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November 30, 1995

Mr. Joseph Yavondetti
Project Manager
Division of Hazardous Waste Remediation
New York State Department of
Environmental Conservation
50 Wolf Road
Albany, New York 12233-7010

**RE: RAMAPO LANDFILL REMEDIATION
RESULTS OF THIRD QUARTER MONITORING FOR 1995**

Dear Mr. Yavondetti:

Attached are the results of the third quarter monitoring event for 1995. This sampling is the seventh of eight rounds of sampling included as part of the Remedial Action phase of the Ramapo Landfill Remediation Project. This document provides the validated analytical data for this sampling event as well as historical analytical data tables for the four target compounds, i.e., benzene, chromium, iron, and manganese. Locations sampled are shown in Figure 1. Samples were collected the week of September 18, 1995, and were analyzed for the routine parameters.

These results reflect a few anomalies that occurred during this sampling event. Samples could not be collected from the United Water New York wells because these wells were not in operation during September due to the drought conditions. Similarly, well MW-90S was dry and could not be sampled during September. All volatile samples collected in September could not be analyzed due to equipment failure at the laboratory. Private wells and monitoring wells with recent VOC hits were resampled on October 17, 1995. Some TOC samples were also collected during the October resampling event for wells which were not sampled for TOC during the September sampling events. Results from the October resampling event are noted on the attached tables.

The fourth quarter monitoring event for 1995 is planned for mid-December. Please feel free to call if you have any questions or if you wish to discuss.

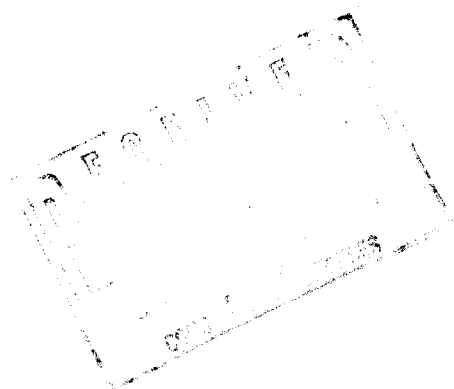
Sincerely,

URS CONSULTANTS, INC.


James Lanzo, P.E.
Project Manager

Enclosure

cc: Supervisor Reisman - Town of Ramapo





AN INTERNATIONAL PROFESSIONAL SERVICES ORGANIZATION

Mr. Gene Ostertag - Town of Ramapo
Mr. Alan Simon - Town of Ramapo
Mr. Robert Nunes - USEPA
Mr. Thomas Micelli - Rockland County Department of Health
Ms. Judy Hunderfund - Rockland County Department of Health
Mr. Geoff Laccetti - NYSDOH
Ms. Arlene Lapidus - Ramapo Land Company, Inc.
Mr. George Demas - Torne Brook Farm
Mr. Raymond Cywinski - Hackensack Water Company
Mr. Tanyo Parashkevov - Hackensack Water Company
Mr. Michael Barnes, Director of Operations - Spring Valley Water Company
Mr. Craig Flanagan
Ms. Kathleen McCue - NYSDEC
File: 35314.50 (C-3 and AD-2)

