available.
 ND - Not detected at analytical detection limit.
 GV - Guidance value.
 R - Duplicate analysis not within control limits.
 N - Spiked sample recovery is not within control limits.

PROBE WATER QUALITY DATA SUMMARY (MAY 1995) United Plating Site

PARAMETER	UPP16	UPP16	UPP16	UPP19	UPP20A	UPP20A	UPFB07	NATURAL AMBIENT		STANDARDS
	[unfiltered]	[unfiltered]	[filtered]	[unfiltered]	[unfiltered]	[unfiltered]	[filtered]	GROUNDWATER	RANGES (n)	
ALUMINUM	616,000 E	619 E	87,900	35,800 E N R	680 E N R	ND	ND	<5.0 - 1,000	N/A	NS
ANTIMONY	ND	ND	ND	ND	ND	ND	ND	N/A	<1.0 - 30	3.0 GV
ARSENIC	102	5.7 B	70	24	ND	ND	ND	<1.0 - 30	<1.0 - 30	25
BARIUM	3,620 E	43 B E	627 E	268 E	37 B E	3.4 B	3.4 B	10 - 500	1,000	1,000
BERYLLIUM	29	ND	5.1	2.3 B	ND	ND	ND	<10	<10	3.0 GV
CADMIUM	136	ND	8.0	6.2	ND	ND	ND	<1.0	<1.0	10
CALCIUM	1,649,000	106,000	435,000	184,000 E	106,000 E	1,240 B	8.7 B	1,000 - 150,000	<1.0 - 5.0	NS
CHROMIUM	10,100 E	5,960 E	207 E	79	4.7 B	ND	ND	<1.0 - 5.0	<10	50
COBALT	648	13 B	132	115	ND	ND	ND	<10	<10	NS
COPPER	2,910	12 B	323	195	8.1 B	16 B	16 B	<1.0 - 30	<1.0 - 30	200
IRON	1,577,000	368	228,000	94,800 N R	407 N R	748 E	748 E	10 - 10,000	10 - 10,000	300 (m)
LEAD	1,450	ND	131	104	ND	3.3	3.3	<15	<15	25
MAGNESIUM	447,000	22,600	107,000	49,600 E	27,100 E	180 B	180 B	1,000 - 50,000	1,000 - 50,000	35,000 GV
MANGANESE	26,200 E	126 E	5,750 E	5,420 E	20 E	13 B	13 B	<1.0 - 1,000	<1.0 - 1,000	300 (m)
MERCURY	3.6	ND	0.25	0.75	0.27	ND N	ND N	<1.0	<1.0	2.0
NICKEL	4,730	37 B	462	286 E	42 E	ND	ND	<10 - 50	<10 - 50	NS
POTASSIUM	86,100 E	10,600 E	21,800 E	11,200	3,780 B	ND	ND	1,000 - 10,000	1,000 - 10,000	NS
SELENIUM	ND	ND	ND	ND	ND	ND	ND	<1.0 - 10	<1.0 - 10	10
SILVER	25	ND	ND	ND	ND	ND	ND	<5.0	<5.0	50
SODIUM	104,000	83,300	95,400	71,200 E	64,600 E	ND	ND	500 - 120,000	500 - 120,000	20,000
THALLIUM	153	7.6 B	ND	ND	ND	11	11	N/A	N/A	4.0 GV
VANADIUM	898	ND	171	75	ND	ND	ND	<1.0 - 10	<1.0 - 10	NS
ZINC	4,310	7.3 B	693	538	ND	169	169	<10 - 2,000	<10 - 2,000	300
CYANIDE	412	80	ND	26 N	♦	ND	ND	N/A	N/A	100

Note: Bold numbers exceed standards.

♦ - Not analyzed.

(m) - Iron and manganese not to exceed 500 µg/l.

(n) - Dragun, J., The Soil Chemistry of Hazardous Materials.

B - Value is less than the contract-required detection limit but

greater than the instrument detection limit.

E - Value estimated due to interference.

NS - No standard.

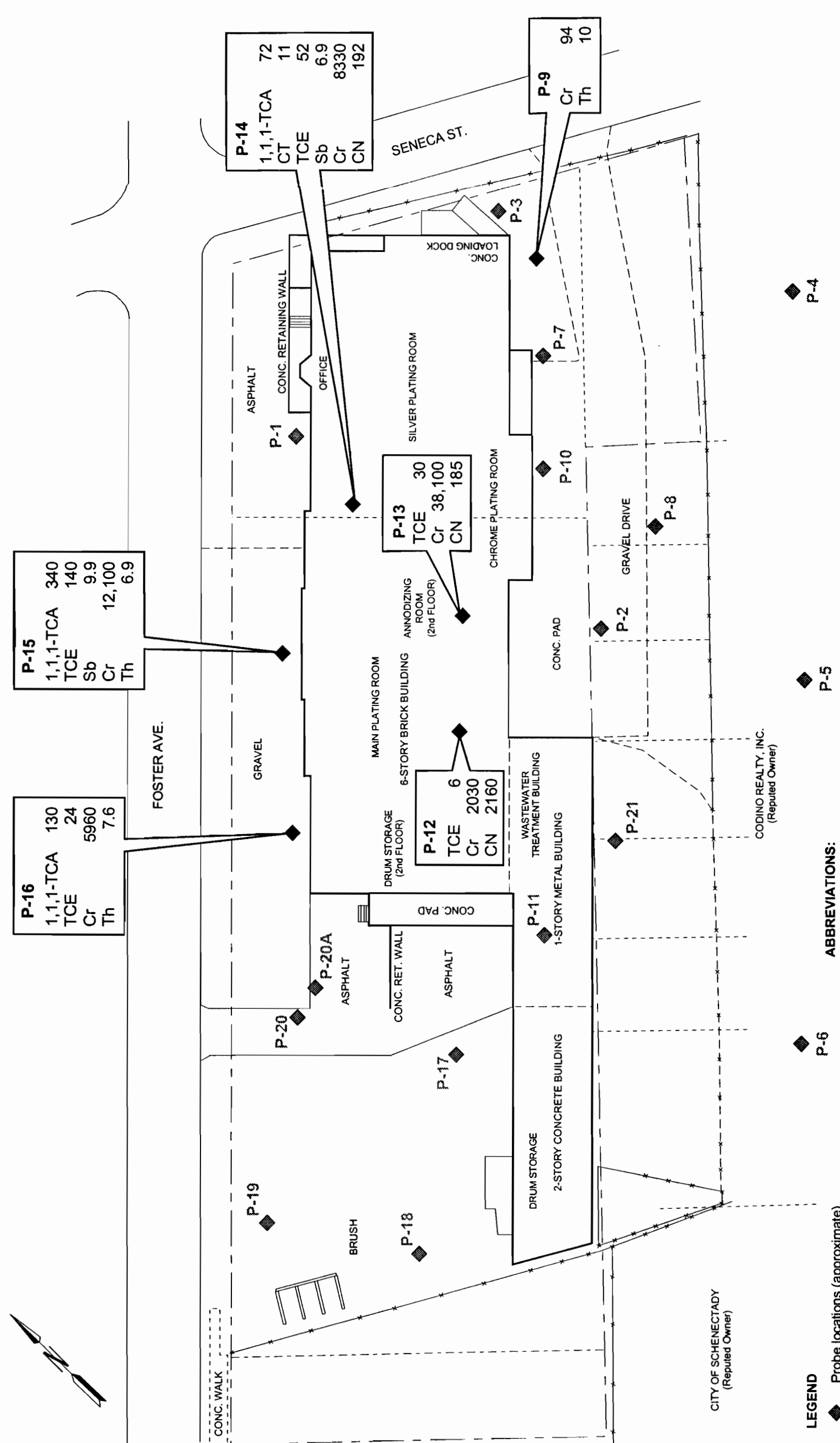
N/A - Not available.

ND - Not detected at analytical detection limit.

GV - Guidance value.

R - Duplicate analysis not within control limits.

N - Spiked sample recovery is not within control limits.



LEGEND

- ◆ Probe locations (approximate)

NOTE:
All concentrations are in µg/kg.
All metals are filtered.

ABBREVIATIONS:

1,1,1-TCA	1,1,1-Trichloroethane
CT	Carbon tetrachloride
TCE	Trichloroethylene
Cr	Chromium
Th	Thallium
Sb	Antimony
CN	Cyanide



Figure 3-3
Selected Groundwater Contaminants From Probes

UNITED PLATING CORPORATION
NYSDEC I.D. No. 447018

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

SURFACE SOIL DATA SUMMARY (MAY 1995)
United Plating Site

United Plating Site

()	- Number of compounds in total.
g	- NYSDEC Division Technical and Administrative Memorandum (TAGM), 1/94.
g	- Value considered estimated based on data validator's report (Appendix D).
N/A	- Estimated concentration; compound present below quantitation limit.
ND	- Not available.
RE	- Not detected at analytical detection limit.
RE	- Reanalysis.

SURFACE SOIL DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER		UPSS06	UPSS07	UPSS08	UPSS09	UPSS10	UPSS11	UPSS12	UPSS13	OBJECTIVES*
NYSDEC SOIL RE CLEANUP										
VOLATILE ORGANICS (mg/kg)		ND	ND	ND	0.0020	ND	ND	ND	ND	0.1
1,2-Dichloroethane		ND	ND	0.0070	0.012	ND	ND	ND	ND	0.8
1,1,1-Trichloroethane		ND	ND	0.0030	0.026	0.0030	0.0020	ND	ND	0.7
Trichloroethylene		ND	0.0020 g	0.0020	0.015	0.0020	ND	ND	ND	1.4
Tetrachloroethylene		ND	ND	ND	0.0030	ND	ND	ND	ND	1.5
Toluene		ND	ND	ND	0.0060	ND	ND	ND	ND	1.7
Chlorobenzene		ND	ND	ND	0.0060	ND	ND	ND	ND	5.5
Ethylbenzene		ND	ND	ND	0.0060	ND	ND	ND	ND	N/A
Styrene		ND	ND	ND	0.0070	ND	ND	ND	ND	1.2
Xylene (total)		ND	ND	ND	0.0030	ND	ND	ND	ND	
TENTATIVELY IDENTIFIED COMPOUNDS (mg/kg)		ND	0.015 g	0.010	0.026	ND	0.018	ND	ND	N/A
Unknown		ND	ND	ND	ND	0.013	ND	ND	ND	N/A
Unknown hydrocarbon		ND	ND	ND	ND	ND	ND	ND	ND	

a
g
- NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
- Value considered estimated based on data validator's report (Appendix D).
- Estimated concentration; compound present below quantitation limit.
- Not available.
ND
RE
- Reanalysis.

SURFACE SOIL DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER	NYSDEC SOIL CLEANUP OBJECTIVES*									
	RE									
	UPSS14	UPSS15	UPSS16	UPSS17	UPSS18	UPSS19	UPSS19	UPSS20	UPSS21	UPSS22
VOLATILE ORGANICS (mg/kg)										
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	0.023 g	N/A
1,1,1-Trichloroethane	ND	ND	ND	0.0080	0.0090	ND	0.0050	ND	ND	ND
Trichloroethylene	ND	ND	ND	0.0080	0.0050	0.0010	0.0090	0.0080	0.0070	0.0070
Tetrachloroethylene	ND	ND	ND	0.0030	0.0030 g	ND	0.0070	0.0040	0.0040	0.0040
Toluene	ND	ND	ND	ND	ND	ND	ND	0.0010	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	0.0020	0.0010	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	0.0020	0.0010	ND	N/A
TENTATIVELY IDENTIFIED COMPOUNDS (mg/kg)										
Unknown	ND	ND	ND	0.013	0.043	0.064	0.013	0.025	0.056	N/A

a - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
 9 - Value considered estimated based on data validator's report (Appendix D).
 j - Estimated concentration; compound present below quantitation limit.
 N/A - Not available.
 ND - Not detected at analytical detection limit.
 RE - Reanalysis.

SURFACE SOIL DATA SUMMARY (MAY 1995)
United Plating Site

NYSDEC SOIL CLEANUP OBJECTIVES ^a											
PARAMETER	UPSS23	UPSS24	UPSS25	UPSS26	UPSS26	UPSS27	UPSS28	UPSS29	N/A		
VOLATILE ORGANICS (mg/kg)											
Chloromethane	0.013 g	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.0010	ND	ND	ND	ND	0.1
1,1,1-Trichloroethane	ND	ND	ND	0.0030	ND	0.0080	0.0040	0.0030	0.0030	0.0030	0.8
Trichloroethylene	0.0020	0.0070	0.0010	0.0050	0.0050	0.019	0.0030	0.0070	0.0070	0.0070	0.7
Tetrachloroethylene	ND	0.0040	ND	0.0030	0.0030	0.012	0.0020	0.0030	0.0030	0.0030	1.4
Toluene	ND	ND	ND	ND	ND	0.0010	ND	ND	ND	ND	1.5
Chlorobenzene	ND	0.0010	ND	ND	ND	0.0040	ND	0.0010	0.0010	0.0010	1.7
Styrene	ND	ND	ND	ND	ND	0.0010	ND	0.0010	0.0010	0.0010	N/A
TENTATIVELY IDENTIFIED COMPOUNDS (mg/kg)											
Unknown	0.013	0.076	0.013	0.019	0.037	0.080	0.0070	0.016	N/A		

a - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
g - Estimated concentration; compound present below quantitation limit.
j - Value considered estimated based on data validator's report (Appendix D).
N/A - Not available.
ND - Not detected at analytical detection limit.
RE - Reanalysis.

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SURFACE SOIL DATA SUMMARY (MAY 1995)
United Plating Site

PARAMETER	UPSS30	UPSS30	UPSS31	UPSS31	UPSS32	UPSS33	UPSS33	RE NYSDEC SOIL CLEANUP OBJECTIVES*
VOLATILE ORGANICS (mg/kg)								
1,1,1-Trichloroethane	ND	0.0040	0.0050	0.0040	0.010	ND	ND	0.8
Trichloroethylene	ND	0.0040	0.0040	0.0040	0.012	0.0030	0.0020	0.7
Tetrachloroethylene	ND	0.0030	0.0030 g	0.0030 g	0.0070	0.0020	0.0020	1.4
Chlorobenzene	ND	ND	ND	ND	0.0020	ND	ND	1.7
TENTATIVELY IDENTIFIED COMPOUNDS (mg/kg)								
Unknown	0.010	0.024 (2)	0.012	0.021	0.030	0.024	0.041	N/A
Unknown alkane	ND	ND	ND	0.0080	ND	ND	ND	N/A

()
 a - Number of compounds in total.
 - NYSDDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
 g - Value considered estimated based on data validator's report (Appendix D).
 j - Estimated concentration; compound present below quantitation limit.
 N/A - Not available.
 ND - Not detected at analytical detection limit.
 RE - Reanalysis.

SURFACE SOIL DATA SUMMARY (MAY 1995)
United Paving Site

NYSDEC SOIL CLEANUP OBJECTIVES*									
PARAMETER	UPSS34	UPSS35	UPSS36	UPSS37	UPSS38	UPSS39	UPSS40	UPFB06 UPTB03	
	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	OBJECTIVES*
VOLATILE ORGANICS (mg/kg)									
1,1,1-Trichloroethane	0.0070	0.0070	0.013	0.011	0.0080	0.0030	0.0040	ND	0.8
Trichloroethylene	0.0070	0.0080	0.0060	0.0030	0.0030	ND	0.0020	ND	0.7
Tetrachloroethylene	0.0020	0.0080	0.0060	0.0030	0.0030	ND	0.0020	ND	1.4
Toluene	ND	0.0040	ND	0.0020	ND	ND	ND	ND	1.5
Chlorobenzene	ND	0.0020	0.0020	0.00090	0.0020	ND	ND	ND	1.7
Ethylbenzene	ND	0.0030	ND	0.00090	ND	ND	ND	ND	5.5
Styrene	ND	0.0060	0.0020	0.0020	0.0030	ND	ND	ND	N/A
Xylene (total)	ND	0.0020	ND	ND	ND	ND	ND	ND	1.2
TENTATIVELY IDENTIFIED COMPOUNDS (mg/kg)									
Unknown	0.011	0.088	0.040	0.034	0.048	0.012	0.013	ND	N/A

a - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
- Estimated concentration; compound present below quantitation limit.
N/A - Not available.
ND - Not detected at analytical detection limit.

