



# TOWN OF HUNTINGTON

FRANK P. PETRONE, *Supervisor*

ENVIRONMENTAL WASTE MANAGEMENT

December 21, 2004

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Division of Environmental Remediation  
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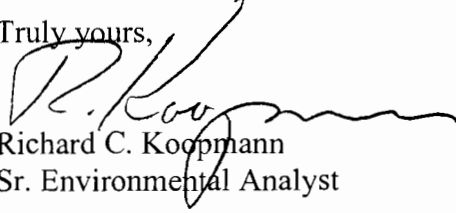
Re. Huntington/East Northport Landfill  
NYSDEC Site # 1-52-040

Dear John,

As required by the Record of Decision for the above referenced site, transmitted herewith please find a copy of the "Landfill Gas and Control System Monitoring Report" for the East Northport Landfill for the month of October 2004, a copy of the "Groundwater and Surface Water Sampling and Analysis Report" for the second half of 2004, as well as a site inspection report for the 4<sup>th</sup> quarter of 2004.

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

Truly yours,

  
Richard C. Koopmann  
Sr. Environmental Analyst

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**Groundwater and Surface Water  
Sampling & Analysis  
East Northport Landfill  
East Northport, New York  
October, 2004**

*Prepared for:*

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

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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

**Groundwater and Surface Water Sampling & Analysis  
East Northport Landfill  
East Northport, New York  
October, 2004**

