



June 1, 2011

New York State Department of Environmental Conservation  
Division of Environmental Remediation, Region 1  
50 Circle Road  
Stony Brook, New York 11790

Attention: Mr. Syad Roman

Re: **Landfill Gas and Control System Monitoring Report**  
Town of Huntington East Northport Landfill  
East Northport, New York  
NYSDEC Stipulation # 152040

Dear Mr. Roman:

EnviroTrac, on behalf of the Town of Huntington is submitting this Landfill Gas and Control System Monitoring Report to document the work conducted at the above referenced Site since the last report.

The primary landfill gas migration control system consists of thirty active landfill gas control wells connected via a single header pipe forming a complete loop around the 44 acre East Northport Landfill (Site), to one blower station. Each of the landfill gas monitoring wells consists of 3-4 probes which are screened at various intervals between 5 and 70 feet below grade (fbg). The probes were set at the various intervals to allow for the collection of data at multiple locations to help monitor the efficiency of the system and to make adjustments as necessary. Separate landfill gas control and monitoring systems are located at the adjacent Animal Control and Resource Recovery Facilities.

The full scope of work including field and laboratory data from the Landfill Gas and Control system operations as well as the groundwater and surface water monitoring activities are discussed in this report.

Sincerely,  
**EnviroTrac Ltd.**

A handwritten signature in black ink, appearing to read "S. Nieves", is written over a horizontal line.

Susan H. Nieves  
Senior Project Manager

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## **Landfill Gas and Control System Monitoring**

Efforts to conduct monthly monitoring events for the Landfill Gas and Control System (system) were attempted in December 2010, January 2011 and February 2011. Due to climatic issues and snowfall, access to the monitoring points was not possible.

On March 31, 2011 and April 1, 2011 (the March monitoring event) and on April 26<sup>th</sup> and 27<sup>th</sup>, 2011 (the April monitoring event), EnviroTrac was able to gain access to the vast majority of monitoring locations across the Site and conducted an Operation and Maintenance inspection (O and M). The O and M included collecting and recording measurements with a GEM 2000 Landfill gas monitor. This monitor is capable of measuring Methane, Carbon Dioxide, and Oxygen levels as well as static and differential pressure. The instrument was rented from Pine Environmental Services, Inc. of Windsor New Jersey (Pine) who has certified technicians properly calibrate the equipment prior to shipment.

Despite the improved access across the Site on those dates, there were still some monitoring locations that EnviroTrac could not monitor. Those points include monitoring well MW-A, and MW-B which could not be located. Monitoring points MW-4A, MW-4B, MW-13B, MW-19A, and MW-41A appear to have been previously damaged and no measurements could be collected from those points. Monitoring points AS-NW, AS-NE, AS-SW, AS-SC, and AS-SE could not be measured due to water vapors in the line. Monitoring points N-1, N-2, N-3, N-4, N-5, and N-6 were not monitored due to a lack of access and monitoring point CWII-6 could not be monitored due to localized flooding conditions.

The network of CWI and CWII collection wells that were monitored indicate that the system is operational as a vacuum was detected at each of the locations.

## **Landfill Gas and Control Monitoring System Results**

**Monitoring Wells:** The field measurements collected from these points show that Methane was not detected in any of the monitoring points on during the March and April 2011 monitoring events.

**Landfill Gas Wells:** The system exhibited a vacuum which ranged from -0.17 inches of water (in H<sub>2</sub>O) to -5.26 in H<sub>2</sub>O for the March 2011 monitoring event and ranged from -0.10 to -4.89 (in H<sub>2</sub>O) for the April 2011 monitoring event. These results indicate that the system is operational and creating negative pressure across the Site.

**Condensate Traps:** The monitoring points associated with the condensate traps were inaccessible during the March 2011 and April 2011 monitoring events. A remote monitoring device is currently being fabricated to address these issues.

**Methane Monitoring Data:** Historical field data collected by R and C Formation, Ltd. of Bellmore, NY (R and C) indicates that the detection of Methane appears to be sporadic. Historical Methane collection Data from R and C is included in Appendix A. During the recent visit to the Site by EnviroTrac, Methane was not detected in any of the monitoring wells, however it was detected in the collection wells where it ranged from 0.0% in multiple wells to a maximum of 1.4% in collection well CWII-2. These numbers indicate that the recovery system is operational.

**System Operating Condition:** These recent visits to the Site were the first monitoring events performed by EnviroTrac at the Site. Part of the monitoring included observing the general condition of the system including but not limited to: monitoring wells, collection wells, sample ports, well pads, the blowers and condensate traps. The inspection of these system components indicated that there is a need for repairs and upgrades at the Site. The repairs and or replacements will be made when approved by the Town of Huntington.