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SURFACE SOIL DATA SUMMARY (MAY 1995)

United Paving Site

PARAMETER		UPSS01	UPSS02	UPSS03	UPSS04	UPSS05	UPSS06	UPSS07	UPSS08	UPSS09	UPSS10	OBJECTIVES*
NYSDEC SOIL CLEANUP												
SEMIVOLATILE ORGANICS (mg/kg)												
Naphthalene	ND	0.18	0.31	ND	0.79	0.12	ND	ND	ND	ND	13.0	
2-Methylnaphthalene	ND	0.13	0.29	ND	0.26	0.094	ND	ND	ND	ND	36.4	
Acenaphthylene	ND	ND	0.35	0.045	0.63	0.21	1.1	ND	ND	0.057	41.0	
Acenaphthene	0.027	0.64	0.99	0.034	0.20	0.38	0.57	ND	ND	0.036	50.0 ***	
Dibenzofuran	ND	0.26	0.59	ND	0.53	0.26	0.41	ND	ND	0.028	6.2	
Fluorene	0.029	0.70	1.2	0.043	0.96	0.58	1.0	ND	ND	0.066	50.0 ***	
Phenanthrene	0.38	4.5	7.8	0.59	6.1	3.6	8.7	0.049	ND	0.73	50.0 ***	
Anthracene	0.068	0.90	2.1	0.14	1.0	0.78	2.8	ND	ND	0.12	50.0 ***	
Carbazole	0.060	0.41 g	1.7	0.13	0.93 g	0.71	1.2 g	ND	ND	0.071	50.0 ***	
Fluoranthene	0.57	3.6	8.6	1.3	5.1	4.5	16	0.098	ND	0.94	50.0 ***	
Pyrene	0.50	3.4	7.6	1.1	4.2	4.1	13	0.081	ND	0.82	50.0 ***	
Benzo(a)anthracene	0.32	1.9	5.0	0.89	2.5	2.8	7.8	0.046	0.44	0.44	0.224 or MDL	
Chrysene	0.30	1.7	4.0	0.66	2.4	2.2	7.8	0.055	0.45	0.45	0.40	
Benzo(b)fluoranthene	0.26	1.0	3.9	0.8	1.4	2.0	7.8	0.047	0.35	1.1	1.1	
Benzo(k)fluoranthene	0.25	1.2	2.9	0.40	1.6	2.2	4.4	0.046	0.29	1.1	1.1	
Benzo(a)pyrene	0.31	1.3	4.1	0.68	1.8	2.2	7.7	0.046	0.34	0.061 or MDL	3.2	
Indeno(1,2,3-c,d)pyrene	0.21	0.80	2.8	0.47	1.1	1.2	5.1	0.032	0.18	0.014 or MDL	50.0 ***	
Dibenzo(a,h)anthracene	0.091	0.37	1.1	0.20	0.49	0.50	2.0	ND	0.078	0.014 or MDL	50.0 ***	
Benzo(g,h,i)perylene	0.19	0.81	2.4	0.33	0.12	0.67	0.79	0.023	0.14	50.0 ***	50.0 ***	

NOTE: Bold numbers exceed cleanup objectives.
 - As per TAGM #4046, total VOCs < 10 ppm, total Semi-VOCs < 500 ppm, and individual Semi-VOCs < 50 ppm.
 - NYSDEC Division Technical and Administrative Memorandum (TAGM), 1/94.
 - Value considered estimated based on data validator's report (Appendix D).
 - Estimated concentration; compound present below quantitation limit.
 - Not available.
 - Not detected at analytical detection limit.

TABLE 3-11 (Page 8 of 27)

SURFACE SOIL DATA SUMMARY (MAY 1995) United Plating Site

PARAMETER	UPSS11	UPSS12	UPSS12	UPSS13	UPSS14	UPSS15	RE	CLEANUP	NYSDEC SOIL CLEANUP OBJECTIVES*
SEMIVOLATILE ORGANICS (mg/kg)									
Naphthalene	ND	ND	ND	ND	0.13	0.27 g	0.46	13.0	50.0 ***
2-Methylnaphthalene	ND	ND	ND	ND	0.072	0.26 g	0.45	36.4	41.0
Acenaphthylene	ND	ND	ND	ND	0.18	1.1 g	1.7	ND	50.0 ***
Acenaphthene	ND	ND	ND	ND	0.27	ND	ND	6.2	50.0 ***
Dibenzofuran	ND	ND	ND	ND	0.28	0.63 g	1.1	1.1	50.0 ***
Fluorene	ND	ND	ND	ND	0.48	1.3 g	2.1	2.1	50.0 ***
Phenanthrene	0.047	0.039 g	0.15	3.4	11 g	13	13	50.0 ***	50.0 ***
Anthracene	ND	ND	ND	0.94	2.1 g	3.5	2.7	50.0 ***	50.0 ***
Carbazole	ND	ND	ND	0.59	4.7 g	12	10	50.0 ***	50.0 ***
Fluoranthene	0.068	0.054 g	0.21	4.0	12 g	10	50.0 ***	50.0 ***	50.0 ***
Pyrene	0.062	0.078 g	0.30	3.0	10 g	10	50.0 ***	50.0 ***	50.0 ***
Benzo(a)anthracene	0.033	0.040 g	ND	2.0	6.6 g	5.7	0.224 or MDL	0.4	0.061 or MDL
Chrysene	0.039	0.028 g	ND	1.5	6.0 g	6.0	6.0	1.1	3.2
Benzo(b)fluoranthene	ND	ND	ND	1.6	5.5 g	4.7	4.2	1.1	1.1
Benzo(k)fluoranthene	ND	ND	ND	1.4	4.0 g	4.2	5.0	1.1	1.1
Benzo(a)pyrene	0.027	0.027 g	ND	1.5	5.1 g	5.0	2.9	0.061 or MDL	0.014 or MDL
Indeno(1,2,3-c,d)pyrene	ND	0.025 g	0.15	1.0	2.7 g	2.9	1.3	50.0 ***	50.0 ***
Dibenzo(a,h)anthracene	ND	ND	ND	0.47	1.3 g	2.5	2.5	50.0 ***	50.0 ***
Benzo(g,h,i)perylene	ND	0.024 g	0.29	0.84	2.2 g	2.5	2.5	50.0 ***	50.0 ***

NOTE: Bold numbers exceed cleanup objectives.

*** - As per TAGM #4046, total VOCs < 10 ppm, total

Semi-VOCs < 500 ppm, and Individual Semi-VOCs < 50 ppm.

a - NYSDEC Division Technical and Administrative Guidance

Memorandum (TAGM), 1/94.

RE - Reanalysis.

ND - Not detected at analytical detection limit.

N/A - Not available.

g - Value considered estimated based on data validator's report (Appendix D).

} - Estimated concentration; compound present below quantitation limit.

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SURFACE SOIL DATA SUMMARY (MAY 1995)
United Plating Site

PARAMETER	NYSDEC SOIL CLEANUP OBJECTIVES ^a									
	DL	DL	UPSS17	UPSS17	UPSS17	UPSS18	UPSS19	UPSS20	UPSS21	UPSS22
SEMIVOLATILE ORGANICS (mg/kg)										
Naphthalene	2.8	1.6 g	ND	0.071	ND	0.056	ND	ND	ND	ND
2-Methylnaphthalene	2.4	ND	ND	0.097	0.043	ND	ND	ND	ND	ND
Acenaphthylene	12	3.8 g	ND	0.044	0.082	ND	ND	ND	0.036	ND
Acenaphthene	ND	ND	ND	0.062	ND	ND	ND	ND	ND	ND
Dibenzofuran	8.9	2.6 g	ND	0.11	0.027	ND	ND	ND	0.043	ND
Fluorene	17	4.7 g	0.067	0.11	0.027	ND	ND	ND	0.043	ND
Phenanthrene	93	42	0.50	0.86	0.44	0.16	0.45	0.12	0.12	0.030
Anthracene	28	8.9 g	0.19	0.23	0.10	0.046	0.11	0.11	0.11	0.030
Carbazole	25	15 g	.014	0.18	0.086	0.033	0.11	0.14	ND	ND
Fluoranthene	89	41	0.80	1.2	1.1	0.32	0.53	0.14	0.14	50.0 ---
Pyrene	71	35	0.81	1.0	1.2	0.33	0.56	0.18	0.18	50.0 ---
Benzo(a)anthracene	43	20	0.63	0.72	0.85	0.20	0.31	0.097	0.097	0.224 or MDL
Chrysene	47	18	0.51	0.69	0.89	0.22	0.32	0.12	0.12	0.4
Benzo(b)fluoranthene	30	13	0.60	0.64	0.75	0.18	0.27	0.083	0.083	1.1
Benzo(k)fluoranthene	36	16	0.59	0.54	0.78	0.18	0.20	0.095	0.095	1.1
Benzo(a)pyrene	37	17	0.58	0.62	0.77	0.20	0.26	0.11	0.11	0.061 or MDL
Indeno(1,2,3-c,d)pyrene	22	10	0.17	0.36	0.32	0.097	0.11	0.058	0.058	3.2
Dibenzo(a,h)anthracene	9.3	4.7	0.073	0.15	0.17	0.040	0.054	0.024	0.024	0.014 or MDL
Benzo(g,h,i)perylene	20	9.2	0.11	0.23	0.22	0.078	0.085	0.055	0.055	50.0 ---

NOTE: Bold numbers exceed cleanup objectives.
 *** - As per TAGM #4046, total VOCs < 10 ppm, total Semi-VOCs < 500 ppm, and individual Semi-VOCs < 50 ppm.
 - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
 a

g - Value considered estimated based on data validator's report (Appendix D).
 DL - Estimated concentration; compound present below quantitation limit.
 DL - Method diluted sample analysis.
 DL - Diluted sample analysis.
 N/A - Not available.
 ND - Not detected at analytical detection limit.

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SURFACE SOIL DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER	NYSDEC SOIL CLEANUP OBJECTIVES ^a												
	UPSS24	UPSS26	UPSS26	UPSS27	UPSS28	UPSS29	UPSS30	UPSS31	UPSS32	OBJECTIVES ^b			
SEMIVOLATILE ORGANICS (mg/kg)													
2,4-Dimethylphenol	0.099	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50.0 ***
Naphthalene	0.040	ND	ND	ND	ND	ND	ND	ND	ND	0.19	ND	ND	13.0
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.088	ND	ND	36.4
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	ND	0.067	ND	ND	ND	41.0
Acenaphthene	0.030	ND	0.056	ND	0.055	ND	0.096	0.15	0.45	50.0 ***	50.0 ***	6.2	50.0 ***
Dibenzofuran	ND	ND	0.036	ND	0.028	ND	0.040	0.094	0.23	0.23	0.23	0.23	50.0 ***
Fluorene	0.034	ND	0.065	ND	0.054	ND	0.092	0.23	0.49	0.49	0.49	0.49	50.0 ***
Phenanthrene	0.32	0.14	0.67	0.21	0.79	0.33	1.0	2.2	3.9	3.9	3.9	3.9	50.0 ***
Anthracene	0.089	ND	0.16	0.068	0.13	0.062	0.21	0.59	1.0	1.0	1.0	1.0	50.0 ***
Carbazole	0.084	0.042 g	0.21 g	0.053	0.28	0.066 g	0.26 g	0.67 g	1.0	1.0	1.0	1.0	50.0 ***
Fluoranthene	0.43	0.27	0.88	0.39	1.3	0.54	1.2	3.9	3.2	3.2	3.2	3.2	50.0 ***
Pyrene	0.44	0.23	0.75	0.40	1.4	0.47	1.4	3.3	3.3	3.3	3.3	3.3	50.0 ***
Benzo(a)anthracene	0.26	0.16	0.47	0.20	0.80	ND	0.74	2.4	1.8	0.224 of MDL	0.224 of MDL	0.4	50.0 ***
Chrysene	0.28	0.14	0.39	0.23	0.69	0.28	0.71	2.0	1.7	0.4	0.4	0.4	50.0 ***
Di-n-octylphthalate	ND	ND	ND	ND	0.030	ND	ND	ND	ND	ND	ND	ND	50.0 ***
Benzo(b)fluoranthene	0.22	0.13	0.38	0.21	0.86	0.22	0.61	2.8	1.5	1.1	1.1	1.1	50.0 ***
Benzo(k)fluoranthene	0.18	0.16	0.35	0.14	0.49	0.24	0.47	2.4	0.83	1.5	1.5	1.5	50.0 ***
Benzo(a)pyrene	0.23	0.12	0.38	0.19	0.69	0.22	0.59	2.5	1.5	0.061 of MDL	0.061 of MDL	3.2	50.0 ***
Indeno(1,2,3-c,d)pyrene	0.11	0.085	0.23	0.074	0.18	0.15	0.13	0.82	0.88	0.014 of MDL	0.014 of MDL	3.2	50.0 ***
Dibenzo(a,h)anthracene	0.047	0.035	0.11	0.030	0.069	0.055	0.057	0.47	0.33	0.014 of MDL	0.014 of MDL	3.2	50.0 ***
Benzo(g,h,i)perylene	0.091	0.10	0.21	0.058	0.090	0.15	0.092	0.71	0.92	0.014 of MDL	0.014 of MDL	3.2	50.0 ***

NOTE: Bold numbers exceed cleanup objectives.

*** - As per TAGM #4046, total VOCs < 10 ppm, total Semic-VOCs < 500 ppm,

and individual Semic-VOCs < 50 ppm.

a - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.

ND - Not available.

ND - Not detected at analytical detection limit.

g - Value considered estimated based on data validator's report (Appendix D).

] - Estimated concentration; compound present below quantitation limit.

SURFACE SOIL DATA SUMMARY (MAY 1995)
United Paving Site

PARAMETER	UPSS33	UPSS34	UPSS36	UPSS36	UPSS37	UPSS38	UPSS39	UPSS40	UPFB06 CLEANUP OBJECTIVES*
SEMIVOLATILE ORGANICS (mg/kg)									
Naphthalene	0.14	ND	0.037	ND	ND	ND	ND	ND	13
2-Methylnaphthalene	0.089	ND	ND	ND	ND	ND	ND	ND	36.4
Acenaphthylene	0.18	ND	ND	ND	ND	ND	ND	ND	41
Acenaphthene	0.38	ND	ND	ND	ND	ND	ND	ND	50.0 ***
Dibenzofuran	0.18	ND	ND	ND	ND	ND	ND	ND	6.2
Fluorene	0.42	ND	ND	ND	ND	ND	ND	ND	50.0 ***
Phenanthrene	4.5	0.040	0.24	0.18	0.13	0.047	0.27	0.19	50.0 ***
Anthracene	0.72	ND	0.040	0.026	ND	ND	0.052	0.029	50.0 ***
Carbazole	0.90	0.040	0.060	0.047	0.041	ND	0.059	0.048	50.0 ***
Fluoranthene	4.5	0.045	0.46	0.31	0.18	0.093	0.39	0.27	50.0 ***
Pyrene	5.0 g	0.057	0.51	0.28	0.14	0.079	0.40	0.29	50.0 ***
Benzo(a)anthracene	2.9	0.041	0.28	0.15	0.082	0.043	0.21	0.16	0.224 of MDL
Chrysene	2.4	0.045	0.29	0.18	0.096	0.057	0.22	0.18	0.4
Benzo(b)fluoranthene	2.2	0.038	0.16	0.18	0.093	0.061	0.15	0.14	1.1
Benzo(k)fluoranthene	1.2	0.045	0.27	0.15	0.064	0.045	0.17	0.13	1.1
Benzo(a)pyrene	2.1	0.040	0.26	0.17	0.079	0.050	0.18	0.15	0.061 of MDL
Indeno(1,2,3-c,d)pyrene	1.2	ND	0.13	0.10	0.051	0.035	0.076	0.035	3.2
Dibenzo(a,h)anthracene	0.55	ND	0.053	0.036	0.017	ND	0.033	ND	0.014 of MDL
Benzo(g,h,i)perylene	1.1	0.018	0.11	0.087	0.046	0.032	0.061	0.027	50.0 ***

NOTE: Bold numbers exceed cleanup objectives.
 *** - As per TAGM #4046, total VOCs < 10 ppm, total Semi-VOCs < 500 ppm,
 and individual Semi-VOCs < 50 ppm.
 - NYSDEC Division Technical and Administrative Guidance
 Memorandum (TAGM), 1/94.
 ND - Not detected at analytical detection limit.
 N/A - Not available.
 } - Estimated concentration; compound present below quantitation limit.
 g - Value considered estimated based on data validator's report (Appendix D).

SURFACE SOIL DATA SUMMARY (MAY 1995) United Plating Site

PARAMETER		UPSS01	UPSS02	UPSS03	UPSS04	UPSS05	UPSS06	UPSS07	UPSS08	UPSS09	OBJECTIVES*
NYSDEC SOIL CLEANUP											
TENTATIVELY IDENTIFIED COMPOUNDS (mg/kg)											
Unknown alkane	3.1 (5)	3.7 (3)	7.9 (2)	2.3 (3)	2.1 (6)	1.8 (2)	3.2 (2)	8.2 (2)	3.9 (5)	N/A	N/A
Unknown	4.5 (7)	1.1 (4)	3.4 (4)	3.4 (5)	2.3 (7)	2.2 (5)	0.51	2.9 (2)	0.82 (7)	N/A	N/A
Unknown PAH	0.45 (2)	1.7 (6)	8.9 (10)	1.5 (7)	0.21 (2)	5.1 (10)	7.0 (13)	24 (11)	ND	N/A	N/A
Unknown aldehyde	0.47	ND	ND	0.39	0.42	ND	ND	ND	0.44	N/A	N/A
Unknown phenanthrene, dimethyl	ND	0.17	0.77	ND	ND	ND	0.27	1.2	ND	N/A	N/A
Unknown steroid	2.5 (3)	0.62	1.2	1.5 (3)	0.75	ND	ND	ND	1.1 (2)	N/A	N/A
Unknown alcohol	ND	1.9	ND	ND	ND	ND	ND	ND	1.3	N/A	N/A
Unknown carboxylic acid	0.12	ND	ND	ND	ND	ND	ND	ND	ND	N/A	N/A
Unknown phenanthrene, methyl	ND	0.36	ND	ND	ND	ND	ND	ND	ND	N/A	N/A
Unknown substituted naphthal	ND	0.20	ND	ND	ND	ND	0.22	ND	ND	N/A	N/A
Unknown octadecenal	ND	ND	ND	ND	0.22	ND	ND	ND	ND	N/A	N/A
Unknown methylbenz(a)anthrac	ND	ND	ND	ND	ND	0.28	ND	ND	ND	N/A	N/A

() - Number of compounds in total.
 a - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
] - Estimated concentration; compound present below quantitation limit.
 N/A - Not available.
 ND - Not detected at analytical detection limit.