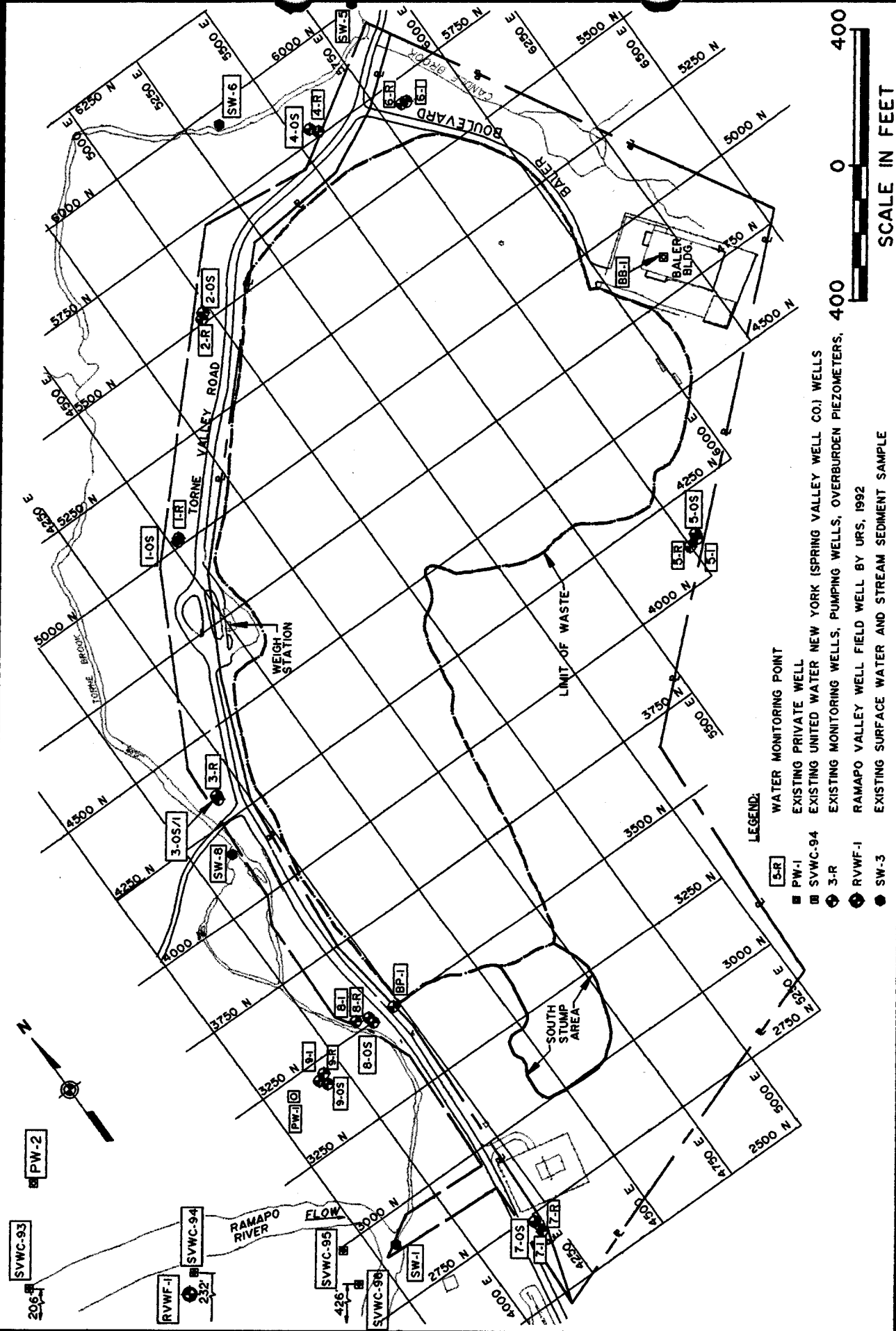
RAMAPO LANDFILL
SAMPLE LOCATIONS

TABLE 1
RAMAPO LANDFILL - SEPTEMBER 1995 SAMPLING
GROUNDWATER SAMPLES

Analyte	Concentration (µg/l)*										
	1-OS	1-R	2-OS	2-R	3-OS/1	3-R	4-OS	4-R	5-I	5-R	6-I
Chlorobenzene ¹	NA	—	NA	NA	NA	NA	NA	—	NA	NA	NA
p-Dichlorobenzene ¹	NA	—	NA	NA	NA	NA	NA	—	NA	NA	NA
Toluene ¹	NA	—	NA	NA	NA	NA	NA	—	NA	NA	NA
Ethylbenzene ¹	NA	—	NA	NA	NA	NA	NA	—	NA	NA	NA
Xylene (Total) ¹	NA	—	NA	NA	NA	NA	NA	—	NA	NA	NA
Arsenic	—	—	6.5	—	—	—	9.0	—	—	—	—
Cadmium	—	0.97	—	—	—	1.2	—	—	—	—	—
Calcium	110000	106000	99000	54600	64300	64800	31400	46900	8800	13500	27200
Chromium	102	136	137	5.0	589	10.3	38.8	9.0	17.4	22.9	22.6
Copper	42.8	18.1	32.3	5.3	29.2	9.9	37.1	3.3	8.1	9.1	4.3
Iron	27900	2750	24300	541	31400	3100	28600	6320	2200	1620	1080
Lead	5.9	—	21.5	—	3.1	4.9	4.5	—	2.8	—	—
Magnesium	27500	19400	22300	9710	19500	20200	11700	16800	5180	4530	6800
Manganese	4930	219	5570	143	3860	12400	2080	1120	49.5	28.6	89.5
Mercury	—	—	—	—	—	—	—	—	—	—	—
Nickel	71.1	69.2	79.3	—	312	6.6	22.7	—	10.2	14.5	7.2
Potassium	5670	2320	3530	887	8410	1730	3000	1150	646	632	964
Sodium	52500	21000	9950	4680	63200	34600	15800	9120	3080	2820	4230
Zinc	67.9	48.2	71.0	47.5	51.8	39.5	52.9	30.5	35.2	29.6	30.8

Only detected results reported.

* - All concentrations given in µg/l unless otherwise noted.

¹ - Laboratory equipment failure resulted in the inability to analyze (NA) the September samples for VOCs.

Private wells and wells with recent VOC findings were resampled on October 17, 1995 and the results are reported here.

TABLE 1
RAMAPO LANDFILL - SEPTEMBER 1995 SAMPLING
GROUNDWATER SAMPLES

Analyte	Concentration (µg/l)*										
	6-R	7-I	7-R	8-OS	8-I	8-R	9-OS	9-I	9-R	BB-1	RVWF-1
Chlorobenzene ¹	—	NA	NA	—	1	2	—	—	—	NA	—
p-Dichlorobenzene ¹	—	NA	NA	—	—	1	—	—	—	NA	—
Toluene ¹	—	NA	NA	—	—	—	—	—	—	NA	—
Ethylbenzene ¹	—	NA	NA	—	—	—	—	—	—	NA	—
Xylene (Total) ¹	—	NA	NA	—	—	—	—	—	—	NA	—
Arsenic	—	—	—	8.1	—	23.8	NA	—	—	—	—
Cadmium	—	—	—	2.1	1.9	4.1	NA	2.9	7.9	—	—
Calcium	26000	15500	41300	46300	74300	146000	NA	7350	18100	19500	34000
Chromium	13.4	49.2	13.4	13.9	24.1	13.4	NA	34.6	66.7	—	—
Copper	6.1	15.3	7.1	12.7	7.0	14.2	NA	8.2	9.9	57.3	7.5
Iron	728	2770	717	46900	32300	26600	NA	4530	4080	744	1260
Lead	—	—	—	4.4	2.8	5.2	NA	—	—	4.6	—
Magnesium	5960	6320	16800	16000	21800	58800	NA	2110	4710	3930	8470
Manganese	42.6	4910	62.2	1420	2430	2500	NA	129	1810	15.1	2470
Mercury	—	—	—	0.2	—	—	NA	—	—	—	—
Nickel	9.9	71.1	12.3	16.4	24.5	74.9	NA	22.0	37.7	—	—
Potassium	947	935	1620	38200	26300	126000	NA	766	5420	550	3070
Sodium	4080	8280	20500	88300	77600	333000	NA	2190	16500	3800	31100
Zinc	23.6	31.7	55.8	49.4	38.9	50.6	NA	35.9	39.9	282	14.9

Only detected results reported.

