



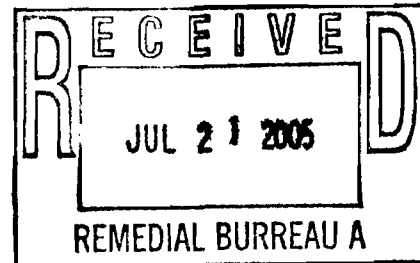
# TOWN OF HUNTINGTON

FRANK P. PETRONE, *Supervisor*

## ENVIRONMENTAL WASTE MANAGEMENT

July 19, 2005

Mr. John Strang, P. E.  
NYS Dept. of Environmental Conservation  
Division of Environmental Remediation  
Bureau of Hazardous Site Control, 11<sup>th</sup> Floor  
625 Broadway  
Albany, New York 12233-7014



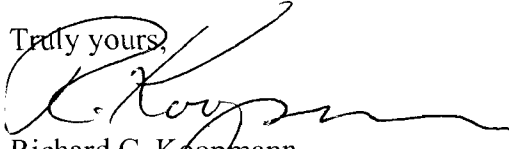
Re. Huntington/East Northport Landfill  
NYSDEC Site # 1-52-040

Dear John,

As required by the Record of Decision for the above referenced site, transmitted herewith please find a copy of the "Groundwater and Surface Water Monitoring Report" for the East Northport Landfill for the first half of 2005.

Please do not hesitate to call me if you have any questions or comments.

Truly yours,

  
Richard C. Koopmann  
Sr. Environmental Analyst

RCK:rk  
Encl. (1)

cc: M. Laux, Deputy Director, DEWM, w/encl.(1)  
J.J. Anastasia II, TOH, Director, DMS  
S. Farkas, NYSDEC, w/encl.(1)

**Groundwater and Surface Water  
Sampling & Analysis  
East Northport Landfill  
East Northport, New York  
April, 2005**

*Prepared for:*

**Town of Huntington Department of Environmental Waste Management  
100 Main Street  
Huntington, New York 11743**

*Prepared by:*

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**Section HA-1A**

Tabulated comparison of historical analytical results in order as follows: CW1-S, CW1-M, CW2-M, CW4-S, CW4-M, EN1-M, EN6-S, EN6-M, EN7-M, EN9-M, EN10-M, SW-1, SW-2, SW-3, SW-4, SW-5, SW-6, SW-7

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**Appendix**

Appendix 1. Laboratory Analytical Data	
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**Groundwater and Surface Water Sampling & Analysis  
East Northport Landfill  
East Northport, New York  
April, 2005**

