Sterling Environmental Engineering, P.C.

October 8, 2003

Mr. Saiban Mahamooth
Environmental Engineer I
Division of Environmental Remediation
New York State Department of Environmental Conservation
Region 3
21 South Putt Corners Road
New Paltz, New York 12561-1696

Subject: Town of Ramapo Landfill
2003 2nd Round Monitoring Results
STERLING File #20010

Dear Mr. Mahamooth:

This letter report provides groundwater, drinking water and air monitoring results for the July 2003 post-closure monitoring event at the Town of Ramapo Landfill Remediation Project. Groundwater and drinking water samples were collected on July 29 and 30, 2003 from post-closure monitoring well clusters 8 and 9, water supply wells SVWC-93 through SVWC-96, and drinking water wells PW-1 and PW-2. Sampling locations are shown on the attached Figure 1, "Ramapo Landfill Sample Locations." A representative from the Rockland County Department of Health (RCDOH) was present during sampling of groundwater monitoring well cluster 9 and the drinking water wells PW-1 and PW-2, and a representative from United Water New York was present during sampling of the SVWC water supply wells.

GROUNDWATER MONITORING

Field parameters were measured at the time of sampling, and are presented on Table 1, "Field Parameters and Water Levels", attached. All samples were analyzed for approved post-closure "Routine" and "Site Related Parameters" by Severn Trent Laboratories located in Newburgh, New York, according to United States Environmental Protection Agency (USEPA) methodologies and protocols.

Analytical results are summarized on the attached Table 2, "Post-Closure Groundwater Quality Monitoring Analytical Results", which also includes historical analytical data for the previous three (3) sampling events. Historic analytical data for the four (4) target compounds (Benzene, Chromium, Iron and Manganese) are presented on Tables 3A through 3D. A copy of the laboratory report for the July 2003 sampling event, prepared according to New York State Department of Environmental Conservation (NYSDEC) ASP Category A reporting requirements, is enclosed.

During the July 2003 sampling event, a blind field duplicate sample was collected from drinking water well PW-2. The duplicate results are consistent with the results of the sample from PW-2. Where results differed, the higher of the two results are reported in this report and on Table 2, which has been noted appropriately.

As presented on the attached Tables 2 and 3, the latest monitoring results are generally consistent with past results. A brief discussion of the latest monitoring results with respect to applicable groundwater standards and guidance values (termed "ARARs" in past reports) for each well follows:

Well 8-OS:

Consistent with historic analytical results, Iron and Manganese exceed applicable ARARs. No volatile organic compounds (VOCs) were detected in the sample from well 8-OS during this monitoring event, or in the recent past.

Well 8-I:

Consistent with recent historic analytical results, Iron and Manganese exceed applicable ARARs. Consistent with historic analytical results, Antimony was detected at a low concentration, slightly above the ARAR, during this monitoring event. No VOCs were detected at this monitoring location during this monitoring event.

Well 8-R:

Consistent with historic analytical results, Iron and Manganese exceed applicable ARARs. No VOCs were detected at this monitoring location during this monitoring event.

Well 9-OS:

No exceedances of the applicable ARARs were detected during this monitoring event.

Well 9-I:

Consistent with historic analytical results, Iron exceeds the ARAR. No VOCs were detected at this monitoring location during this monitoring event.

Well 9-R:

Consistent with recent and historic results, Iron and Manganese exceed applicable ARARs. Additionally, Antimony was detected at a low concentration, slightly above the detection limit and the ARAR. No VOCs were detected at this monitoring location during this monitoring event.

Well PW-1:

The latest monitoring results are comparable to recent past results. There were no exceedances of applicable ARARs during this or recent past monitoring events, except for a slight exceedance of Thallium during the April 2003 sampling event. No VOCs were detected in the sample from well PW-1 during this monitoring event, or in the recent past.

Well PW-2:

There were no exceedances of applicable ARARs during this or recent past monitoring events, with the exception of Antimony, detected in the recent past, and during this monitoring event. Antimony was

detected at a low concentration of 10.1 ug/L, slightly above the ARAR. Overall, the latest monitoring results are comparable to recent past results. No VOCs were detected in the sample from well PW-2 during this monitoring event, or in the recent past.

Well SVWC-93:

The latest analytical results for all parameters are consistent with recent past results. No parameter was detected in exceedance of the ARARs. No VOCs were detected in the sample from well SVWC-93 during this monitoring event, or in the recent past.

Well SVWC-94:

The latest analytical results for all parameters are consistent with recent past results. No parameter was detected in exceedance of the ARARs. No VOCs were detected in the sample from well SVWC-94 during this monitoring event, or in the recent past.

Well SVWC-95:

The latest analytical results for all parameters are consistent with recent past results. No parameter was detected in exceedance of the ARARs. No VOCs were detected in the sample from well SVWC-95 during this monitoring event, or in the recent past.

Well SVWC-96:

There were no exceedances of applicable ARARs during this or recent past monitoring events, with the exception of Antimony, detected during this monitoring event. Antimony was detected at a low concentration of 7.1 ug/L, slightly above the ARAR. Overall, the latest monitoring results are comparable to recent past results. No VOCs were detected in the sample from well SVWC-96 during this monitoring event, or in the recent past.

AIR QUALITY MONITORING

Air monitoring consisted of explosive gas (Lower Explosive Limit, or LEL), Hydrogen Sulfide (H_2S) and photoionization detector (PID) measurements of the headspace of each monitoring well, the baler building, leachate manhole A-5, lift stations A-10 and W-20, and the landfill perimeter. LEL and H_2S measurements were obtained with a QRAE Multi gas monitor, and PID measurements were obtained with a Photovac 2020 photoionization device.

The next sampling event is scheduled to occur in October 2003. Please call me at 518/456-4900 should you have any questions or comments.

Very truly yours,

STERLING ENVIRONMENTAL ENGINEERING, P.C.

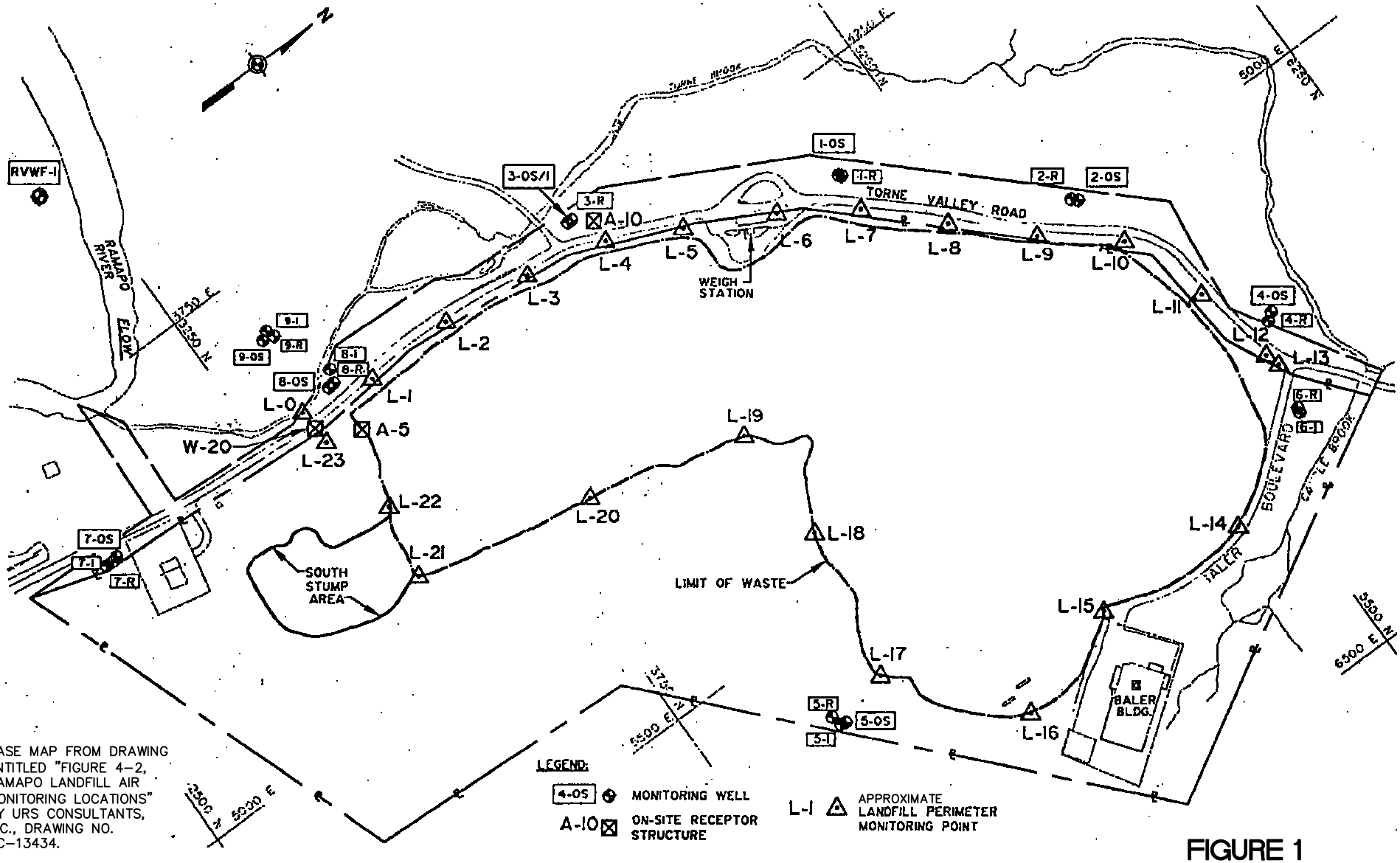
~ SIGNATURE ON ORIGINAL HARD COPY ~

Peter J. Kelleher, P.E.
Senior Environmental Engineer
peter@sterlingenvironmental.com

PJK/bh
Facsimile/First Class Mail
Attachments (Figure 1, Tables 1, 2 and 3A through 3D, Laboratory Report)

cc: George Jacob, USEPA
John Olm, NYDOH *
Gerald Rider, NYSDEC *
Ted Dzurinko, Town of Ramapo *
Judy Hunderfund, Rockland County DOH
Thomas Micelli, Rockland County DOH *
Chris Berke, United Water New York *
Tanyo Parashkevov, United Water New York
John France, Torne Brook Farm **
Frank Digianni, 20 Torne Brook Road **
Ms. Arlene Lapidos, Ramapo Land Co., Inc. *

* letter, figures and tables only.
** letter, figures, tables and partial lab report enclosure.



BASE MAP FROM DRAWING ENTITLED "FIGURE 4–2, RAMAPO LANDFILL AIR MONITORING LOCATIONS" BY URS CONSULTANTS, INC., DRAWING NO. AC–13434.

FIGURE 1

STERLING

Sterling Environmental Engineering, P.C.

One Columbia Circle ♦ Albany, New York 12203

2003 AIR QUALITY MONITORING LOCATIONS
TOWN OF RAMAPO
LANDFILL

TOWN OF RAMAPO — ROCKLAND CO., N.Y.

PROJ. No.:	E20010	DATE:	7–17–03	SCALE:	1" = 400'	DWG. NO.	20010004	FIGURE	1

TABLE 1

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER QUALITY MONITORING
FIELD PARAMETERS AND WATER LEVELS
APRIL 2003

Well I.D.	Date	Static Water Level [1] (feet)	pH [2] (pH units)	Specific Conductance (mmhos)	Temperature (degrees C)	Eh (mV)
1-OS	7/29/2003	[3]	---	---	---	---
1-R	7/29/2003	17.48	---	---	---	---
2-I	7/29/2003	16.71	---	---	---	---
2-OS	7/29/2003	14.75	---	---	---	---
2-R	7/29/2003	18.08	---	---	---	---
3-OS/I	7/29/2003	13.04	---	---	---	---
3-R	7/29/2003	13.50	---	---	---	---
4-OS	7/30/2003	7.80	---	---	---	---
4-R	7/30/2003	9.77	---	---	---	---
5-OS	7/30/2003	10.10	---	---	---	---
5-I	7/30/2003	13.63	---	---	---	---
5-R	7/30/2003	26.69	---	---	---	---
6-I	7/30/2003	19.55	---	---	---	---
6-R	7/30/2003	30.60	---	---	---	---
7-OS	7/29/2003	13.04	---	---	---	---
7-I	7/29/2003	14.40	---	---	---	---
7-R	7/29/2003	[3]	---	---	---	---
8-OS	7/29/2003	13.87	**5.67**	98.2	16.3	78.3
8-I	7/29/2003	14.91	6.67	761	15.9	14.7
8-R	7/29/2003	14.14	**6.48**	1280	15.4	22.8
9-OS	7/29/2003	6.68	**5.94**	66.4	22.8	62.9
9-I	7/29/2003	11.21	**5.89**	82.8	19.1	65.2
9-R	7/29/2003	12.21	**6.49**	371	15.7	16.4
PW-1	7/29/2003	---	**6.08**	119.7	19.3	49.6
PW-2	7/29/2003	---	6.70	263	16.6	-7.8
SVWC-93	7/29/2003	---	**6.47**	374	17.3	26.3
SVWC-94	7/29/2003	---	**6.34**	374	14.8	28.2
SVWC-95	7/29/2003	---	6.51	370	16.6	20.9
SVWC-96	7/29/2003	---	**6.41**	474	17.2	28.5

NOTES: [1] Depth to water surface from top of PVC well riser, prior to purging and sampling.