* - All concentrations given in µg/l unless otherwise noted.

¹ - Laboratory equipment failure resulted in the inability to analyze (NA) the September samples for VOCs.

Private wells and wells with recent VOC findings were resampled on October 17, 1995 and the results are reported here.

TABLE 1
RAMAPO LANDFILL - SEPTEMBER 1995 SAMPLING
DRINKING WATER SAMPLES

Analyte	PW-1		PW-2	Concentration (µg/l)*				SVWC-96 ³	ARARs** (µg/l)
				SVWC-93 ³	SVWC-94 ³	SVWC-95 ³	SVWC-96 ³		
Chlorobenzene ¹	—	—	—	—	—	—	—	—	5 (2)
p-Dichlorobenzene ¹	—	—	—	—	—	—	—	—	4.7
Toluene ¹	—	—	1	—	—	—	—	—	—
Ethylbenzene ¹	—	—	2	—	—	—	—	—	5
Xylene (Total) ¹	—	—	12	—	—	—	—	—	5
Arsenic	—	—	—	NA	NA	NA	NA	NA	25
Cadmium	—	—	—	NA	NA	NA	NA	NA	10
Calcium	7770	—	68200	NA	NA	NA	NA	NA	—
Chromium	—	—	—	NA	NA	NA	NA	NA	50
Copper	91.3	—	13.7	NA	NA	NA	NA	NA	200
Iron	238	—	276	NA	NA	NA	NA	NA	300
Lead	2.8	—	3.2	NA	NA	NA	NA	NA	15 (1)
Magnesium	2070	—	7780	NA	NA	NA	NA	NA	35000
Manganese	83.1	—	11.6	NA	NA	NA	NA	NA	300
Mercury	—	—	—	NA	NA	NA	NA	NA	2
Nickel	—	—	—	NA	NA	NA	NA	NA	—
Potassium	499	—	1270	NA	NA	NA	NA	NA	—
Sodium	2680	—	10600	NA	NA	NA	NA	NA	20000
Zinc	111	—	174	NA	NA	NA	NA	NA	300

Only detected results reported.

* - All concentrations given in µg/l unless otherwise noted.

** - Values obtained from Water Quality Regulations for Surface Waters and Groundwaters 6 NYCRR Parts 700-705, September 1, 1991, unless otherwise indicated.

(1) - USEPA action level.

(2) - Value obtained from Chapter 1-New York State Sanitary Code, Subpart 5-1, Principal Organic Contaminants.

¹ - Laboratory equipment failure resulted in the inability to analyze (NA) the September samples for VOCs.

Private wells and wells with recent VOC findings were resampled on October 17, 1995 and the results are reported here.

³ - United Water New York wells were not sampled during the September 1995 sampling due to drought conditions.

TABLE 1
RAMAPO LANDFILL - SEPTEMBER 1995 SAMPLING
SURFACE WATER SAMPLES

Analyte	Concentration (µg/l)*				ARARs** (µg/l)
	SW-1	SW-5	SW-6	SW-8	
Chlorobenzene ¹	NA	NA	NA	NA	20
p-Dichlorobenzene ¹	NA	NA	NA	NA	30
Toluene ¹	NA	NA	NA	NA	—
Ethylbenzene ¹	NA	NA	NA	NA	5
Xylene (Total) ¹	NA	NA	NA	NA	5
Arsenic	—	—	—	—	50
Cadmium	—	—	—	—	10
Calcium	35500	9860	10400	11400	—
Chromium	—	—	—	—	50
Copper	6.0	—	—	—	200
Iron	168	379	385	276	300
Lead	—	—	—	—	50
Magnesium	9730	2270	2400	2800	35000
Manganese	17.9	75.3	36.1	25.5	300
Mercury	—	—	—	—	0.012 ***
Nickel	5.2	—	—	—	1.3E-07 ***
Potassium	4880	450	499	557	—
Sodium	58700	2710	2990	3410	—
Zinc	34.7	21.0	21.4	23.1	300

Only detected results reported.

* - All concentrations given in µg/l unless otherwise noted.

** - Values obtained from Water Quality Regulations for Surface Waters and Groundwaters 6 NYCRR Parts 700-705, September 1, 1991, unless otherwise indicated.

*** - Values obtained from the Clean Water Act.

¹ - Laboratory equipment failure resulted in the inability to analyze (NA) the Septembers samples for VOCs.

Private wells and wells with recent VOC findings were resampled on October 17, 1995 and the results are reported here.

TABLE 2
RAMAPO LANDFILL - SEPTEMBER 1995 SAMPLING
GROUNDWATER SAMPLES

Analyte	Concentration (mg/l)*										
	1-OS	1-R	2-OS	2-R	3-OS/l	3-R	4-OS	4-R	5-I	5-R	6-I
Chloride	74	60	19	27	57	33	28.4	28.4	2.0	<2.0	25.7
COD	6	15	33	19	16	16	5	8	6	<5	<5
Total Hardness	418	322	339	180	247	252	173	192	45	54	98
Ammonia	0.12	0.05	8.94	<0.05	0.07	0.06	0.11	0.09	<0.05	<0.05	<0.05
Nitrate	0.03	0.33	0.05	<0.02	0.21	0.05	0.03	0.03	0.19	0.24	0.11
Total Phenols	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Sulfate	38.2	30.6	18.8	18.2	25.1	26.4	20.9	21.2	10.2	12.7	12.8
Total Alkalinity	324	272	234	125	285	299	92	160	34	41	46
Total Dissolved Solids	542	461	336	234	440	427	224	290	97	103	174
Total Organic Carbon (MG/L)	3	3	NA	NA	NA	NA	1	1	1	3	3
Turbidity (Units)	210	20	224	3.6	155	31	63	23	19	15	4.7

Only detected results reported.