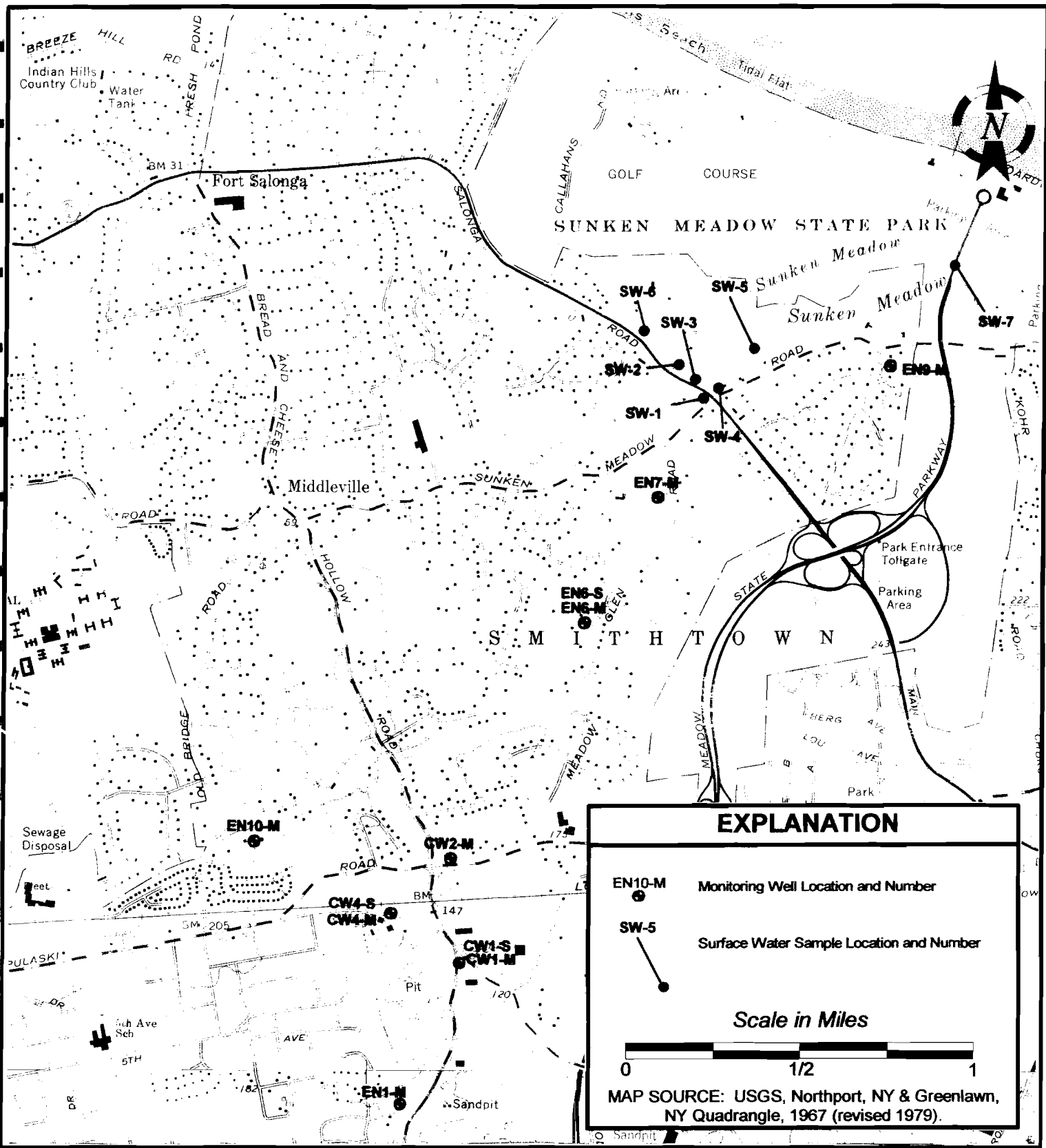
**Introduction**

This report presents the results of October, 2004 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 illustrates groundwater and surface water sampling locations. 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.



**EXPLANATION**

EN10-M Monitoring Well Location and Number

SW-5 Surface Water Sample Location and Number

Scale in Miles

0 1/2 1

MAP SOURCE: USGS, Northport, NY & Greenlawn, NY Quadrangle, 1967 (revised 1979).

**Groundwater and Surface Water Sampling Locations**

**East Northport Landfill  
Post Closure Water Sampling**

Prepared By: RDH

Date: May 1997

Reviewed By: RNC

Figure: 1

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## 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 collecting samples. 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 specific sampling locations and allowing water to flow smoothly into them. Additionally, 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 EN6-S, EN6-M, EN7-M and EN9-M were collected October 25, 2004. Groundwater samples from monitoring wells CW1-S, CW1-M, CW2-M, CW4-S, CW4-M, EN1-M and EN10-M were collected October 26, 2004. All seven surface water samples were also collected October 26, 2004. 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.

Table 1 presents a summary of field data measured and recorded at all sampling locations. 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 entails instrument calibrations, analysis of method blanks, matrix spike blanks and percent-recovery of surrogates (system monitoring compounds) - is included in the above-mentioned "Sample Data Summary Package" presented in

**Table 1**  
**Summary of Field Data**  
**Measured October 25-26, 2004**  
**East Northport Landfill, East Northport, NY**

Sampling Point	Dissolved Oxygen (mg/l)	Conductivity (umhos)	Temperature (°centigrade)	pH (units)	Salinity (‰)	Turbidity (ntu)
CW1-S	1.00	420	18.0	7.21	0.0	5.30
CW1-M	1.20	280	18.0	6.98	0.0	0.70
CW2-M	1.80	105	11.0	6.54	0.0	0.15
CW4-S	7.20	30	12.0	7.23	0.0	3.70
CW4-M	6.00	90	12.0	6.76	0.0	0.10
EN1-M	6.50	100	14.0	6.92	0.0	0.10
EN6-S	6.30	100	9.0	5.46	0.0	15.00
EN6-M	2.80	125	9.0	6.15	0.0	0.56
EN7-M	2.90	190	8.0	6.23	0.0	0.10
EN9-M	4.00	120	8.0	6.37	0.0	0.20
EN10-M	6.30	70	8.0	5.79	0.0	1.20
SW-1	8.20	80	12.0	6.51	0.0	4.70
SW-2	5.40	85	8.0	6.93	0.0	1.70
SW-3	5.50	70	8.0	6.31	0.0	2.02
SW-4	7.20	85	11.0	6.64	0.0	2.33
SW-5	5.50	90	8.0	6.29	0.0	0.80
SW-6	6.50	80	8.0	5.32	0.0	4.32
SW-7	7.30	1800	8.0	6.9	0.5	2.15



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. Furthermore, trip blanks representative of groundwater (TB-GW) and surface water samples (TB-SW) were analyzed for volatile organic compounds. A field blank (FB10-25), 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 contaminant, targeted volatile organic compounds were not detected in either of the aforementioned trip blanks, or the field blank. In addition, analytical results relative to blind duplicates and representative groundwater and surface water samples are comparable (see Tables 2, 3 and 3A), with one notable anomaly (see Table 2A). The blind duplicate (i.e., GW-B) of groundwater sample CW1-M lacks analytical similarity with respect to the metals arsenic, calcium, iron, magnesium, potassium and sodium. This exception notwithstanding, the results of groundwater and surface water analyses summarized below are considered valid.