[2] pH values in **BOLD** indicate an exceedance of the NYSDEC Water Quality Standard for pH: minimum 6.5 pH units, maximum 8.5 pH units (from T.O.G.S. 1.1.1, June 1998).

[3] Well protective casing was found to be damaged, which prevented access to the well.

--- Not Measured

TABLE 2

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER QUALITY MONITORING
ANALYTICAL RESULTS

Parameter	ARARs [1]	UNITS	WELL 1-OS				WELL 1-R			
			Jul-02 [4]	Oct-02 [4]	Apr-03 [5]	Jul-03 [5]	Jul-02	Oct-02 [4] [Dup]	Apr-03 [3]	Jul-03 [4]
Leachate Indicator Parameters:										
Alkalinity	---	mg/L	NA	222	NA	NA	NA	424	277	NA
Chemical Oxygen Demand	---	mg/L	NA	10	NA	NA	NA	15	10	NA
Total Hardness	---	mg/L	NA	288	NA	NA	NA	447	293	NA
Total Kjeldhal Nitrogen	---	mg/L	NA	1.17	NA	NA	NA	1 U	1 U	NA
TAL Metals:										
Aluminum	---	ug/L	NA	NA	NA	NA	NA	NA	48.5 B	NA
Antimony	3	ug/L	NA	**15 B,N**	NA	NA	NA	**5.6 B,N**	5 U	NA
Arsenic	25	ug/L	NA	**91.3**	NA	NA	NA	4 B	2.4 U	NA
Barium	1000	ug/L	NA	NA	NA	NA	NA	NA	13.1 B	NA
Beryllium	3	ug/L	NA	NA	NA	NA	NA	NA	0.2 U	NA
Cadmium	5	ug/L	NA	0.48 U	NA	NA	NA	1.5 B	0.3 U	NA
Calcium	---	ug/L	NA	NA	NA	NA	NA	NA	85200	NA
Chromium	50	ug/L	NA	**386 E**	NA	NA	NA	**82.9 E**	0.8 U	NA
Cobalt	---	ug/L	NA	NA	NA	NA	NA	NA	3.7 B	NA
Copper	200	ug/L	NA	86.3	NA	NA	NA	20.4 B	3.6 B	NA
Iron	300 [2]	ug/L	NA	**127000 E**	NA	NA	NA	**41600 E**	**374**	NA
Lead	25	ug/L	NA	10.3 N	NA	NA	NA	4.8 B,N	2.2 U	NA
Magnesium	35000 GV	ug/L	NA	NA	NA	NA	NA	NA	19600	NA
Manganese	300 [2]	ug/L	NA	**8160 E**	NA	NA	NA	**1650 E**	177	NA
Mercury	0.7	ug/L	NA	0.2 U	NA	NA	NA	0.2 U	0.2 U	NA
Nickel	100	ug/L	NA	NA	NA	NA	NA	NA	2.2 B	NA
Potassium	---	ug/L	NA	NA	NA	NA	NA	NA	2950 BU	NA
Selenium	10	ug/L	NA	NA	NA	NA	NA	NA	1.4 U	NA
Silver	50	ug/L	NA	NA	NA	NA	NA	NA	2.6 U	NA
Sodium	20000	ug/L	NA	NA	NA	NA	NA	NA	**24200**	NA
Thallium	0.5 GV	ug/L	NA	NA	NA	NA	NA	NA	3.5 U	NA
Vanadium	---	ug/L	NA	NA	NA	NA	NA	NA	1.7 U	NA
Zinc	2000 GV	ug/L	NA	78.1	NA	NA	NA	18.8 B	15.2 B	NA
VOCs by EPA Method 601:										
Chlorobenzene	5	ug/L	NA	NA	NA	NA	NA	NA	1 U	NA
Chloroethane	5	ug/L	NA	NA	NA	NA	NA	NA	1 U	NA
Chloroform	7	ug/L	NA	NA	NA	NA	NA	NA	1 U	NA
1,4-Dichlorobenzene	3	ug/L	NA	NA	NA	NA	NA	NA	1 U	NA
Dichlorodifluoromethane	5	ug/L	NA	NA	NA	NA	NA	NA	1 U	NA
1,1-Dichloroethane	5	ug/L	NA	1 U	NA	NA	NA	1 U	0.83 J	NA
1,1,1-Trichloroethane	5	ug/L	NA	NA	NA	NA	NA	NA	1 U	NA
Vinyl Chloride	5	ug/L	NA	1 U	NA	NA	NA	1 U	1 U	NA
VOCs by EPA Method 602:										
Benzene	1	ug/L	NA	1 U	NA	NA	NA	1 U	1 U	NA
Chlorobenzene	5	ug/L	NA	1 U	NA	NA	NA	1 U	1 U	NA

NOTES:

[1] NYSDEC Water Quality Standards and Guidance Values, T.O.G.S. 1.1.1 (June 1998).
[2] The groundwater standard for the sum of Iron and Manganese concentrations is 500 mg/L.
[3] Sample analyzed for "Baseline Parameters".
[4] Sample analyzed for "Routine" and "Site-Related Parameters".
[5] Well protective casing was found to be damaged, which prevented access to the well.
[Dup] Duplicate sample collected and greatest values reported in this Table.

NA Denotes Not Analyzed
U Denotes that the compound was analyzed for but not detected at the detection limit listed.
* Indicates that the duplicate analysis was not within laboratory control limits.
J Indicates an estimated value for tentatively identified compounds.
B The reported value is less than the Contract Required Detection Limit (CRDL), but greater than the Instrument Detection Limit.
E Indicates an estimated value because of the possible presence of interference.
W Indicates an estimated value because of the possible presence of interference.
N Spiked sample recovery not within control limits

Values in **BOLD** indicate an exceedance of applicable water quality standards or guidance values.

TABLE 2 (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER QUALITY MONITORING RESULTS
ANALYTICAL RESULTS

	ARARs [1]	UNITS	WELL 2-OS				WELL 2-R			
			Jul-02	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]	Jul-02	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]
Leachate Indicator Parameters:										
Alkalinity	---	mg/L	NA	242	265	NA	NA	214	188	NA
Chemical Oxygen Demand	---	mg/L	NA	10 U	10	NA	NA	10 U	15	NA
Total Hardness	---	mg/L	NA	375	346	NA	NA	248	201	NA
Total Kjeldhal Nitrogen	---	mg/L	NA	1.23	1 U	NA	NA	1 U	1 U	NA
TAL Metals:										
Aluminum	---	ug/L	NA	NA	20300	NA	NA	NA	1960	NA
Antimony	3	ug/L	NA	**33 B,N**	5 U	NA	NA	5.3 U,N	5 U	NA
Arsenic	25	ug/L	NA	13.3	10.3	NA	NA	2.6 U	2.4 U	NA
Barium	1000	ug/L	NA	NA	179 B	NA	NA	NA	32.4 B	NA
Beryllium	3	ug/L	NA	NA	1 B	NA	NA	NA	0.2 U	NA
Cadmium	5	ug/L	NA	0.48 U	1.7 B	NA	NA	0.48 U	0.3 U	NA
Calcium	---	ug/L	NA	NA	97300	NA	NA	NA	59100	NA
Chromium	50	ug/L	NA	**2040 E**	**89.8**	NA	NA	4.6 B,E	4.8 B	NA
Cobalt	---	ug/L	NA	NA	71.3	NA	NA	NA	2 B	NA
Copper	200	ug/L	NA	83.4	55.3	NA	NA	6.9 U	11.3 B	NA
Iron	300 [2]	ug/L	NA	**48200 E**	**40700**	NA	NA	**1760 E**	**2550**	NA
Lead	25	ug/L	NA	**31.3 N**	**41.1**	NA	NA	2.9 U,N	2.2 U	NA
Magnesium	35000 GV	ug/L	NA	NA	25100	NA	NA	NA	12900	NA
Manganese	300 [2]	ug/L	NA	**6940 E**	**3100**	NA	NA	**404 E**	157	NA
Mercury	0.7	ug/L	NA	0.2 U	0.2 U	NA	NA	0.2 U	0.2 U	NA
Nickel	100	ug/L	NA	NA	**108**	NA	NA	NA	3.9 B	NA
Potassium	---	ug/L	NA	NA	7290 E	NA	NA	NA	2390 BE	NA
Selenium	10	ug/L	NA	NA	1.4 UW	NA	NA	NA	1.4 U	NA
Silver	50	ug/L	NA	NA	7.1 B	NA	NA	NA	2.6 U	NA
Sodium	20000	ug/L	NA	NA	7130	NA	NA	NA	7670	NA
Thallium	0.5 GV	ug/L	NA	NA	**4.8 B**	NA	NA	NA	3.5 U	NA
Vanadium	---	ug/L	NA	NA	40.4 B	NA	NA	NA	2.7 B	NA
Zinc	2000 GV	ug/L	NA	82.7	110	NA	NA	17.8 U	2.8 U	NA
VOCs by EPA Method 601:										
Chlorobenzene	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroform	7	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,4-Dichlorobenzene	3	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Dichlorodifluoromethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,1-Dichloroethane	5	ug/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA
1,1,1-Trichloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Vinyl Chloride	5	ug/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA
VOCs by EPA Method 602:										
Benzene	1	ug/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA
Chlorobenzene	5	ug/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA

NOTES:

[1] NYSDEC Water Quality Standards and Guidance Values, T.O.G.S. 1.1.1 (June 1998).
[2] The groundwater standard for the sum of Iron and Manganese concentrations is 500 mg/L.
[3] Sample analyzed for "Baseline Parameters".
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Values in **BOLD** indicate an exceedance of applicable water quality standards or guidance values.

TABLE 2 (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER QUALITY MONITORING RESULTS
ANALYTICAL RESULTS

	ARARs [1]	UNITS	WELL 3-OS/I				WELL 3-R			
			Jul-02	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]	Jul-02	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]
Leachate Indicator Parameters:										
Alkalinity	---	mg/L	NA	275	326	NA	NA	212	167	NA
Chemical Oxygen Demand	---	mg/L	NA	15	20	NA	NA	10	15	NA
Total Hardness	---	mg/L	NA	298	315	NA	NA	214	209	NA
Total Kjeldhal Nitrogen	---	mg/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA
TAL Metals:										
Aluminum	---	ug/L	NA	NA	2740	NA	NA	NA	1150	NA
Antimony	3	ug/L	NA	**25.4 B,N**	**77.6**	NA	NA	**5.5 B,N**	5 U	NA
Arsenic	25	ug/L	NA	2.6 U	5.4 B	NA	NA	2.6 U	2.4 U	NA
Barium	1000	ug/L	NA	NA	139 B	NA	NA	NA	38.6 B	NA
Beryllium	3	ug/L	NA	NA	0.2 U	NA	NA	NA	0.2 U	NA
Cadmium	5	ug/L	NA	0.48 U	1.2 B	NA	NA	0.48 U	0.3 U	NA
Calcium	---	ug/L	NA	NA	101000	NA	NA	NA	54000	NA
Chromium	50	ug/L	NA	**1400 E**	**4250**	NA	NA	31.2 E	**86.8**	NA
Cobalt	---	ug/L	NA	NA	24.5 B	NA	NA	NA	5 B	NA
Copper	200	ug/L	NA	31.6	59.9	NA	NA	8.8 B	5.3 B	NA
Iron	300 [2]	ug/L	NA	**30800 E**	**31800**	NA	NA	**13300 E**	**4830**	NA
Lead	25	ug/L	NA	3.9 B,N	6.7	NA	NA	4.2 B,N	2.2 U	NA
Magnesium	35000 GV	ug/L	NA	NA	15400	NA	NA	NA	18000	NA
Manganese	300 [2]	ug/L	NA	**13400 E**	**24800**	NA	NA	**19400 E**	**12100**	NA
Mercury	0.7	ug/L	NA	0.2 U	0.2 U	NA	NA	0.2 U	0.2 U	NA
Nickel	100	ug/L	NA	NA	**932**	NA	NA	NA	5.1 B	NA
Potassium	---	ug/L	NA	NA	5310 E	NA	NA	NA	2410 BE	NA
Selenium	10	ug/L	NA	NA	1.4 UW	NA	NA	NA	1.4 UW	NA
Silver	50	ug/L	NA	NA	39.5	NA	NA	NA	2.6 U	NA
Sodium	20000	ug/L	NA	NA	**31500**	NA	NA	NA	**38000**	NA
Thallium	0.5 GV	ug/L	NA	NA	3.5 U	NA	NA	NA	3.5 U	NA
Vanadium	---	ug/L	NA	NA	5.9 B	NA	NA	NA	1.9 B	NA
Zinc	2000 GV	ug/L	NA	17.8 U	35.2	NA	NA	17.8 U	2.8 U	NA
VOCs by EPA Method 601:										
Chlorobenzene	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroform	7	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,4-Dichlorobenzene	3	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Dichlorodifluoromethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,1-Dichloroethane	5	ug/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA
1,1,1-Trichloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Vinyl Chloride	5	ug/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA
VOCs by EPA Method 602:										
Benzene	1	ug/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA
Chlorobenzene	5	ug/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA

NOTES:

[1] NYSDEC Water Quality Standards and Guidance Values, T.O.G.S. 1.1.1 (June 1998).
[2] The groundwater standard for the sum of Iron and Manganese concentrations is 500 mg/L.
[3] Sample analyzed for "Baseline Parameters".
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TABLE 2 (Continued)