TABLE 3-11 (Page 13 of 27)

SURFACE SOIL DATA SUMMARY (MAY 1995)
 United Plating Site

PARAMETER	UPSS10	UPSS11	UPSS12	UPSS12	UPSS12	UPSS13	UPSS14	NYSDEC SOIL CLEANUP OBJECTIVES*
SEMIVOLATILE ORGANICS								
Unknown alkane	2.4 (4)]	0.31 (2)]	ND	0.13] n	ND	ND	ND	N/A
Unknown	3.3 (7)]	0.56 (4)]	ND	2.6 (5)]	14 (6)]	0.60 (2)]	0.60 (2)]	N/A
Unknown PAH	0.60 (2)]	ND	ND	ND	ND	3.2 (10)]	3.2 (10)]	N/A
Unknown aldehyde	0.82 (2)]	0.080]	ND	ND	ND	ND	ND	N/A
Unknown phenanthrene, dimethy	ND	ND	ND	ND	ND	0.16]	0.16]	N/A
Unknown steroid	0.96]	ND	ND	ND	ND	ND	ND	N/A
Unknown naphthalene, phenyl	0.12]	ND	ND	ND	ND	ND	ND	N/A
Unknown alkene	0.35]	ND	ND	ND	ND	ND	ND	N/A
Unknown substituted naphthal	ND	ND	ND	ND	ND	0.20]	0.20]	N/A
Unknown ketone	0.13]	ND	ND	ND	ND	ND	ND	N/A
Unknown hydrocarbon	ND	0.087]	ND	ND	ND	ND	ND	N/A
Propanoic acid, 2-methyl-, 1	ND	ND	ND	0.10] n	ND	ND	ND	N/A
Hexadecanoic acid	ND	ND	ND	0.10] n	ND	ND	ND	N/A

()
 - Number of compounds in total.
 a
 - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
]
 - Estimated concentration; compound present below quantitation limit.
 n
 - Identification is based on a mass spectral library search.
 N/A
 - Not available.
 ND
 - Not detected at analytical detection limit.
 RE
 - Reanalysis.

SURFACE SOIL DATA SUMMARY (MAY 1995)
United Plating Site

PARAMETER	NYSDEC SOIL CLEANUP OBJECTIVES*									
	RE	DL	DL	UPSS16	UPSS17	UPSS17	UPSS18	UPSS19	UPSS20	UPSS21
SEMIVOLATILE ORGANICS										
TENTATIVELY IDENTIFIED COMPOUNDS (mg/kg)										
1,3-Dioxolane, 2,2,4-trimeth	ND	ND	ND	0.12 j n	ND	0.14 j n	0.45 j n	0.56 j n	N/A	N/A
1,2-Propanediol	8.6 b j n	2.9 b j n	ND	3.3 b j n	1.3 b j n	2.3 b j n	6.0 b j n	4.7 b j n	N/A	N/A
2-Pentanone, 4-hydroxy-4-met	10 b c j n	7.4 b c j n	ND	2.6 b c j n	2.0 b c j n	2.4 b c j n	2.3 b c j n	2.5 b c j n	N/A	N/A
Unknown alkane	ND	1.7 j	ND	2.8 (4) j	4.9 (4) j	1.3 (3) j	0.45 (4) j	1.1 (4) j	N/A	N/A
9,10-Anthracenedione	0.58 j n	ND	6.8 j n	ND	ND	ND	ND	ND	N/A	N/A
Unknown	1.3 j	ND	2.6 j	43 (7) g j	1.8 (2) j	2.8 (5) j	0.22 j	0.41 (2) j	0.27 (2) j	N/A
Unknown PAH	9.3 (10) j	14 (10) j	123 (13) j	47 (8) g j	ND	2.1 (8) j	0.18 (2) j	0.19 (2) j	0.20 (2) j	N/A
Unknown aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A
Unknown phenanthrene, dimethy	0.67 j	1.0 j	7.1 j	2.8 g j	ND	0.13 j	ND	ND	ND	N/A
Unknown steroid	1.5 j	ND	ND	ND	ND	ND	ND	ND	ND	N/A
Unknown naphthalene, dimethyl	ND	0.97 j	ND	ND	ND	ND	ND	ND	ND	N/A
Unknown naphthalene, phenyl	ND	1.1 j	ND	2.7 g j	ND	ND	ND	ND	ND	N/A
Unknown alkene	ND	ND	ND	16 g j	ND	ND	ND	ND	ND	N/A
Unknown benzothioophene	ND	ND	ND	5.8 g j	ND	ND	ND	ND	ND	N/A
Unknown alkenol	ND	ND	ND	ND	0.31 j	ND	0.29 j	0.13 j	ND	N/A
Unknown phosphoric acid, dip	ND	ND	ND	ND	ND	ND	ND	0.15 j	ND	N/A
Unknown alcohol	ND	ND	ND	ND	ND	ND	ND	ND	0.12 j	N/A
Unknown carboxylic acid	ND	ND	ND	ND	ND	0.17 j	ND	ND	ND	N/A

[DL: 50:1]

- ()
- Number of compounds in total.
 - NYSDDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
 - Found in associated blanks.
 - Suspected aldol condensation product.
 - Value considered estimated based on data validator's report (Appendix D).
 - Estimated concentration; compound present below quantitation limit.
 - Identification is based on a mass spectral library search.
 - Method diluted sample analysis.
 - Diluted sample analysis.
 - Not available.
 - Not detected at analytical detection limit.
 - Reanalysis.

SURFACE SOIL DATA SUMMARY (MAY 1995)

United Paving Site

PARAMETER		UPSS23	UPSS24	UPSS25	UPSS26	UPSS27	UPSS28	UPSS29	UPSS30	UPSS31	OBJECTIVES*
NYSDEC SOIL CLEANUP											
SEMIVOLATILE ORGANICS											
TENTATIVELY IDENTIFIED COMPOUNDS (mg/kg)											
1,3-Dioxolane, 2,2,4-trimeth	0.41 j n	0.45 j n	0.10 j n	0.11 j n	0.27 j n	ND	0.10 j n	ND	ND	ND	N/A
Unknown alkane	0.84 (5) j	0.16 j	1.4 (4) j	3.7 (4) j	2.8 (4) j	2.8 (5) j	0.97 (4) j	3.8 (5) j	4.3 (3) j	N/A	N/A
Unknown	0.43 (3) j	2.3 (4) j	2.2 (8) j	0.32 (3) j	0.40 (3) j	0.88 (2) j	1.0 (4) j	1.6 (7) j	7.3 (8) j	N/A	N/A
Unknown PAH	0.12 j	0.31 j	ND	0.18 (2) j	0.33 (2) j	0.65 (4) j	0.18 j	0.78 (4) j	1.0 (3) j	N/A	N/A
Unknown aldehyde	ND	ND	ND	ND	0.29 j	ND	0.17 j	ND	ND	N/A	N/A
Unknown phenanthrene, dimethy	ND	ND	ND	ND	ND	0.14 j	ND	ND	ND	N/A	N/A
Unknown naphthalene, phenyl	ND	ND	ND	ND	ND	ND	ND	ND	0.23 j	N/A	N/A
Unknown alkenol	ND	ND	ND	0.15 j	0.16 j	ND	ND	ND	ND	N/A	N/A
Unknown benzene, methylpropyl	0.083 j	ND	ND	ND	ND	ND	ND	ND	ND	N/A	N/A
Unknown alkanol	ND	ND	ND	0.26 j	ND	ND	0.36 j	0.90 j	ND	N/A	N/A
Propanoic acid, 2-methyl-, 1	ND	ND	ND	ND	ND	ND	0.087 j n	ND	ND	N/A	N/A
Unknown carboxylic acid	ND	ND	0.32 (2) j	ND	ND	ND	ND	ND	ND	N/A	N/A
Unknown alkanol	ND	ND	0.47 j	ND	ND	ND	ND	ND	ND	N/A	N/A
Camphor	ND	ND	ND	ND	ND	0.095 j n	ND	ND	ND	N/A	N/A
Unknown hydrocarbon	ND	ND	ND	ND	ND	0.086 j	ND	0.15 j	ND	N/A	N/A
Unknown octadecenoic acid, m	ND	ND	ND	ND	ND	ND	ND	0.13 j	ND	N/A	N/A

() - Number of compounds in total;
 a - NYSDEC Division Technical and Administrative Memorandum (TAGM), 1/94.
 j - Estimated concentration; compound present below quantitation limit.
 n - Identification is based on a mass spectral library search.
 N/A - Not available.
 ND - Not detected at analytical detection limit.

SURFACE SOIL DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER	NYSDEC SOIL UPFB06 CLEANUP									
	UPSS32	UPSS33	UPSS34	UPSS35	UPSS36	UPSS37	UPSS38	UPSS39	UPSS40	OBJECTIVES*

SEMIVOLATILE ORGANICS TENTATIVELY IDENTIFIED COMPOUNDS (mg/kg)										
	UPSS32	UPSS33	UPSS34	UPSS35	UPSS36	UPSS37	UPSS38	UPSS39	UPSS40	OBJECTIVES*
1,3-Dioxolane, 2,2,4-trimeth	ND	0.27	n	0.20	n	ND	ND	ND	0.076	n
Unknown alkane	3.8 (5)	4.5 (3)	1.2 (8)	0.93 (6)	1.1 (8)	0.27 (3)	4.9 (17)	0.24 (2)	4.9 (4)	ND
Unknown	0.84 (3)	2.7 (2)	2.6 (4)	0.66 (3)	ND	ND	ND	0.43 (4)	3.2 (6)	10 (3)
Unknown PAH	2.5 (7)	5.3 (10)	ND	ND	0.17	ND	ND	0.13	ND	ND
Unknown aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	0.47	ND
Unknown phenanthrene, dimeth	ND	0.27	ND	ND	ND	ND	ND	ND	ND	ND
Unknown naphthalene, phenyl	ND	0.22	ND	ND	ND	ND	ND	ND	ND	ND
Unknown alkene	ND	ND	0.27	ND	ND	ND	ND	ND	0.078	ND
Unknown pyrene, methyl	ND	0.19	ND	ND	ND	ND	ND	ND	ND	ND
Unknown alkane	ND	0.96	0.16	ND	ND	ND	ND	ND	ND	ND
Cyclopentasiloxane, decameth	ND	ND	0.077	n	ND	ND	ND	ND	ND	ND
Unknown hexenedioic acid, es	ND	ND	0.13	ND	ND	ND	ND	ND	ND	ND
Ethanol, 1-phenyl-	ND	ND	0.070	n	ND	ND	ND	ND	ND	ND
Propanoic acid, 2-methyl-, 1	ND	ND	ND	0.11	n	ND	0.073	n	ND	ND
Unknown carboxylic acid	ND	ND	ND	ND	0.098	ND	ND	ND	ND	ND
Unknown hydrocarbon	ND	ND	ND	ND	ND	ND	0.081	ND	ND	ND
Unknown alcohol	ND	ND	ND	ND	ND	ND	ND	0.10	ND	ND
Unknown alkene	ND	ND	ND	ND	ND	ND	ND	ND	0.29	ND
Hexanedioic acid, dioctyl es	ND	ND	ND	ND	ND	ND	ND	ND	ND	3

() - Number of compounds in total.
a - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
- Estimated concentration; compound present below quantitation limit.
n - Identification is based on a mass spectral library search.
N/A - Not available.
ND - Not detected at analytical detection limit.

SURFACE SOIL DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER	NYSDEC SOIL CLEANUP OBJECTIVES*									
	UPSS01	UPSS02	UPSS03	UPSS04	UPSS05	UPSS06	UPSS07	UPSS08	UPSS09	OBJECTIVES*
PESTICIDES/PCBs (mg/kg)										
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11
gamma-BHC (Lindane)	0.0074 j r	ND	ND	ND	ND	ND	ND	ND	ND	0.2
Aldrin	0.0054 j p r	0.0016 j p r	ND	0.0057 j p r	ND	0.0053 j p r	0.0018 j p r	ND	ND	0.041
Heptachlor epoxide	0.0087 j p r	0.0042	0.0017 j p r	0.0021	ND	0.0025 p r	0.0043 p r	ND	ND	0.02
Endosulfan I	0.0013 j p r	0.0035 p r	0.0023 p r	0.00055 j p r	ND	0.0016 j p r	0.0022 p r	0.0025 p r	ND	0.9
Dieldrin	0.0033 j p r	0.0098 p	0.0056 p r	0.0045 p r	0.00077 j p r	0.0014 j p r	0.0078 p r	ND	ND	0.044
4,4'-DDE	0.0027 j p r	ND	0.00090 j p r	ND	ND	0.0017 j	ND	0.068 r	ND	2.1
Endrin	ND	0.029 p g	0.013 p r g	0.0088 p r g	0.0013 j p r g	0.005 p n g	0.010 p n g	0.024 p r g	ND	0.10
Endosulfan II	0.0026 j p r	0.0076 p r	0.005 p r	0.0019 j p r	0.0023 j p n	ND	0.0053 p n	0.0094 p r	ND	0.9
4,4'-DDD	0.0019 j n p	0.0017 j p r	0.0037 j	0.0026 j	ND	ND	0.0017 j p	0.0036 j p r	0.0034 j p r	2.9
4,4'-DDT	D	D	D	D	D	D	D	0.010 p g	0.059 g r	2.1
Methoxychlor	0.0048 j p r	0.016 j p r	0.015 j p r	0.0039 j p r	ND	ND	0.015 j p r	0.021 p r	ND	...
gamma-Chlordane	0.00058 j p r	0.0015 j p n	ND	ND	ND	0.00074 j	ND	ND	ND	0.64
Aroclor 1242	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.01
Aroclor 1248	ND	ND	ND	ND	ND	ND	0.055 p	ND	ND	1.01
Aroclor 1254	0.064	ND	ND	ND	ND	ND	ND	ND	ND	1.01

...
 - As per TAGM #4046, total pesticides <10 ppm.
 - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
 - Total surface PCBs = 1.0 mg/kg.
 - Value considered estimated based on data validator's report (Appendix D).
 - Estimated concentration; compound present below quantitation limit.
 - Tentative identification.
 - Pesticide/Aroclor target analyte has >25% difference for the detected concentrations between the two GC columns.
 - Value rejected by data validator but usable to show magnitude of contaminated level (Appendix D).
 - Value rejected at analytical detection limit.

United Plating Site

- As per TAGM #4046, total pesticides < 10 ppm.
- NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
- Total surface PCBs = 1.0 mg/kg.
- Value considered estimated based on data validator's report (Appendix D).
- Estimated concentration: compound present below quantitation limit.
- Pesticide/Aroclor target analyte has >25% difference for the detected concentrations between the two GC columns.
- Tentative identification.
- Value rejected by data validator but usable to show magnitude of contaminated level (Appendix D).
- Not detected at analytical detection limit.

TABLE 3-11 (Page 19 of 27)

SURFACE SOIL DATA SUMMARY (MAY 1995)
United Plating Site

PARAMETER	NYSDEC SOIL CLEANUP OBJECTIVES*				
	UPSS17	UPSS18	UPSS19	UPSS20	UPSS21
PESTICIDES/PCBs (mg/kg)	0.00045 j p r	ND	ND	ND	ND
alpha-BHC	ND	0.0012 j p r	ND	ND	ND
delta-BHC	ND	0.0018 j p r	ND	ND	ND
gamma-BHC (Lindane)	0.0055 p r	ND	ND	0.0013 j p	ND
Aldrin	ND	0.00031 j p r	0.00056 j p r	0.0011 j p r	ND
Heptachlor epoxide	0.011 p r	0.0016 j r	0.00099 j p r	ND	ND
Endosulfan I	ND	ND	0.00066 j p r	0.00099 j p r	0.00080 j p
Dieldrin	0.025 p r	0.016 r	0.002 j p r	0.0057 p r	0.0028 j p
4,4'-DDE	0.0029 j r	ND	0.0014 j p r	ND	0.00083 j p
Endrin	ND	0.010 g p r	0.0032 g j p r	0.0059 g p	0.0029 j p
Endosulfan II	0.022 p r	ND	0.0025 j p	ND	ND
4,4'-DDD	0.011 p r	0.0050 r	ND	0.0013 j p	ND
4,4'-DDT	ND	0.0074 g p r	0.0090 g	0.0052 g n p	0.0027 g j p r
Methoxychlor	0.040 p r	0.0064 j p r	0.0049 j p	0.0037 j p r	0.0032 j p
alpha-Chlordane	ND	0.00056 j p r	ND	0.00039 j p r	ND
gamma-Chlordane	ND	ND	ND	0.0020 p	0.00089 j p
Aroclor 1242	ND	ND	ND	ND	ND
Aroclor 1260	ND	0.012 j	ND	ND	0.018 j n p

...
 a - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
 f - Total surface PCBs = 1.0 mg/kg.
 g - Value considered estimated based on data validator's report (Appendix D).
 j - Estimated concentration; compound present below quantitation limit.
 p - Pesticide/Aroclor target analyte has >25% difference for the detected concentrations between the two GC columns.
 r - Value rejected by data validator but usable to show magnitude of contaminated level (Appendix D).
 ND - Not detected at analytical detection limit.