#### *Groundwater*

Tables 2 and 2A summarize the results of groundwater analyses relative to volatile organic compounds and metals/leachate indicators, respectively; including comparisons with New York State Department of Environmental Conservation (NYSDEC) Class GA drinking water standards.

As shown on Table 2, volatile organic compounds detected in excess of NYSDEC drinking water standards include *trichloroethene* (EN7-M) and *tetrachloroethene* (EN6-M, EN7M).

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As shown on Table 2A, metals detected in excess of NYSDEC drinking water standards include *iron* (CW1-S, EN6-S, EN10-M), *magnesium* (EN7-M) and *sodium* (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*

Tables 3 and 3A summarize the results of groundwater analyses relative to volatile organic compounds and leachate indicators, respectively; including comparisons with New York State Department of Environmental Conservation (NYSDEC) Class GA drinking water standards.

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 previously reported, the detection of an elevated concentration of chloride at this sampling point is attributable to the influence of saline surface water (sampling point SW-7 is 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 October, 2004 on a per sampling-point basis. A summary of inconsistencies with the most recent analyses, completed June, 2004, is presented below. With the exception of the below-listed inconsistencies, October, 2004 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, 2004).

### Groundwater

\* The concentration of *arsenic* decreased in groundwater sampled from monitoring well CW1-S from 59.1 micrograms per liter ( $\mu\text{g/l}$ ), a concentration above NYSDEC's drinking water standard of 25.0  $\mu\text{g/l}$ , to non-detect (ND).

\* The concentration of *chromium* decreased in groundwater sampled from monitoring wells CW1-S, CW4-M and EN1-M from 125.0 µg/l, 114.0 µg/l and 64.6 µg/l, respectively - concentrations above NYSDEC's drinking water standard of 50.0 µg/l - to 2.13 µg/l, ND and ND.

\* The concentration of *iron* decreased in groundwater sampled from monitoring wells CW1- M, CW4-S and CW4-M from 7,400.0 µg/l, 310.0 µg/l and 409.0 µg/l, respectively - concentrations above NYSDEC's drinking water standard of 300.0 µg/l - to 81.8 µg/l, 197.0 µg/l and 43.0 µg/l. The concentration of this constituent increased in groundwater sampled from monitoring wells EN6-S and EN10-M from 66.6 µg/l and 30.1 µg/l, respectively, to 381.0 µg/l and 481.0 µg/l.

\* The concentration of *sodium* decreased in groundwater sampled from monitoring wells CW1-S and CW1-M from 219,000.0 µg/l, and 54,100.0 µg/l, respectively - concentrations above NYSDEC's drinking water standard of 20,000.0 µg/l - to 5,850.0 µg/l, and 4,640.0.

\* The concentration of *ammonia* decreased in groundwater sampled from monitoring well EN6-S from 2.5 milligrams per liter (mg/l) - a concentration above NYSDEC's drinking water standard of 2.0 mg/l - to 0.36 mg/l.

\* The concentration of *sulfate* decreased in groundwater sampled from monitoring well EN7M from 350.0 mg/l - a concentration above NYSDEC's drinking water standard of 250.0 mg/l - to 180.0 mg/l.

### Surface Water

\* The concentration of *ammonia* decreased at sampling point SW-7 from 2.8 mg/l - a concentration above NYSDEC's drinking water standard of 2.0 mg/l - to ND.

\* The concentration of *sulfate* decreased at sampling point SW-7 from 440.0 mg/l - a concentration above NYSDEC's drinking water standard of 250.0 mg/l - to 190 mg/l.