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POST-CLOSURE GROUNDWATER QUALITY MONITORING RESULTS
ANALYTICAL RESULTS

	ARARs [1]	UNITS	WELL 4-OS				WELL 4-R			
			Jul-02	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]	Jul-02	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]
Leachate Indicator Parameters:										
Alkalinity	---	mg/L	NA	131	36.7	NA	NA	145	147	NA
Chemical Oxygen Demand	---	mg/L	NA	10 U	10 U	NA	NA	10 U	10 U	NA
Total Hardness	---	mg/L	NA	194	81.8	NA	NA	178	183	NA
Total Kjeldhal Nitrogen	---	mg/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA
TAL Metals:										
Aluminum	---	ug/L	NA	NA	6950	NA	NA	NA	255	NA
Antimony	3	ug/L	NA	5.3 U,N	5 U	NA	NA	5.3 U,N	5 U	NA
Arsenic	25	ug/L	NA	7.5 B	4 B	NA	NA	2.6 U	4.4 B	NA
Barium	1000	ug/L	NA	NA	72.5 B	NA	NA	NA	11.4 B	NA
Beryllium	3	ug/L	NA	NA	0.38 B	NA	NA	NA	0.2 U	NA
Cadmium	5	ug/L	NA	0.48 U	0.33 B	NA	NA	0.48 U	0.3 U	NA
Calcium	---	ug/L	NA	NA	17800	NA	NA	NA	46100	NA
Chromium	50	ug/L	NA	35 E	17.9	NA	NA	1.3 B,E	0.8 U	NA
Cobalt	---	ug/L	NA	NA	12.3 B	NA	NA	NA	6.1 B	NA
Copper	200	ug/L	NA	45.4	17.6 B	NA	NA	6.9 U	3.1 B	NA
Iron	300 [2]	ug/L	NA	**32800 E**	**14100**	NA	NA	**4520 E**	**6250**	NA
Lead	25	ug/L	NA	7.1 N	2.6 B	NA	NA	2.9 U,N	2.3 B	NA
Magnesium	35000 GV	ug/L	NA	NA	9080	NA	NA	NA	16400	NA
Manganese	300 [2]	ug/L	NA	**3790 E**	**620**	NA	NA	**953 E**	**1180**	NA
Mercury	0.7	ug/L	NA	0.2 U	0.2 U	NA	NA	0.2 U	0.2 U	NA
Nickel	100	ug/L	NA	NA	14.8 B	NA	NA	NA	1.9 U	NA
Potassium	---	ug/L	NA	NA	3610 BE	NA	NA	NA	1730 BE	NA
Selenium	10	ug/L	NA	NA	1.4 U	NA	NA	NA	1.4 U	NA
Silver	50	ug/L	NA	NA	2.6 U	NA	NA	NA	2.6 U	NA
Sodium	20000	ug/L	NA	NA	**26200**	NA	NA	NA	12900	NA
Thallium	0.5 GV	ug/L	NA	NA	3.5 U	NA	NA	NA	3.5 U	NA
Vanadium	---	ug/L	NA	NA	15.3 B	NA	NA	NA	1.7 U	NA
Zinc	2000 GV	ug/L	NA	64.4	51.9	NA	NA	17.8 U	2.8 U	NA
VOCs by EPA Method 601:										
Chlorobenzene	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroform	7	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,4-Dichlorobenzene	3	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Dichlorodifluoromethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,1-Dichloroethane	5	ug/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA
1,1,1-Trichloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Vinyl Chloride	5	ug/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA
VOCs by EPA Method 602:										
Benzene	1	ug/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA
Chlorobenzene	5	ug/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA

NOTES:

[1] NYSDEC Water Quality Standards and Guidance Values, T.O.G.S. 1.1.1 (June 1998).
[2] The groundwater standard for the sum of Iron and Manganese concentrations is 500 mg/L.
[3] Sample analyzed for "Baseline Parameters".
[4] Sample analyzed for "Routine" and "Site-Related Parameters".
[5] Well protective casing was found to be damaged, which prevented access to the well.
[Dup] Duplicate sample collected and greatest values reported in this Table.

NA Denotes Not Analyzed
U Denotes that the compound was analyzed for but not detected at the detection limit listed.
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J Indicates an estimated value for tentatively identified compounds.
B The reported value is less than the Contract Required Detection Limit (CRDL), but greater than the Instrument Detection Limit.
E Indicates an estimated value because of the possible presence of interference.
W Indicates an estimated value because of the possible presence of interference.
N Spiked sample recovery not within control limits

Values in **BOLD** indicate an exceedance of applicable water quality standards or guidance values.

TABLE 2 (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER QUALITY MONITORING RESULTS
ANALYTICAL RESULTS

	ARARs [1]	UNITS	WELL 5-OS				WELL 5-I			
			Jul-02	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]	Jul-02	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]
Leachate Indicator Parameters:										
Alkalinity	---	mg/L	NA	NA	NA	NA	NA	46.5	40.8	NA
Chemical Oxygen Demand	---	mg/L	NA	NA	NA	NA	NA	10 U	10 U	NA
Total Hardness	---	mg/L	NA	NA	NA	NA	NA	41.9	43	NA
Total Kjeldhal Nitrogen	---	mg/L	NA	NA	NA	NA	NA	1 U	1 U	NA
TAL Metals:										
Aluminum	---	ug/L	NA	NA	NA	NA	NA	NA	1350	NA
Antimony	3	ug/L	NA	NA	NA	NA	NA	5.3 U,N	5 U	NA
Arsenic	25	ug/L	NA	NA	NA	NA	NA	2.6 U	2.4 U	NA
Barium	1000	ug/L	NA	NA	NA	NA	NA	NA	11.2 B	NA
Beryllium	3	ug/L	NA	NA	NA	NA	NA	NA	0.2 U	NA
Cadmium	5	ug/L	NA	NA	NA	NA	NA	0.48 U	0.3 U	NA
Calcium	---	ug/L	NA	NA	NA	NA	NA	NA	8060	NA
Chromium	50	ug/L	NA	NA	NA	NA	NA	1.2 B,E	5.6 B	NA
Cobalt	---	ug/L	NA	NA	NA	NA	NA	NA	4 B	NA
Copper	200	ug/L	NA	NA	NA	NA	NA	6.9 U	4.2 B	NA
Iron	300 [2]	ug/L	NA	NA	NA	NA	NA	60.7 E	**1910**	NA
Lead	25	ug/L	NA	NA	NA	NA	NA	2.9 U,N	2.2 U	NA
Magnesium	35000 GV	ug/L	NA	NA	NA	NA	NA	NA	5570	NA
Manganese	300 [2]	ug/L	NA	NA	NA	NA	NA	3.7 B,E	63.6	NA
Mercury	0.7	ug/L	NA	NA	NA	NA	NA	0.2 U	0.2 U	NA
Nickel	100	ug/L	NA	NA	NA	NA	NA	NA	2.7 B	NA
Potassium	---	ug/L	NA	NA	NA	NA	NA	NA	1080 BE	NA
Selenium	10	ug/L	NA	NA	NA	NA	NA	NA	1.4 U	NA
Silver	50	ug/L	NA	NA	NA	NA	NA	NA	2.6 U	NA
Sodium	20000	ug/L	NA	NA	NA	NA	NA	NA	4540 B	NA
Thallium	0.5 GV	ug/L	NA	NA	NA	NA	NA	NA	**4.1 B**	NA
Vanadium	---	ug/L	NA	NA	NA	NA	NA	NA	3.7 B	NA
Zinc	2000 GV	ug/L	NA	NA	NA	NA	NA	17.8 U	2.8 U	NA
VOCs by EPA Method 601:										
Chlorobenzene	5	ug/L	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	5	ug/L	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	7	ug/L	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	3	ug/L	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	5	ug/L	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	5	ug/L	NA	NA	NA	NA	NA	1 U	NA	NA
1,1,1-Trichloroethane	5	ug/L	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	5	ug/L	NA	NA	NA	NA	NA	1 U	NA	NA
VOCs by EPA Method 602:										
Benzene	1	ug/L	NA	NA	NA	NA	NA	1 U	NA	NA
Chlorobenzene	5	ug/L	NA	NA	NA	NA	NA	1 U	NA	NA

NOTES:

[1] NYSDEC Water Quality Standards and Guidance Values, T.O.G.S. 1.1.1 (June 1998).
[2] The groundwater standard for the sum of Iron and Manganese concentrations is 500 mg/L.
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Values in **BOLD** indicate an exceedance of applicable water quality standards or guidance values.

TABLE 2 (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER QUALITY MONITORING RESULTS
ANALYTICAL RESULTS

	ARARs [1]	UNITS	WELL 5-R				WELL 7-OS			
			Jul-02	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]	Jul-02	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]
Leachate Indicator Parameters:										
Alkalinity	---	mg/L	NA	44.4	44.9	NA	NA	105	110	NA
Chemical Oxygen Demand	---	mg/L	NA	10 U	10 U	NA	NA	15	10	NA
Total Hardness	---	mg/L	NA	54.5	48.1	NA	NA	172	138	NA
Total Kjeldhal Nitrogen	---	mg/L	NA	1 U	1 U	NA	NA	1.47	1 U	NA
TAL Metals:										
Aluminum	---	ug/L	NA	NA	1110	NA	NA	NA	1240	NA
Antimony	3	ug/L	NA	5.3 U,N	5 U	NA	NA	5.3 U,N	5 U	NA
Arsenic	25	ug/L	NA	2.6 U	2.4 U	NA	NA	5.2 B	2.4 U	NA
Barium	1000	ug/L	NA	NA	15.4 B	NA	NA	NA	42.1 B	NA
Beryllium	3	ug/L	NA	NA	0.2 U	NA	NA	NA	0.2 U	NA
Cadmium	5	ug/L	NA	0.48 U	0.3 U	NA	NA	0.48 U	0.3 U	NA
Calcium	---	ug/L	NA	NA	11500	NA	NA	NA	41700	NA
Chromium	50	ug/L	NA	9.9 B,E	5.6 B	NA	NA	**108 E**	36	NA
Cobalt	---	ug/L	NA	NA	3.1 B	NA	NA	NA	3.8 B	NA
Copper	200	ug/L	NA	6.9 U	5.6 B	NA	NA	39.5	4.4 B	NA
Iron	300 [2]	ug/L	NA	**1230 E**	**1760**	NA	NA	**21200 E**	**1850**	NA
Lead	25	ug/L	NA	2.9 U,N	2.2 U	NA	NA	7.2 N	2.2 U	NA
Magnesium	35000 GV	ug/L	NA	NA	4740 B	NA	NA	NA	8230	NA
Manganese	300 [2]	ug/L	NA	21.7 E	29.5	NA	NA	**1730 E**	124	NA
Mercury	0.7	ug/L	NA	0.2 U	0.2 U	NA	NA	0.2 U	0.2 U	NA
Nickel	100	ug/L	NA	NA	2.1 B	NA	NA	NA	3.5 B	NA
Potassium	---	ug/L	NA	NA	1030 B	NA	NA	NA	7440 E	NA
Selenium	10	ug/L	NA	NA	1.4 UW	NA	NA	NA	1.4 U	NA
Silver	50	ug/L	NA	NA	2.6 U	NA	NA	NA	2.6 U	NA
Sodium	20000	ug/L	NA	NA	4190 B	NA	NA	NA	13100	NA
Thallium	0.5 GV	ug/L	NA	NA	3.5 U	NA	NA	NA	3.5 U	NA
Vanadium	---	ug/L	NA	NA	5.3 B	NA	NA	NA	2.5 B	NA
Zinc	2000 GV	ug/L	NA	17.8 U	2.8 U	NA	NA	53.5	2.8 U	NA
VOCs by EPA Method 601:										
Chlorobenzene	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroform	7	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,4-Dichlorobenzene	3	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Dichlorodifluoromethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,1-Dichloroethane	5	ug/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA
1,1,1-Trichloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Vinyl Chloride	5	ug/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA
VOCs by EPA Method 602:										
Benzene	1	ug/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA
Chlorobenzene	5	ug/L	NA	1 U	1 U	NA	NA	1 U	1 U	NA

NOTES:

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TABLE 2 (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER QUALITY MONITORING RESULTS
ANALYTICAL RESULTS