TABLE 3-11 (Page 20 of 27)

SURFACE SOIL DATA SUMMARY (MAY 1995)
United Plating Site

NYSDEC SOIL CLEANUP OBJECTIVES*		PARAMETER						
UPSS28	UPSS27	UPSS26	UPSS25	UPSS24	UPSS23	UPSS22	UPSS21	UPSS20
PESTICIDES/PCBs (mg/kg)								
ND	ND	0.00044 g p r	0.00068 g	ND	ND	0.00068 g	0.00044 g p r	ND
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND
Aldrin	0.0013 p r	0.0015 p r	0.00094 g p r	ND	ND	0.0015 p r	0.0013 p r	0.0013 p r
Heptachlor epoxide	ND	ND	ND	0.0015 g p r	ND	ND	ND	ND
Dieldrin	ND	ND	0.0024 g p r	ND	ND	0.0024 g p r	ND	ND
4,4'-DDE	0.00070 p r	0.0011 p	ND	0.0091 g p	ND	0.0091 g p	0.041 g	0.041 g
Endrin	ND	ND	0.0028 g p r	0.0072 g n p	ND	0.010 g n p	0.010 g n p	0.010 g n p
Endosulfan II	0.0017 n p	0.00077 p r	0.0065 g p r	0.0055 g p r	0.0013 p r	0.004 g n p	0.004 g n p	0.004 g n p
4,4'-DDD	ND	0.00045 p r	0.0017 g p r	0.0025 g p r	ND	0.025 g p r	0.025 g p r	0.025 g p r
Endosulfan sulfate	ND	ND	0.0035 g p	0.010 g p	ND	0.030 g p	0.030 g p	0.030 g p
4,4'-DDT	ND	D	ND	ND	D	0.17 g r	0.17 g r	0.17 g r
Methoxychlor	ND	0.0011 p r	0.0027 g p r	0.0077 g p r	0.00048 p r	0.0049 g p r	0.0049 g p r	0.0049 g p r
Endrin aldehyde	0.0046 p r	0.00074 p r	ND	ND	ND	ND	ND	ND
alpha-Chlordane	ND	ND	ND	ND	0.0016 p r	0.0016 g p r	0.0016 g p r	0.0016 g p r
gamma-Chlordane	ND	0.00061 p r	ND	0.0020 g p r	ND	ND	ND	ND
Aroclor 1254	ND	ND	ND	ND	ND	0.060	0.060	0.060
Aroclor 1260	ND	0.026	0.24	0.11 p	ND	ND	ND	ND

- As per TAGM #4046, total pesticides <10 ppm.

- NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.

- Total surface PCBs = 1.0 mg/kg.

- Value considered estimated based on data validator's report (Appendix D).

- Estimated concentration; compound present below quantitation limit.

- Tentative identification.

- Pesticide/Aroclor target analyte has >25% difference for the detected concentration between the two GC columns.

- Value rejected by data validator but usable to show magnitude of contaminated level (Appendix D).

- Value rejected by data validator and found unusable (Appendix D).

- Not detected at analytical detection limit.

ND

TABLE 3-11 (Page 21 of 27)

SURFACE SOIL DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER	PESTICIDES/PCBs (mg/kg)						NYSDEC SOIL CLEANUP OBJECTIVES ¹
	UPSS29	UPSS30	UPSS31	UPSS32	UPSS33	UPSS34	
Heptachlor	0.0030 g p r	0.00094 g n p	0.0017 g	ND	ND	ND	0.1
Aldrin	0.00054 g p r	0.0015 g p r	0.00077 g p r	ND	0.0038 p r	ND	0.041
Heptachlor epoxide	ND	ND	0.00050 g p r	0.0024	ND	ND	0.02
Endosulfan I	ND	ND	ND	ND	ND	ND	0.09
Dieldrin	ND	ND	0.0031 g p r	0.0051 p r	0.024 p r	ND	0.044
4,4'-DDE	ND	0.014 g	0.00056 g p r	0.015 p	0.045 p	ND	2.1
Endrin	0.0016 g p r	0.0053 g p r	0.021 g	0.010 g p	0.038 g	ND	0.10
Endosulfan II	0.00065 g p r	0.0034 g p n	0.0024 g p r	0.0052	0.0096 p r	0.00049 p r	0.9
4,4'-DDD	0.00085 g p r	0.0052 g p r	0.0048 g p n	0.014	0.015	0.00061 p r	2.9
Endosulfan sulfate	ND	0.0022 g p r	ND	ND	ND	0.00040 p r	1.0
4,4'-DDT	D	0.039 g	0.014 g p n	0.083 g p	0.11 g p	ND	2.1
Methoxychlor	0.0046 g p r	0.0053 g p r	0.0049 g p r	0.0073 p r	0.012 p r	0.0027 p	---
Endrin aldehyde	ND	ND	ND	ND	ND	ND	---
alpha-Chlordane	ND	ND	0.00049 g	ND	ND	ND	0.54
gamma-Chlordane	ND	ND	0.00068 g p r	ND	ND	ND	0.54
Aroclor 1254	ND	ND	ND	ND	ND	ND	1.01
Aroclor 1260	ND	0.035	0.015 p	ND	ND	ND	1.01

... - As per TAGM #4046, total pesticides <10 ppm.
 a - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
 f - Total surface PCBs = 1.0 mg/kg.
 g - Value considered estimated based on data validator's report (Appendix D).
 j - Estimated concentration; compound present below quantitation limit.
 n - Tentative identification.
 p - Pesticide/Aroclor target analyte has >25% difference for the detected concentrations between the two GC columns.
 r - Value rejected by data validator but usable to show magnitude of contaminated level (Appendix D).
 D - Value rejected by data validator and found unusable (Appendix D).
 ND - Not detected at analytical detection limit.

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SURFACE SOIL DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER		UPSS35	UPSS36	UPSS37	UPSS38	UPSS39	UPSS40	UPFB06	FIELD	BLANK	OBJECTIVES*
		(µg/l)									
		NYSDEC SOIL CLEANUP									
		OBJECTIVES*									
PESTICIDES/PCBs (mg/kg)		ND	ND	ND	0.0057 g] n p	ND	ND	ND	0.1	0.041	0.02
Heptachlor	ND	ND	ND	ND	0.0057 g] n p	ND	ND	ND	0.02	0.09	0.09
Aldrin	ND	ND	ND	ND	0.0072 g] p r	ND	ND	ND	0.02	0.09	0.09
Heptachlor epoxide	ND	ND	ND	ND	0.0072 g] p r	ND	ND	ND	0.02	0.09	0.09
Endosulfan I	0.00095] p r	0.0016] p r	ND	ND	ND	ND	ND	ND	0.02	0.09	0.09
Dieldrin	0.0030] p r	0.0030] p r	0.0017] p r	ND	ND	ND	ND	ND	0.02	0.09	0.09
4,4'-DDE	0.0057 p	ND	0.00085] p	ND	0.0013 g] n p	0.0073 g	ND	ND	0.044	0.10	2.1
Endrin	ND	ND	0.00068 g] p r	0.0041 g p	0.0018 g] p	0.0025 g] p	ND	ND	0.10	0.9	2.9
Endosulfan II	0.0035	0.0013] p r	0.0011] p r	0.00065 g] p r	0.0047 g] p r	ND	ND	ND	0.9	2.9	1.0
4,4'-DDD	ND	ND	0.0011] p r	0.0014 g] p r	ND	0.0013 g] p r	ND	ND	2.1	1.0	1.0
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND	2.1	1.0	1.0
4,4'-DDT	D	D	D	D	D	0.015 g	D	D	2.1	1.0	1.0
Methoxychlor	0.0019] p r	ND	0.0019] p r	0.0028 g] n p	ND	0.0045 g] n p	ND	ND	2.1	1.0	1.0
Endrin aldehyde	0.0020] p r	ND	ND	ND	ND	ND	ND	ND	2.1	1.0	1.0
alpha-Chlordane	ND	ND	ND	ND	0.00048 g] p r	ND	ND	ND	0.54	0.54	0.54
gamma-Chlordane	0.0011] p r	0.0010] n p	0.00066] p r	ND	0.00067 g] p	ND	ND	ND	0.54	0.54	0.54
Aroclor 1254	0.15 p	ND	0.012] n p	ND	ND	ND	ND	ND	1.01	1.01	1.01
Aroclor 1260	ND	0.018] p	ND	0.0081 p	ND	0.0068] p	ND	ND	1.01	1.01	1.01

- As per TAGM #4046, total pesticides <10 ppm.

- NYSDDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.

- Total surface PCBs = 1.0 mg/kg.

- Concentration based on QC evaluation.

- Estimated concentration; compound present below quantitation limit.

- Tentative identification.

- Pesticide/Aroclor target analyte has >25% difference for the detected concentrations between the two GC columns.

- Value rejected by data validator but usable to show magnitude of contaminated level (Appendix D).

- Value rejected by data validator and found unusable (Appendix D).

- Not detected at analytical detection limit.

SURFACE SOIL DATA SUMMARY (MAY 1995)

United Plating Site

PARAMETER	UPSS01	UPSS02	UPSS03	UPSS04	UPSS05	UPSS06	UPSS07	BACKGROUND SOIL SOIL CLEANUP RECOMMENDED	EASTERN USA BACKGROUND SOIL CONCENTRATIONS (b) OBJECTIVE (b)
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TAL METALS (mg/kg)

Aluminum	11,600	17,300	14,500	11,500 g	23,300 g	11,400 g	10,200 g	33,000	SB
Antimony	ND N	ND N	ND N	ND N	ND N	ND N	ND N	0.6 - 10 (n)	SB
Arsenic	4.9	5.9	9.1	8.2	ND	6.2	15	3.0 - 12.0 ee	7.5 or SB
Barium	88	135	179	82	140	254	141	15 - 500	300 or SB
Beryllium	0.65 B	0.83 B	0.69 B	0.55 B	1.1 B	0.60	0.57 B	0 - 1.75	0.16 or SB
Cadmium	2.9	2.3	2.8	3.0	1.3	4.1	4.3	0.1 - 1.0	1 or SB
Calcium	D	D	D	D	D	D	D	130 - 35,000 ee	SB
Chromium	25 g	25 g	37 g	29 g	31 g	21 g	34 g	1.5 - 40.0 ee	10 or SB
Cobalt	8.8 B	10 B	10 B	8.2 B	11	19	11 B	2.5 - 60.0 ee	30 or SB
Copper	47	39	87	60	30	45	55	1.0 - 50.0	25 or SB
Iron	25,300	28,900	38,500	24,400 g	38,000 g	31,800 g	26,900 g	2,000 - 550,000	2,000 or SB
Lead	100 g E	82 g E	227 g E	67 g E	0.68 g B E	55 g E	156 g E	4.0 - 61 or 200 - 500*	SB*
Magnesium	4,200	7,330	3,770	4,650	5,010	9,330	3,720	100 - 5,000	SB
Manganese	457	743	427	370	737	5,900	513	50 - 5,000	SB
Mercury	0.14 g B	ND	0.16 g	ND	ND	0.20 g	0.18 g	0.001 - 0.2	0.1
Nickel	22	26	303	24	22	35	36	0.5 - 25	13 or SB
Potassium	D	D	D	D	D	D	D	8,500 - 43,000 ee	SB
Selenium	0.69 g B	D	D	D	D	2.8 g	D	0.1 - 3.9	2 or SB
Silver	1.7 B	1.0 B	1.9 B	1.7 B	ND	2.0 B	3.2	0.1 - 5.0 (n)	SB
Sodium	137 B	143 B	107 B	68 B	102 B	226 B	129	0.000 - 8,000	SB
Thallium	ND	ND	ND	ND	14 g	ND	ND	0.1 - 0.8 (q)	SB
Vanadium	28	35	35	30	54	29	27	1.0 - 300	150 or SB
Zinc	193 g E	162 g E	308 g E	137 g E	116 g E	124 g E	232 g E	9.0 - 50	20 or SB
Cyanide	1.1 B	ND	ND	0.64 B	ND	0.92 g B	ND	N/A	**

NOTE: Bold numbers exceed cleanup objectives/background concentrations.

- Background levels for lead range from 4 to 61 ppm in undeveloped, rural areas to 200 to 500 ppm in metropolitan or suburban areas or near highways.

- Some forms of cyanide are complex and stable, while other forms are pH dependent and hence are very unstable. Site-specific form(s) of cyanide should be taken into consideration when establishing soil cleanup objectives.

** - New York State background concentration.
- NYSDEC Division Technical and Administrative Guidance
Memorandum (TAGM), 1/94.

(n) - Dragun, J., The Soil Chemistry of Hazardous Materials.
(q) - Bowman, H.J., Environmental Chemistry of the Elements.
g - Value considered estimated based on data validator's report (Appendix D).
D - Value rejected by data validator and found unusable (Appendix D).
B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
E - Value estimated due to interference.
N - Spiked sample recovery is not within control limits.
ND - Not detected at analytical detection limit.
N/A - Not available.
SB - Site background.

United Plating Site

PARAMETER	UPSS08	UPSS09	UPSS10	UPSS11	UPSS12	UPSS13	UPSS14	UPSS15	EASTERN USA RECOMMENDED BACKGROUND SOIL SOIL CLEANUP OBJECTIVE (b)
PARAMETER	UPSS08	UPSS09	UPSS10	UPSS11	UPSS12	UPSS13	UPSS14	UPSS15	OBJECTIVE (b)

TAL METALS (mg/kg)																
Aluminum	10,600 g	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N
Antimony	ND N	ND	ND	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N
Arsenic	ND	ND	ND	6.1	2.3	ND	5.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	146	29	64	70	67	50	55	104 g E	0.62 B	7.3	0.1 - 1.0	130 - 35,000 #	1.5 - 40.0 #	2.5 - 60.0 #	1.0 - 50.0	2,000 - 550,000
Beryllium	0.58 B	0.27 B	0.59 B	0.7	0.56 B	0.4 B	0.44 B	8.7 B	39 g E	20,000 g	21,500 g	81 g E	3,710 g E	328	575	ND N
Cadmium	3.0	0.81 B	3.7	1.9	3.3	11	ND	7.2	D	D	D	ND	23	0.5 - 25	8,500 - 43,000 #	0.1 - 3.9
Calcium	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
Chromium	35 g	7.0 g	24 g	22 g	23 g	55 g	20 g	8.7 B	39 g E	20,000 g	21,500 g	81 g E	3,710 g E	328	575	ND N
Cobalt	8.9 B	3.9 B	14 g	13 g	17 g	78 g	11 g	8.7 B	39 g E	20,000 g	21,500 g	81 g E	3,710 g E	328	575	ND N
Copper	82	14	43	37	45	58	42	39 g E	20,000 g	21,500 g	81 g E	3,710 g E	328	575	ND N	0.001 - 0.2
Iron	38,800 g	12,600 g	30,300 g	29,000 g	31,000 g	24,800 g	21,500 g	81 g E	3,710 g E	328	575	ND N	0.001 - 0.2	0.1	0.1	0.1
Lead	161 g E	23 g E	74 g E	18 g E	26 g E	131 g E	81 g E	3,710 g E	328	575	ND N	0.001 - 0.2	0.1	0.1	0.1	0.1
Magnesium	4,610	2,130	6,060	4,590	7,060	5,050	8,360	3,710 g E	328	575	ND N	0.001 - 0.2	0.1	0.1	0.1	0.1
Manganese	430	247	654	324	666	440	575	328	575	ND N	0.001 - 0.2	0.1	0.1	0.1	0.1	0.1
Mercury	0.15 g	ND	ND	0.10 g	0.09 g B	0.13 g	ND N	0.001 - 0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Nickel	34	9.3	29	29	35	33	ND	23	0.5 - 25	8,500 - 43,000 #	0.1 - 3.9	0.1 - 5.0 (n)	6,000 - 8,000	0.1 - 0.8 (q)	1.0 - 300	9.0 - 50
Potassium	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
Selenium	D	0.91 g B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1.9 B	ND	0.59 B	ND	1.1 B	3.0	5.0	2.5 B	289 B	151 B	133 B	102 B	101 B	ND	26	18
Sodium	101 B	31 B	80 B	101 B	102 B	133 B	151 B	289 B	151 B	133 B	102 B	101 B	101 B	ND	26	18
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	26	18
Vanadium	28	16	26	26	21	17	18	26	18	26	18	26	18	26	18	109 g E
Zinc	271 g E	132 g E	159 g E	122 g E	194 g E	183 g E	109 g E	280 g N	109 g E	183 g E	183 g E	109 g E	280 g N	109 g E	183 g E	
Cyanide																

NOTE: Bold numbers exceed cleanup objectives/background concentrations.

rural areas to 200 to 500 ppm in metropolitan or suburban areas or near highways.