* - All concentrations given in mg/l unless otherwise noted.

TABLE 2
RAMAPO LANDFILL - SEPTEMBER 1995 SAMPLING
GROUNDWATER SAMPLES

Analyte	Concentration (mg/l)*										
	6-R	7-I	7-R	8-I	8-OS	8-R	9-I	9-OS	9-R	BB-1	RWVF-1
Chloride	26.7	5.0	34	162	133	687	3.5	NA	24.6	3.0	75.9
COD	< 5	8	24	50	48	279	9	NA	13	< 5	7
Total Hardness	89	68.3	168	282	178	618	39	NA	72	61	131
Ammonia	< 0.05	0.06	< 0.05	22.1	37.4	161	0.06	NA	6.34	< 0.05	2.17
Nitrate	0.07	0.72	2.35	0.53	0.8	0.11	0.09	NA	0.49	< 0.02	0.36
Total Phenols	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	NA	< 0.02	< 0.02	< 0.02
Sulfate	18.1	19.7	30.9	63.7	53.6	27.2	9.6	NA	13.6	14.6	17.0
Total Alkalinity	58	59	143	265	284	1240	16.8	NA	86	50	93
Total Dissolved Solids	180	116	290	674	572	2120	54	NA	171	108	266
Total Organic Carbon (MG/L)	2	NA	NA	11.9 ²	1.4 ²	7.1 ²	< 1.0 ²	< 1 ²	2.5 ²	1	2.3 ²
Turbidity (Units)	5.5	78	3.5	190	35	115	26	NA	20	1.72	4.4

Only detected results reported.

* - All concentrations given in mg/l unless otherwise noted.

² - Sample collected on October 17, 1995.

TABLE 2
RAMAPO LANDFILL - SEPTEMBER 1995 SAMPLING
DRINKING WATER SAMPLES

Analyte	Concentration (mg/l)*						ARARs** (mg/l)
	PW-1	PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96	
Chloride	5.7	90.2	NA	NA	NA	NA	250
COD	< 5	< 5	NA	NA	NA	NA	—
Total Hardness	29	196	NA	NA	NA	NA	—
Ammonia	< 0.05	2.15	NA	NA	NA	NA	2
Nitrate	0.13	1.79	NA	NA	NA	NA	10
Total Phosphorus	< 0.02	< 0.02	NA	NA	NA	NA	—
Sulfate	10.2	20.2	NA	NA	NA	NA	250
Total Alkalinity	19.2	77.8	NA	NA	NA	NA	—
Total Dissolved Solids	73	446	NA	NA	NA	NA	500
Total Organic Carbon (MG/L)	< 1.0 ²	< 1.0 ²	< 1.0 ²	< 1.0 ²	1.5 ²	< 1.0 ²	—
Turbidity (Units)	0.17	0.19	NA	NA	NA	NA	—

Only detected results reported.

* - All concentrations given in mg/l unless otherwise noted.

** - NYSDEC Water Quality Standards and Guidance Values, TOGS 1.1.1, October 1993, Table 1.

² - Sample collected on October 17, 1995.

TABLE 2
RAMAPO LANDFILL - SEPTEMBER 1995 SAMPLING
SURFACE WATER SAMPLES

Analyte	Concentration (mg/l)*				ARARs** (mg/l)
	SW-1	SW-5	SW-6	SW-8	
Chloride	129	5	5	6	250
COD	8	< 5	< 5	9	—
Total Hardness	133	28	38	34	—
Ammonia	< 0.05	< 0.05	< 0.05	< 0.05	2
Nitrate	2.65	0.07	0.08	0.07	10
Total Phenols	< 0.02	< 0.02	< 0.02	< 0.02	—
Sulfate	30.4	11.3	13.1	12.5	250
Total Alkalinity	75	25	26	29	—
Total Dissolved Solids	276	85	86	81	500
Total Organic Carbon (MG/L)	3	1	2	2	—
Turbidity (Units)	0.67	0.43	0.17	0.15	—

Only detected results reported.

* - All concentrations given in mg/l unless otherwise noted.