	ARARs [1]	UNITS	WELL 7-R				WELL 8-OS			
			Jul-02	Oct-02 [5]	Apr-03 [5]	Jul-03 [4]	Jul-02 [4]	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]
Leachate Indicator Parameters:										
Alkalinity	---	mg/L	NA	NA	NA	NA	64.6	26.3	20.4	33
Chemical Oxygen Demand	---	mg/L	NA	NA	NA	NA	10 U	10	10 U*	10 U
Total Hardness	---	mg/L	NA	NA	NA	NA	82.9	77.3	58.9	28.9
Total Kjeldhal Nitrogen	---	mg/L	NA	NA	NA	NA	1.3	1.01	1 U	1 U
TAL Metals:										
Aluminum	---	ug/L	NA	NA	NA	NA	NA	NA	149 B	NA
Antimony	3	ug/L	NA	NA	NA	NA	5.3 U	5.3 U,N	5 U	5.5 U
Arsenic	25	ug/L	NA	NA	NA	NA	3.9 B	2.6 U	2.4 U	2.4 U
Barium	1000	ug/L	NA	NA	NA	NA	NA	NA	15.8 B	NA
Beryllium	3	ug/L	NA	NA	NA	NA	NA	NA	0.2 U	NA
Cadmium	5	ug/L	NA	NA	NA	NA	0.48 U	0.48 U	0.3 U	0.3 U
Calcium	---	ug/L	NA	NA	NA	NA	NA	NA	16400	NA
Chromium	50	ug/L	NA	NA	NA	NA	5.7 B	33.8 E	10.4	20.2
Cobalt	---	ug/L	NA	NA	NA	NA	NA	NA	4.4 B	NA
Copper	200	ug/L	NA	NA	NA	NA	6.9 U,*	12.9 B	3 B	10.1 B
Iron	300 [2]	ug/L	NA	NA	NA	NA	**3540 ***	**6600 E**	**2490**	**2480**
Lead	25	ug/L	NA	NA	NA	NA	2.9 U	2.9 U,N	2.2 U	2.2 U
Magnesium	35000 GV	ug/L	NA	NA	NA	NA	NA	NA	4390 B	NA
Manganese	300 [2]	ug/L	NA	NA	NA	NA	**3390**	**6950 E**	**894**	**760**
Mercury	0.7	ug/L	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	100	ug/L	NA	NA	NA	NA	NA	NA	6.8 B	NA
Potassium	---	ug/L	NA	NA	NA	NA	NA	NA	1300 BE	NA
Selenium	10	ug/L	NA	NA	NA	NA	NA	NA	1.4 U	NA
Silver	50	ug/L	NA	NA	NA	NA	NA	NA	2.6 U	NA
Sodium	20000	ug/L	NA	NA	NA	NA	NA	NA	10900	NA
Thallium	0.5 GV	ug/L	NA	NA	NA	NA	NA	NA	3.5 U	NA
Vanadium	---	ug/L	NA	NA	NA	NA	NA	NA	1.7 U	NA
Zinc	2000 GV	ug/L	NA	NA	NA	NA	17.8 U	24.5	2.8 U	5.9 B
VOCs by EPA Method 601:										
Chlorobenzene	5	ug/L	NA	NA	NA	NA	NA	NA	1 U	NA
Chloroethane	5	ug/L	NA	NA	NA	NA	NA	NA	1 U	NA
Chloroform	7	ug/L	NA	NA	NA	NA	NA	NA	1 U	NA
1,4-Dichlorobenzene	3	ug/L	NA	NA	NA	NA	NA	NA	1 U	NA
Dichlorodifluoromethane	5	ug/L	NA	NA	NA	NA	NA	NA	1 U	NA
1,1-Dichloroethane	5	ug/L	NA	NA	NA	NA	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5	ug/L	NA	NA	NA	NA	NA	NA	1 U	NA
Vinyl Chloride	5	ug/L	NA	NA	NA	NA	1 U	1 U	1 U	1 U
VOCs by EPA Method 602:										
Benzene	1	ug/L	NA	NA	NA	NA	1 U	1 U	1 U	1 U
Chlorobenzene	5	ug/L	NA	NA	NA	NA	1 U	1 U	1 U	1 U

NOTES:

[1] NYSDEC Water Quality Standards and Guidance Values, T.O.G.S. 1.1.1 (June 1998).
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TABLE 2 (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER QUALITY MONITORING RESULTS
ANALYTICAL RESULTS

	ARARs [1]	UNITS	WELL 8-I				WELL 8-R			
			Jul-02 [4]	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]	Jul-02 [4]	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]
Leachate Indicator Parameters:										
Alkalinity	---	mg/L	190	97	269	222	503	497	526	458
Chemical Oxygen Demand	---	mg/L	10	10	25	26.9	25	25	30 *	24.1
Total Hardness	---	mg/L	131	110	224 *	168	538	551	584	568
Total Kjeldhal Nitrogen	---	mg/L	20.2	5.09	21	18.6	5.6	3.08	5.03	3.46
TAL Metals:										
Aluminum	---	ug/L	NA	NA	6820	NA	NA	NA	54.2 B	NA
Antimony	3	ug/L	5.3 U	5.3 U,N	5 U	**7.5 B**	5.3 U	**6.3 B,N**	5 U	8 B
Arsenic	25	ug/L	10.2	5.2 B	7.5 B	7.8 B	2.7 B	2.6 U	2.4 U	2.4 U
Barium	1000	ug/L	NA	NA	94.7 B	NA	NA	NA	27.1 B	NA
Beryllium	3	ug/L	NA	NA	0.41 B	NA	NA	NA	0.2 U	NA
Cadmium	5	ug/L	0.48 U	0.48 U	0.55 B	0.3 U	0.48 U	0.48 U	0.3 U	0.3 U
Calcium	---	ug/L	NA	NA	58800	NA	NA	NA	169000	NA
Chromium	50	ug/L	9.5 B	9.5 B,E	15.5	8.8 B	1.7 B	6.1 B,E	0.8 U	15.2
Cobalt	---	ug/L	NA	NA	11.7 B	NA	NA	NA	14.3 B	NA
Copper	200	ug/L	15.8 B,*	14.1 B	18.6 B	9.4 B	8.1 B,*	22 B	4.6 B	30
Iron	300 [2]	ug/L	**16700 ***	**17600 E**	**21400**	**12500**	**1580 ***	**1490 E**	**969**	**2440**
Lead	25	ug/L	2.9 U	2.9 U,N	3.5 B	3.6	2.9 U	2.9 U,N	3 B	6.1
Magnesium	35000 GV	ug/L	NA	NA	18900	NA	NA	NA	**39500**	NA
Manganese	300 [2]	ug/L	**2390**	**2980 E**	**3140**	**2540**	**2160**	**1980 E**	**2050**	**2190**
Mercury	0.7	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	100	ug/L	NA	NA	14.3 B	NA	NA	NA	15 B	NA
Potassium	---	ug/L	NA	NA	27300 E	NA	NA	NA	10100 E	NA
Selenium	10	ug/L	NA	NA	2 BW	NA	NA	NA	1.4 U	NA
Silver	50	ug/L	NA	NA	2.6 U	NA	NA	NA	2.6 U	NA
Sodium	20000	ug/L	NA	NA	**46500**	NA	NA	NA	**52200**	NA
Thallium	0.5 GV	ug/L	NA	NA	3.5 U	NA	NA	NA	3.5 U	NA
Vanadium	---	ug/L	NA	NA	13.8 B	NA	NA	NA	1.7 U	NA
Zinc	2000 GV	ug/L	20.1	21.8	17.6 B	73.1	17.8 U	17.8 U	2.8 U	2.9 U
VOCs by EPA Method 601:										
Chlorobenzene	5	ug/L	NA	NA	0.8 J	NA	NA	NA	1 U	NA
Chloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroform	7	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,4-Dichlorobenzene	3	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Dichlorodifluoromethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,1-Dichloroethane	5	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Vinyl Chloride	5	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
VOCs by EPA Method 602:										
Benzene	1	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	5	ug/L	0.87 J	1 U	0.66 J	0.6 J	1 U	1 U	1 U	1 U

NOTES:

[1] NYSDEC Water Quality Standards and Guidance Values, T.O.G.S. 1.1.1 (June 1998).
[2] The groundwater standard for the sum of Iron and Manganese concentrations is 500 mg/L.
[3] Sample analyzed for "Baseline Parameters".
[4] Sample analyzed for "Routine" and "Site-Related Parameters".
[5] Well protective casing was found to be damaged, which prevented access to the well.
[Dup] Duplicate sample collected and greatest values reported in this Table.

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N Spiked sample recovery not within control limits

Values in **BOLD** indicate an exceedance of applicable water quality standards or guidance values.

TABLE 2 (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER QUALITY MONITORING RESULTS
ANALYTICAL RESULTS

	ARARs [1]	UNITS	WELL 9-OS				WELL 9-I			
			Jul-02 [4]	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]	Jul-02 [4]	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]
Leachate Indicator Parameters:										
Alkalinity	---	mg/L	17.2	18.2	16.3	24.5	14.1	20.2	12.2	22.4
Chemical Oxygen Demand	---	mg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total Hardness	---	mg/L	31.6	34.3	25	19.2	45.3	42.6	36.2	29.9
Total Kjeldhal Nitrogen	---	mg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TAL Metals:										
Aluminum	---	ug/L	NA	NA	968	NA	NA	NA	2120	NA
Antimony	3	ug/L	5.3 U	5.3 U,N	5 U	5.5 U	5.3 U	5.3 U,N	5 U	5.5 U
Arsenic	25	ug/L	2.6 U	2.6 U	2.4 U	2.4 U	2.6 U	2.6 U	2.4 U	2.7 B
Barium	1000	ug/L	NA	NA	13.3 B	NA	NA	NA	27.1 B	NA
Beryllium	3	ug/L	NA	NA	0.2 U	NA	NA	NA	0.2 U	NA
Cadmium	5	ug/L	0.48 U	0.48 U	0.3 U	0.3 U	0.48 U	0.48 U	0.3 U	0.3 U
Calcium	---	ug/L	NA	NA	6730	NA	NA	NA	9670	NA
Chromium	50	ug/L	5.2 B	9.7 B,E	19.2	2.1 B	3.8 B	0.83 U,E	4.2 B	9.5 B
Cobalt	---	ug/L	NA	NA	2.5 B	NA	NA	NA	2.6 B	NA
Copper	200	ug/L	6.9 U,*	6.9 U	2.8 U	3.2 B	6.9 U,*	6.9 U	5.3 B	10.4 B
Iron	300 [2]	ug/L	**789 ***	**500 E**	**1600**	288	**3290 ***	39.9 B,E	**3710**	**7250**
Lead	25	ug/L	2.9 U	2.9 U,N	2.2 U	2.2 U	2.9 U	2.9 U,N	2.2 U	2.8 B
Magnesium	35000 GV	ug/L	NA	NA	1990 B	NA	NA	NA	2940 B	NA
Manganese	300 [2]	ug/L	19	10.5 E	35.6	7.9 B	75.8	4.1 B,E	52.3	115
Mercury	0.7	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	100	ug/L	NA	NA	1.9 U	NA	NA	NA	2.7 B	NA
Potassium	---	ug/L	NA	NA	1050 BE	NA	NA	NA	1370 BE	NA
Selenium	10	ug/L	NA	NA	1.4 U	NA	NA	NA	1.4 U	NA
Silver	50	ug/L	NA	NA	2.6 U	NA	NA	NA	2.6 U	NA
Sodium	20000	ug/L	NA	NA	4530 B	NA	NA	NA	5830	NA
Thallium	0.5 GV	ug/L	NA	NA	3.5 U	NA	NA	NA	3.5 U	NA
Vanadium	---	ug/L	NA	NA	2.1 B	NA	NA	NA	3.7 B	NA
Zinc	2000 GV	ug/L	17.8 U	17.8 U	2.8 U	79.3	17.8 U	17.8 U	2.8 U	62.4
VOCs by EPA Method 601:										
Chlorobenzene	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroform	7	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,4-Dichlorobenzene	3	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Dichlorodifluoromethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,1-Dichloroethane	5	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Vinyl Chloride	5	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
VOCs by EPA Method 602:										
Benzene	1	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	5	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

NOTES:

[1] NYSDEC Water Quality Standards and Guidance Values, T.O.G.S. 1.1.1 (June 1998).
[2] The groundwater standard for the sum of Iron and Manganese concentrations is 500 mg/L.
[3] Sample analyzed for "Baseline Parameters".
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Values in **BOLD** indicate an exceedance of applicable water quality standards or guidance values.

TABLE 2 (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER QUALITY MONITORING RESULTS
ANALYTICAL RESULTS

	ARARs [1]	UNITS	WELL 9-R			
			Jul-02 [4] [Dup]	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]
Leachate Indicator Parameters:						
Alkalinity	---	mg/L	113	80.8	110	85.2
Chemical Oxygen Demand	---	mg/L	15	10 U	10	10 U
Total Hardness	---	mg/L	94.6	99.3	87.5	85
Total Kjeldhal Nitrogen	---	mg/L	7.6	7.15	6.46	6.27
TAL Metals:						
Aluminum	---	ug/L	NA	NA	35.8 B	NA
Antimony	3	ug/L	5.3 U	5.3 U,N	5 U	**9.7 B**
Arsenic	25	ug/L	5.5 B	2.6 U	3.7 B	2.4 B
Barium	1000	ug/L	NA	NA	20.2 B	NA
Beryllium	3	ug/L	NA	NA	0.2 U	NA
Cadmium	5	ug/L	0.48 U	0.48 U	0.3 U	0.3 U
Calcium	---	ug/L	NA	NA	22700	NA
Chromium	50	ug/L	0.83 U	0.83 U,E	0.8 U	1.5 B
Cobalt	---	ug/L	NA	NA	4.1 B	NA
Copper	200	ug/L	6.9 U,*	6.9 U	2.8 U	9.9 B
Iron	300 [2]	ug/L	**7110 ***	**6140 E**	**5720**	**5610**
Lead	25	ug/L	2.9 U	2.9 U,N	2.2 U	3.4
Magnesium	35000 GV	ug/L	NA	NA	7460	NA
Manganese	300 [2]	ug/L	**2740**	**2880 E**	**2630**	**2550**
Mercury	0.7	ug/L	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	100	ug/L	NA	NA	1.9 U	NA
Potassium	---	ug/L	NA	NA	10800 E	NA
Selenium	10	ug/L	NA	NA	1.4 U	NA
Silver	50	ug/L	NA	NA	2.6 U	NA
Sodium	20000	ug/L	NA	NA	**20600**	NA
Thallium	0.5 GV	ug/L	NA	NA	3.5 U	NA
Vanadium	---	ug/L	NA	NA	1.7 U	NA
Zinc	2000 GV	ug/L	17.8 U	17.8 U	2.8 U	2.9 U
VOCs by EPA Method 601:						
Chlorobenzene	5	ug/L	NA	NA	1 U	NA
Chloroethane	5	ug/L	NA	NA	1 U	NA
Chloroform	7	ug/L	NA	NA	1 U	NA
1,4-Dichlorobenzene	3	ug/L	NA	NA	1 U	NA
Dichlorodifluoromethane	5	ug/L	NA	NA	1 U	NA
1,1-Dichloroethane	5	ug/L	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5	ug/L	NA	NA	1 U	NA
Vinyl Chloride	5	ug/L	1 U	1 U	1 U	1 U
VOCs by EPA Method 602:						
Benzene	1	ug/L	1 U	1 U	1 U	1 U
Chlorobenzene	5	ug/L	1 U	1 U	1 U	1 U

NOTES:
[1] NYSDEC Water Quality Standards and Guidance Values, T.O.G.S. 1.1.1 (June 1998).
[2] The groundwater standard for the sum of Iron and Manganese concentrations is 500 mg/L.
[3] Sample analyzed for "Baseline Parameters".
[4] Sample analyzed for "Routine" and "Site-Related Parameters".
[5] Well protective casing was found to be damaged, which prevented access to the well.
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Values in **BOLD** indicate an exceedance of applicable water quality standards or guidance values.