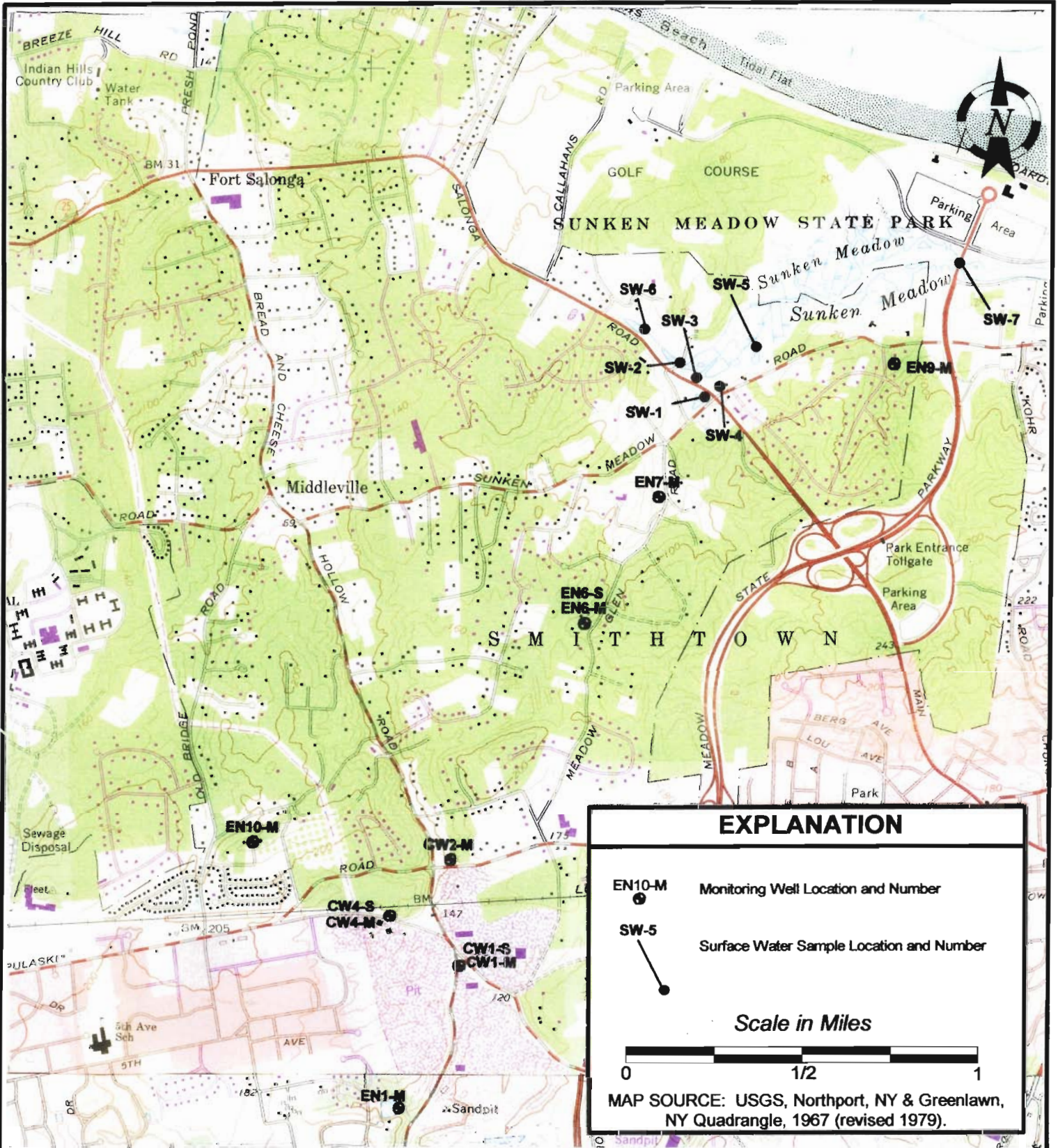
**Introduction**

Presented herein are the results of April, 2005 groundwater and surface water sampling and analyses performed as stipulated by the Record of Decision (ROD) for the East Northport Landfill Remedial Investigation/Feasibility Study. The ROD specifically requires the performance of "semi-annual sampling and analysis of eleven groundwater monitoring wells and seven surface water locations for leachate parameters." Figure 1 depicts the location of each groundwater and surface water sampling point. The scope-of-work performed each semi-annual event is presented below. A description of sampling methodology, quality assurance/quality control procedures, and a summary of analytical results follows.

**Scope-of-Work**

The scope-of-work includes performance of the following items:

- 1) sampling of groundwater monitoring wells CW1-S, CW1-M, CW2-M, CW4-S, CW4-M, EN1-M, EN6-S, EN6-M, EN7-M, EN9-M, EN10-M and surface water locations SW-1 through SW-7;
- 2) analyzing collected groundwater samples for *Volatile Organic Compounds* by EPA method 624 with TCL parameter list and ASP category B reporting of data; *Metals* (Aluminum, Arsenic, Chromium, Cadmium, Calcium, Iron, Lead, Magnesium, Mercury, Potassium, Sodium); and *Leachate Indicators* (Alkalinity/Bicarbonate, Ammonia, Nitrate, Chloride, TDS, Hardness, Sulfate);
- 3) analyzing collected surface water samples for *Volatile Organic Compounds* and *Leachate Indicators* (as above); and
- 4) measuring and recording appropriate field data including Temperature, pH, Specific Conductivity, Dissolved Oxygen, Salinity and Turbidity.