** - NYSDEC Water Quality Standards and Guidance Values, TOGS 1.1.1, October 1993, Table 1.

TABLE 3
RAMAPO LANDFILL
GROUNDWATER AND SURFACE WATER
MONITORING DATA
COMPOUND: Benzene

Sample ID	Date of Sampling Event									
	1/90	9/90	1/93	4/93	9/93	12/93	3/94	6/94	9/94	12/94
1-OS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-OS	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
2-R	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
3-OS/I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3-R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-OS	ND	0.3	ND	ND	ND	ND	ND	ND	ND	ND
4-R	1.0	1.0	ND	0.7	ND	ND	ND	ND	ND	ND
5-OS	2.0	ND	ND	ND	NA	NA	NA	ND	NA	NA
5-I	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND
5-R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6-I	NA	0.2	ND	ND	ND	ND	ND	ND	ND	ND
6-R	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
7-OS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7-R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8-OS	2.0	0.3	ND	ND	ND	ND	ND	ND	ND	ND
8-I	2.0	2.9	NA	ND	ND	ND	ND	ND	ND	2.0
8-R	3.0	0.4	ND	0.9	ND	ND	ND	ND	ND	ND
9-OS	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND
9-I	NA	0.2	NA	NA	NA	NA	ND	ND	ND	ND
9-R	NA	0.9	ND	ND	ND	NA	ND	ND	ND	1.0
PW-1	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND
PW-2	NA	NA *	ND	ND	ND	NA	NA	NA	ND	ND
PW-3	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
BP-1	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA
BB-1	NA	NA	ND	ND	ND	NA	ND	ND	ND	ND
RVWF-1	NA	NA	ND	ND	ND	NA	ND	ND	ND	ND
SVWC-93	NA	NA	ND	ND	NA	NA	ND	ND	ND	ND
SVWC-94	NA	NA	ND	ND	NA	NA	ND	ND	ND	1.0
SVWC-95	NA	NA	ND	ND	ND	NA	ND	ND	ND	ND
SVWC-96	NA	NA	ND	ND	NA	NA	ND	ND	ND	ND
Surface Water										
Sample ID	Date of Sampling Event									
	10/89	7/90	1/93	4/93	9/93	12/93	3/94	6/94	9/94	12/94
SW-1	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
SW-5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SW-6	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
SW-8	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes: Concentration reported in µg/L (ppb).

ND - Not detected

NA - Not applicable (e.g. well not installed by this date or if installed, not sampled)

* NYSDOH results from 3/92 sampling.

- Exceeded ARAR value of 0.7 ppb for groundwater.

TABLE 3 (Cont.)

**RAMAPO LANDFILL
MONITORING DATA
COMPOUND: Benzene**

Sample ID	Sample Type	Date of Sampling Event		
		3/95	6/95	9/95
1-OS	Groundwater	ND	ND	NA
1-R	Groundwater	ND	ND	ND
2-OS	Groundwater	ND	ND	NA
2-R	Groundwater	ND	ND	NA
3-OS/I	Groundwater	ND	ND	NA
3-R	Groundwater	ND	ND	NA
4-OS	Groundwater	ND	ND	NA
4-R	Groundwater	ND	ND	ND
5-OS	Groundwater	NA	ND	NA
5-I	Groundwater	ND	NA	NA
5-R	Groundwater	ND	ND	NA
6-I	Groundwater	ND	ND	NA
6-R	Groundwater	ND	0.5	ND
7-OS	Groundwater	ND	NA	NA
7-I	Groundwater	NA	ND	NA
7-R	Groundwater	ND	ND	NA
8-OS	Groundwater	ND	ND	ND
8-I	Groundwater	ND	ND	ND
8-R	Groundwater	2	0.9	ND
9-OS	Groundwater	ND	ND	ND
9-I	Groundwater	ND	ND	ND
9-R	Groundwater	ND	ND	ND
BP-1	Groundwater	NA	NA	NA
BB-1	Groundwater	ND	ND	NA
RVWF-1	Groundwater	ND	ND	ND
PW-1	Drinking Water	ND	ND	ND
PW-2	Drinking Water	NA	0.5	ND
PW-3	Drinking Water	NA	NA	NA
SVWC-93	Drinking Water	ND	ND	ND
SVWC-94	Drinking Water	ND	ND	ND
SVWC-95	Drinking Water	ND	ND	ND
SVWC-96	Drinking Water	ND	ND	ND
SW-1	Surface Water	ND	ND	NA
SW-5	Surface Water	ND	ND	NA
SW-6	Surface Water	ND	ND	NA
SW-8	Surface Water	ND	ND	NA

Notes:

Concentration reported in µg/L (ppb).

ND - Not detected

NA - Not applicable (e.g. well not installed by this date or if installed, not sampled)

 - Exceeded ARAR value of 0.7 ppb for groundwater.

TABLE 4
RAMAPO LANDFILL
GROUNDWATER AND SURFACE WATER
MONITORING DATA
COMPOUND: Chromium

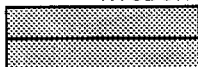
Sample ID	Date of Sampling Event									
	1/90	9/90	1/93	4/93	9/93	12/93	3/94	6/94	9/94	12/94
1-OS	153	57.3	8	ND	60.0	257.0	65.5	7.2	284	134
1-R	39.7	17.5	ND	ND	84.9	46.8	10.3	ND	39.3	58.3
2-OS	160	141	NA	ND	50.2	95.9	11.8	89.3	45.9	25.1
2-R	16.1	5.5	NA	ND	14.8	6.1	ND	5.1	8.3	4.9
3-OS/I	587	1290	807	40.4	1350	1100	784	304	561	1020
3-R	28	11.4	ND	ND	ND	14.7	10.5	17.8	4.8	4.9
4-OS	139	40.1	5.8	ND	10.8	11.2	15.1	25.4	23.1	53.1
4-R	35.5	13.1	ND	8.8	ND	5.9	4.4	ND	13.3	2
5-OS	90	35.6	48.8	ND	NA	NA	NA	NA	NA	NA
5-I	NA	NA	NA	NA	NA	80	30.2	7.2	40	63.1
5-R	27.4	29.3	6.8	ND	ND	8.6	13.8	6.3	52.3	105
6-I	NA	28.7	ND	ND	13.4	17.0	32.7	9.5	488	9.9
6-R	NA	31.1	24	34.8	27.7	67.4	71.3	27.1	37.7	13.6
7-OS	33.5	40.1	24.2	13.0	1890	218	31	210	571	258
7-R	16.2	16.8	ND	ND	ND	ND	ND	5.3	8.6	3.4
8-OS	34.8	16.7	ND	ND	ND	7.6	86.6	28.7	13.2	4.2
8-I	215	32.5	NA	ND	ND	ND	29	17	12.8	8.4
8-R	20	23.1	9.9	ND	17.7	18.2	7.5	17.0	10.4	6.8
9-OS	NA	6.8	ND	ND	ND	ND	22.9	27.1	14.8	2.9
9-I	NA	8.1	NA	NA	NA	NA	28	ND	2.4	5.8
9-R	NA	8.8	3.9	16.4	16.7	11.6	35.4	48.2	29.9	10.5
PW-1	NA	ND	ND	ND	ND	ND	ND	ND	0.6	ND
PW-2	NA	ND *	ND	ND	ND	4.9	NA	ND	ND	ND
PW-3	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
BP-1	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA
BB-1	NA	NA	ND	ND	ND	ND	ND	ND	1.2	ND
RVWF-1	NA	NA	25.2	14.7	13.2	20.5	8.4	ND	ND	ND
SVWC-93	NA	NA	ND	ND	NA	ND	ND	ND	ND	ND
SVWC-94	NA	NA	ND	ND	NA	NA	ND	ND	ND	0.97
SVWC-95	NA	NA	ND	ND	ND	NA	ND	ND	ND	ND
SVWC-96	NA	NA	ND	ND	NA	ND	ND	ND	ND	0.87
Surface Water										
Sample ID	Date of Sampling Event									
	10/89	7/90	1/93	4/93	9/93	12/93	3/94	6/94	9/94	12/94
SW-1	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
SW-5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SW-6	NA	ND	ND	ND	ND	5.1	ND	ND	ND	ND
SW-8	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes: Concentration reported in µg/L (ppb).