TABLE 2 (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER QUALITY MONITORING RESULTS
ANALYTICAL RESULTS

	ARARs [1]	UNITS	WELL PW-1				WELL PW-2			
			Jul-02 [4]	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]	Jul-02 [4]	Oct-02 [4]	Apr-03 [3]	Jul-03 [4] [Dup]
Leachate Indicator Parameters:										
Alkalinity	---	mg/L	27.3	16.2	16.3	20.2	80.8	80.8	75.5	72.4
Chemical Oxygen Demand	---	mg/L	10 U	10	10 U	10 U	10	10	10 U	10 U
Total Hardness	---	mg/L	47.5	54.2	49.7	36.7	110	115	96	103
Total Kjeldhal Nitrogen	---	mg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TAL Metals:										
Aluminum	---	ug/L	NA	NA	15.8 U	NA	NA	NA	15.8 U	NA
Antimony	3	ug/L	5.3 U	5.3 U,N	5 U	5.5 U	5.3 U	5.3 U,N	**9.3 B**	**10.1 B**
Arsenic	25	ug/L	2.6 U	2.6 U	2.4 U	2.4 U	2.6 U	2.6 U	2.7 B	2.4 U
Barium	1000	ug/L	NA	NA	9 B	NA	NA	NA	2 B	NA
Beryllium	3	ug/L	NA	NA	0.2 U	NA	NA	NA	0.25 B	NA
Cadmium	5	ug/L	0.48 U	0.48 U	0.3 U	0.3 U	0.48 U	0.48 U	0.3 U	0.3 U
Calcium	---	ug/L	NA	NA	13400	NA	NA	NA	31800	NA
Chromium	50	ug/L	0.83 U	0.83 U,E	0.8 U	1.6 B	0.83 U	0.83 U,E	0.8 U	2.2 B
Cobalt	---	ug/L	NA	NA	2 U	NA	NA	NA	2 U	NA
Copper	200	ug/L	121 *	50.6	58.7	106	13 B,*	18.4 B	13.9 B	13.8 B
Iron	300 [2]	ug/L	7.5 B,*	23.5 B,E	9.3 B	47 U	17.3 B,*	32.7 B,E	25.1 B	47 U
Lead	25	ug/L	2.9 U	3.5 B,N	5.2	3.6	2.9 U	2.9 U,N	2.3 B	2.6 B
Magnesium	35000 GV	ug/L	NA	NA	3960 B	NA	NA	NA	4000 B	NA
Manganese	300 [2]	ug/L	1.9 U	2.1 B,E	0.8 U	1.2 B	6.9 B	3.3 B,E	3.9 B	2.7 B
Mercury	0.7	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	100	ug/L	NA	NA	1.9 U	NA	NA	NA	1.9 U	NA
Potassium	---	ug/L	NA	NA	1250 BE	NA	NA	NA	1220 BE	NA
Selenium	10	ug/L	NA	NA	1.4 U	NA	NA	NA	1.4 U	NA
Silver	50	ug/L	NA	NA	2.6 U	NA	NA	NA	2.6 U	NA
Sodium	20000	ug/L	NA	NA	8690	NA	NA	NA	9000	NA
Thallium	0.5 GV	ug/L	NA	NA	**4.1 B**	NA	NA	NA	3.5 U	NA
Vanadium	---	ug/L	NA	NA	1.7 U	NA	NA	NA	1.7 U	NA
Zinc	2000 GV	ug/L	17.8 U	20.4	2.8 U	35	17.8 U	17.8 U	2.8 U	3.7 B
VOCs by EPA Method 601:										
Chlorobenzene	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroform	7	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,4-Dichlorobenzene	3	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Dichlorodifluoromethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,1-Dichloroethane	5	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Vinyl Chloride	5	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
VOCs by EPA Method 602:										
Benzene	1	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	5	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

NOTES:

[1] NYSDEC Water Quality Standards and Guidance Values, T.O.G.S. 1.1.1 (June 1998).
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TABLE 2 (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER QUALITY MONITORING RESULTS
ANALYTICAL RESULTS

	ARARs [1]	UNITS	SVWC-93				SVWC-94			
			Aug-02 [4]	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]	Aug-02 [4]	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]
Leachate Indicator Parameters:										
Alkalinity	---	mg/L	51	54.5	30.6	38.3	53	48.5	44.9	40.5
Chemical Oxygen Demand	---	mg/L	10.3 *	10 U	10 U	10 U	10.3 *	10	10 U	10 U
Total Hardness	---	mg/L	76.8	82.5	67.6	63.8	73.7	102	78.2	59.7
Total Kjeldhal Nitrogen	---	mg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TAL Metals:										
Aluminum	---	ug/L	NA	NA	15.8 U	NA	NA	NA	15.8 U	NA
Antimony	3	ug/L	**8.1 B**	**17.2 B,N**	5 U	5.5 U	5.3 U	**5.5 B,N**	5 U	5.5 U
Arsenic	25	ug/L	2.6 U	2.6 U	2.4 U	2.4 U	2.6 U	2.6 U	2.4 U	2.4 U
Barium	1000	ug/L	NA	NA	7.6 B	NA	NA	NA	11.7 B	NA
Beryllium	3	ug/L	NA	NA	0.2 U	NA	NA	NA	0.2 U	NA
Cadmium	5	ug/L	0.48 U	0.48 U	0.3 U	0.3 U	2.4 B	0.48 U	0.3 U	0.3 U
Calcium	---	ug/L	NA	NA	18800	NA	NA	NA	21600	NA
Chromium	50	ug/L	0.83 U	0.83 U	0.8 U	1.4 B	0.83 U	0.83 U	0.8 U	1.5 B
Cobalt	---	ug/L	NA	NA	2 U	NA	NA	NA	2 U	NA
Copper	200	ug/L	6.9 U	6.9 U	6.4 B	5.4 B	6.9 U	6.9 U	4.4 B	9 B
Iron	300 [2]	ug/L	18.5 B	**939 E**	23.9 B	247	6.6 U	52.9 B,E	19.6 B	47 U
Lead	25	ug/L	2.9 U	2.9 U,N	2.2 U	2.2 U	2.9 U	2.9 U,N	2.2 U	2.2 U
Magnesium	35000 GV	ug/L	NA	NA	5060	NA	NA	NA	5890	NA
Manganese	300 [2]	ug/L	1.9 U	7.4 B	0.8 U	0.94 B	4.6 B	1.9 U	6.1 B	1.7 B
Mercury	0.7	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	100	ug/L	NA	NA	1.9 U	NA	NA	NA	1.9 U	NA
Potassium	---	ug/L	NA	NA	1810 BE	NA	NA	NA	1790 BE	NA
Selenium	10	ug/L	NA	NA	1.4 U	NA	NA	NA	1.4 U	NA
Silver	50	ug/L	NA	NA	2.6 U	NA	NA	NA	2.6 U	NA
Sodium	20000	ug/L	NA	NA	**39800**	NA	NA	NA	**43000**	NA
Thallium	0.5 GV	ug/L	NA	NA	3.5 U	NA	NA	NA	3.5 U	NA
Vanadium	---	ug/L	NA	NA	1.7 U	NA	NA	NA	1.7 U	NA
Zinc	2000 GV	ug/L	17.8 U	17.8 U	2.8 U	2.9 U	17.8 U	17.8 U	2.8 U	9.9 B
VOCs by EPA Method 601:										
Chlorobenzene	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroform	7	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,4-Dichlorobenzene	3	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Dichlorodifluoromethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,1-Dichloroethane	5	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Vinyl Chloride	5	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
VOCs by EPA Method 602:										
Benzene	1	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	5	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

NOTES:

[1] NYSDEC Water Quality Standards and Guidance Values, T.O.G.S. 1.1.1 (June 1998).
[2] The groundwater standard for the sum of Iron and Manganese concentrations is 500 mg/L.
[3] Sample analyzed for "Baseline Parameters".
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TABLE 2 (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER QUALITY MONITORING RESULTS
ANALYTICAL RESULTS

	ARARs [1]	UNITS	SVWC-95				SVWC-96			
			Aug-02 [4]	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]	Aug-02 [4]	Oct-02 [4]	Apr-03 [3]	Jul-03 [4]
Leachate Indicator Parameters:										
Alkalinity	---	mg/L	59.2	54.5	44.9	51.1	53	52.5	49	46.9
Chemical Oxygen Demand	---	mg/L	10 U,*	10	10 U	10 U	10 U,*	10	10	10 U
Total Hardness	---	mg/L	77.4	97.1	66.8	71.7	93.3	76.8	67.7	80.8
Total Kjeldhal Nitrogen	---	mg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TAL Metals:										
Aluminum	---	ug/L	NA	NA	15.8 U	NA	NA	NA	15.8 U	NA
Antimony	3	ug/L	5.3 U	5.3 U,N	5 U	5.5 U	5.3 U	5.3 U,N	5 U	**7.1 B**
Arsenic	25	ug/L	2.6 U	2.6 U	2.4 U	2.4 U	2.6 U	2.6 U	2.4 U	2.4 U
Barium	1000	ug/L	NA	NA	8.7 B	NA	NA	NA	8.2 B	NA
Beryllium	3	ug/L	NA	NA	0.2 U	NA	NA	NA	0.2 U	NA
Cadmium	5	ug/L	0.48 U	0.48 U	0.3 U	0.3 U	0.48 U	0.48 U	0.3 U	0.3 U
Calcium	---	ug/L	NA	NA	18000	NA	NA	NA	18100	NA
Chromium	50	ug/L	0.83 U	0.83 U	0.8 U	1.5 B	0.83 U	0.83 U	0.8 U	1 B
Cobalt	---	ug/L	NA	NA	2 U	NA	NA	NA	2 U	NA
Copper	200	ug/L	6.9 U	7.9 B	4 B	5.2 B	6.9 U	6.9 U	3.6 B	7.7 B
Iron	300 [2]	ug/L	8.8 B	91.4 E	56.1 B	47 U	6.6 U	11.2 B,E	7 B	47 U
Lead	25	ug/L	2.9 U	2.9 U,N	2.2 U	2.2 U	2.9 U	2.9 U,N	2.2 U	2.2 U
Magnesium	35000 GV	ug/L	NA	NA	5300	NA	NA	NA	5480	NA
Manganese	300 [2]	ug/L	77.4	61.7	80	86.5	1.9 U	3.4 B	0.8 U	0.6 U
Mercury	0.7	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	100	ug/L	NA	NA	2.9 B	NA	NA	NA	1.9 U	NA
Potassium	---	ug/L	NA	NA	1740 BE	NA	NA	NA	1680 BE	NA
Selenium	10	ug/L	NA	NA	1.4 U	NA	NA	NA	1.4 U	NA
Silver	50	ug/L	NA	NA	2.6 U	NA	NA	NA	2.6 U	NA
Sodium	20000	ug/L	NA	NA	**34700**	NA	NA	NA	4040	NA
Thallium	0.5 GV	ug/L	NA	NA	3.5 U	NA	NA	NA	3.5 U	NA
Vanadium	---	ug/L	NA	NA	1.7 U	NA	NA	NA	1.7 U	NA
Zinc	2000 GV	ug/L	17.8 U	17.8 U	2.8 U	12 B	17.8 U	17.8 U	2.8 U	8.8 B
VOCs by EPA Method 601:										
Chlorobenzene	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroform	7	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,4-Dichlorobenzene	3	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Dichlorodifluoromethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
1,1-Dichloroethane	5	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5	ug/L	NA	NA	1 U	NA	NA	NA	1 U	NA
Vinyl Chloride	5	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
VOCs by EPA Method 602:										
Benzene	1	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	5	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

NOTES:

[1] NYSDEC Water Quality Standards and Guidance Values, T.O.G.S. 1.1.1 (June 1998).
[2] The groundwater standard for the sum of Iron and Manganese concentrations is 500 mg/L.
[3] Sample analyzed for "Baseline Parameters".
[4] Sample analyzed for "Routine" and "Site-Related Parameters".
[5] Well protective casing was found to be damaged, which prevented access to the well.
[Dup] Duplicate sample collected and greatest values reported in this Table.