- Some forms of cyanide are complex and stable, while other forms are pH dependent and hence are very unstable. Site-specific form(s)

of cyanide should be taken into consideration when establishing soil cleanup objectives.

- New York State background concentration.
- NYSDEC Division Technical and Administrative Guidance Memoranda
- Review | The Soil Chemistry of Hazardous Materials

(ii) - Driegan, C.; THE SOIL CHEMISTRY OF TROPICAL SOILS.

- aa - New York State background concentration.
- (b) - NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.

(n) - Dragun, J., The Soil Chemistry of Hazardous Materials.

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(d) - Bowman, H.J., Environmental Chemistry of the Elements.

B - Value is less than the contract-required detection limit but greater than the instrument detection limit.

E - Value estimated due to interference.

g - Spiked sample recovery is not within control limits.

N - Value considered estimated based on data validator's report

D - Value rejected by data validator and found unusable (Applicable)

N/A - Not detected at analytical detection limit.

SB - Site background.

g - Value considered estimated based on data validator's report (Appendix D).
D - Value rejected by data validator and found unusable (Appendix D).

ND - Not detected at analytical detection limit.
N/A - Not available.
SR - Site background

SB - Site background.

United Plating Site

PARAMETER	UPSS16	UPSS17	UPSS18	UPSS19	UPSS20	UPSS21	UPSS22	UPSS23	EASTERN USA BACKGROUND SOIL CONCENTRATIONS (b)	RECOMMENDED SOIL CLEANUP OBJECTIVE (b)
TAL METALS (mg/kg)										
Aluminum	15,600 g E	11,400 g E	6,470 g E	7,540	5,100 g E	5,520 g E	6,650 g E	14,800 g E	33,000	SB
Antimony	ND	ND	ND	ND	ND	ND	ND	ND	0.6 - 10 (n)	SB
Arsenic	4.8	4.3	ND	4.8	2.5	7.8	5.6	4.4	3.0 - 12.0 (n)	SB
Barium	120 g E	103 g E	36 g B E	123 g	45 g E	60 g E	71 g E	138 g E	15 - 600	300 or SB
Beryllium	0.69 B	0.55 B	0.33 B	0.49 B	0.34 B	0.39 B	0.42 B	0.70	0 - 1.75	0.16 or SB
Cadmium	7.2	2.4	3.6	1.3	ND	2.5	6.8	10	0.1 - 1.0	1 or SB
Calcium	D	D	D	D	104,000 g	99,900 g	D	D	130 - 35,000 (n)	SB
Chromium	62	24	18	25 g	62	42	30	34	1.5 - 40.0 (n)	10 or SB
Cobalt	11 B	7.7 B	5.4 B	ND	5.4 B	6.1 B	17	15	2.5 - 60.0 (n)	30 or SB
Copper	47 g E	39 g E	17 g E	54 g	33 g E	62 g E	63 g E	51 g E	1.0 - 50.0	25 or SB
Iron	28,500 g	22,200 g	10,800 g	27,100 g	14,000 g	14,000 g	16,100 g	29,200 g	2,000 - 550,000	2,000 or SB
Lead	183 g E	218 g E	140 g E	116 g E	236 g E	41 g E	53 g E	54 g E	4.0 - 61 or 200 - 500*	SB*
Magnesium	3,250 g E	2,360 g E	1,810 g E	3,460	49,600 g E	45,700 g E	31,600 g E	11,700 g E	100 - 5,000	SB
Manganese	291	330	342	400	340	382	390	666	50 - 5,000	SB
Mercury	ND N	ND N	ND N	0.22 g	ND N	ND N	ND N	ND N	0.001 - 0.2	0.1
Nickel	26	39	16	34	14	17	23	37	0.5 - 25	13 or SB
Potassium	D	D	D	D	1,680	2,310	D	D	8,500 - 43,000 (n)	SB
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	0.1 - 3.9	2 or SB
Silver	5.7	1.9 B	0.5 B	ND	0.39 B	1.7 B	1.8 B	1.2 B	0.1 - 5.0 (n)	SB
Sodium	306 B	203 B	113 B	55 B	506 B	157 B	118 B	92 B	6,000 - 8,000	SB
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	0.1 - 0.8 (g)	SB
Vanadium	30 g	24 g	12 g	25 g	15 g	13 g	15 g	26 g	1.0 - 300	150 or SB
Zinc	272 g N	241 g N	248 g N	136 g E	61 g N	71 g N	138 g N	125 g N	9.0 - 50	20 or SB
Cyanide	ND N	ND N	ND N	ND	ND N	2.1 g N	1.7 g N	0.69 g N	N/A	**

NOTE: Bold numbers exceed cleanup objectives/background concentrations.

rural areas to 200 to 500 ppm in metropolitan or suburban areas or near highways.

- Some forms of cyanide are complex and stable, while other forms are pH dependent and hence are very unstable. Site-specific form(s)

of cyanide should be taken into consideration when establishing soil cleanup objectives.

- (b) - New York State background concentration;
- (b) - NYSDEC Division Technical and Administrative Guidance Memoranda
- (b) - Region 1, The Soil Chemistry of Hazardous Materials

(v) - Figure 6: The Soil Chemistry of the Soil Chemistry

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SURFACE SOIL DATA SUMMARY (MAY 1995) United Plating Site

EASTERN USA
RECOMMENDED SOIL CLEANUP BACKGROUND SOIL CONCENTRATIONS (b) OBJECTIVE (b)
PARAMETER UPSS24 UPSS25 UPSS26 UPSS27 UPSS28 UPSS29 UPSS30 UPSS31 UPSS32

TAL METALS (mg/kg)	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Cyanide
11,600 g E	9,680 g E	ND	3.7	96 g E	0.71	49	D	54	16	75 g E	25,400 g	140 g E	12,900 g E	522	ND N	38	D	ND	2.3	89 B	ND	21 g	149 g N	4.1 g N
4,300 g E	4,300 g E	ND N	3.1 R	68 g E	0.41 B	2.2 g N R	D	27 R	4.7 B	34 R	11,500 g E	198 g E N	15,300 g E	247 g E N	0.12 g N	13	D	D	0.98 B	97 B	1.3 g B	17 g	119 g E	ND
8,840 g E	8,840 g E	ND	3.1	49 g E	0.42 B	1.2 B	D	29 g E	11	45 R	20,500 g	61 g E	8,980 g E	479	ND N	22	D	ND	0.99 B	220 B	ND	19 g	98 g N	ND N
5,150 g E	5,150 g E	ND N	2.8 R	55 g E	0.35 B	4.5 g N R	D	17	5.0 B	27 R	15,500 g E	215 g E N	15,400 g E	239 g E N	0.10 g N	16	D	D	2.2	147 B	1.6 g B	19 g	127 g E	ND
11,500 g E	11,500 g E	ND N	1.8 B R	92 g E	0.87 B	1.0 g N R	D	19	9.4 B	27 R	22,800 g E	38 g E N	5,850 g E	449 g E N	ND N	20	D	D	ND	110 B	ND	25 g	69 g E	ND
10,300 g E	10,300 g E	ND N	1.9 B R	82 g E	0.70 B	2.2 g N R	D	37 R	9.0 B	37 R	21,800 g E	87 g E N	6,220 g E	399 g E N	ND N	22	D	D	0.93 B	89 B	1.5 g B	26 g	104 g E	ND
7,090 g E	7,090 g E	ND N	1.6 B R	48 g E	0.46 B	2.1 g N R	D	34 R	6.6 B	34 R	19,400 g E	162 g E N	13,200 g E	396 g E N	ND N	17	D	D	1.0 B	237 B	ND	21	134 g E	ND
9,120 g E	9,120 g E	ND	2.9	64 g E	0.44 B	1.7	D	11	31 g E	31 g E	18,100 g	215 g E	8,610 g E	435	ND N	21	D	ND	0.84 B	95 B	ND	20 g	166 g N	ND N

(q) - Bowman, H.J., Environmental Chemistry of the Elements.
g - Value considered estimated based on data validator's report (Appendix D).
B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
D - Value rejected by data validator and found unusable (Appendix D).
E - Value estimated due to interference.
N - Spiked sample recovery is not within control limits.
R - Duplicate analysis not within control limits.
ND - Not detected at analytical detection limit.
N/A - Not available.
SB - Site background.

NOTE: Bold numbers exceed cleanup objectives/background concentrations.
- Background levels for lead range from 4 to 61 ppm in undeveloped, rural areas to 200 to 500 ppm in metropolitan or suburban areas or near highways.
- Some forms of cyanide are complex and stable, while other forms are pH dependent and hence are very unstable. Site-specific form(s) of cyanide should be taken into consideration when establishing soil cleanup objectives.
- New York State background concentration.
- NYSDEC Division Technical and Administrative Guidance Memorandum (TAGM), 1/94.
- Dragun, J., The Soil Chemistry of Hazardous Materials.

SURFACE SOIL DATA SUMMARY (MAY 1995)

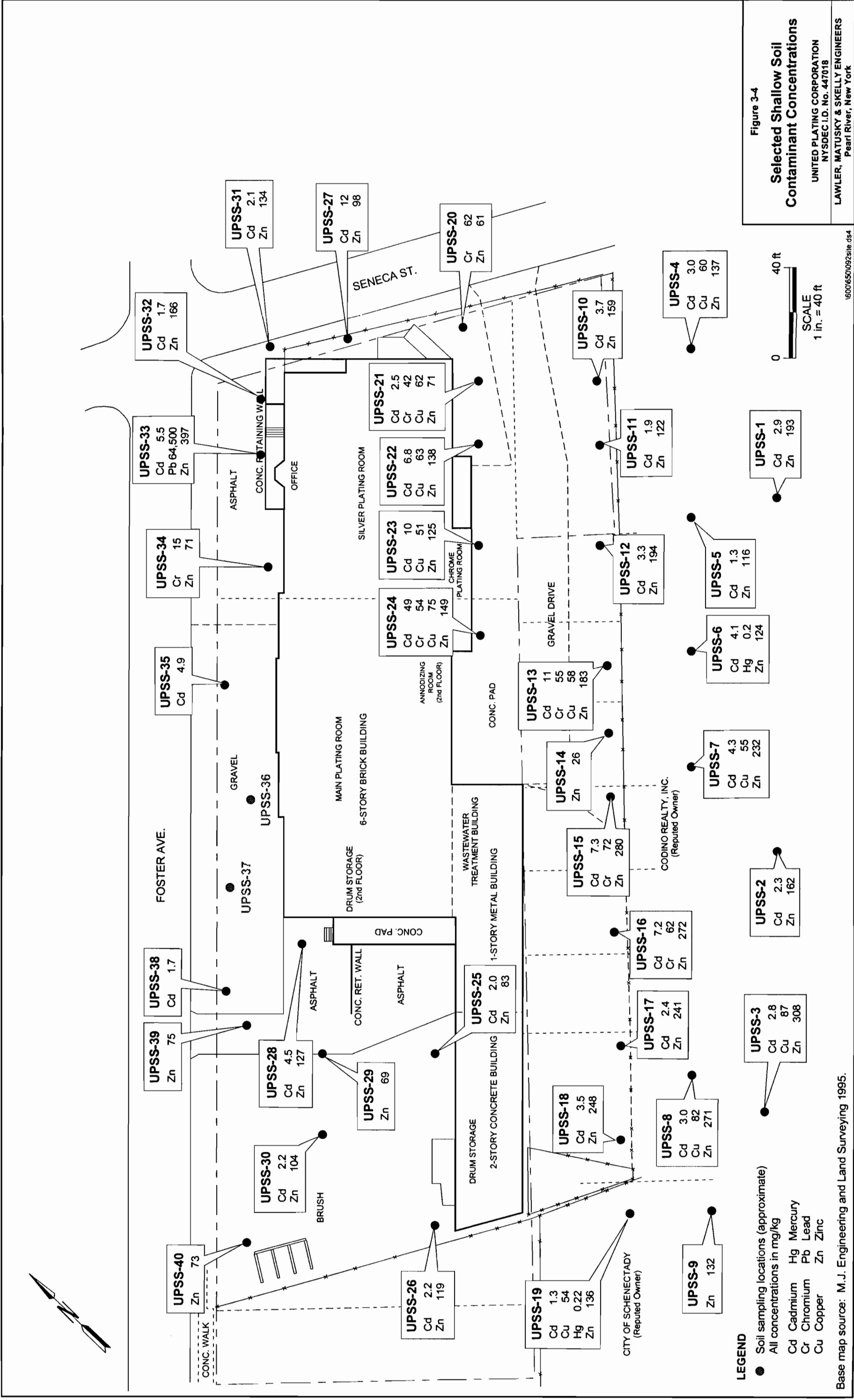
United Plating Site

RECOMMENDED EASTERN USA
 UPFB06 BACKGROUND SOIL SOIL CLEANUP
 PARAMETER UPSS33 UPSS34 UPSS35 UPSS36 UPSS37 UPSS38 UPSS39 UPSS40 (µg/l) CONCENTRATIONS (b) OBJECTIVE (b)

TAL METALS (mg/kg)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
Aluminum	13,000 g E	7,970 E	2,630 g E	2,270 g E	1,860 g E	2,200 g E	9,730 g E	10,300 g E	ND	D	5.0 B	43 B g E	ND	ND	1.0 g N R	0.72 B	66 g E	57 g E	0.58 B	1.0 g N R	D	18	12	32 R	23,200 g E	33 g E N	7,280 g E	473 g E N	ND N	D	ND	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Antimony	680	ND	ND	ND	ND	ND N	ND N	ND N	ND N	D	D	4.7 R	ND N	ND N	1.2 R	0.58 B	66 g E	57 g E	0.58 B	1.0 g N R	D	18	12	32 R	23,200 g E	33 g E N	7,280 g E	473 g E N	ND N	D	ND	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Arsenic	3.4	1.5 B	7.9	7.6	2.7	6.0 R	1.2 R	4.7 R	5.0 B	43 B g E	ND	ND	1.0 g N R	0.72 B	66 g E	57 g E	0.58 B	1.0 g N R	D	18	12	32 R	23,200 g E	33 g E N	7,280 g E	473 g E N	ND N	D	ND	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide																																																																																																																																																																																																																																																																																																																																																																																																																																																									
Barium	79 g E	37 g E	48 g E	40 g E	30 B g E	49 g E	57 g E	66 g E	43 B g E	ND	ND	1.0 g N R	0.72 B	66 g E	57 g E	0.58 B	66 g E	57 g E	0.58 B	1.0 g N R	D	18	12	32 R	23,200 g E	33 g E N	7,280 g E	473 g E N	ND N	D	ND	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Beryllium	0.52 B	0.42 B	0.25 B	0.25 B	0.19 B	0.32 B	0.58 B	0.72 B	ND	ND	1.0 g N R	0.72 B	66 g E	57 g E	0.58 B	0.58 B	0.72 B	66 g E	0.58 B	1.0 g N R	D	18	12	32 R	23,200 g E	33 g E N	7,280 g E	473 g E N	ND N	D	ND	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Cadmium	5.5	0.64 B	4.9	ND	ND	1.7 g N R	1.0 g N R	1.0 g N R	ND	ND	1.0 g N R	0.72 B	66 g E	57 g E	0.58 B	0.58 B	0.72 B	66 g E	0.58 B	1.0 g N R	D	18	12	32 R	23,200 g E	33 g E N	7,280 g E	473 g E N	ND N	D	ND	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Calcium	D	D	105,000 g	111,000 g	101,000 g	164,000 g	D	1.0 g N R	ND	ND	1.0 g N R	0.72 B	66 g E	57 g E	0.58 B	0.58 B	0.72 B	66 g E	0.58 B	1.0 g N R	D	18	12	32 R	23,200 g E	33 g E N	7,280 g E	473 g E N	ND N	D	ND	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Chromium	32	15	33	13	10	11	D	1.0 g N R	ND	ND	1.0 g N R	0.72 B	66 g E	57 g E	0.58 B	0.58 B	0.72 B	66 g E	0.58 B	1.0 g N R	D	18	12	32 R	23,200 g E	33 g E N	7,280 g E	473 g E N	ND N	D	ND	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Cobalt	10	8.1 B	4.8 B	4.6 B	3.1 B	4.4 B	9.3	1.0 g N R	ND	ND	1.0 g N R	0.72 B	66 g E	57 g E	0.58 B	0.58 B	0.72 B	66 g E	0.58 B	1.0 g N R	D	18	12	32 R	23,200 g E	33 g E N	7,280 g E	473 g E N	ND N	D	ND	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Copper	35 g E	26 g E	22 g E	15 g E	16 g E	15 R	27 R	23,200 g E	33 g E N	7,280 g E	473 g E N	ND N	D	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide	ND	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Iron	19,000 g	22,100 g	11,400 g	11,500 g	8,590 g	11,400 g E	22,600 g E	23,200 g E	33 g E N	7,280 g E	473 g E N	ND N	D	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide	ND	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Lead	64,500 g E	15 g E	376 g E	74 g E	68 g E	27 g E N	25 g E N	33 g E N	7,280 g E	473 g E N	ND N	D	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide	ND	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Magnesium	4,420 g E	7,510 g E	52,300 g E	51,300 g E	44,100 g E	52,200 g E	11,500 g E	7,280 g E	473 g E N	ND N	D	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide	ND	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Manganese	385	488	213	227	190	243 g E N	539 g E N	473 g E N	ND N	ND N	ND N	473 g E N	ND N	D	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide	ND	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Mercury	ND N	ND N	ND N	0.11 g B N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	ND N	D	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide	ND	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Nickel	20	21	15	12	7.5	13	37	22	ND N	ND N	ND N	ND N	ND N	D	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide	ND	ND	3.6 B	132 g	ND	ND	64,500 g E	4,420 g E	385	ND N	20	D	ND	1.7 B	87 B	ND	26 g	397 g N	0.60 g B N	Cyanide																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Potassium	D	D	1,530	1,280	987	1,260	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D</

NOTE: Bold numbers exceed cleanup objectives/background concentrations.
 - Background levels for lead range from 4 to 61 ppm in undeveloped, rural areas to 200 to 500 ppm in metropolitan or suburban areas or near highways.
 - Some forms of cyanide are complex and stable, while other forms are pH dependent and hence are very unstable. Site-specific forms of cyanide should be taken into consideration when establishing soil cleanup objectives.
 - New York State Technical and Administrative Guidance Memorandum (TAGM), 1/94.
 - Dragun, J., The Soil Chemistry of Hazardous Materials.