ND - Not detected

NA - Not applicable (e.g. well not installed by this date or if installed, not sampled)

* NYSDOH results from 3/92 sampling.



- Exceeded ARAR value of 50 ppb for groundwater.

- Exceeded ARAR value of 50 ppb for surface water.

The ARAR for SW-1 (Class A water body) is 50 ppb.

TABLE 4 (Cont.)

**RAMAPO LANDFILL
MONITORING DATA
COMPOUND: Chromium**

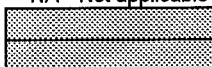
Sample ID	Sample Type	Date of Sampling Event		
		3/95	6/95	9/95
1-OS	Groundwater	727	17	102
1-R	Groundwater	146	49.5	136
2-OS	Groundwater	39.7	34.1	137
2-R	Groundwater	4.4	ND	5.0
3-OS/I	Groundwater	144	406	589.0
3-R	Groundwater	3.6	2.0	10.3
4-OS	Groundwater	21.1	ND	38.8
4-R	Groundwater	2.5	ND	9.0
5-OS	Groundwater	NA	39.0	NA
5-I	Groundwater	109	NA	17.4
5-R	Groundwater	19.9	7.9	22.9
6-I	Groundwater	6.9	9.1	22.6
6-R	Groundwater	11.9	8.4	13.4
7-OS	Groundwater	324	NA	NA
7-I	Groundwater	NA	34.8	49.2
7-R	Groundwater	2.8	12.4	13.4
8-OS	Groundwater	129	40.4	13.9
8-I	Groundwater	8.0	3.4	24.1
8-R	Groundwater	6.3	10.1	13.4
9-OS	Groundwater	6.6	7.6	NA
9-I	Groundwater	3.9	8.0	34.6
9-R	Groundwater	16.9	26.5	66.7
BP-1	Groundwater	NA	NA	NA
BB-1	Groundwater	ND	ND	ND
RVWF-1	Groundwater	ND	ND	ND
PW-1	Drinking Water	0.8	ND	ND
PW-2	Drinking Water	NA	ND	ND
PW-3	Drinking Water	NA	NA	NA
SVWC-93	Drinking Water	ND	ND	NA
SVWC-94	Drinking Water	ND	ND	NA
SVWC-95	Drinking Water	ND	ND	NA
SVWC-96	Drinking Water	ND	1.7	NA
SW-1	Surface Water	ND	ND	ND
SW-5	Surface Water	ND	ND	ND
SW-6	Surface Water	ND	ND	ND
SW-8	Surface Water	0.67	ND	ND

Notes:

Concentration reported in µg/L (ppb).

ND - Not detected

NA - Not applicable (e.g. well not installed by this date or if installed, not sampled)



- Exceeded ARAR value of 50 ppb for groundwater.

- Exceeded ARAR value of 50 ppb for surface water.