NA Denotes Not Analyzed
U Denotes that the compound was analyzed for but not detected at the detection limit listed.
* Indicates that the duplicate analysis was not within laboratory control limits.
J Indicates an estimated value for tentatively identified compounds.
B The reported value is less than the Contract Required Detection Limit (CRDL), but greater than the Instrument Detection Limit.
E Indicates an estimated value because of the possible presence of interference.
W Indicates an estimated value because of the possible presence of interference.
N Spiked sample recovery not within control limits

Values in **BOLD** indicate an exceedance of applicable water quality standards or guidance values.

TABLE 3A

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER MONITORING DATA
COMPOUND: Benzene

Sample ID	Sample Date															
	Jan-90	Sep-90	Jan-93	Apr-93	Sep-93	Dec-93	Mar-94	Jun-94	Sep-94	Dec-94	Mar-95	Jun-95	Sep-95	Dec-95	Mar-96	Jun-96
1-OS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA
1-R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
2-OS	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA
2-R	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA
3-OS/I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA
3-R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA
4-OS	ND	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA
4-R	1.0	1.0	ND	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
5-OS	**2.0**	ND	ND	ND	NA	NA	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA
5-I	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA	ND	NA	NA
5-R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA
7-OS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	ND	ND	NA
7-R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA
8-OS	**2.0**	0.3	ND	ND	ND	ND	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**	ND	ND	ND	**1.2**	1.0	**2.0**
8-R	**3.0**	0.4	ND	0.9	ND	ND	ND	ND	ND	ND	**2.0**	0.9	ND	0.65	ND	ND
9-OS	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND
9-I	NA	0.2	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9-R	NA	0.9	ND	ND	ND	NA	ND	ND	ND	1.0	ND	ND	ND	ND	ND	ND
PW-1	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PW-2	NA	NA	ND	ND	ND	NA	NA	NA	ND	ND	NA	0.5	ND	ND	ND	ND
SVWC-93	NA	NA	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVWC-94	NA	NA	ND	ND	NA	NA	ND	ND	ND	1.0	ND	ND	ND	ND	ND	ND
SVWC-95	NA	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVWC-96	NA	NA	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES: Concentrations reported in µg/L (ppb).
ND = Not Detected
NA = Not Analyzed
Values in **BOLD** indicate an exceedance of groundwater quality standard for Benzene, 1.0 µg/L.

TABLE 3A (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER MONITORING DATA
COMPOUND: Benzene

Sample ID	Sample Date															
	Sep-96	Dec-96	Mar-97	Jun-97	Sep-97	Dec-97	Mar-98	Jun-98	Sep-98	Mar-99	Jun-99	Sep-99	May-00	Sep-00	Dec-00	Mar-01
1-OS	ND	NA	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND
1-R	ND	NA	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND
2-OS	NA	NA	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND
2-R	ND	NA	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND
3-OS/I	ND	NA	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND
3-R	ND	NA	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND
4-OS	ND	NA	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND
4-R	ND	NA	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND
5-OS	NA	NA	ND	NA	NA	NA	NA	NA	NA	ND	NA	ND	ND	NA	ND	ND
5-I	ND	NA	NA	NA	ND	NA	ND	NA	ND	NA	NA	ND	NA	NA	NA	NA
5-R	ND	NA	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND
7-OS	ND	NA	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND
7-R	ND	NA	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND
8-OS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8-I	**2.0**	**3.0**	ND	ND	**2.0**	ND	ND	ND	ND	NA	ND	ND	0.5 J	ND	ND	ND
8-R	ND	ND	ND	ND	ND	**2.0**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9-OS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9-I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9-R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PW-1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PW-2	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVWC-93	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
SVWC-94	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
SVWC-95	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
SVWC-96	ND	NA	NA	ND	ND	ND	ND	NA	ND	NA	ND	NA	ND	ND	ND	ND

NOTES: Concentrations reported in µg/L (ppb).
ND = Not Detected
NA = Not Analyzed
Values in **BOLD** indicate an exceedance of groundwater quality standard for Benzene, 1.0 µg/L.

TABLE 3A (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER MONITORING DATA
COMPOUND: Benzene

Sample ID	Sample Date						
	Jul-01	Oct-01	Mar-02	Jul-02	Oct-02	Apr-03	Jul-03
1-OS	NA	ND	ND	NA	ND	NA	NA
1-R	NA	ND	ND	NA	ND	ND	NA
2-OS	NA	ND	ND	NA	ND	ND	NA
2-R	NA	ND	ND	NA	ND	ND	NA
3-OS/I	NA	ND	ND	NA	ND	ND	NA
3-R	NA	ND	ND	NA	ND	ND	NA
4-OS	NA	ND	ND	NA	ND	ND	NA
4-R	NA	ND	ND	NA	ND	ND	NA
5-OS	NA	NA	NA	NA	NA	ND	NA
5-I	NA	ND	ND	NA	ND	NA	NA
5-R	NA	ND	ND	NA	ND	ND	NA
7-OS	NA	ND	ND	NA	ND	ND	NA
7-R	NA	ND	ND	NA	NA	NA	NA
8-OS	ND	ND	ND	ND	ND	ND	ND
8-I	ND	ND	ND	ND	ND	ND	ND
8-R	ND	ND	ND	ND	ND	ND	ND
9-OS	ND	ND	ND	ND	ND	ND	ND
9-I	ND	ND	ND	ND	ND	ND	ND
9-R	ND	ND	ND	ND	ND	ND	ND
PW-1	ND	ND	ND	ND	ND	ND	ND
PW-2	ND	ND	ND	ND	ND	ND	ND
SVWC-93	ND	NA	ND	ND	ND	ND	ND
SVWC-94	ND	NA	ND	ND	ND	ND	ND
SVWC-95	ND	NA	ND	ND	ND	ND	ND
SVWC-96	ND	NA	ND	ND	ND	ND	ND

NOTES: Concentrations reported in µg/L (ppb).
ND = Not Detected
NA = Not Analyzed
Values in **BOLD** indicate an exceedance of groundwater quality standard for Benzene, 1.0 µg/L.

TABLE 3B

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER MONITORING DATA
COMPOUND: Chromium

Sample ID	Sample Date															
	Jan-90	Sep-90	Jan-93	Apr-93	Sep-93	Dec-93	Mar-94	Jun-94	Sep-94	Dec-94	Mar-95	Jun-95	Sep-95	Dec-95	Mar-96	Jun-96
1-OS	**153**	**57.3**	8	ND	**60**	**257**	**65.5**	7.2	**284**	**134**	**727**	17	**102**	**70.5**	**127**	NA
1-R	39.7	17.5	ND	ND	**84.9**	46.8	10.3	ND	39.3	**58.3**	**146**	49.5	**136**	42.8	**133**	NA
2-OS	**180**	**141**	NA	ND	**50.2**	**95.9**	11.8	**89.3**	45.9	25.1	39.7	34.1	**137**	**50.3**	**83.6**	NA
2-R	16.1	5.5	NA	ND	14.8	6.1	ND	5.1	8.3	4.9	4.4	ND	5	5.7	ND	NA
3-OS/I	**587**	**1290**	**807**	40.4	**1350**	**1100**	**784**	**304**	**561**	**1020**	**144**	**406**	**589**	**253**	**372**	NA
3-R	28	11.4	ND	ND	ND	14.7	10.5	17.8	4.8	4.9	3.6	2	10.3	7	ND	NA
4-OS	**139**	40.1	5.8	ND	10.8	11.2	15.1	25.4	23.1	**53.1**	21.1	ND	38.8	12.2	11	NA
4-R	35.5	13.1	ND	8.8	ND	5.9	4.4	ND	13.3	2	2.5	ND	9	5.8	ND	NA
5-OS	**90**	35.6	48.8	ND	NA	NA	NA	NA	NA	NA	NA	39	NA	NA	**216**	NA
5-I	NA	NA	NA	NA	NA	**80**	30.2	7.2	40	**63.1**	**109**	NA	17.4	22.4	NA	NA
5-R	27.4	29.3	6.8	ND	ND	8.6	13.8	6.3	**52.3**	**105**	19.9	7.9	22.9	27.9	10.1	NA
7-OS	33.5	40.1	24.2	13	**1890**	**218**	31	**210**	**571**	**258**	**324**	NA	NA	37	**125**	NA
7-R	16.2	16.8	ND	ND	ND	ND	ND	5.3	8.6	3.4	2.8	12.4	13.4	9.2	ND	NA
8-OS	34.8	16.7	ND	ND	ND	7.6	**86.6**	28.7	13.2	4.2	**129**	40.4	13.9	7.2	**62.2**	35.8
8-I	**215**	32.5	NA	ND	ND	ND	29	17	12.8	8.4	8	3.4	24.1	29.2	12.3	26.2
8-R	20	23.1	9.9	ND	17.7	18.2	7.5	17	10.4	6.8	6.3	10.1	13.4	8.5	6.7	23.8
9-OS	NA	6.8	ND	ND	ND	ND	22.9	27.1	14.8	2.9	6.6	7.6	NA	NA	9.8	11.2
9-I	NA	8.1	NA	NA	NA	NA	28	ND	2.4	5.8	3.9	8	34.6	25.3	8.1	11.4
9-R	NA	8.8	3.9	16.4	16.7	11.6	35.4	48.2	29.9	10.5	16.9	26.5	**66.7**	45.4	43.8	12.8
PW-1	NA	ND	ND	ND	ND	ND	ND	ND	0.6	ND	0.8	ND	ND	ND	ND	ND
PW-2	NA	ND	ND	ND	ND	4.9	NA	ND	ND	ND	NA	ND	ND	ND	ND	0.94
SVWC-93	NA	NA	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND
SVWC-94	NA	NA	ND	ND	NA	NA	ND	ND	ND	0.97	ND	ND	NA	ND	ND	ND
SVWC-95	NA	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND
SVWC-96	NA	NA	ND	ND	NA	ND	ND	ND	ND	0.87	ND	1.7	NA	ND	ND	ND

NOTES: Concentrations reported in µg/L (ppb).
ND = Not Detected
NA = Not Analyzed
Values in **BOLD** indicate an exceedance of groundwater quality standard for Chromium, 50 µg/L.

TABLE 3B (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER MONITORING DATA
COMPOUND: Chromium

Sample ID	Sample Date															
	Sep-96	Dec-96	Mar-97	Jun-97	Sep-97	Dec-97	Mar-98	Jun-98	Sep-98	Mar-99	Jun-99	Sep-99	May-00	Sep-00	Dec-00	Mar-01
1-OS	**102**	NA	**88**	NA	**220**	NA	**1180**	NA	**52.1**	**496**	NA	**1850**	**2100**	NA	**405**	**253**
1-R	**176**	NA	**200**	NA	ND	NA	37.1	NA	41.7	39.8	NA	**73.4**	**58.6**	NA	9.8	**119**
2-OS	NA	NA	ND	NA	ND	NA	**241**	NA	**121**	13.6	NA	**285**	**415**	NA	**120**	**128**
2-R	20.7	NA	**160**	NA	**50**	NA	**53.5**	NA	**59.6**	**75.6**	NA	ND	4	NA	4.7	ND
3-OS/I	29.7	NA	25	NA	**190**	NA	**433**	NA	**804**	**270**	NA	**321**	**687**	NA	453	**522**
3-R	24.2	NA	27	NA	ND	NA	20.7	NA	12.8	**73**	NA	**75.7**	**51.2**	NA	**213**	**124**
4-OS	6.2	NA	ND	NA	ND	NA	34.7	NA	8.6	2.2	NA	**87.7**	36.8	NA	17.9	13.2
4-R	1.8	NA	ND	NA	ND	NA	2.7	NA	7.7	0.78	NA	ND	ND	NA	ND	ND
5-OS	NA	NA	19	NA	NA	NA	NA	NA	NA	15.3	NA	NA	**69.3**	NA	**165**	38.6
5-I	8	NA	NA	NA	ND	NA	2.3	NA	9.6	NA	NA	10.6	NA	NA	NA	NA
5-R	7.2	NA	10	NA	ND	NA	ND	NA	2.5	4.4	NA	2.7	14.7	NA	7.2	3.9
7-OS	4.4	NA	41	NA	**60**	NA	**188**	NA	**96.2**	48.1	NA	**59.2**	**200**	NA	34.7	**51.9**
7-R	3.4	NA	ND	NA	ND	NA	ND	NA	3.4	1.6	NA	ND	ND	NA	ND	ND
8-OS	15.9	20	ND	ND	ND	ND	4	9.6	4.5	**79.4**	20.2	31	30.1	16.9	8.8	25.8
8-I	17.4	**110**	17	10	ND	20	4.6	4.8	**55.6**	NA	**56.8**	ND	10	17.3	22.9	49.9
8-R	20.4	ND	ND	20	20	ND	ND	5.2	6.3	3.4	2	ND	1.1	2.2	3.6	7.7
9-OS	5.2	ND	ND	10	ND	ND	ND	2.3	0.64	9.8	1.1	ND	34.5	7.4	20.1	17
9-I	4.8	ND	ND	ND	ND	ND	1.7	8	2.8	1.7	6.8	ND	10.8	5.0	4.1	28.8
9-R	23.8	**90**	ND	20	ND	ND	15.2	1.9	23.4	8.5	15	47.3	3	1.6	2.4	4.1
PW-1	0.43	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.75	ND	ND	ND
PW-2	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.69	ND	ND	ND	ND	ND	ND
SVWC-93	0.89	ND	ND	ND	ND	ND	ND	ND	0.78	NA	ND	NA	ND	ND	1.4	ND
SVWC-94	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	ND	NA	0.53	ND	ND	ND
SVWC-95	ND	ND	ND	ND	ND	NA	ND	ND	0.96	NA	ND	NA	ND	ND	ND	ND
SVWC-96	1.3	NA	NA	ND	ND	ND	ND	NA	ND	NA	ND	NA	ND	ND	ND	ND

NOTES: Concentrations reported in µg/L (ppb).
ND = Not Detected
NA = Not Analyzed
Values in **BOLD** indicate an exceedance of groundwater quality standard for Chromium, 50 µg/L.

