

February 24, 1995

URS CONSULTANTS, INC.
282 DELAWARE AVENUE
BUFFALO, NEW YORK 14202-1805
(716) 856-5636
FAX: (716) 856-2545

ATLANTA
BOSTON
BUFFALO
CLEVELAND
COLUMBUS
DENVER
NEW YORK
PARAMUS, NJ
NEW ORLEANS
SAN FRANCISCO
SAN MATEO
SEATTLE
VIRGINIA BEACH
WASHINGTON, D.C.

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 FOURTH QUARTER MONITORING FOR 1994**

Dear Mr. Yavondetti:

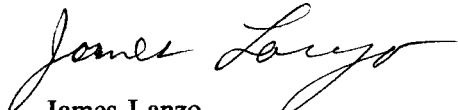
Attached are two (2) copies of the results of the fourth quarter monitoring event for 1994. This sampling event was the fourth of eight rounds of sampling included as part of the Remedial Action phase of the Ramapo Landfill Remediation Project. This document provides the validated analytical data for this sampling event as well as the historical analytical data 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 December 12, 1994, and were analyzed for the routine and site-related parameters.

In order to simplify the result tables for this sampling event, we are reporting analytical results without data qualifiers. The lack of qualifiers for these results do not affect the usability of the data. In future sampling events, results will have data qualifiers only if their usability is affected (i.e., rejected data for holding time exceedance, etc.).

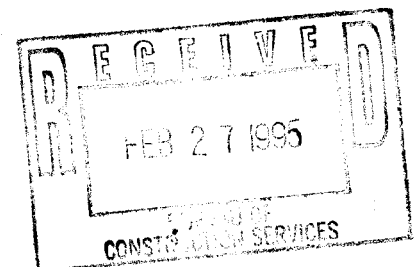
The first quarter monitoring event for 1995 is planned for the week of March 20. Please feel free to call if you have any questions or if you wish to discuss.

Sincerely,

URS CONSULTANTS, INC.


James Lanzo
Project Manager

Enc.
cc:



Supervisor Reisman - Town of Ramapo
Alan Simon - Town of Ramapo
Thomas Micelli - RCDOH
John Olm - NYSDOH
George Demas - Torne Brook Farm
Tanyo Parashkevov - Hackensack Water Co.
Michael Barnes - Spring Valley Water Co.

Gene Ostertag - Town of Ramapo
Robert Nunes - USEPA
Judy Hunderfund - RCDOH
Arlene Lapidus - Ramapo Land Co., Inc.
Raymond Cywinski - Hackensack Water Co.
Craig Flanagan
File: 35314 (VI-C and XII-C)

TABLE 1

RAMAPO LANDFILL - DECEMBER 1994 SAMPLING

ANALYTE	CONCENTRATION (µg/l)*							
	1 O/S	1 R	2 O/S	2 R	3 O/S	3 R	4 O/S	
1,1-Dichloroethane	--	1	--	--	--	--	--	
Chlorobenzene	--	--	--	--	--	--	--	
Benzene	--	--	--	--	--	--	--	
Vinyl Chloride	--	--	--	--	--	--	--	
Antimony	2.3	--	1.3	--	7.6	--	--	
Arsenic	6	--	2.2	--	4.4	--	3.3	
Cadmium	0.67	1.1	0.73	1.3	0.63	0.7	1.8	
Calcium	96400	88000	84500	51000	72200	78800	33000	
Chromium	134	58.3	25.1	4.9	1020	4.9	53.1	
Copper	55.1	13.3	7.2	3.9	28.8	4.8	14	
Iron	47700	1710	4120	363	37500	1730	15200	
Lead	8.4	1.3	--	--	6.7	1.3	4	
Magnesium	30700	18100	17500	10700	22000	26100	14000	
Manganese	4770	97.6	827	88.8	5540	11300	1130	
Mercury	--	--	--	--	--	--	--	
Nickel	79.3	30.5	15	4.7	188	7	23.7	
Potassium	12100	3280	2320	1420	12500	2750	3490	
Sodium	53700	19200	9060	6680	67900	47600	30800	
Zinc	103	22.8	25	20.4	59.8	19	41.5	

Only detected results reported.

All results reported in µg/l (ppb).

*Analytical results do not include data qualifiers, unless usability of data is affected.