## Groundwater and Surface Water Sampling Locations

<b>East Northport Landfill Post Closure Water Sampling</b>	Prepared By: RDH	Date: May 1997
	Reviewed By: RNC	Figure: 1

## Sampling Methodology

Groundwater sampling methodology consists of evacuating a minimum of 3-5 casing volumes of water from each monitoring well - via a submersible centrifugal pump (Grundfos Redi-Flo2) with per-well dedicated tubing - prior to sample collection. During well-water purging activities, dissolved oxygen, specific conductivity, temperature, pH, salinity and turbidity are measured and recorded on a per-casing-volume basis.

Groundwater samples are collected following the stabilization of these values to within 10 %. The Grundfos Redi-Flo2 is cleaned internally and externally with an Alconox and water solution, followed by two fresh water rinses, between each sampling location.

Surface water sampling methodology includes submerging laboratory-provided containers at each sampling point and allowing water to flow smoothly into them. In addition, surface water samples are collected during a dry period (minimum of 3 days without precipitation prior to sampling) to minimize the influence of surface water runoff from adjacent land surfaces and roadways. Collected surface water samples, therefore, reflect stream base-flow and, for the most part, the quality of groundwater.

Groundwater samples from monitoring wells CW1-S, CW2-M, CW4-S, CW4-M, EN1-M, EN6-S, EN6-M, EN7-M and EN9-M were collected April 12, 2005. Groundwater samples from monitoring wells CW1-M and EN10-M, as well as all seven surface water samples, were collected April 13, 2005. Following the completion of sampling activities, collected samples were submitted under chain-of-custody control to New York State Department of Health certified Chemtech for chemical analysis. A copy of the original laboratory "Sample Data Summary Package" is presented in Appendix 1.

A summary of field data measured and recorded at all sampling locations is presented on Table 1. Data associated with groundwater monitoring well sampling points reflects the last value measured during purging activities.

## Quality Assurance/Quality Control

A narrative discussion (conformance/nonconformance summary) of QA/QC procedures practiced by Chemtech - which encompass instrument calibrations, analysis of method blanks, matrix spike blanks, and the percent-recovery of surrogates (system monitoring compounds) - is included in the above-mentioned "Sample Data Summary Package" presented in Appendix 1. Matrix spike/matrix spike duplicates (MS/MSD's) were collected to support both groundwater and surface water analyses. The MS/MSD samples were collected from monitoring well EN7-M and sampling location SW-3 for groundwater and surface water QA/QC purposes, respectively. Additionally, trip blanks representing groundwater (TB-GW) and surface water samples (TB-SW) were

**Table 1**  
**Summary of Field Data**  
**Measured April 12-13, 2005**  
**East Northport Landfill, East Northport, NY**

<b>Sampling Point</b>	<b>Dissolved Oxygen (mg/l)</b>	<b>Conductivity (umhos)</b>	<b>Temperature (°centigrade)</b>	<b>pH (units)</b>	<b>Salinity (‰)</b>	<b>Turbidity (ntu)</b>
CW1-S	1.60	525	21.9	7.17	0.0	4.86
CW1-M	1.30	410	22.1	6.90	0.0	1.07
CW2-M	2.60	318	14.1	6.46	0.0	0.43
CW4-S	6.10	48	16.1	7.22	0.0	1.40
CW4-M	6.30	256	14.5	6.61	0.0	0.80
EN1-M	6.50	306	11.7	6.31	0.0	0.54
EN6-S	7.10	275	12.3	5.57	0.0	0.07
EN6-M	2.60	775	12.2	6.31	0.0	0.06
EN7-M	2.40	600	10.8	6.46	0.0	0.02
EN9-M	4.50	407	10.5	6.54	0.0	0.25
EN10-M	2.40	205	13.9	6.06	0.0	32.90
SW-1	9.70	318	11.3	6.57	0.0	2.81
SW-2	10.40	407	13.3	6.84	0.0	4.36
SW-3	7.40	255	10.9	6.34	0.0	0.10
SW-4	7.80	346	11.1	6.55	0.0	1.99
SW-5	7.50	588	11.8	6.43	0.0	0.34
SW-6	10.60	725	13.3	6.95	0.0	3.59
SW-7	6.40	2000	12.2	6.72	0.5	12.30