TABLE 3B (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER MONITORING DATA
COMPOUND: Chromium

Sample ID	Sample Date						
	Jul-01	Oct-01	Mar-02	Jul-02	Oct-02	Apr-03	Jul-03
1-OS	NA	20.6	**60.1**	NA	**386**	NA	NA
1-R	NA	47.1	10.2	NA	**82.9**	ND	NA
2-OS	NA	**87.1**	35.6	NA	**2040**	**89.8**	NA
2-R	NA	3.9	9.6	NA	4.6	4.8	NA
3-OS/I	NA	**467**	**257**	NA	**1400**	**4250**	NA
3-R	NA	12.7	33.5	NA	31.2	**86.8**	NA
4-OS	NA	4	8.7	NA	35	17.9	NA
4-R	NA	2.2	ND	NA	1.3	ND	NA
5-OS	NA	NA	NA	NA	NA	NA	NA
5-I	NA	3.3	10.5	NA	1.2	5.6	NA
5-R	NA	3.3	24.6	NA	9.9	5.6	NA
7-OS	NA	48.4	22.1	NA	**108**	4.4	NA
7-R	NA	2.3	ND	NA	NA	NA	NA
8-OS	6.55	20.6	16.4	5.7	33.8	10.4	20.2
8-I	19.9	2.3	4.8	9.5	9.5	15.5	8.8
8-R	5.56	3.9	1.2	1.7	6.1	ND	15.2
9-OS	ND	17.4	12.5	5.2	9.7	19.2	2.1
9-I	2.35	1.2	2.4	3.8	ND	4.2	9.5
9-R	1.12	1.9	ND	ND	ND	ND	1.5
PW-1	ND	1.2	ND	ND	ND	ND	1.6
PW-2	ND	1.8	ND	ND	ND	ND	2.2
SVWC-93	ND	NA	ND	ND	ND	ND	1.4
SVWC-94	ND	NA	ND	ND	ND	ND	1.5
SVWC-95	ND	NA	ND	ND	ND	ND	1.5
SVWC-96	ND	NA	ND	ND	ND	ND	1

NOTES: Concentrations reported in µg/L (ppb).
ND = Not Detected
NA = Not Analyzed
Values in **BOLD** indicate an exceedance of groundwater quality standard for Chromium, 50 µg/L.

TABLE 3C

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER MONITORING DATA
COMPOUND: Iron

Sample ID	Sample Date															
	Jan-90	Sep-90	Jan-93	Apr-93	Sep-93	Dec-93	Mar-94	Jun-94	Sep-94	Dec-94	Mar-95	Jun-95	Sep-95	Dec-95	Mar-96	Jun-96
1-OS	**45000**	**17500**	**1870**	**884**	**32300**	**162000**	**12200**	69.6	**4950**	**47700**	**5970**	**2820**	**27900**	**23400**	**21700**	NA
1-R	**1180**	**2650**	**395**	197	**1940**	**1210**	186	**70600**	**830**	**1710**	**1430**	**1080**	**2750**	**1050**	**3240**	NA
2-OS	**912**	**41800**	NA	186	**11800**	**9800**	**946**	**5080**	**14700**	**4120**	**1310**	**1730**	**24300**	**5660**	**1770**	NA
2-R	**409**	**602**	NA	**674**	**1120**	**1450**	187	83.1	248	**363**	259	**369**	**541**	**822**	189	NA
3-OS/I	**6830**	**9750**	**5110**	**333**	**21300**	**37900**	**19400**	**29900**	**14400**	**37500**	**54600**	**16600**	**31400**	**3710**	**7750**	NA
3-R	**1930**	**1370**	**11500**	**2940**	**3280**	**4800**	**1970**	**2090**	**2440**	**1730**	**1260**	**1450**	**3100**	**1330**	**1060**	NA
4-OS	**15600**	**12400**	**529**	**520**	**5560**	**10600**	**5720**	**17600**	**16900**	**15200**	**6110**	**3010**	**28600**	**7460**	**7470**	NA
4-R	**8230**	**5290**	**3520**	**4920**	**3100**	**5290**	**4790**	**4020**	**6850**	**5100**	**5650**	**5590**	**6320**	**4880**	**4910**	NA
5-OS	**27000**	**11200**	**11100**	**4700**	NA	NA	NA	NA	NA	NA	NA	**17100**	NA	NA	**60000**	NA
5-I	NA	NA	NA	NA	NA	**2030**	**2080**	**2380**	**8990**	**30700**	**56200**	NA	**2200**	**1870**	NA	NA
5-R	**658**	**368**	**620**	**2310**	**751**	243	**742**	71.2	**21400**	**64000**	**11300**	**2260**	**1620**	**1120**	**434**	NA
7-OS	**981**	**24500**	**1250**	**521**	**619000**	**2200**	**2340**	**15600**	**14500**	**14400**	**12200**	NA	NA	**1870**	**11400**	NA
7-R	ND	**1940**	31.5	56.6	**989**	**600**	**762**	226	**681**	270	**485**	**886**	**717**	**794**	**363**	NA
8-OS	**229000**	**43800**	**3230**	**2080**	**6180**	**12000**	**20300**	**6240**	**7490**	**6740**	**13500**	**5760**	**46900**	0.116	**4870**	**4370**
8-I	**15700**	**30500**	NA	ND	ND	ND	**22300**	**41200**	**24200**	**18200**	**24300**	**21100**	**32300**	**28500**	**27300**	**38700**
8-R	**1360**	**2940**	**11600**	**2590**	**9160**	**4710**	**2510**	**11100**	**22000**	**10200**	**24900**	**25700**	**26600**	**124000**	**18400**	**14300**
9-OS	NA	249	50.7	**1200**	**383**	**393**	**2210**	**1040**	**1020**	**1490**	**1340**	294	NA	NA	**2330**	**1350**
9-I	NA	145	NA	NA	NA	NA	**2040**	62.3	84	260	**788**	**468**	**4530**	**762**	232	**443**
9-R	NA	**20200**	**2680**	**8250**	**11500**	**10800**	**8850**	**19400**	**9110**	**2700**	**1080**	**2230**	**4080**	**1370**	**2060**	**2270**
PW-1	NA	64	186	130	**1260**	**916**	85.3	11.2	**561**	39.7	283	**400**	238	252	53.9	38.1
PW-2	NA	11	41.8	49.5	ND	22.7	NA	ND	53.5	13.6	NA	253	276	225	ND	ND
SVWC-93	NA	NA	32.6	10.6	NA	**553**	179	ND	17.2	20.7	19	154	NA	**585**	ND	ND
SVWC-94	NA	NA	40.3	19.1	NA	NA	49.4	ND	6.1	13.8	ND	143	NA	124	ND	ND
SVWC-95	NA	NA	51.7	74.4	ND	NA	45.5	ND	274	40.3	279	161	NA	148	ND	ND
SVWC-96	NA	NA	22.3	17.3	NA	22.6	14.9	ND	61.5	66.8	ND	173	NA	136	ND	ND

NOTES: Concentrations reported in µg/L (ppb).
ND = Not Detected
NA = Not Analyzed
Values in **BOLD** indicate an exceedance of groundwater quality standard for Iron, 300 µg/L.

TABLE 3C (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER MONITORING DATA
COMPOUND: Iron

Sample ID	Sample Date															
	Sep-96	Dec-96	Mar-97	Jun-97	Sep-97	Dec-97	Mar-98	Jun-98	Sep-98	Mar-99	Jun-99	Sep-99	May-00	Sep-00	Dec-00	Mar-01
1-OS	**48000**	NA	**19000**	NA	**49000**	NA	**62100**	NA	**3150**	**74400**	NA	**76200**	**40500**	NA	**43800**	**54100**
1-R	**1910**	NA	**1800**	NA	ND	NA	**1020**	NA	**561**	**897**	NA	**1420**	**867**	NA	**990**	**15700**
2-OS	NA	NA	140	NA	**900**	NA	**15100**	NA	**24900**	**536**	NA	**6910**	**32900**	NA	**32800**	**37700**
2-R	**6920**	NA	**1600**	NA	**800**	NA	**1700**	NA	**718**	**2110**	NA	**2640**	**1790**	NA	**1440**	**337**
3-OS/I	**303**	NA	**1500**	NA	**5400**	NA	**29800**	NA	**23600**	**1620**	NA	**1990**	**3310**	NA	**3620**	**5810**
3-R	**4200**	NA	**1500**	NA	**700**	NA	**1420**	NA	**1260**	**680**	NA	**8770**	**1610**	NA	**3020**	**4400**
4-OS	**1300**	NA	**2700**	NA	**600**	NA	**8490**	NA	**6840**	**1100**	NA	**50200**	**16300**	NA	**11300**	**7690**
4-R	**3970**	NA	**6800**	NA	**3300**	NA	**5310**	NA	**1850**	**5250**	NA	**7500**	**5900**	NA	**7240**	**4220**
5-OS	NA	NA	**8100**	NA	NA	NA	NA	NA	NA	**8180**	NA	NA	**41500**	NA	**101000**	**22800**
5-I	**2170**	NA	NA	NA	**600**	NA	**3150**	NA	**851**	NA	NA	**700**	NA	NA	NA	NA
5-R	197	NA	ND	NA	100	NA	210	NA	94.5	105	NA	40.4	**5000**	NA	**2370**	**826**
7-OS	**305**	NA	**9700**	NA	**9700**	NA	**36300**	NA	**21900**	**1950**	NA	**11300**	**4300**	NA	**12400**	**4170**
7-R	54.2	NA	ND	NA	ND	NA	112	NA	145	93.8	NA	ND	128	NA	**310**	213
8-OS	**997**	**2100**	ND	**1500**	**1800**	**2800**	**795**	**1820**	153	**1000**	**473**	**747**	**1200**	**8900**	**4450**	**6020**
8-I	**26400**	**80000**	**18000**	**26000**	**14000**	**15000**	**15700**	**6000**	**37200**	NA	**19100**	**4270**	**9870**	**22900**	**26400**	**47600**
8-R	**11700**	**2700**	**1400**	**5400**	**9200**	**12000**	**4880**	**4150**	**1940**	**2440**	**1140**	**5260**	**1180**	**2230**	**2580**	**2500**
9-OS	**1030**	**460**	**1400**	**6500**	200	**300**	0.105	**392**	126	**912**	**515**	198	**1880**	**2230**	**2640**	**3660**
9-I	80.5	100	ND	ND	ND	ND	113	**400**	91.3	86.4	**949**	ND	**2820**	**3920**	**2570**	**24000**
9-R	**1640**	**3200**	**13000**	**4700**	**7800**	**4600**	**5040**	**3660**	**3900**	**670**	**4360**	**3110**	**1340**	**9110**	**8280**	**8080**
PW-1	40.2	**30000**	ND	ND	ND	ND	ND	94.4	38.8	42.2	163	ND	18	ND	4.5	15.3
PW-2	ND	ND	ND	ND	ND	ND	27.7	36.9	22.2	35.3	114	ND	59.4	36.8	62	10.8
SVWC-93	ND	ND	ND	ND	ND	ND	26.4	253	50.2	NA	169	NA	8.8	4.2	36.5	62.4
SVWC-94	ND	ND	ND	ND	ND	NA	ND	90.9	ND	NA	83.1	NA	3.9	ND	20.5	22.2
SVWC-95	98.8	ND	ND	ND	ND	NA	ND	61	27	NA	90.1	NA	23.2	ND	14.4	24.9
SVWC-96	147	NA	NA	ND	ND	ND	ND	NA	289	NA	67.8	NA	4.6	ND	52.9	27.8

NOTES: Concentrations reported in µg/L (ppb).
ND = Not Detected
NA = Not Analyzed
Values in **BOLD** indicate an exceedance of groundwater quality standard for Iron, 300 µg/L.