TABLE 1

RAMAPO LANDFILL - DECEMBER 1994 SAMPLING

ANALYTE	CONCENTRATION (µg/l)*							
	4 R	5 I	5 R	6 I	6 R	7 O/S	7 R	
1,1-Dichloroethane	--	--	--	--	--	--	--	
Chlorobenzene	--	--	--	--	--	--	--	
Benzene	--	--	--	--	--	--	--	
Vinyl Chloride	--	--	--	--	--	--	--	
Antimony	--	1	2.5	--	--	1.5	--	
Arsenic	2.7	3.7	5.4	--	--	5	--	
Cadmium	0.47	0.57	4.7	0.2	0.3	0.4	0.83	
Calcium	45900	11800	27400	24100	27200	31400	47300	
Chromium	2	63.1	105	9.9	13.6	258	3.4	
Copper	2.7	40.1	83.9	1.9	2.8	27.4	3.1	
Iron	5100	30700	64000	153	332	14400	270	
Lead	0.9	7.1	12.7	--	0.9	5.3	--	
Magnesium	17200	12700	19200	6430	6970	10800	21200	
Manganese	1190	474	624	13.2	45.8	992	80.9	
Mercury	--	--	0.23	--	--	--	--	
Nickel	3.1	42.5	74.3	6.5	7.9	29.8	6.1	
Potassium	1730	6420	10600	1320	1510	17400	2520	
Sodium	11900	7400	8960	5750	6090	29600	28300	
Zinc	20.6	76.2	255	17	20.3	45.7	24.3	

Only detected results reported.

All results reported in µg/l (ppb).

*Analytical results do not include data qualifiers, unless usability of data is affected.

TABLE 1

RAMAPO LANDFILL - DECEMBER 1994 SAMPLING

ANALYTE	CONCENTRATION (µg/l)*						
	8 I	8 O/S	8 R	9 I	9 O/S	9 R	PW 1
1,1-Dichloroethane	--	--	--	--	--	--	--
Chlorobenzene	--	--	1	--	--	--	--
Benzene	--	--	--	--	--	1	--
Vinyl Chloride	--	--	--	--	--	--	--
Antimony	--	--	--	--	--	--	--
Arsenic	11.8	3.5	18.6	--	--	1.7	--
Cadmium	1.3	0.23	0.4	4.8	0.63	9	--
Calcium	87900	63700	54500	8500	8540	20400	10700
Chromium	8.4	29	6.8	5.8	2.9	10.5	--
Copper	3.3	4.2	2.7	2.2	3.4	4.8	110
Iron	18200	6740	10200	260	1490	2700	39.7
Lead	--	--	--	--	1	0.98	1.4
Magnesium	49900	21900	14000	2020	2330	5820	3260
Manganese	862	1840	1980	9.8	40.8	1460	15.3
Mercury	--	0.12	--	--	--	--	--
Nickel	75.9	12.5	7.2	3.8	2.3	9.9	--
Potassium	124000	26000	22300	822	928	6440	928
Sodium	305000	72700	50100	3230	3200	24700	4490
Zinc	17.1	14.3	16.3	23.9	19.3	16.3	36.9

Only detected results reported.

All results reported in µg/l (ppb).

*Analytical results do not include data qualifiers, unless usability of data is affected.

TABLE 1

RAMAPO LANDFILL - DECEMBER 1994 SAMPLING

ANALYTE	CONCENTRATION (µg/l)*		
	PW 2	BB-1	RVWF-1
1,1-Dichloroethane	--	--	--
Chlorobenzene	--	--	--
Benzene	--	--	--
Vinyl Chloride	--	--	--
Antimony	--	--	--
Arsenic	--	--	--
Cadmium	--	0.23	--
Calcium	44200	17900	42100
Chromium	--	--	--
Copper	8.5	51.1	12.7
Iron	13.6	332	58.2
Lead	2.1	3.1	--
Magnesium	5220	4200	12300
Manganese	6.1	12.5	3810
Mercury	--	--	--
Nickel	--	1.5	7.8
Potassium	1460	913	6370
Sodium	9330	5500	48800
Zinc	140	324	36.4

Only detected results reported.

All results reported in µg/l (ppb).

*Analytical results do not include data qualifiers, unless usability of data is affected.