TABLE 5
RAMAPO LANDFILL
GROUNDWATER AND SURFACE WATER
MONITORING DATA
COMPOUND: Iron

Sample ID	Date of Sampling Event									
	1/90	9/90	1/93	4/93	9/93	12/93	3/94	6/94	9/94	12/94
1-OS	45000	17500	1870	884	32300	162000	12200	69.6	4950	47700
1-R	1180	2650	395	197	1940	1210	186	70600	830	1710
2-OS	912	41800	NA	186	11800	9800	946	5080	14700	4120
2-R	409	602	NA	674	1120	1450	187	83.1	248	363
3-OS/I	6830	9750	5110	333	21300	37900	19400	29900	14400	37500
3-R	1930	1370	11500	2940	3280	4800	1970	2090	2440	1730
4-OS	15600	12400	529	520	5550	10600	5720	17600	16900	15200
4-R	8230	5290	3520	4920	3100	5290	4790	4020	6850	5100
5-OS	27000	11200	11100	4700	NA	NA	NA	NA	NA	NA
5-I	NA	NA	NA	NA	NA	2030	2080	2380	8990	30700
5-R	658	368	620	2310	751	243	742	71.2	21400	64000
6-I	NA	486	953	17.3	332	2860	4020	1360	1590	153
6-R	NA	683	1220	715	662	1710	698	379	501	332
7-OS	981	24500	1250	521	619000	2200	2340	15600	14500	14400
7-R	ND	1940	31.5	56.6	989	600	762	226	681	270
8-OS	229000	43800	3230	2080	6180	12000	20300	6240	7490	6740
8-I	15700	30500	NA	ND	ND	ND	22300	41200	24200	18200
8-R	1360	2940	11600	2590	9160	4710	2510	11100	22000	10200
9-OS	NA	249	50.7	1200	383	393	2210	1040	1020	1490
9-I	NA	145	NA	NA	NA	NA	2040	62.3	84	260
9-R	NA	20200	2680	8250	11500	10800	8850	19400	9110	2700
PW-1	NA	64	186	130	1260	916	85.3	11.2	561	39.7
PW-2	NA	11 *	41.8	49.5	ND	22.7	NA	ND	53.5	13.6
PW-3	NA	NA	NA	NA	NA	NA	NA	6.4	NA	NA
BP-1	NA	NA	274	NA	NA	NA	NA	NA	NA	NA
BB-1	NA	NA	NA	297	247	225	263	282	367	332
RVWF-1	NA	NA	362	207	202	294	221	ND	47.7	58.2
SVWC-93	NA	NA	32.6	10.6	NA	553	179	ND	17.2	20.7
SVWC-94	NA	NA	40.3	19.1	NA	NA	49.4	ND	6.1	13.8
SVWC-95	NA	NA	51.7	74.4	ND	NA	45.5	ND	274	40.3
SVWC-96	NA	NA	22.3	17.3	NA	22.6	14.9	ND	61.5	66.8
Surface Water										
Sample ID	Date of Sampling Event									
	10/89	7/90	1/93	4/93	9/93	12/93	3/94	6/94	9/94	12/94
SW-1	2630	NA	141	1670	170	119	367	287	66.2	242
SW-5	93	163	194	204	168	71.7	41.9	291	124	63.1
SW-6	NA	177	82.5	245	76.7	55.2	55	159	92.4	42.6
SW-8	NA	1290	109	341	ND	26.7	66.2	187	92.6	186

Notes: Concentration reported in µg/L (ppb).

ND - Not detected

NA - Not applicable (e.g. well not installed by this date or if installed, not sampled)

* NYSDOH results from 3/92 sampling.

	- Exceeded ARAR value of 300 ppb for groundwater.
	- Exceeded ARAR value of 300 ppb for surface water.

MADE BY EN DATE 11-30-95
 CHKD BY 600 DATE 11-30-95

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 11/30/95 11:41 (1 of 1)

TABLE 5 (Cont.)

**RAMAPO LANDFILL
MONITORING DATA
COMPOUND: Iron**

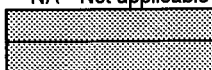
Sample ID	Sample Type	Date of Sampling Event		
		3/95	6/95	9/95
1-OS	Groundwater	5970	2820	27900
1-R	Groundwater	1430	1060	2750
2-OS	Groundwater	1310	1730	24300
2-R	Groundwater	259	369	541
3-OS/I	Groundwater	54600	16600	31400
3-R	Groundwater	1260	1450	3100
4-OS	Groundwater	6110	3010	28600
4-R	Groundwater	5650	5500	6320
5-OS	Groundwater	NA	17100	NA
5-I	Groundwater	56200	NA	2200
5-R	Groundwater	11300	2260	1620
6-I	Groundwater	172	565	1060
6-R	Groundwater	225	625	728
7-OS	Groundwater	12200	NA	NA
7-I	Groundwater	NA	4260	2770
7-R	Groundwater	485	886	717
8-OS	Groundwater	13500	5760	46900
8-I	Groundwater	24300	21100	32300
8-R	Groundwater	24900	25700	26600
9-OS	Groundwater	1340	294	NA
9-I	Groundwater	788	468	4530
9-R	Groundwater	1080	2230	4080
BP-1	Groundwater	NA	NA	NA
BB-1	Groundwater	250	608	744
RVWF-1	Groundwater	ND	816	1260
PW-1	Drinking Water	283	400	238
PW-2	Drinking Water	NA	253	276
PW-3	Drinking Water	NA	NA	NA
SVWC-93	Drinking Water	19	154	NA
SVWC-94	Drinking Water	ND	143	NA
SVWC-95	Drinking Water	279	161	NA
SVWC-96	Drinking Water	ND	173	NA
SW-1	Surface Water	183	396	168
SW-5	Surface Water	74.4	324	379
SW-6	Surface Water	54	551	385
SW-8	Surface Water	339	315	276

Notes:

Concentration reported in µg/L (ppb).

ND - Not detected

NA - Not applicable (e.g. well not installed by this date or if installed, not sampled)



- Exceeded ARAR value of 300 ppb for groundwater.

- Exceeded ARAR value of 300 ppb for surface water.