(g) - Bowman, H.J., Environmental Chemistry of the Elements.
 - Value considered estimated based on data validator's report (Appendix D).
 - Value is less than the contract-required detection limit but greater than the instrument detection limit.
 - Value rejected by data validator and found unusable (Appendix D).
 - Value estimated due to interference.
 - Spiked sample recovery is not within control limits.
 - Duplicate analysis not within control limits.
 - Not detected at analytical detection limit.
 - Not available.
 - Site background.
 - SB



contained in Appendix C, and the data validation and usability report is contained in Appendix D.

None of the samples had VOC or pesticide/polychlorinated biphenyl (PCB) concentrations that exceeded the NYSDEC cleanup objective. However, several semivolatile organic compounds (SVOCs) were found above the cleanup objective: benzo(a)- and dibenzo(a,h)anthracene, benzo(a)pyrene, benzo(b)- and benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene. In addition, phenanthrene, fluoranthene, and pyrene were detected in UPSS-17 above the 50-mg/kg cleanup objective for individual SVOCs. The cleanup objective for total SVOCs is 500 mg/kg; sample UPSS-17 exceeded this limit, with a total concentration of TCL SVOCs of 596.5 mg/kg.

Zinc exceeded the cleanup objective/background level in 36 samples, cadmium in 31 samples, nickel in 15 samples, copper in 10 samples, and chromium in six samples. A concentration 64,500 mg/kg of lead was found at UPSS-33, which is outside the room that contained the lead smelter.

3.7 SURFACE WATER/SEDIMENT SAMPLING

Sediment samples were collected from a total of 16 locations and analyzed for TAL metals and cyanide; TCLP metals were analyzed at three locations. Table 3-12 and 3-13 summarize the total metals and TCLP metals data, respectively. The TCLP limit is also shown on Table 3-13, with results exceeding the limit highlighted in bold. The results are shown graphically on Figure 3-5. The laboratory analytical data sheets are contained in Appendix C, and the data validation and usability report is contained in Appendix D.

The TCLP limit for chromium was exceeded at two locations, UPSD-3 and -8, with the sample at UPSD-3 having a concentration 40 times greater than the standard. Cadmium and lead also exceeded the TCLP limit at UPSD-3. The sample at UPSD-1 had no metals above the TCLP limit. Metals detected at fairly high levels in most of the sediment samples include chromium, copper, lead, mercury, and zinc. Cadmium and silver were detected at fairly high levels at one location, barium at four locations, and antimony at four locations. Cyanide was detected at fairly high levels at all but one location. The samples with the lowest concentration of contaminants were UPSD-1, the covered sump on the southeast area of the building, and UPSD-14, which was inside the building.

Surface water samples were collected from a total of five locations and analyzed for TAL metals and cyanide. Table 3-14 summarizes the results and Figure 3-6 graphically presents the data.

TABLE 3-12 (Page 1 of 2)

SEDIMENT DATA SUMMARY (JUNE 1995)
United Plating Site

PARAMETER	UPSD01	UPSD02	UPSD03	UPSD04	UPSD05	UPSD06	UPSD07	UPSD08
TAL METALS (mg/kg)								
Aluminum	12,100 g s E	3,460 g E	3,030 g s E	4,500 g E	3,020 g E	5,710 g E	13,000 g s E	8,480 g E
Antimony	D	13 g B N	64 g s N	44 g N	22 N	ND N	212 s N	444 N
Arsenic	14 g s	8.4 g	18 g s	24 g	8.8 g	D	8.6 g s	71
Barium	207 g s E	104 g E	509 g s E	140 g E	187 g E	210 g E	434 g s E	2,270 g E
Beryllium	0.71 s B	ND	ND	0.32 B	ND	0.40 B	0.40 s B	0.42 B
Cadmium	164 g s E N R	343 g E N R	86 g s E N R	277 g E N R	821 g E N R	451 g E N R	423 g s E N R	33 g E N R
Calcium	59,400 g s E R	16,500 g E R	20,100 g s E R	4,870 g E R	7,070 g E R	31,000 g E R	4,640 g s E R	11,100 g E R
Chromium	870 g s	5,870 g	22,300 g s	24,400 g	16,100	1,680	5,870 s	73,400
Cobalt	180 g s	16 g	5.8 g s B	16 g	16	48	14 s B	34
Copper	629 g s E	26,500 g E	920 g s E	1,700 g E	3,870 g E	1,470 g E	8,000 g s E	1,400 g E
Iron	88,000 g s E	69,700 g E	21,600 g s E	117,000 g E	171,000 g E	114,000 g E	142,000 g s E	31,100 g E
Lead	880 g s E R	6,580 g E R	16,300 g s E R	4,200 g E R	ND g E R	2,460 g E R	14,400 g s E R	156,000 g E R
Magnesium	24,200 g s E	3,050 g E	1,250 g s B E	2,450 g E	1,300 g B E	3,080 g E	6,320 g s E	2,940 g E
Manganese	402 g s E N	513 g E N	111 g s E N	413 g E N	532 g E N	650 g E N	245 g s E N	123 g E N
Mercury	0.76 r	0.35 r	0.51 r	1.6 r	1.3 r	12	1.7 r	0.44 r
Nickel	153 g s E N	3,010 g E N	123 g s E N	1,130 g E N	2,070 g E N	878 g E N	458 g s E N	333 g E N
Potassium	3,770 g s B E	5,270 g E	2,210 g s E	2,240 g E	3,060 g E	2,980 g E	3,980 g s E	3,420 g E
Selenium	ND	ND	ND	ND	D	D	D	D
Silver	28 g s E	70 g E	64 g s E	76 g E	35 g E	62 g E	100 g s E	378 g E
Sodium	381 s B	1,800	1,320 s B	768 B	1,370 B	1,150 B	859 s B	294 B
Thallium	D	D	3.8 g s B	4.2 g	8.6 g	ND	7.9 g s	8.5 g
Vanadium	39 g s E	9.5 g B E	14 g s B E	26 g E	20 g E	23 g E	49 g s E	19 g E
Zinc	1,410 g s E N	2,890 g E N	395 g s E N	3,150 g E N	32,900 g E N	11,800 g E N	3,100 g s E N	1,910 g E N
Cyanide	ND	65	79 s	65	57	103	120 s	479

g - Value considered estimated based on data validator's report (Appendix D).
r - Value rejected by data validator but usable to show magnitude
s - Value estimated level (Appendix D).
B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
ND - Not detected at analytical detection limit.
R - Duplicate analysis not within control limits.
N - Spiked sample recovery is not within control limits.
E - Value estimated due to interference.
D - Value rejected by data validator and found unusable (Appendix D).

TABLE 3-12 (Page 2 of 2)

SEDIMENT DATA SUMMARY (JUNE 1995) United Plating Site

PARAMETER	UPSD09	UPSD10	UPSD11	UPSD12	UPSD13	UPSD14	UPSD15	UPSD16	UPFB09
TAL METALS (mg/kg)									
Aluminum	6,280 g E	4,160 g E	4,170 g E	1,490 g E	7,220 g E	9,360 g E	2,120 g E	5,260 g E	ND N
Antimony	4,770 N	1,890 N	2,540 N	264 N	566 N	ND N	3,840 N	ND N	ND N
Arsenic	253	39	77	19	22	5.9	80	23	D
Barium	13,600 g E	236 g E	1,150 g E	381 g E	595 g E	104 g E	4,120 g E	408 g E	ND
Beryllium	3.5	ND	0.23 B	ND	0.29 B	0.41 B	0.18 B	0.26 B	ND
Cadmium	981 g E N R	493 g E N R	184 g E N R	52 g E N R	519 g E N R	18 g E N R	142 g E N R	78 g E N R	ND E
Calcium	94,800 g E R	18,000 g E R	9,640 g E R	3,240 g E R	15,300 g E R	25,100 g E R	6,420 g E R	42,400 g E R	ND
Chromium	20,600	7,040	30,800	16,900	26,000	428	56,100	2,110	D
Cobalt	659	71	57	19	147	25	47	219	ND
Copper	1,560 g E	18,000 g E	7,390 g E	454 g E	3,440 g E	157 g E	1,810 g E	682 g E	ND g E
Iron	98,100 g E	100,000 g E	69,500 g E	27,300 g E	58,400 g E	33,900 g E	68,600 g E	115,000 g E	40 B g E N
Lead	36,900 g E R	98,000 g E R	143,000 g E R	35 g E R	32,800 g E R	206 g E R	191,000 g E R	39 g E R	8.9 g
Magnesium	46,700 g E	3,480 g E	1,840 g E	927 B g E	3,650 g E	5,580 g E	1,180 g E	6,020 g E	ND
Manganese	4,050 g E N	738 g E N	438 g E N	159 g E N	494 g E N	470 g E N	394 g E N	701 g E N	ND E
Mercury	1.2 r	2.4	1.2 r	0.86 r	1.8	0.87 r	0.59 r	5.8	0.41 r
Nickel	2,990 g E N	346 g E N	1,560 g E N	76 g E N	1,360 g E N	103 g E N	233 g E N	674 g E N	D
Potassium	13,900 g E	873 g B E	1,360 g E	475 g B E	1,690 g E	2,050 g E	648 g B E	1,480 g E	74 g B E
Selenium	D	D	ND	D	D	D	D	D	D
Silver	2,830 g E	80 g E	83 g E	19 g E	137 g E	11 g E	88 g E	37 g E	ND
Sodium	1,370	168 B	554 B	46 B	323 B	2,100	155 B	279 B	ND E
Thallium	ND	ND	6.2 g	7.2 g	5.5 g	ND	9.5 g	9.2 g	ND R
Vanadium	352 g E	17 g E	14 g E	14 g E	34 g E	25 g E	12 g E	26 g E	ND
Zinc	10,400 g E N	1,900 g E N	1,640 g E N	476 g E N	3,490 g E N	228 g E N	863 g E N	9,810 g E N	7.6 g B E
Cyanide	52 g	55	55	22	86	39	38	30	ND

g - Value considered estimated based on data validator's report (Appendix D).
r - Value rejected by data validator but usable to show magnitude.
B - Value is less than the contract-required detection limit but of contaminated level (Appendix D).
ND - Not detected at analytical detection limit.
R - Duplicate analysis not within control limits.
N - Spiked sample recovery is not within control limits.
E - Value estimated due to interference.
D - Value rejected by data validator and found unusable (Appendix D).

TABLE 3-13

SEDIMENT TCLP DATA SUMMARY (JUNE 1995)
United Plating Site

TCLP METALS (mg/l)				
UPSD01	UPSD03	UPSD08	TCLP STANDARDS	
Arsenic D	0.072 g B	D	5.0	5.0
Barium 0.52 g B E	0.14 g B E	0.58 g B E	100	1.0
Cadmium 0.024 g B R	1.6 R	0.17 R	5.0	5.0
Chromium 0.68 g E R	201 g E R	31 g E R	5.0	5.0
Lead ND R	9.5 r R	0.078 g B R	5.0	0.2
Mercury 0.00034	0.00068	0.00043	1.0	5.0
Selenium ND R	0.050 g R	ND R	5.0	5.0
Silver 0.019 g B R	0.030 g B R	0.11 g R	5.0	5.0

Note: Bold numbers exceed TCLP Standards.
 g - Value considered estimated based on data validator's report (Appendix D).
 r - Value rejected by data validator but usable to show magnitude of contamination level (Appendix D).
 B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
 D - Value rejected by data validator and found unusable (Appendix D).
 E - Value estimated due to interference.
 R - Duplicate analysis not within control limits.
 ND - Not detected at analytical detection limit.