**Summa Canister Air Monitoring:** On March 30, 2011 and April 26, 2011 air samples were collected from the Landfill Gas Control system. The samples were collected from an effluent port on the blower. The sample was collected in a laboratory certified clean canister with a laboratory supplied 8 hour regulator. The samples were collected and transported via courier to Alpha Analytical Laboratories. The samples were analyzed for VOCs and the following compounds were detected: 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, 1,4-Dichlorobenzene, Benzene, Chloromethane, Dichlorodifluoromethane, Ethyl benzene, Freon-114, m and p Xylene, o-Xylene, Toluene, Trichlorofluoromethane, and Vinyl Chloride. The tabulated laboratory data can be seen in Table-3. The complete laboratory analytical results can be found in Appendix B.

## **Groundwater Monitoring Activities**

On December 30, 2010 EnviroTrac, under contract with the Town of Huntington and in accordance with New York State Department of Environmental Conservation (NYSDEC) Stipulation Agreement No. 152040 attempted to conduct the bi-annual groundwater and surface water monitoring at the Town of Huntington East Northport Landfill (Site). However due to inclement weather conditions most of the monitoring wells were obstructed and could not be located. Additional attempts to locate and sample the monitoring wells occurred, but again due to the accumulated snowfall and climatic conditions the monitoring well network was not sampled until March 29, 2011. Depth to water at the Site ranged from 25.95 to 94.67 fbg. In-Situ field measurements were collected from the monitoring wells which included pH, Turbidity, Specific Conductivity, Dissolved Oxygen (DO), Temperature, and Oxygen Reduction Potential (ORP). The results of these measurements can be found in Table 4.

On March 29, 2011 Groundwater samples were collected from the East Northport Landfill monitoring network. The wells were purged of 3-5 well volumes as per United States Environmental Protection Agency (USEPA) guidelines. The samples were collected from each well with a disposable bailer and poured into glassware provided by PHOENIX Environmental Laboratories of Manchester Connecticut (Phoenix) New York State Department of Health ELAP No. 11301. Upon completing the sample collection process the samples were placed on ice in a

cooler provided by PHOENIX. The Samples were kept under proper chain of custody procedures and were relinquished to a courier provided by PHOENIX.

The Samples were sent to the laboratory for analysis of Volatile Organic Compounds (VOCs) via USEPA method 624 with Total Compound List (TCL) parameters with NYSDEC Category B Reports. The samples were also analyzed for Metals via USEPA 6010 which include (Aluminum, Arsenic, Chromium, Cadmium, Calcium, Iron, Lead, Magnesium, Potassium, and Sodium). Mercury was analyzed via USEPA method 7470. In addition to VOCs and Metals, the samples were also analyzed for Lechate Indicators via USEPA method 200.7 Series which included the following compounds (Alkalinity/Bicarbonate, Ammonia, Nitrate, Sulfate, Chloride, Total Dissolve Solids (TDS), and Hardness).

The laboratory results indicate that the VOC toluene was detected above drinking water standards in monitoring well EN-9M at a level of 6.1 parts per billion (ppb). In addition to the presence of toluene in EN-9M, Metals compounds which exceeded NYSDEC Drinking Water Standards were found in CW-1M (Arsenic and Sodium), CW-4S (Cadmium and Iron), EN-6S (Sodium) and EN-9M (Sodium). All other metal compounds that were analyzed were below NYSDEC Drinking Water Standards. The lechate compounds that were analyzed were below NYSDEC Drinking Water Standards in all of the collected monitoring well samples. The complete tabulated laboratory data can be found in Table 5, 6, and 7. The Laboratory Report can be found in Appendix B.

## **Surface Water Monitoring Activities**

On December 30, 2010 EnviroTrac, under contract with the Town of Huntington and in accordance with NYSDEC Stipulation Agreement No. 152040 attempted to conduct the bi-annual surface water monitoring at the Town of Huntington East Northport Landfill (Site). However due to inclement weather conditions access to the locations was obstructed and the samples could not be collected. Additional attempts to gain access to the surface water sample locations was attempted but again due to the accumulated snowfall and climatic conditions the monitoring well network was sampled until March 3, 2011. In-Situ field measurements were collected from the surface water sampling locations which included pH, Turbidity, Specific Conductivity, Dissolved Oxygen (DO), Temperature, and Oxygen Reduction Potential (ORP). The results of these measurements can be found in Table 4.

On March 3, 2011 Surface water samples were collected in the vicinity of the East Northport Landfill. The samples were collected via a Van-Dorn sampling device and poured into glassware provided by PHOENIX. Upon completing the sample collection process the samples were placed on ice in a cooler provided by PHOENIX. The Samples were kept under proper chain of custody procedures and were relinquished to a courier for PHOENIX.

The Samples were sent to the laboratory for analysis of VOCs via USEPA method 624 with Total Compound List parameters with NYSDEC Category B Reports. In addition to VOCs the samples were also analyzed for Lechate Indicators via USEPA method 200.7 Series which included the following compounds (Alkalinity/Bicarbonate, Ammonia, Nitrate, Sulfate, Chloride, Total Dissolve Solids (TDS), and Hardness).