TABLE 6
RAMAPO LANDFILL
GROUNDWATER AND SURFACE WATER
MONITORING DATA
COMPOUND: Manganese

Sample ID	Date of Sampling Event									
	1/90	9/90	1/93	4/93	9/93	12/93	3/94	6/94	9/94	12/94
1-OS	3790	3700	609	1410	4010	5590	3510	26.8	5150	4770
1-R	144	98.5	61.4	38.7	143	62	29.3	6020	67	97.6
2-OS	298	4770	NA	27.0	4850	1580	92.5	985	2450	827
2-R	197	135	NA	118	126	116	99.5	91.1	92.9	88.8
3-OS/I	8700	18100	3450	1690	9590	8780	5640	10300	2240	5540
3-R	7230	12400	10700	12900	11000	12000	11800	112800	10600	11300
4-OS	4210	5020	547	506	2080	995	598	2850	3050	1130
4-R	1730	1520	1660	1890	1160	1230	1460	1350	1210	1190
5-OS	981	530	192	43.2	NA	NA	NA	NA	NA	NA
5-I	NA	NA	NA	NA	NA	52.8	40.6	215	221	474
5-R	22.3	9.3	9.6	21.9	11.4	8.2	9.6	2.5	232	624
6-I	NA	33.1	151	1.3	34.4	84.7	1060	275	156	13.2
6-R	NA	14.3	100	57.5	60.7	195	59.8	72.6	56	45.8
7-OS	1240	3260	48.3	46.1	45100	122	67.4	1580	9820	992
7-R	51.9	102	46.1	51.8	114	81.6	99.8	186	126	80.9
8-OS	2830	2750	1680	1640	3330	1910	4090	1790	3230	1840
8-I	4230	1110	NA	ND	ND	ND	877	1180	692	862
8-R	872	181	1660	2600	2440	2650	2220	1890	1740	1980
9-OS	NA	14.6	ND	21.1	9.6	8.7	74.8	34.7	26.2	40.8
9-I	NA	377	NA	NA	NA	NA	40.6	3.2	21.7	9.8
9-R	NA	3270	2320	2280	2540	1890	1660	1830	1650	1460
PW-1	NA	ND	1.2	1.8	ND	3.6	5.4	ND	5.1	15.3
PW-2	NA	ND *	4.7	7.5	6.3	6.6	NA	2.4	8.7	6.1
PW-3	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
BP-1	NA	NA	4630	NA	NA	NA	NA	NA	NA	NA
BB-1	NA	NA	7.9	11.7	11.1	10.3	8.9	12.5	20.1	12.5
RVWF-1	NA	NA	839	40.2	1710	111	46.5	767	2170	3810
SVWC-93	NA	NA	ND	1.7	NA	72.2	ND	ND	2	0.37
SVWC-94	NA	NA	7.3	ND	NA	NA	6.3	ND	10.4	11.9
SVWC-95	NA	NA	56.4	1.8	ND	NA	91.6	108	273	85.9
SVWC-96	NA	NA	ND	ND	NA	ND	ND	ND	2.1	11.9
Surface Water										
Sample ID	Date of Sampling Event									
	1/90	9/90	1/93	4/93	9/93	12/93	3/94	6/94	9/94	12/94
SW-1	1120	NA	16.6	107	50.4	29.6	63	83.8	27.4	27
SW-5	19.5	44.5	19.3	27.9	70.8	20.5	23	50.3	65.1	16.4
SW-6	NA	31.9	14.5	23.9	14.4	16.9	19.6	23.5	20.7	12.9
SW-8	NA	153	10.9	28.5	8.6	9.9	17.6	64.3	19.4	25.4

Notes: Concentration reported in µg/L (ppb).

ND - Not detected

NA - Not applicable (e.g. well not installed by this date or if installed, not sampled)

* NYSDOH results from 3/92 sampling.

- Exceeded ARAR value of 300 ppb for groundwater.

TABLE 6 (Cont.)

**RAMAPO LANDFILL
MONITORING DATA
COMPOUND: Manganese**

Sample ID	Sample Type	Date of Sampling Event		
		3/95	6/95	9/95
1-OS	Groundwater	2950	2010	4930
1-R	Groundwater	96.9	153	219
2-OS	Groundwater	221	982	5570
2-R	Groundwater	94.8	70.2	143
3-OS/I	Groundwater	3590	3270	3860
3-R	Groundwater	11900	10900	12400
4-OS	Groundwater	602	2860	2080
4-R	Groundwater	1430	1120	1120
5-I	Groundwater	1410	NA	49.5
5-OS	Groundwater	NA	248	NA
5-R	Groundwater	116	21.6	28.6
6-I	Groundwater	19.9	31.3	89.5
6-R	Groundwater	17.4	33.4	42.6
7-OS	Groundwater	1180	NA	NA
7-I	Groundwater	NA	3500	4910
7-R	Groundwater	69.1	48.8	62.2
8-OS	Groundwater	2050	2690	1420
8-I	Groundwater	1480	1110	2430
8-R	Groundwater	3290	1300	2500
9-OS	Groundwater	32.9	3.9	NA
9-I	Groundwater	40.5	10.9	129
9-R	Groundwater	1590	1790	1810
BP-1	Groundwater	NA	NA	NA
BB-1	Groundwater	10.7	11.2	15.1
RVWF-1	Groundwater	2880	3070	2470
PW-1	Drinking Water	18.1	5.2	83.1
PW-2	Drinking Water	NA	6.1	11.6
PW-3	Drinking Water	NA	NA	NA
SWWC-93	Drinking Water	9.6	0.95	NA
SWWC-94	Drinking Water	6.7	11.4	NA
SWWC-95	Drinking Water	29	49.7	NA
SWWC-96	Drinking Water	1.3	ND	NA
SW-1	Surface Water	39.8	71.6	17.9
SW-5	Surface Water	15.4	18.3	75.3
SW-6	Surface Water	12.8	51.9	36.1
SW-8	Surface Water	25.8	80.1	25.5

Notes:

Concentration reported in µg/L (ppb).

ND - Not detected

NA - Not applicable (e.g. well not installed by this date or if installed, not sampled)

 - Exceeded ARAR value of 300 ppb for groundwater.