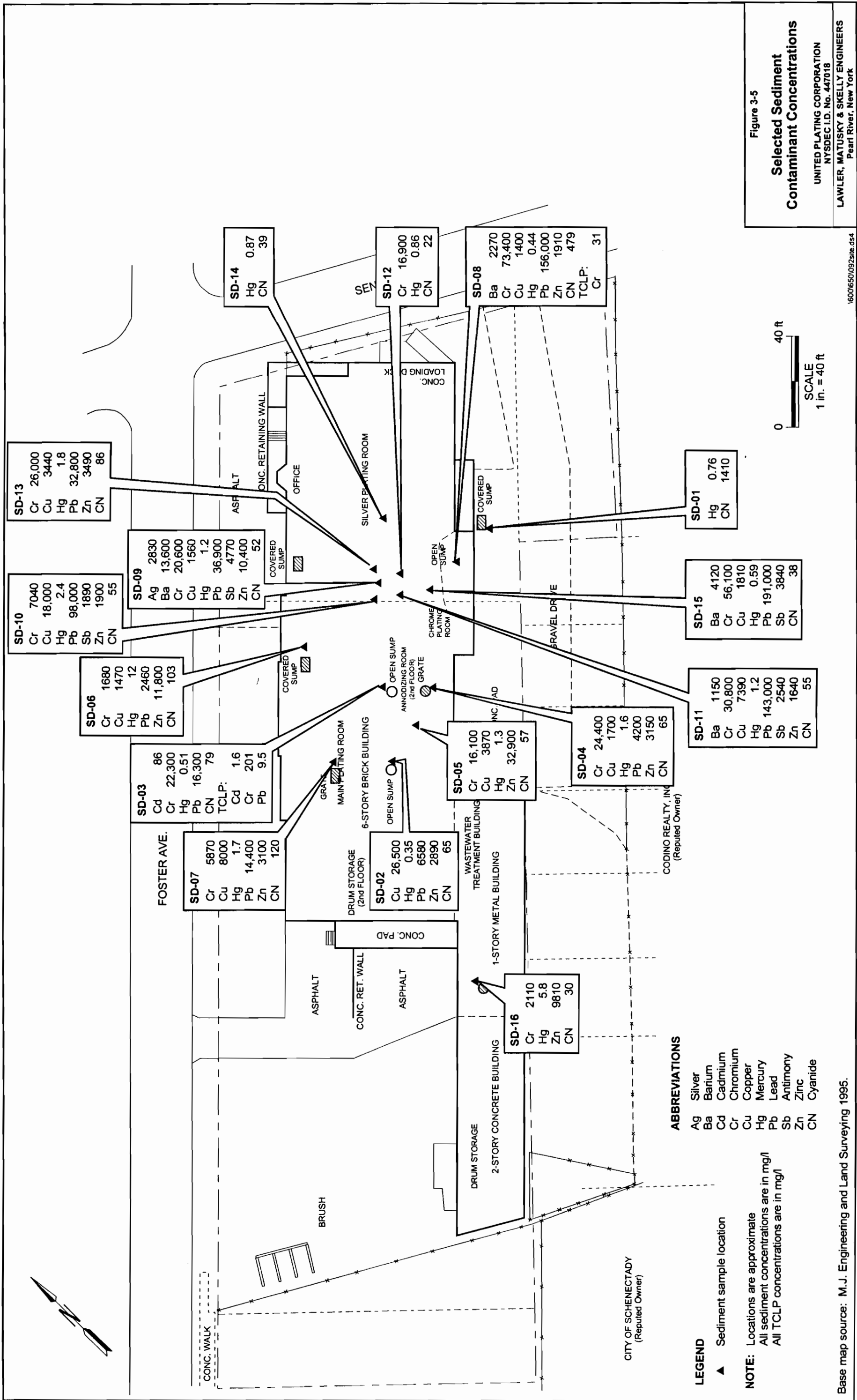


TABLE 3-14

SURFACE WATER DATA SUMMARY (JUNE 1995) **United Plating Site**

UPSW01	UPSW02	UPSW03	UPSW04	UPSW05	UPFB08
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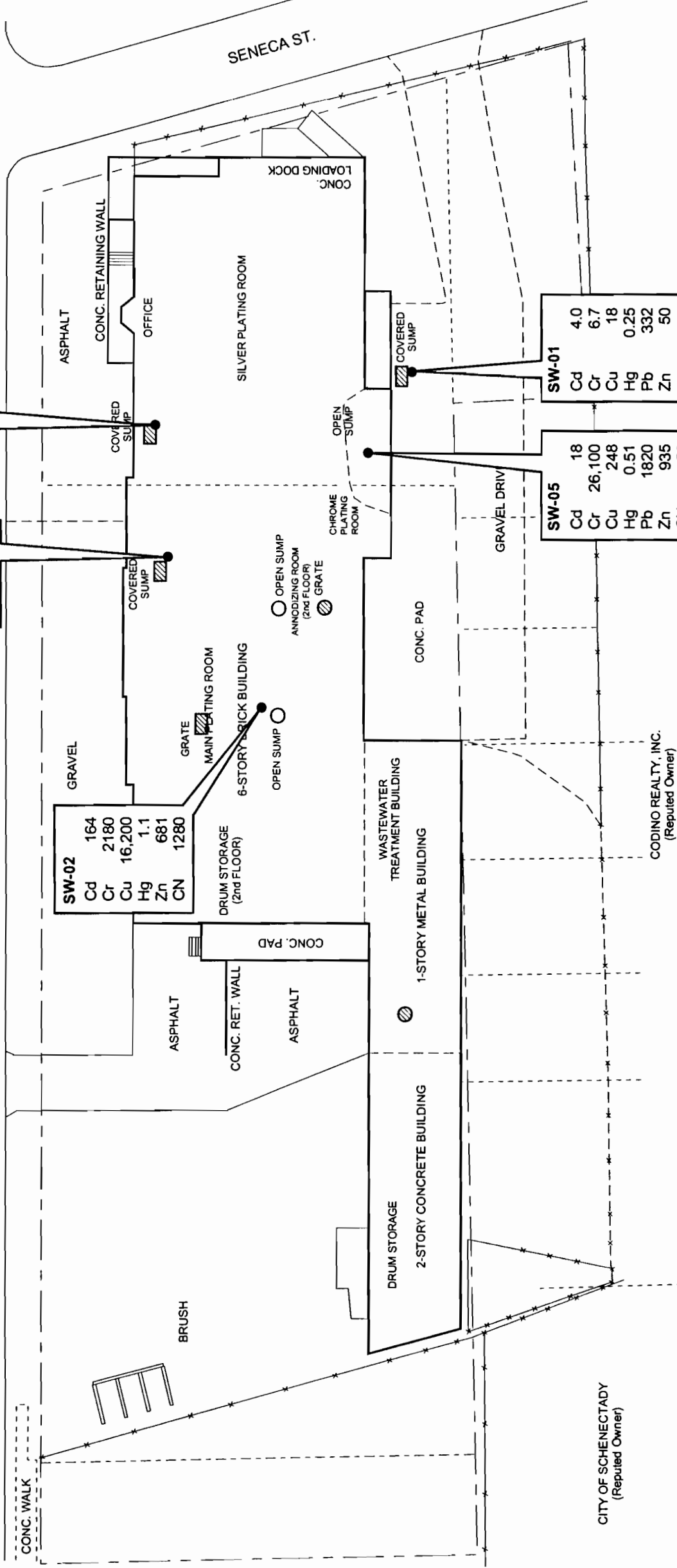
METALS (µg/l)	UPSW01	UPSW02	UPSW03	UPSW04	UPSW05	UPFB08
Aluminum	ND N	ND N	7,750 N	601 N	912 N	208 N
Antimony	ND N	45 B N	66 N	ND N	54 g B N	ND N
Arsenic	D	63 g R	12 R	D	D	D
Barium	19 B	38 B	366	43 B	41 B	ND
Beryllium	ND	ND	0.87 B	ND	ND	ND
Cadmium	4.0 g B E	164 g E	536 g E	22 g E	18 g E	ND E
Calcium	36000 g	16,900 g	171000 g	41900 g	80300 g	ND
Chromium	6.7 g B E	2,180 g E	16,000 g E	3,370 g E	26,100 g E	D
Cobalt	3.7 g B	17 g B	110 g	7.3 g B	32 g B	ND
Copper	18 g B E	16,200 E	3,280 E	152 g E	248 g E	D
Iron	272 g r E N	5,720 g E N	58,700 E N	1,360 g E N	14,800 E N	124 g E N
Lead	332 g N	ND	6,280 g N	293 g N	1,820 g N	ND
Magnesium	8,350	5,430	24,500	4,080 B	9,380	ND
Manganese	14 g B E	68 g E	668 g E	24 g E	58 g E	ND E
Mercury	0.25 r	1.1 r	66 r	0.48	0.51	0.24
Nickel	7.6 g B E	631 g E	963 g E	28 g B E	102 g E	D
Potassium	3,350 g B E	180,000 g E	68,300 g E	6,670 g E	6,940 E	ND E
Selenium	D	D	D	D	D	D
Silver	2.1 B	33	159	8.2 B	43	1.6 B
Sodium	7,500 g E	137000 g E	181,000 g E	16,700 g E	34,200 g E	ND E
Thallium	ND R	ND R	9.3 g B R	D	11 g R	8.2 B R
Vanadium	ND	5.3 B	33 g B	14 g B	ND g	ND
Zinc	50 g r E	681 g E	4,760 g E	178 g E	935 g E	43 E
Cyanide	ND	1,280	1,280	33	50	ND

g - Value considered estimated based on data validator's report (Appendix D).
r - Value rejected by data validator but usable to show magnitude of contaminated level (Appendix D).
B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
ND - Not detected at analytical detection limit.

D - Value rejected by data validator and found unusable (Appendix D).
E - Value estimated due to interference.
N - Spiked sample recovery is not within control limits.
R - Duplicate analysis not within control limits.
ND - Not detected at analytical detection limit.



FOSTER AVE.



- LEGEND**
- Surface water sample location
- ABBREVIATIONS**
- Cd Cadmium
 - Cr Chromium
 - Cu Copper
 - Hg Mercury
 - Pb Lead
 - Zn Zinc
 - CN Cyanide
- NOTE:** Locations are approximate.
All concentrations are in µg/l.



Figure 3-6
Selected Surface Water
Contaminant Concentrations

UNITED PLATING CORPORATION
NYSDEC I.D. No. 447018
LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

The laboratory analytical data sheets are contained in Appendix C, and the data validation and usability report is contained in Appendix D.

The five surface water samples all had fairly high concentrations of cadmium, chromium, copper, mercury, and zinc. In addition, lead and cyanide were found in all samples but one, UPSW-2 and UPSW-1, respectively, at fairly high levels.

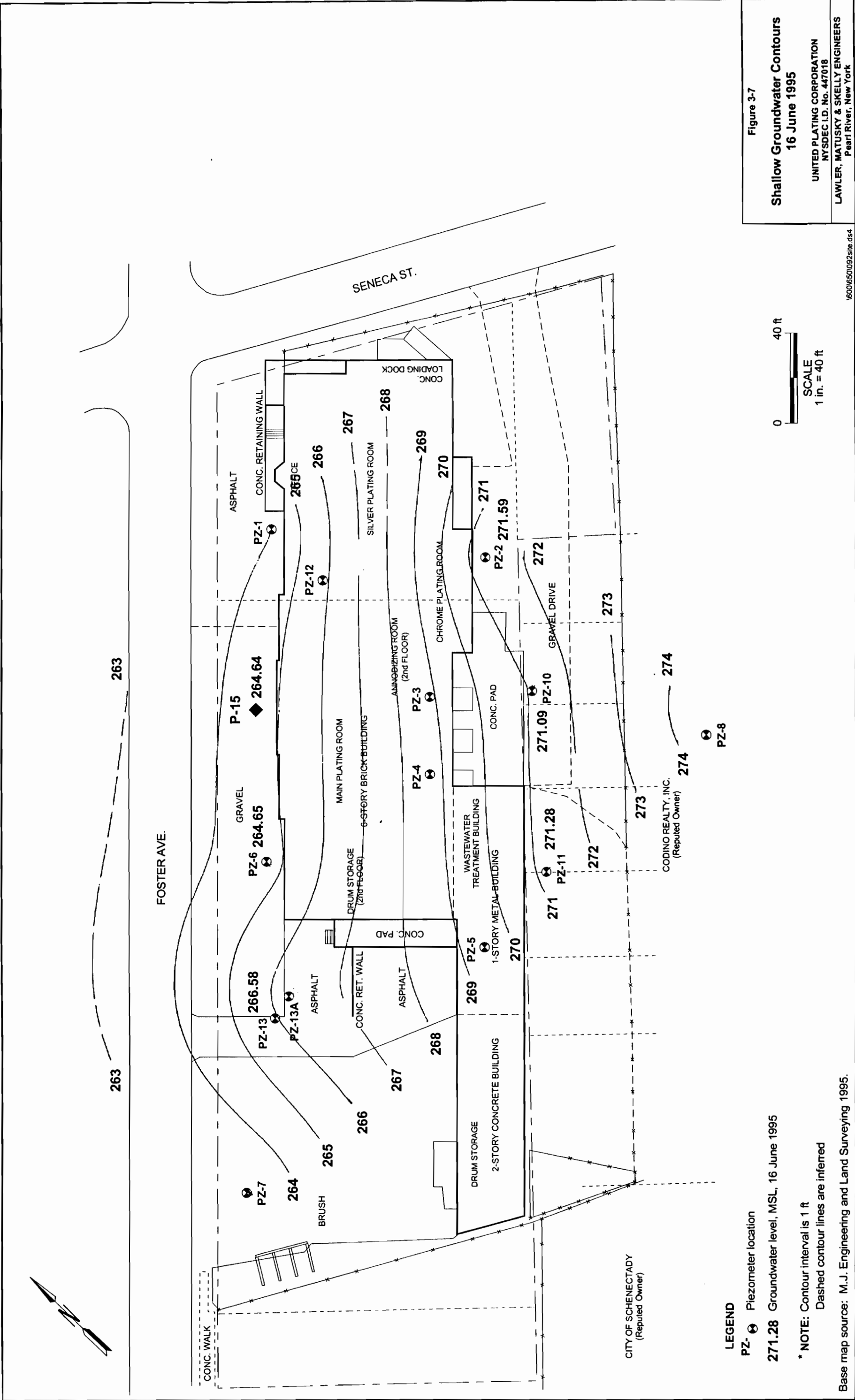
3.8 WATER LEVEL MEASUREMENTS

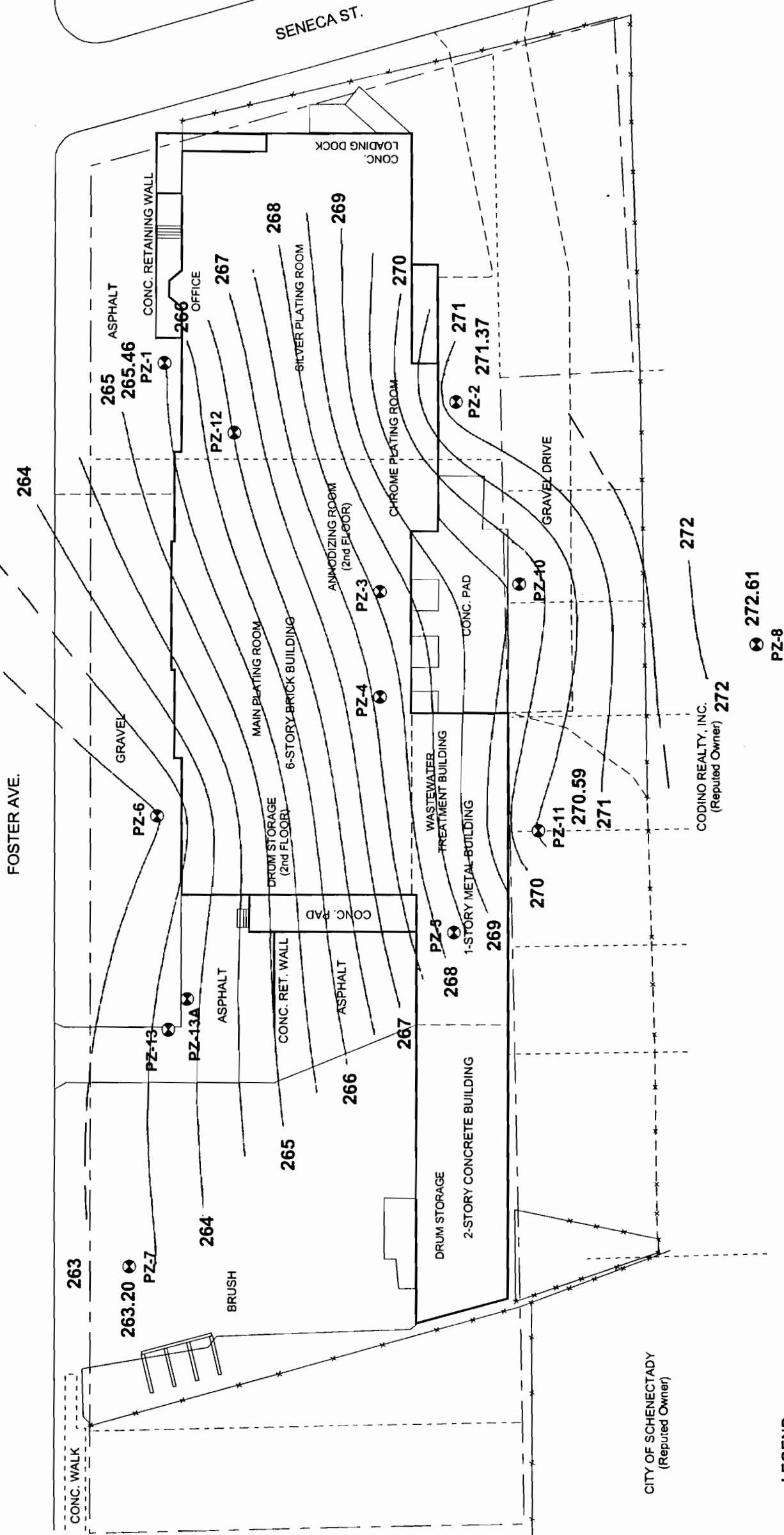
Water level measurements were taken on the newly constructed piezometers and the various other sumps and standing water locations on three occasions (16 and 26 June 1995 and 10 July 1995) (see Appendix B). The results reflect the shallow groundwater flow system, and some of the points may be reflective of perched water. The building is also suspected of affecting the shallow flow system; it appears that stormwater now collects on the lower floor and gradually infiltrates over time. This would serve to artificially raise groundwater levels within the building footprint.

Flow direction calculations were conducted for 16 June and 10 July 1995. The indicated flow direction is to the northwest (42-46° W of N) toward the Mohawk River. On-site groundwater elevations are approximately 220 ft above mean sea level (MSL). Groundwater contour maps for 16 June and 10 July 1995 are presented on Figures 3-7 and 3-8, respectively.

3.9 SITE SURVEY

To date, M.J. Engineering has provided LMS with a draft site plan and elevations of piezometers and various sump locations. The site survey revealed that the fence along the rear yard does not appear to fall on the property line. The survey also indicated that the vacant lot east of the site is owned by Condino Realty and is not part of the UP property. A copy of the survey map is located in the pocket in the back of the report.





LEGEND

PZ- Piezometer location

271.28 Groundwater level, MSL, 16 June 1995

* NOTE: Contour interval is 0.5 ft
Dashed contour lines are inferred

Base map source: M.J. Engineering and Land Surveying 1995.