analyzed for volatile organic compounds. A field blank (FB4-12), representative of groundwater sampling activities, was also analyzed for volatile organic compounds.

The accuracy of reported analytical results is assessed by way of analyzing "blind duplicates" collected from groundwater monitoring well CW1-M (identified as GW-B) and surface water sampling location SW-2 (identified as SW-B). Blind duplicate samples GW-B and SW-B were analyzed for all groundwater and surface water parameters, respectively.

### Summary of Analytical Results

#### *QA/QC Samples*

With the exception of methylene chloride - a typical "in house" laboratory analytical contaminant - detected in QA/QC samples TB-GW and FB4-12, targeted volatile organic compounds were not detected in either of the aforementioned trip blank or field blanks. Furthermore, analytical results relative to groundwater and surface water blind duplicates are comparable (see Tables 2, 2A, 3 and 3A). Subsequently, the results of groundwater and surface water analyses summarized below are considered valid.

#### *Groundwater*

A summary of analytical results relative to volatile organic compounds and metals/leachate indicators - including a comparison with New York State Department of Environmental Conservation (NYSDEC) Class GA drinking water standards - is presented on Table 2 and Table 2A, respectively.

As shown on Table 2, volatile organic compounds detected in excess of NYSDEC drinking water standards include *trichloroethene* (EN7-M), *benzene* (CW-1S), *tetrachloroethene* (EN7-M) and *1,4-dichlorobenzene* (EN7-M)

As shown on Table 2A, metals detected in excess of NYSDEC drinking water standards include *arsenic* (CW1-S, CW1-M), *iron* (CW1-S, CW1-M, CW4-S, EN10-M), *lead* (EN10-N), *magnesium* (EN7-M) and *sodium* (CW1-S, CW1-M, CW2-M, EN6-S, EN6-M, EN7-M, EN9-M). Leachate indicators detected in excess of NYSDEC drinking water standards include *ammonia* (CW1-S, CW1-M) and *chloride* (EN7-M).

#### *Surface Water*

A summary of analytical results relative to volatile organic compounds and leachate indicators - including a comparison with New York State Department of Environmental



Conservation (NYSDEC) Class GA drinking water standards - is presented on Table 3 and Table 3A, respectively.

As shown on Table 3, volatile organic compounds were not detected in any of the collected surface water samples above NYSDEC drinking water standards.

As shown on Table 3A, the sole leachate indicator detected in excess of its NYSDEC Class GA drinking water standard is *chloride* in surface water sample SW-7. As reported previously, an elevated concentration of chloride at this sampling point is attributed to the influence of saline surface water, insofar as surface water sample SW-7 is collected from within the tidal portion of Sunken Meadow Creek.

### *Historical Analysis*

Section HA-1A presents a tabulated comparison of historical analytical results for the period-of-record dating from June, 1996 to April, 2005 on a per sampling-point basis. A summary of inconsistencies with the most recent analyses, completed October, 2004, is presented below. With the exception of the below-listed inconsistencies, April, 2005 analytical results, as summarized above, continue to be consistent with past events (i.e., June, 1996, April & September, 1997, April & September, 1998, April & September, 1999, April & September, 2000, April & September, 2001, April & September, 2002, April & October, 2003, June & October, 2004).