TABLE 1

RAMAPO LANDFILL - DECEMBER 1994 SAMPLING

ANALYTE	CONCENTRATION (µg/l)*					ARARs @
	SVWC-93	SVWC-94	SVWC-95	SVWC-96		
1,1-Dichloroethane	--	--	--	--		5 §
Chlorobenzene	--	--	--	--		5
Benzene	--	1	--	--		0.7 @
Vinyl Chloride	--	--	--	--		2
Antimony	--	--	--	--		3
Arsenic	2.1	1.8	--	--		25
Cadmium	--	1.4	0.63	0.33		10
Calcium	26700	34800	16800	6170		--
Chromium	--	0.97	--	0.87		50 §
Copper	161	26.7	54.2	32.5		200
Iron	20.7	13.8	40.3	66.8		300
Lead	4.9	5.9	5.2	1		15 ¥
Magnesium	6480	9460	4920	1640		35000
Manganese	0.37	11.9	85.9	11.9		300
Mercury	--	--	--	--		2
Nickel	3.2	11	3.8	1.1		--
Potassium	2590	2760	1700	1980		--
Sodium	44200	50900	28000	5850		20000
Zinc	52.8	20.9	37.9	55.5		300

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

§ - Values obtained from Chapter I - New York State Sanitary Code, Subpart 5-1, Principal Organic Contaminants

¥ - Value obtained from Chapter I - New York State Sanitary Code, Subpart 5-1, Unspecified Organic Contaminants

¥ USEPA action level

Only detected results reported.

All results reported in µg/l (ppb).

*Analytical results do not include data qualifiers, unless usability of data is affected.

TABLE 1

RAMAPO LANDFILL - DECEMBER 1994 SAMPLING

ANALYTE	CONCENTRATION (µg/l)*					ARARs @
	SW 1	SW 5	SW 6	SW 8		
1,1-Dichloroethane	--	--	--	--		0.07
Chlorobenzene	--	--	--	--		20
Benzene	--	--	--	--		0.7
Vinyl Chloride	--	--	--	--		0.3
Antimony	--	--	--	--		3
Arsenic	--	1.7	1.7	--		50
Cadmium	0.33	0.2	--	--		10
Calcium	14200	3370	3210	13300		10
Chromium	--	--	--	--		--
Copper	2.5	1.9	4.3	10.5		50
Iron	242	63.1	42.6	186		200
Lead	2.8	3.6	1.8	0.93		300
Magnesium	4110	963	948	3830		50
Manganese	27	16.4	12.9	25.4		35000
Mercury	--	--	--	--		300
Nickel	1.1	1	--	1.3		0.012
Potassium	1290	335	312	1180		1.3E-07
Sodium	20800	2460	2110	18700		--
Zinc	38.3	20	16.2	16.9		30

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

£ - Clean Water Act

φ - ARAR value must be calculated

Only detected results reported.

All results reported in µg/l (ppb).

*Analytical results do not include data qualifiers, unless usability of data is affected.

TABLE 2

RAMAPO LANDFILL - DECEMBER 1994 SAMPLING

INDICATOR	1 O/S	1 R	2 O/S	2 R	3 O/S	3 R	4 O/S
Ammonia	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02
COD	<15.00	<15.00	23	15	25	30	<15.00
Chloride	42	46	9	19	103	43	59
Nitrate	0.2	0.2	0.2	0.1	0.3	<0.10	<0.10
Sulfate	50.4	31.5	19.5	22	23.7	28.2	82.8
Total Phenols (ug/l)	900	266	<1.00	2.5	<1.00	<1.00	<1.00
Total Alkalinity	466	414	255	139	238	332	69.6
Total Dissolved Solids	367	294	308	213	415	428	268
Total Hardness	4.3	4.2	283	171	271	304	140
Total Organic Carbon	4	1.8	4.8	2.5	6.6	7.6	3.3
Turbidity (units)	42	7.5	21	5	40	9	36

All concentrations reported in mg/l, unless otherwise noted.

TABLE 2

RAMAPO LANDFILL - DECEMBER 1994 SAMPLING

INDICATOR	4 R	5 I	5 R	6 I	6 R	7 O/S	7 R
Ammonia	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
COD	<15.00	56	<15.00	<15.00	25	<15.00	<15.00
Chloride	22	4	4	22	17	19	42
Nitrate	<0.10	<0.10	<0.10	<0.10	0.1	5.2	3.1
Sulfate	22.7	10.5	13.7	15.5	19.2	23.2	36.2
Total Phenols (ug/l)	1.2	210	260	<1.00	1.8	<1.00	<1.00
Total Alkalinity	164	104	106	49.9	65.7	135	150
Total Dissolved Solids	266	81.3	147	149	153	242	302
Total Hardness	185	<1.00	1.4	86.6	96.7	123	205
Total Organic Carbon	3.1	2	<1.00	1.5	1.7	10	5.4
Turbidity (units)	22	72	80	3.5	2.7	32	3.5

All concentrations reported in mg/l, unless otherwise noted.