Figure 3-8

Shallow Groundwater Contours

10 July 1995

UNITED PLATING CORPORATION
NYSDEC I.D. No. 447018

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

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CHAPTER 4

RECOMMENDATIONS

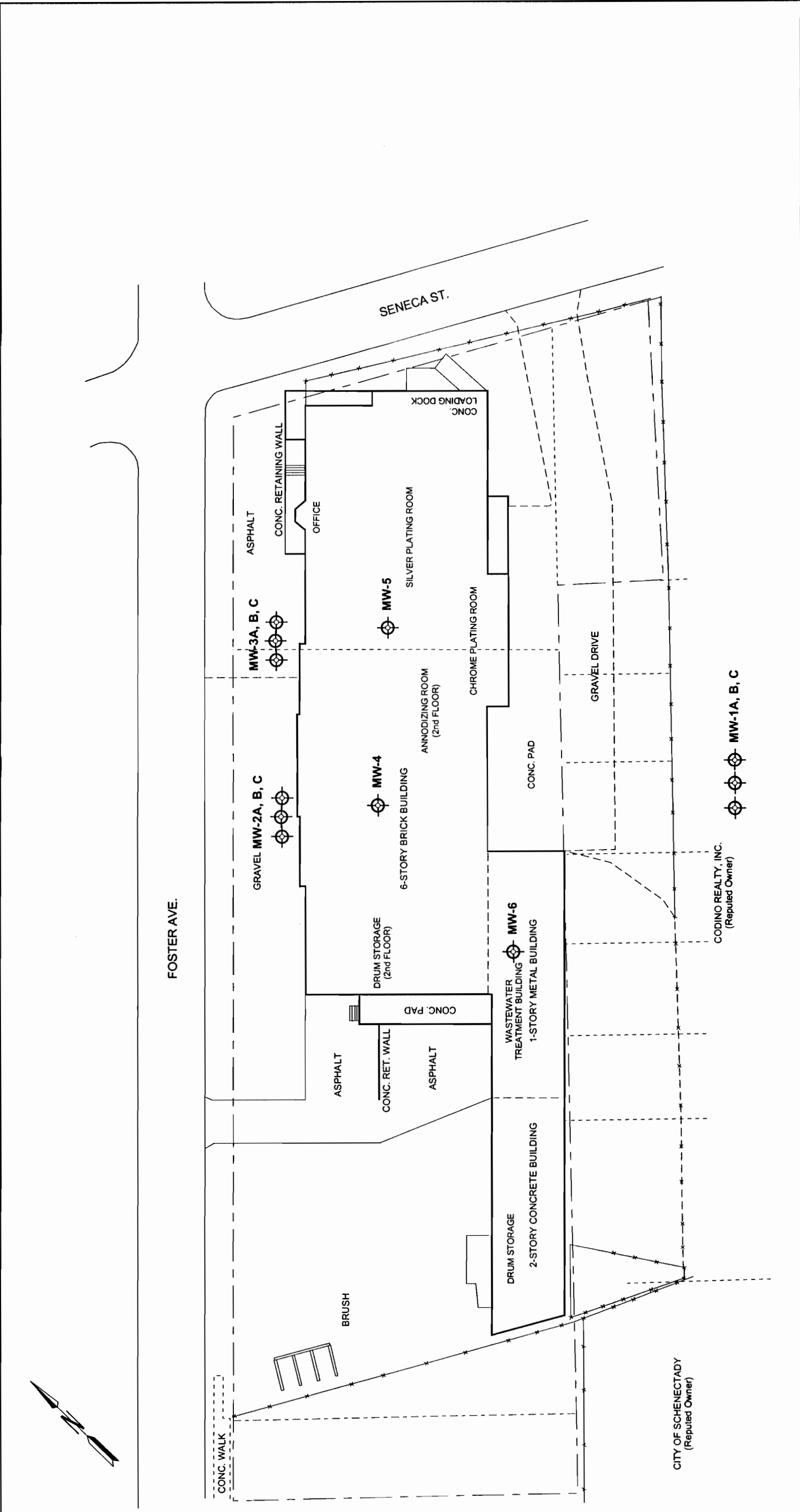
4.1 TASK 2b

4.1.1 Monitoring Well Installation

The original March 1995 Work Plan for the UP RI/FS had proposed a total of nine monitoring wells consisting of one upgradient and four downgradient wells plus one paired upgradient and one paired downgradient well. The upgradient wells were to be located in the vacant lot east of the site. The downgradient wells were to be located along the front of the property, possibly one on the side of the property and one adjacent to the sump area. All wells were to be constructed in the overburden, with the second well of the paired wells constructed in the bedrock. The purpose of the bedrock wells was to determine whether contamination is migrating vertically.

Based on the results of the probe sampling and test pit investigation, LMS now recommends that three triplicate wells be installed, with one upgradient and two downgradient triplicates. At each location one well will be installed in the overburden, one in the weather till/bedrock interface, and one in the bedrock. The three wells are needed to monitor the perched water table (which may or may not exist at the site), monitor the groundwater above the bedrock in the till, and monitor the groundwater in the bedrock. Figure 4-1 shows the proposed locations of the monitoring well clusters.

In addition, LMS proposes to install three overburden wells inside the building, with one well located downgradient of the main plating room, one located in the chromium plating room, and one in the steel treatment plant building. These wells are needed to monitor the levels of contamination in the fill material beneath the building where the probe samples found high levels of contaminants. A low-profile drill rig will be needed to install these wells. Level C personnel protection respiratory equipment will be used while drilling the wells inside the building because of the dust levels expected to be generated. All wells will be surveyed after construction for the horizontal location and elevation.



LEGEND

⊗ Proposed monitoring well location

Figure 4-1

Proposed Monitoring Well Locations

UNITED PLATING CORPORATION
NYSDEC I.D. No. 447018

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

0 40 ft

SCALE
1 in. = 40 ft

Base map source: M.J. Engineering and Land Surveying 1995.

1600650092site.dwg

4.1.2 Soil/Groundwater Sampling

The original March 1995 Work Plan called for the collection of split-spoon samples every 2 ft, with two samples selected for analysis from each location. LMS recommends that only one sample be analyzed from each location, for a total of six samples (three triplicate wells and three wells inside the building). Each soil sample will be analyzed for the full TCL and TAL suite of chemicals using NYSDEC ASP (December 1991). Split-spoon samples will be collected every 2 ft at each of the three triplicate well locations down to bedrock and at each of the wells inside the building through the fill material. The remaining unanalyzed split-spoon samples will be stored for six months for possible future metals analysis.

LMS recommends that each monitoring well be sampled once and analyzed for the full TCL and TAL suite of chemicals using NYSDEC ASP (December 1991). Both filtered and unfiltered samples will be collected and analyzed for metals analysis. After the data are received the need for a second round of sampling will be evaluated. If a second round of sampling is recommended, the cost will be covered under a contract amendment.

4.1.3 Sump Area Investigation

The original March 1995 Work Plan called for three days of test pitting and 10 samples for analysis. The sump area investigation was done on 21 and 22 August 1995 using only two days of test pitting. Based on field observation it was judged that only seven samples plus the appropriate QA/QC samples were needed. These samples were collected and sent to the laboratory for analysis.

4.2 TASK 3

4.2.1 Background

The original RI/FS work scope (March 1995) included tasks to investigate and determine the fate of the UP building and its contents. These tasks were leading to an interim remedial measure (IRM), including removal and/or cleanup of hazardous or contaminated materials at the site. The evaluation centered on three aspects: the structural integrity of the building, the contents of the building, and the interior of the building (walls, floors, etc.).

During the initial investigation of the site and an outside observation of the building by a structural engineer, it was evident that the building is not in immediate danger of collapsing; however, portions of the building are unsafe. It became clear that a broader structural

assessment of the building is needed not only to address the building's structural integrity but also to investigate unsafe areas, determine the cost to repair the unsafe areas, determine the cost to demolish the building, and/or evaluate the impact on the building of any decontamination. To utilize a minority business enterprise (MBE) and reduce costs through use of a local firm, LMS proposes to use MJ Engineering to conduct this structural assessment.

The initial investigation (Subtask 2.4) included sampling of the building and its contents. The preliminary results indicate:

- Just about everything inside the building (contents, walls, floors, etc.) is covered with grime/dirt/dust that has high levels of heavy metals (cadmium, chromium, lead).
- Some of the samples collected of the concrete and wood beams had high levels of metals, with hazardous levels (i.e., exceeding TCLP standards) in a few of the samples.
- Interior walls appear to be covered with lead-based paint, with high levels of lead.
- Some of the floor dirt has hazardous levels of metals (primarily lead).
- Decontamination (steam cleaning) of selected contents of the building was successful in removing most of the contamination (i.e., dust/grime) adhering to the items.

Based on the experience of removing the debris in the back of the building (requiring three times the originally estimated number of rollofs), results of the sampling and site investigations conducted to date, and discussion of the results to date at a meeting with NYSDEC on 11 August 1995, it was concluded that additional evaluation is needed to determine the best methods to decontaminate/clean/remove the debris and contamination in the building for the IRM. In particular, NYSDEC requested that LMS evaluate different alternatives for removal, disposal, or decontamination of the contents and the interior of the building. Analytical results to date indicate that the building and contents are contaminated although not necessarily hazardous, particularly when evaluated as demolition debris.

In the original work scope, Subtask 3.3 was to evaluate alternatives for the structure and/or contents; Subtask 3.1 was the structural assessment and development of the IRM plans and specifications; and Subtask 3.2 was the oversight of the IRM. The work effort was loosely scoped as little information was available at that time. If it was determined that the building

was structurally unsound and had to be demolished or if the building and contents were hazardous, the proposed scope and budget would have been sufficient. However, the complexity of the site as the data now indicate requires a more detailed evaluation of alternatives and a more complex IRM plan and specifications. The proposed scope below is recommended as a replacement for Subtasks 3.1, 3.2, and 3.3. In an attempt to keep costs within the initially approved budget amount, the proposed work goes through to the development and selection of a conceptual IRM plan. The preparation of the plans and specifications and oversight/sampling will be proposed as an amendment.

4.2.2 Objectives

Overall objective: To determine the most feasible and economic IRM to remediate the UP building and contents.

Structural Assessment Objectives:

- Determine the basic structural stability of the building.
- List the unsafe aspects of the building and determine the estimated costs for repair.
- Estimate the costs for complete demolition of the building.
- Estimate the impact of any decontamination procedures on the structural integrity of the building.

Focus Feasibility Study Objectives:

- Based on existing data and EPA's recommended method for identifying hazardous debris, calculate the quantity of hazardous (if any) vs contaminated debris to be addressed by the IRM.
- Obtain a better estimate of the quantity and types of the building contents.
- Evaluate the best technologies/alternatives for remediation of the building and its contents.
- Select the most appropriate plan for the IRM and prepare conceptual plans and costs.

4.2.3 Structural Assessment

4.2.3.1 *On-Site Inspection.* An initial on-site inspection of the building would include the development of:

- A schematic plan of each of the floors of the building
- An inventory of the structural elements of the building, i.e., columns, beams, roof rafters, roofs, floors, walls, and appurtenant systems
- Dimensions, where necessary, to determine the size and condition of the materials or building systems
- Photographs suitable to illustrate the location of key building components and their condition
- A repair/stabilization plan that will render the building structurally sound

4.2.3.2 *Engineering Structural Assessment.* An evaluation of the structural components and systems within the building will be prepared to determine whether they provide the structural integrity required.

4.2.3.3 *Safety Assessment.* If the building is basically sound, we will provide recommendations of repair work that will need to be completed to ensure its long-term stability. For example, although some of the various roofs on the building have failed, the roof joists are sound; however, the roof needs replacement.

4.2.3.4 *Cost Estimate of Safety Repairs.* We will provide cost estimates for the completion of the repair items identified in 4.2.2.3 above. This estimate will provide a basis for determining the total costs to render the building structurally sound, as well as to complete the work required to ensure its sound condition over the next several years.

4.2.3.5 *Demolition Estimate.* We will develop demolition costs of entire building by working with two demolition contractors to submit actual estimates. We propose working with two contractors because our recent experience is that estimated costs from contractor to contractor vary greatly. It will be assumed that the building will be clean at the time that it will be demolished.

4.2.3.6 *Impact of Remediation.* We will assess the impact of any proposed remediation of the building interior on its structural stability.

4.2.3.7 Report. We will compile all data, costs, photographs, and sketches; prepare an engineering report summarizing the work completed; and report recommendations. We will provide 10 copies of the finalized report.

4.2.4 Focused Feasibility Study (FFS)

4.2.4.1 Data Review. Existing analytical data from sampling of the building interior and contents, including wipe, sweep, concrete chip, wood chip, and paint chip sample data, will be reviewed to assess the extent of contamination of the building interior, including debris. The data will be used to evaluate potential health hazards posed by the debris and building materials, health hazards that may be encountered during debris removal/remediation efforts, and the need for and potentially appropriate decontamination and disposal options for the waste materials.

Determination of the amount of any hazardous materials present will be conducted in accordance with the EPA-recommended method as outlined in the Technical Assistance Document for Complying with the TC Rule and Implementing the Toxicity Characteristic Leaching Procedure (TCLP) (May 1994). Two methods are included in this document for classifying building demolition debris, the Sampling/Statistical Analysis Method and the Mass Balance TCLP Method. The Sampling/Statistical Analysis Method consists of using drill bits to obtain core samples from the debris to be classified and analyzing the resultant sample (consisting of both actual debris material and any contaminated surface coatings or layers) using TCLP. In most cases, it is anticipated that this method would result in nonhazardous TCLP levels in the samples as only the surface dust/grime layer is expected to be contaminated, while the debris materials themselves, which would comprise most of the core sample volume, are not likely to be contaminated. This method would be difficult to implement at the UP site due to the difficulty in obtaining core samples of the debris materials for disposal, particularly of large metallic items such as equipment.

The Mass Balance TCLP Method is based on the assumption that only the surface layer (e.g., paint or dust/grime layer) is contaminated. Therefore, TCLP samples are collected of the contaminated surface layer only. Following analysis of these samples, the results are adjusted based on the mass of the surface layer as compared to the mass of the debris item as a whole. As with the previous method, this method is also expected to result in a determination that the vast majority of the debris materials are nonhazardous as the mass of the contaminated surface layer is very small compared to the mass of the item as a whole. The exception to this may be very thin debris with large surface area, e.g. plywood. This method, however,

requires estimating or measuring the thickness and surface area of the contaminated surface layer and the mass of the debris items.

4.2.4.2 *Estimated Quantities of Contaminated Materials.* Based on the data review and available information on the building and its contents, estimates will be developed of the approximate quantities of contaminated materials to be addressed in the FFS. The estimated quantities will be based on the types of materials present (e.g., metallic, wood, plastic) for use in developing estimated costs for decontamination of the building and its contents.

4.2.4.3 *Identification and Evaluation of Technologies/Alternatives.* Appropriate technologies and alternatives for debris and building decontamination will be considered by category of material. Only technologies that are expected to be feasible for implementation at the site will be considered; a full list of potential technologies will not be developed. The identified decontamination technologies/alternatives will be evaluated based on the criteria of effectiveness, implementability, and cost.

Debris removal. Decontamination of the building structure will first require removal of the existing debris. A wide variety of debris types are present in the building. The need for decontamination and the potential disposal options will vary by type of material. The FFS will consider appropriate decontamination/disposal options for several general categories of debris, including large debris, scrap metal, and small debris, as discussed below. In addition, it is anticipated that several other types of debris will require special consideration, such as lead acid batteries, recyclable materials (e.g., copper wiring), PCB-containing transformers, or drums, depending on their presence at the site. Appropriate handling of decontamination residuals, such as washwaters generated by steam cleaning or wet washing, will also be addressed in the FFS, including potential treatment and/or disposal options.

Large Debris. Building investigations conducted to date have indicated that there are a number of large debris items, such as pumps, motors, generators, tanks (which may contain sludge materials), and vats in the building that would require specific handling and decontamination procedures. Potential decontamination procedures for these items include steam cleaning or other wet cleaning processes to remove dust and grime. Disposal options for the cleaned debris may include landfilling or disposal as metallic wastes at a recycling facility.

Scrap Metal. Large quantities of scrap metal, including piping, wiring, buckets, small equipment, etc., are currently present in the building. A metal recycling facility may

accept the scrap metal for disposal without prior decontamination, or the debris may require steam cleaning or washing prior to recycling or other disposal options.

Small Debris. A wide variety of small debris items are present in the building, including plastic piping, wood scraps, molding pieces, and small metallic scraps. The FFS will consider how to appropriately handle these items, including the need for separation by debris composition and potential decontamination methods such as steam cleaning or washing. Because of the large volume and heterogeneous nature of the small debris items, special consideration of suitable handling methods to minimize the labor involved in sorting, decontaminating, and disposing of these items will be included in the FFS. For example, wire buckets or a conveyor belt may be used to handle small debris during decontamination via steam cleaning or wet washing.

Building decontamination. Available analytical data from the building investigation will be used to determine the extent of building structural material contamination. The FFS will evaluate options for the building itself following removal of all interior debris. Potential options to be considered include sealing the building to prevent human exposure or migration of contaminants, decontaminating the building interior, and/or demolishing the building. Decontamination may be performed using HEPA vacuums, sand-blasting, steam-cleaning, or wet-washing processes. Worker and public health and safety issues related to inhalation of contaminated dusts during remediation will be included in the FFS evaluations. The building demolition alternative will consider engineering controls such as containment to control the potential generation of large quantities of contaminated dust. Lead-based paint removal technologies may also require evaluation if reuse of the building is being considered.

4.2.4.4 Summary Report. The results of the FFS will be presented in a summary report. The report will include estimated costs as well as advantages/disadvantages for each of the building and debris decontamination technologies/alternatives considered in the FFS. Based on the FFS, the summary report will present a recommended plan for conducting the IRM to address both building and debris decontamination, including the estimated cost of the IRM. Sampling and analytical requirements for the IRM to determine the need for and/or effectiveness of decontamination processes will also be discussed in the FFS report as part of the conceptual plan for the IRM presented in the FFS report.

4.2.5 Scoping

This subtask will scope and budget the amendment for the IRM plans and specifications, review of bids, and construction oversight.

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