### Groundwater

- \* The concentration of *benzene* increased in groundwater sampled from monitoring well CW1-S from non-detect (ND) to 1.6 micrograms per liter ( $\mu\text{g/l}$ ), a concentration above NYSDEC's drinking water standard of 1.0  $\mu\text{g/l}$ .
- \* The concentration of *tetrachloroethene* decreased in groundwater sampled from monitoring well EN6-M from 9.5  $\mu\text{g/l}$ , a concentration above NYSDEC's drinking water standard of 5.0  $\mu\text{g/l}$ , to 4.4  $\mu\text{g/l}$ .
- \* The concentration of *1,4-dichlorobenzene* increased in groundwater sampled from monitoring well EN7-M from 2.5  $\mu\text{g/l}$  to 3.6  $\mu\text{g/l}$ , a concentration above NYSDEC's drinking water standard of 3.0  $\mu\text{g/l}$ .
- \* The concentration of *arsenic* increased in groundwater sampled from monitoring wells CW1-S and CW1-M from ND to 64.2  $\mu\text{g/l}$  and 40.6  $\mu\text{g/l}$ , respectively, concentrations above NYSDEC's drinking water standard of 25.0  $\mu\text{g/l}$ .

\* The concentration of *iron* increased in groundwater sampled from monitoring wells CW1- M and CW4-S from 81.8 µg/l and 197.0, respectively, to 12,200.0 µg/l and 1,570.0 µg/l, respectively - concentrations above NYSDEC's drinking water standard of 300.0 µg/l. This constituent decreased in concentration in groundwater sampled from monitoring well EN6-S from 381.0 µg/l to 31.4 µg/l.

\* The concentration of *lead* increased in groundwater sampled from monitoring well EN10-M from 11.3 µg/l to 33.8 µg/l, a concentration above NYSDEC's drinking water standard of 25.0 µg/l.

\* The concentration of *sodium* increased in groundwater sampled from monitoring wells CW1-S and CW1-M from 5,850.0 µg/l, and 4,640.0.0 µg/l, respectively, to 263,000.0 and 66,400.0, respectively - concentrations above NYSDEC's drinking water standard of 20,000.0 µg/l.

#### Surface Water

No significant variations with the most recent (i.e., October, 2004) analyses are evident in any of the seven collected samples.



Table 2 continued

Contaminant	CW1-S	CW1-M	CW2-M	CW4-S	CW4-M	EN1-M	EN6-S	EN6-M	EN7-M	EN9-M	EN10-M	GW-B	TB-GW	FB4-12	NYSDEC Class GA Standard
Ethylbenzene	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	5.0
1,2-Dichlorobenzene	ND(0.67)	ND(0.67)	ND(0.67)	ND(0.67)	ND(0.67)	ND(0.67)	ND(0.67)	ND(0.67)	1.0 J	ND(0.67)	ND(0.67)	ND(0.67)	ND(0.67)	ND(0.67)	3.0
1,3-Dichlorobenzene	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	3.0
1,4-Dichlorobenzene	1.7 J	ND(0.79)	ND(0.79)	ND(0.79)	ND(0.79)	ND(0.79)	ND(0.79)	ND(0.79)	3.6 J	ND(0.79)	ND(0.79)	ND(0.79)	ND(0.79)	ND(0.79)	3.0

Note:

ND( ): Compound not detected at the method detection limit

NYSDEC Class GA Standards: New York State Department of Environmental Conservation Ambient Water Quality Standards for Source of Drinking Water Title 6 Part 703 (per June 1998 revision)

GV: NYSDEC Guidance Value for Source of Drinking Water

NS/GV: No NYSDEC Standard or Guidance Value Established

J: Indicates an estimated value; compound is present at a concentration less than specified detection limit