TABLE 3C (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER MONITORING DATA
COMPOUND: Iron

Sample ID	Sample Date						
	Jul-01	Oct-01	Mar-02	Jul-02	Oct-02	Apr-03	Jul-03
1-OS	NA	**1110**	**35200**	NA	**127000**	NA	NA
1-R	NA	**6260**	**1330**	NA	**41600**	**374**	NA
2-OS	NA	**24500**	**10500**	NA	**48200**	**40700**	NA
2-R	NA	299	**6830**	NA	**1760**	**2550**	NA
3-OS/I	NA	**4090**	**1810**	NA	**30800**	**31800**	NA
3-R	NA	**1140**	**2020**	NA	**13300**	**4830**	NA
4-OS	NA	**1760**	**4310**	NA	**32800**	**14100**	NA
4-R	NA	**3850**	**3250**	NA	**4520**	**6250**	NA
5-OS	NA	NA	NA	NA	NA	NA	NA
5-I	NA	186	**5490**	NA	60.7	**1910**	NA
5-R	NA	96.4	**10300**	NA	**1230**	**1760**	NA
7-OS	NA	**10400**	**6790**	NA	**21200**	**1850**	NA
7-R	NA	22.2	72.9	NA	NA	NA	NA
8-OS	**2460**	**4600**	**3060**	**3540**	**6600**	**2490**	**2480.0**
8-I	**27600**	**6560**	**16700**	**16700**	**17600**	**21400**	**12500.0**
8-R	**1680**	**1770**	**2110**	**1580**	**1490**	**969**	**2440.0**
9-OS	ND	**3780**	**896**	**789**	**500**	**1600**	288.0
9-I	**2350**	**145**	**2000**	**3290**	39.9	**3710**	**7250.0**
9-R	**8320**	**8150**	**5980**	**7110**	**6140**	**5720**	**5610.0**
PW-1	**561**	**15.8**	8.2	7.5	23.5	9.3	47.0
PW-2	25.7	59.1	35.9	17.3	32.7	25.1	47.0
SVWC-93	29.1	NA	ND	18.5	939	23.9	247.0
SVWC-94	6.5	NA	11.1	ND	52.9	19.6	47.0
SVWC-95	103	NA	13	8.8	91.4	56.1	47.0
SVWC-96	19.3	NA	4.5	ND	11.2	7	47.0

NOTES: Concentrations reported in µg/L (ppb).
ND = Not Detected
NA = Not Analyzed
Values in **BOLD** indicate an exceedance of groundwater quality standard for Iron, 300 µg/L.

TABLE 3D

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER MONITORING DATA
COMPOUND: Manganese

Sample ID	Sample Date															
	Jan-90	Sep-90	Jan-93	Apr-93	Sep-93	Dec-93	Mar-94	Jun-94	Sep-94	Dec-94	Mar-95	Jun-95	Sep-95	Dec-95	Mar-96	Jun-96
1-OS	**3790**	**3700**	**809**	**1410**	**4010**	**5590**	**3510**	26.8	**5150**	**4770**	**2950**	**2010**	**4930**	**3130**	**2020**	NA
1-R	144	98.5	61.4	38.7	143	62	29.3	**6020**	67	97.6	96.9	153	219	137	120	NA
2-OS	298	**4770**	NA	27	**4850**	**1580**	92.5	**985**	**2450**	**827**	221	**982**	**5570**	**883**	280	NA
2-R	197	135	NA	118	126	116	99.5	91.1	92.9	88.8	94.8	70.2	143	85.5	93.8	NA
3-OS/I	**8700**	**18100**	**3450**	**1690**	**9590**	**8780**	**5640**	**10300**	**2240**	**5540**	**3590**	**3270**	**3860**	**6090**	**11900**	NA
3-R	**7230**	**12400**	**10700**	**12900**	**11000**	**12000**	**11800**	**112800**	**10600**	**11300**	**11900**	**10900**	**12400**	**9710**	**11100**	NA
4-OS	**4210**	**5020**	**547**	**506**	**2080**	**995**	**598**	**2850**	**3050**	**1130**	**602**	**2860**	**7080**	**682**	**636**	NA
4-R	**1730**	**1520**	**1660**	**1890**	**1160**	**1230**	**1460**	**1350**	**1210**	**1190**	**1430**	**1120**	**1120**	**1140**	**1536**	NA
5-OS	**981**	**530**	192	43.2	NA	NA	NA	NA	NA	NA	**1410**	NA	49.5	NA	**616**	NA
5-I	NA	NA	NA	NA	NA	52.8	40.6	215	221	**474**	NA	248	NA	53.6	NA	NA
5-R	22.3	9.3	9.6	21.9	11.4	8.2	9.6	2.5	232	**624**	116	21.6	28.6	11.9	7.1	NA
7-OS	**1240**	**3260**	48.3	46.1	**45100**	122	67.4	**1580**	**9820**	**992**	**1180**	NA	NA	56.8	**390**	NA
7-R	51.9	102	46.1	51.8	114	81.6	99.8	186	126	80.9	69.1	48.8	62.2	34.8	46.4	NA
8-OS	**2830**	**2750**	**1680**	**1640**	**3330**	**1910**	**4090**	**1790**	**3230**	**1840**	**2050**	**2690**	**1420**	**903**	**2460**	**3120**
8-I	**4230**	**1110**	NA	ND	ND	ND	**877**	**1180**	**692**	**862**	**1480**	**1110**	**2430**	**945**	**1860**	**3200**
8-R	**872**	181	**1660**	**2600**	**2440**	**2650**	**2220**	**1890**	**1740**	**1980**	**3290**	**1300**	**2500**	**2610**	**4040**	**3230**
9-OS	NA	14.6	ND	21.1	9.6	8.7	74.8	34.7	26.2	40.8	32.9	3.9	NA	NA	75.7	70.9
9-I	NA	**377**	NA	NA	NA	NA	40.6	3.2	21.7	9.8	40.5	10.9	129	15.9	5.2	13.1
9-R	NA	**3270**	**2320**	**2280**	**2540**	**1890**	**1660**	**1830**	**1650**	**1460**	**1590**	**1790**	**1810**	**1070**	**738**	**1840**
PW-1	NA	ND	1.2	1.8	ND	3.6	5.4	ND	5.1	15.3	18.1	5.2	83.1	57.7	83.7	25.7
PW-2	NA	ND	4.7	7.5	6.3	6.6	NA	2.4	8.7	6.1	NA	6.1	11.6	7.7	2.6	5
SVWC-93	NA	NA	ND	1.7	NA	72.2	ND	ND	2	0.37	9.6	0.95	NA	11.9	ND	3.4
SVWC-94	NA	NA	7.3	ND	NA	NA	6.3	ND	10.4	11.9	6.7	11.4	NA	ND	3.1	ND
SVWC-95	NA	NA	56.4	1.8	ND	NA	91.6	108	273	85.9	29	49.7	NA	22.1	47.4	67.4
SVWC-96	NA	NA	ND	ND	NA	ND	ND	ND	2.1	11.9	1.3	ND	NA	48	ND	ND

NOTES: Concentrations reported in µg/L (ppb).
ND = Not Detected
NA = Not Analyzed
Values in **BOLD** indicate an exceedance of groundwater quality standard for Manganese, 300 µg/L.

TABLE 3D (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER MONITORING DATA
COMPOUND: Manganese

Sample ID	Sample Date															
	Sep-96	Dec-96	Mar-97	Jun-97	Sep-97	Dec-97	Mar-98	Jun-98	Sep-98	Mar-99	Jun-99	Sep-99	May-00	Sep-00	Dec-00	Mar-01
1-OS	**4710**	NA	**2200**	NA	**5500**	NA	**4530**	NA	**1600**	**5600**	NA	**9830**	**5740**	NA	**5810**	**4940**
1-R	188	NA	200	NA	200	NA	**405**	NA	289	**332**	NA	**599**	236	NA	158	**2070**
2-OS	NA	NA	18	NA	**650**	NA	**1060**	NA	**3320**	69.6	NA	**936**	**4110**	NA	**3370**	**3450**
2-R	**653**	NA	150	NA	180	NA	248	NA	214	**356**	NA	**744**	**497**	NA	247	142
3-OS/I	**4880**	NA	**3000**	NA	**4500**	NA	**12100**	NA	**8880**	**948**	NA	**577**	**5720**	NA	**5070**	**3750**
3-R	**13900**	NA	**12000**	NA	**11000**	NA	**10400**	NA	**10900**	**12500**	NA	**15100**	**14200**	NA	**13100**	**10400**
4-OS	59.6	NA	140	NA	**940**	NA	**430**	NA	**1600**	220	NA	**1720**	**1340**	NA	**1930**	**440**
4-R	**1300**	NA	**1500**	NA	**810**	NA	**1410**	NA	**319**	**1100**	NA	**1180**	**1320**	NA	**1240**	**1040**
5-OS	NA	NA	NA	NA	20	NA	57.8	NA	18.7	NA	NA	27.2	**533**	NA	**1080**	**323**
5-I	77.7	NA	160	NA	NA	NA	NA	NA	NA	88.6	NA	NA	NA	NA	NA	NA
5-R	7.8	NA	ND	NA	ND	NA	5	NA	2.6	2.6	NA	1.2	69.3	NA	33	13.1 B
7-OS	43.1	NA	**1400**	NA	**550**	NA	**2480**	NA	**2190**	211	NA	**755**	**305**	NA	**1270**	**638**
7-R	66.7	NA	35	NA	110	NA	90.1	NA	168	157	NA	98.5	257	NA	**360**	**379**
8-OS	**679**	**2200**	**570**	**670**	**830**	**570**	124	**466**	**2640**	119	**1400**	**860**	**525**	**3820**	**2410**	**6760**
8-I	**2100**	**3100**	**1200**	**1800**	**910**	**840**	**937**	**692**	**1500**	NA	**1050**	**1570**	**789**	**2810**	**2560**	**3430**
8-R	**4310**	**3400**	**3500**	**3100**	**2000**	**1500**	**2130**	**2340**	**952**	NA	**1900**	**2780**	**2640**	**2390**	**2120**	**2250**
9-OS	43.3	20	49	170	ND	20	28	14.7	3.5	28.6	15.1	11.7	40.1	54.6	58.9	93.2
9-I	5.6	6	ND	ND	ND	ND	4.8	11.8	3.6	2.8	18	5.4	109	66.7	49.2	**561**
9-R	**1930**	**2200**	**2600**	**2400**	**2000**	**1500**	**1650**	**1150**	**1810**	**771**	**1620**	**1320**	**1500**	**3020**	**3100**	**2860**
PW-1	4.4	80	ND	ND	ND	ND	9.4	0.99	7	1.4	1.9	ND	0.81	0.74	1.4	13.6
PW-2	3.8	ND	ND	ND	ND	ND	9.1	5.1	0.61	6.6	6.6	ND	1.8	2.5	3.9	6
SVWC-93	2	ND	ND	ND	ND	ND	12.8	0.79	3.6	NA	2.5	NA	0.49	2.1	ND	2.2
SVWC-94	5.3	6	ND	ND	10	NA	8.1	5.8	7.6	NA	4.3	NA	3.6	7.1	9.6	4.7
SVWC-95	26.4	70	82	80	130	NA	58.6	64.4	21	NA	40.6	NA	40.4	49.7	47.5	49.8
SVWC-96	10.1	NA	NA	ND	ND	ND	ND	NA	22	NA	1.6	NA	ND	<0.70	ND	ND

NOTES: Concentrations reported in µg/L (ppb).
ND = Not Detected
NA = Not Analyzed
Values in **BOLD** indicate an exceedance of groundwater quality standard for Manganese, 300 µg/L.

TABLE 3D (Continued)

TOWN OF RAMAPO LANDFILL
POST-CLOSURE GROUNDWATER MONITORING DATA
COMPOUND: Manganese

Sample ID	Sample Date						
	Jul-01	Oct-01	Mar-02	Jul-02	Oct-02	Apr-03	Jul-03
1-OS	NA	**5310**	**6240**	NA	**8160**	NA	NA
1-R	NA	**909**	104	NA	**1650**	177	NA
2-OS	NA	**3830**	**2300**	NA	**6940**	**3100**	NA
2-R	NA	106	**616**	NA	**404**	157	NA
3-OS/I	NA	**2040**	**2800**	NA	**13400**	**24800**	NA
3-R	NA	**12700**	**9950**	NA	**19400**	**12100**	NA
4-OS	NA	**839**	**759**	NA	**3790**	**620**	NA
4-R	NA	**1070**	**1110**	NA	**953**	**1180**	NA
5-OS	NA	NA	NA	NA	NA	NA	NA
5-I	NA	2.7	132	NA	3.7	63.6	NA
5-R	NA	ND	154	NA	21.7	29.5	NA
7-OS	NA	**668**	**592**	NA	**1730**	124	NA
7-R	NA	**375**	292	NA	NA	NA	NA
8-OS	**5800**	**6340**	**1620**	**3390**	**6950**	**894**	**760.0**
8-I	**2990**	**1760**	**3670**	**2390**	**2980**	**3140**	**2540.0**
8-R	**2640**	**2060**	**1930**	**2160**	**1980**	**2050**	**2190.0**
9-OS	ND	77.6	24.7	19	10.5	35.6	7.9
9-I	38	4.9	44.6	75.8	4.1	52.3	115.0
9-R	**2960**	**3080**	**2490**	**2740**	**2880**	**2630**	**2550.0**
PW-1	4.35	ND	ND	ND	2.1	ND	1.2
PW-2	1.96	4.7	6	6.9	3.3	3.9	2.7
SVWC-93	ND	NA	ND	ND	7.4	ND	0.9
SVWC-94	2.67	NA	6.9	4.6	ND	6.1	1.7
SVWC-95	143	NA	68.2	77.4	61.7	80	86.5
SVWC-96	ND	NA	ND	ND	3.4	ND	0.6

NOTES: Concentrations reported in µg/L (ppb).
ND = Not Detected
NA = Not Analyzed
Values in **BOLD** indicate an exceedance of groundwater quality standard for Manganese, 300 µg/L.