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	FB10-25	NYSDEC Class GA Standard
Ethylbenzene	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	5.0
1,2-Dichlorobenzene	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	0.9 J	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	3.0
1,3-Dichlorobenzene	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	3.0
1,4-Dichlorobenzene	1.1 J	ND(0.30)	ND(0.30)	ND(0.30)	ND(0.30)	ND(0.30)	ND(0.30)	ND(0.30)	2.5 J	ND(0.30)	ND(0.30)	ND(0.30)	ND(0.30)	ND(0.30)	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 October 25-26, 2004  
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	ND(180.0)	ND(180.0)	ND(180.0)	ND(180.0)	ND(180.0)	ND(180.0)	ND(180.0)	ND(180.0)	ND(180.0)	ND(180.0)	305.00	ND(180.0)	NS/GV
Arsenic	ND(4.84)	ND(4.84)	ND(4.84)	ND(4.84)	ND(4.84)	ND(4.84)	ND(4.84)	ND(4.84)	ND(4.84)	ND(4.84)	ND(4.84)	36.20	25.0
Cadmium	ND(0.99)	ND(0.99)	ND(0.99)	1.58 J	ND(0.99)	ND(0.99)	ND(0.99)	ND(0.99)	ND(0.99)	ND(0.99)	ND(0.99)	ND(0.99)	5.0
Calcium	7,410.0	6,740.0	29,600.0	5,760.0	21,600.0	26,000.0	14,000.0	73,000.0	84,500.0	20,400.0	14,000.0	13,500.0	NS/GV
Chromium	2.13 J	1.30 J	ND(1.22)	ND(1.22)	ND(1.22)	ND(1.22)	7.80 J	ND(1.22)	ND(1.22)	ND(1.22)	1.96 J	ND(1.22)	50.0
Iron	1,400.0	81.8	168.0	197.0	43.0 J	43.0 J	381.0	30.9 J	ND(29.0)	51.3 J	481.0	5,500.0	300.0
Lead	ND(1.79)	ND(1.79)	ND(1.79)	ND(1.79)	ND(1.79)	ND(1.79)	ND(1.79)	ND(1.79)	ND(1.79)	ND(1.79)	11.30	ND(1.79)	25.0
Magnesium	2,020.0 J	1,260.0 J	10,600.0	619.0 J	8,570.0	9,660.0	6,080.0	20,100.0	36,100.0	9,220.0	4,530.0 J	9,510.0	35,000.0 GV
Mercury	ND(0.03)	ND(0.03)	0.14 J	0.08 J	0.09 J	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	0.7
Potassium	1,720.0 J	1,050.0 J	13,100.0	2,340.0 J	1,080.0 J	1,410.0	1,610.0 J	4,520.0 J	5,550.0	1,800.0 J	3,600.0	41,500.0	NS/GV
Sodium	5,850.0	4,640.0 J	22,300.0	1,190.0 J	10,200.0	16,900.0	24,200.0	54,100.0	231,000.0	27,700.0	7,340.0	45,300.0	20,000.0
<b>Leachate Indicators (mg/l)</b>													
Ammonia	110.0	37.0	0.49	ND(0.2)	ND(0.2)	ND(0.2)	0.36	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	36.0	2.0
Bicarbonate	870.0	280.0	83.0	12.0	32.0	24.0	11.0	140.0	340.0	30.0	23.0	280.0	NS/GV
Chloride	130.0	32.0	31.0	2.8	22.0	35.0	57.0	120.0	270.0	81.0	10.0	32.0	250.0
Nitrate	ND(0.50)	0.67	ND(0.50)	0.54	7.15	9.03	6.21	5.24	0.58	0.78	2.51	0.62	10.0
Sulfate	12.0	56.0	85.0	ND(1.0)	37.0	50.0	26.0	120.0	180.0	19.0	15.0	64.0	250.0
Alkalinity	870.0	280.0	83.0	12.0	32.0	24.0	11.0	140.0	340.0	30.0	23.0	280.0	NS/GV
TDS	10,850.0	353.0	251.0	11.0	137.0	187.0	216.0	475.0	1,049.0	74.0	34.0	317.0	NS/GV
Hardness	27.0	22.0	118.0	17.0	89.0	105.0	60.0	265.0	360.0	89.0	54.0	73.0	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(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	5.0
1,2-Dichlorobenzene	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	3.0
1,3-Dichlorobenzene	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	3.0
1,4-Dichlorobenzene	ND(0.30)	ND(0.30)	ND(0.30)	ND(0.30)	ND(0.30)	ND(0.30)	ND(0.30)	ND(0.30)	ND(0.30)	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 October 26, 2004  
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)	ND(0.20)	ND(0.20)	2.0
Bicarbonate	29.0	52.0	21.0	31.0	44.0	48.0	43.0	52.0	NS/GV
Chloride	52.0	61.0	32.0	54.0	94.0	67.0	<b>1,300.0</b>	60.0	250.0
Nitrate	2.44	1.4	3.9	2.51	3.75	0.974	1.15	1.39	10.0
Sulfate	23.0	39.0	22.0	23.0	31.0	17.0	190.0	38.0	250.0
Alkalinity	29.0	52.0	21.0	31.0	44.0	48.0	43.0	52.0	NS/GV
TDS	157.0	168.0	108.0	262.0	373.0	350.0	2,393.0	285.0	NS/GV
Hardness	61.0	94.0	56.0	64.0	97.0	61.0	390.0	93.0	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