TABLE 2

RAMAPO LANDFILL - DECEMBER 1994 SAMPLING

INDICATOR	8 I	8 O/S	8 R	9 I	9 O/S	9 R	PW1
Ammonia	180	6.4	7.7	<0.02	<0.02	1.6	<0.02
COD	471	20	<15.00	<15.00	<15.00	<15.00	<15.00
Chloride	700	117	73	7	6	25	11
Nitrate	<0.10	2.3	5.5	<0.10	0.5	2.6	0.3
Sulfate	44	53.4	35.5	9.2	11.5	14.7	10.5
Total Phenols (ug/l)	4.9	1.2	<1.00	<1.00	<1.00	4	<1.00
Total Alkalinity	2390	265	720	22.4	19.5	91.1	23.8
Total Dissolved Solids	1990	482	421	58	59	151	71
Total Hardness	424	249	194	29.5	30.9	74.9	40.1
Total Organic Carbon	79.9	9.4	7.1	1.5	2.9	3.4	1.8
Turbidity (units)	50	7.5	20	5.5	12	10	<1.00

All concentrations reported in mg/l, unless otherwise noted.

TABLE 2

RAMAPO LANDFILL - DECEMBER 1994 SAMPLING

INDICATOR	PW2	BB-1	RVWF-1
Ammonia	<0.02	<0.02	1.9
COD	<15.00	<15.00	<15.00
Chloride	29	<2.00	76
Nitrate	2	<0.10	0.3
Sulfate	20	15.7	15.7
Total Phenols (ug/l)	2	52	142
Total Alkalinity	72.4	93	278
Total Dissolved Solids	182	62	156
Total Hardness	132	1.9	5.8
Total Organic Carbon	1.7	1.7	2
Turbidity (units)	<1.00	2	<1.00

All concentrations reported in mg/l, unless otherwise noted.

TABLE 2

RAMAPO LANDFILL - DECEMBER 1994 SAMPLING

INDICATOR	SVWC-93	SVWC-94	SVWC-95	SVWC-96	ARARs @ (ug/l)
Ammonia	<0.02	<0.02	<0.02	<0.02	2000
COD	61	61	<15.00	<15.00	--
Chloride	94	109	46	61	250000
Nitrate	0.8	1	1.1	0.7	10000
Sulfate	22.2	19.5	15	19	250000
Total Phenols (ug/l)	<1.00	62.8	39.2	45.5	--
Total Alkalinity	45	275	139	183	--
Total Dissolved Solids	241	126	62	22.1	500000
Total Hardness	93.3	4.1	2.6	3.5	--
Total Organic Carbon	1.3	<1.00	7.2	<1.00	--
Turbidity (units)	<1.00	<1.00	<1.00	<1.00	--

@ - NYSDEC Water Quality Standards
and Guidance Values, TOGS 1.1.1,
October 1993, table 1

All concentrations reported in mg/l, unless otherwise noted.

TABLE 2

RAMAPO LANDFILL - DECEMBER 1994 SAMPLING

INDICATOR	SW 1	SW 5	SW 6	SW 8	ARARs @ (ug/l)
Ammonia	<0.02	<0.02	<0.02	<0.02	2000
COD	<15.00	<15.00	<15.00	<15.00	--
Chloride	38	3	3	32	250000
Nitrate	0.4	<0.10	<0.10	0.4	10000
Sulfate	17.7	11.2	11.5	16.5	250000
Total Phenols (ug/l)	29.6	4.6	4.7	25.5	--
Total Alkalinity	143	46	49	115	--
Total Dissolved Solids	52.2	12.3	11.9	82.2	500000
Total Hardness	4.1	1.5	1.7	2.3	--
Total Organic Carbon	1.2	<1.00	<1.00	<1.00	--
Turbidity (units)	<1.00	<1.00	<1.00	<1.00	--

@ - NYSDEC Water Quality Standards
and Guidance Values, TOGS 1.1.1,
October 1993, table 1

All concentrations reported in mg/l, unless otherwise noted.