\*Standard of 0.4 applies to sum of cis and trans 1,3-Dichloropropene

**Table 2A**

**Summary of Analytical Results-Groundwater  
East Northport Landfill, East Northport, NY  
Sampled April 12-13, 2005**

Metals and Leachate Indicators

Reported in Micrograms per Liter (µg/l) and Milligrams per Liter (mg/l)

Metals (µg/l)	CW1-S	CW1-M	CW2-M	CW4-S	CW4-M	EN1-M	EN6-S	EN6-M	EN7-M	EN9-M	EN10-M	GW-B	NYSDEC Class GA Standard
Aluminum	18.2 J	43.7 J	35.8 J	154.0 J	39.4 J	19.4 J	16.2 J	56.1 J	9.62 J	20.4 J	1,910.00	33.5 J	NS/GV
Arsenic	<b>64.20</b>	<b>40.60</b>	ND(3.32)	ND(3.32)	ND(3.32)	ND(3.32)	ND(3.32)	ND(3.32)	ND(3.32)	ND(3.32)	ND(3.32)	<b>39.50</b>	25.0
Cadmium	ND(0.327)	ND(0.327)	ND(0.327)	2.700 J	ND(0.327)	ND(0.327)	ND(0.327)	ND(0.327)	ND(0.327)	ND(0.327)	ND(0.327)	ND(0.327)	5.0
Calcium	25,100.0	16,300.0	21,700.0	5,540.0	23,100.0	24,700.0	11,900.0	70,900.0	93,500.0	22,500.0	16,100.0	15,300.0	NS/GV
Chromium	2,480 J	ND(0.343)	ND(0.343)	11.10	2,420 J	0.905 J	2,740 J	0.545 J	ND(0.343)	ND(0.343)	4,910 J	1,540 J	50.0
Iron	<b>6,690.0</b>	<b>12,200.0</b>	234.0	<b>1,570.0</b>	40.2 J	41.2 J	31.4 J	154.0	ND(27.0)	37.1 J	<b>1,640.0</b>	<b>11,900.0</b>	300.0
Lead	ND(2.18)	ND(2.18)	ND(2.18)	17.20	ND(2.18)	ND(2.18)	ND(2.18)	ND(2.18)	ND(2.18)	ND(2.18)	<b>33.80</b>	ND(2.18)	25.0
Magnesium	25,600.0	12,500.0	7,890.0	229 J	9,380.0	9,450.0	5,620.0	20,000.0	<b>40,600.0</b>	10,500.0	6,080.00	12,100.0	35,000.0 GV
Mercury	0.07 J	0.07 J	0.04 J	0.04 J	0.04 J	0.06 J	0.09 J	0.09 J	0.09 J	0.07 J	0.07 J	0.07 J	0.7
Potassium	123,000.0	39,300.0	8,810.0	2,710.0 J	1,350.0 J	1,500.0 J	1,850.0 J	4,530.0 J	5,140.00	2,140.0 J	3,300.0 J	43,900.0	NS/GV
Sodium	<b>263,000.0</b>	<b>66,400.0</b>	<b>21,100.0</b>	1,740 J	12,600.0	19,100.0	<b>32,900.0</b>	<b>60,600.0</b>	<b>288,000.0</b>	<b>39,200.0</b>	11,100.0	<b>69,400.0</b>	20,000.0
<b>Leachate Indicators (mg/l)</b>													
Ammonia	<b>34.0</b>	<b>34.0</b>	0.367	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	0.251	ND(0.2)	ND(0.2)	ND(0.2)	<b>34.0</b>	2.0
Bicarbonate	990.0	280.0	64.0	17.0	35.0	27.0	14.0	140.0	410.0	33.0	23.0	290.0	NS/GV
Chloride	170.0	42.0	25.0	3.3	22.0	33.0	51.0	110.0	<b>280.0</b>	100.0	20.0	41.0	250.0
Nitrate	ND(0.50)	ND(0.50)	ND(0.50)	0.717	7.28	8.84	5.35	5.86	ND(0.50)	0.86	6.33	ND(0.50)	10.0
Sulfate	17.0	48.0	64.0	ND(1.0)	40.0	49.0	24.0	120.0	190.0	180.0	32.0	56.0	250.0
Alkalinity	990.0	280.0	64.0	17.0	35.0	27.0	14.0	140.0	410.0	33.0	23.0	290.0	NS/GV
TDS	980.0	380.0	190.0	23.0	170.0	190.0	150.0	510.0	1,100.0	310.0	190.0	390.0	NS/GV
Hardness	168.0	92.0	87.0	15.0	96.0	101.0	53.0	259.0	401.0	99.0	65.0	88.0	NS/GV