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 O/S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1 R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2 O/S	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
2R	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
3 O/S/I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3 R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4 O/S	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
5I	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND
5 O/S	2.0	ND	ND	ND	NA	NA	NA	ND	NA	NA
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 O/S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7 R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8 I	2.0	2.9	NA	ND	ND	ND	ND	ND	ND	2.0
8 O/S	2.0	0.3	ND	ND	ND	ND	ND	ND	ND	ND
8 R	3.0	0.4	ND	0.9	ND	ND	ND	ND	ND	ND
9I	NA	0.2	NA	NA	NA	NA	ND	ND	ND	ND
9 O/S	NA	ND	ND	ND	ND	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 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 O/S	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 O/S	180	141	NA	ND	50.2	95.9	11.8	89.3	45.9	25.1
2R	16.1	5.5	NA	ND	14.8	6.1	ND	5.1	8.3	4.9
3 O/S/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 O/S	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
5I	NA	NA	NA	NA	NA	80	30.2	7.2	40	63.1
5 O/S	90	35.6	48.8	ND	NA	NA	NA	NA	NA	NA
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 O/S	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 I	215	32.5	NA	ND	ND	ND	29	17	12.8	8.4
8 O/S	34.8	16.7	ND	ND	ND	7.6	86.6	28.7	13.2	4.2
8 R	20	23.1	9.9	ND	17.7	18.2	7.5	17.0	10.4	6.8
9 I	NA	8.1	NA	NA	NA	NA	28	ND	2.4	5.8
9 O/S	NA	6.8	ND	ND	ND	ND	22.9	27.1	14.8	2.9
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 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 O/S	45000	17500	1870	884	32300	162000	12200	69.6	4950	47700
1 R	1180	2650	395	197	1940	1210	186	70600	830	1710
2 O/S	912	41800	NA	186	11800	9800	946	5080	14700	4120
2R	409	602	NA	674	1120	1450	187	83.1	248	363
3 O/S	6830	9750	5110	333	21300	37900	19400	29900	14400	37500
3 R	1930	1370	11500	2940	3280	4800	1970	2090	2440	1730
4 O/S	15600	12400	529	520	5560	10600	5720	17600	16900	15200
4 R	8230	5290	3520	4920	3100	5290	4790	4020	6850	5100
5I	NA	NA	NA	NA	NA	2030	2080	2380	8990	30700
5 O/S	27000	11200	11100	4700	NA	NA	NA	NA	NA	NA
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 O/S	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 I	15700	30500	NA	ND	ND	ND	22300	41200	24200	18200
8 O/S	229000	43800	3230	2080	6180	12000	20300	6240	7490	6740
8 R	1360	2940	11600	2590	9160	4710	2510	11100	22000	10200
9 I	NA	145	NA	NA	NA	NA	2040	62.3	84	260
9 O/S	NA	249	50.7	1200	383	393	2210	1040	1020	1490
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.

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 O/S	3790	3700	809	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 O/S	298	4770	NA	27.0	4850	1580	92.5	985	2450	827
2R	197	135	NA	118	126	116	99.5	91.1	92.9	88.8
3 O/S/I	8700	18100	3450	1690	9590	8780	5640	10300	2240	5540
3 R	7230	12400	10700	12900	11000	12000	11800	112800	10600	11300
4 O/S	4210	5020	547	506	2080	995	598	2850	3050	1130
4 R	1730	1520	1660	1890	1160	1230	1460	1350	1210	1190
5I	NA	NA	NA	NA	NA	52.8	40.6	215	221	474
5 O/S	981	530	192	43.2	NA	NA	NA	NA	NA	NA
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 O/S	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 I	4230	1110	NA	ND	ND	ND	877	1180	692	862
8 O/S	2830	2750	1680	1640	3330	1910	4090	1790	3230	1840
8 R	872	181	1660	2600	2440	2650	2220	1890	1740	1980
9 I	NA	377	NA	NA	NA	NA	40.6	3.2	21.7	9.8
9 O/S	NA	14.6	ND	21.1	9.6	8.7	74.8	34.7	26.2	40.8
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	Date of Sampling Event									
Sample ID	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.



RAMAPO LANDFILL SAMPLE LOCATIONS