Note:

ND( ): Compound not detected at the method detection limit

NYSDEC Class GA Standards: New York State Department of Environmental Conservation Ambient Water Quality Standards for Source of Drinking Water Title 6 Part 703 (per June 1998 revision)

GV: NYSDEC Guidance Value for Source of Drinking Water

NS/GV: No NYSDEC Standard or Guidance Value Established

B: Reported value less than contract required detection limit but greater than or equal to instrument detection limit

J: Indicates an estimated value; compound is present at a concentration less than specified detection limit



**Table 3 continued**

Contaminant	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-7	SW-B	TB-SW	NYSDEC Class GA Standard
Ethylbenzene	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	5.0
1,2-Dichlorobenzene	ND(0.67)	ND(0.67)	ND(0.67)	ND(0.67)	ND(0.67)	ND(0.67)	ND(0.67)	ND(0.67)	ND(0.67)	3.0
1,3-Dichlorobenzene	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	3.0
1,4-Dichlorobenzene	ND(0.79)	ND(0.79)	ND(0.79)	ND(0.79)	ND(0.79)	ND(0.79)	ND(0.79)	ND(0.79)	ND(0.79)	3.0

Note:  
 ND( ): Compound not detected at the method detection limit  
 NYSDEC Class GA Standards: New York State Department of Environmental Conservation Ambient Water Quality Standards for Source of Drinking Water Title 6 Part 703 (per June 1998 revision)  
 GV: NYSDEC Class GA Guidance Value for Source of Drinking Water  
 NS/GV: No NYSDEC Standard or Guidance Value Established  
 \*Standard of 0.4 applies to sum of cis and trans 1,3-Dichloropropene  
 J: Indicates an estimated value; compound is present at a concentration less than specified detection limit

**Table 3A**

**Summary of Analytical Results-Surface Water**  
**East Northport Landfill, East Northport, NY**  
**Sampled April 13,2005**  
Leachate Indicators  
*Reported in Milligrams per Liter*

Parameter	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-7	SW-B	NYSDEC Class GA Standard
Ammonia	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	0.329	0.369	2.0
Bicarbonate	29.0	ND(2.0)	23.0	34.0	74.0	42.0	48.0	46.0	NS/GV
Chloride	65.0	83.0	45.0	110.0	110.0	190.0	<b>2,400.0</b>	83.0	250.0
Nitrate	2.31	1.47	3.85	2.31	2.52	0.844	0.654	1.46	10.0
Sulfate	23.0	40.0	23.0	23.0	47.0	22.0	380.0	ND(1.0)	250.0
Alkalinity	29.0	ND(2.0)	23.0	34.0	74.0	42.0	48.0	46.0	NS/GV
TDS	180.0	250.0	180.0	290.0	330.0	410.0	4,300.0	260.0	NS/GV
Hardness	81.0	121.0	78.0	77.0	160.0	80.0	667.0	105.0	NS/GV

Note:

ND( ): Compound not detected at the method detection limit

NYSDEC Class GA Standards: New York State Department of Environmental Conservation Ambient Water Quality Standards for Source of Drinking Water Title 6 Part 703 (per June 1998 revision)

NS/GV: No NYSDEC Standard or Guidance Value Established