The laboratory results indicate that the VOC compounds in the samples collected were below NYSDEC Drinking Water Standards. In addition, the laboratory analyzed lechate compounds were below NYSDEC drinking Standards with the exception of SW-7 which had exceedences for Magnesium, Chloride, Sulfate, and TDS. The complete tabulated laboratory data can be found in Tables 5, and 7. The Laboratory Report can be found in Appendix B.

## **Recommendations**

On March 31, 2011 and April 1, 2011 and on April 26<sup>th</sup> and 27<sup>th</sup>, 2011 monthly system operations visits were performed at the Town of Huntington East Northport Landfill facility. The data collected during both visits indicates that the system is still operational as negative pressure was encountered at each measured point. In addition to the vacuum measurements, gas levels were monitored in the field and an air sample was collected and analyzed in a NYSDOH certified laboratory. The gas levels encountered during the visits and the presence of VOCs in the air sample indicate that the system is currently recovering vapors from the subsurface. Based on the data collected in the field and the laboratory data it is recommended that monthly monitoring events continue at the Site. In addition to the continued monthly monitoring events, it is also recommended that repairs be made to the system as feasible to increase the number of monitoring points.

An evaluation of the laboratory analytical data for the surface and groundwater samples collected in March 2011 indicate that monitoring should continue on a bi-annual basis.

## Tables

Table-1 Monitoring Well Field Data

Monitoring Point ID	March 2011 Data		April 2011 Data	
	Pressure (in H2O)	Methane (in %)	Pressure (in H2O)	Methane (in %)
MW-AA	CNL	CNL	CNL	CNL
MW-AB	CNL	CNL	CNL	CNL
MW-AC	CNL	CNL	CNL	CNL
MW-AD	CNL	CNL	CNL	CNL
MW-BA	CNL	CNL	CNL	CNL
MW-BB	CNL	CNL	CNL	CNL
MW-BC	CNL	CNL	CNL	CNL
MW-BD	CNL	CNL	CNL	CNL
MW-2A	0.01	0.0	0.00	0
MW-2B	0.0	0.0	0.00	0
MW-2C	0.02	0.0	0.01	0
MW-2D	0.02	0.0	0.04	0
MW-3A	0.01	0.0	0.5	0
MW-3B	0.14	0.0	0.06	0
MW-3C	0.08	0.0	0.0	0
MW-3D	0.0	0.0	0.00	0
MW-4A	NA/B	NA/B	0.23	0
MW-4B	NA/B	NA/B	0.02	0
MW-4C	NA/B	NA/B	NA/B	NA/B
MW-4D	0.20	0.0	0.17	0
MW-5A	0.02	0.0	0.00	0
MW-5B	0.05	0.0	0.02	0
MW-5C	0.03	0.0	0.03	0
MW-5A	0.0	0.0	0.02	0
MW-6B	0.0	0.0	0.03	0
MW-6C	0.0	0.0	0.01	0
MW-7A	0.15	0.0	0.05	0
MW-7B	1.6	0.0	0.04	0
MW-7C	0.41	0.0	0.04	0
MW-8A	0.13	0.0	0.11	0
MW-8B	0.11	0.0	0.06	0
MW-8C	0.13	0.0	0.02	0
MW-9A	0.38	0.0	0.20	0
MW-9B	0.11	0.0	0.02	0
MW-9C	0.43	0.0	0.50	0
MW-10A	0.37	0.0	0.18	0
MW-10B	0.31	0.0	0.04	0
MW-10C	0.39	0.0	0.18	0
MW-10D	0.37	0.0	0.19	0
MW-11A	0.16	0.0	0.08	0
MW-11B	0.25	0.0	0.21	0
MW-11C	0.28	0.0	0.32	0
MW-11D	0.16	0.0	0.27	0



Table-1 Monitoring Well Field Data

March 2011 Data

April 2011 Data

Monitoring Point ID	Pressure (in H2O)	Methane (in %)	Pressure (in H2O)	Methane (in %)
MW-12A	0.05	0.0	0.10	0
MW-12B	0.08	0.0	0.15	0
MW-12C	0.12	0.0	0.19	0
MW-13A	0.0	0.0	0.05	0
MW-13B	NA/B	NA/B	NA/B	NA/B
MW-13C	0.38	0.0	0.53	0
MW-15A	0.09	0.0	0.10	0
MW-15B	0.1	0.0	0.23	0
MW-15C	0.08	0.0	0.17	0
MW-16A	0.44	0.0	0.54	0
MW-16B	0.4	0.0	0.59	0
MW-16C	0.37	0.0	0.46	0
MW-17A	0.37	0.0	0.45	0
MW-17B	0.09	0.0	0.03	0
MW-17C	0.31	0.0	0.46	0
MW-18A	0.11	0.0	0.03	0
MW-18B	0.12	0.0	0.03	0
MW-18C	0.39	0.0	0.47	0
MW-19A	NA/B	NA/B	NA/B	NA/B
MW-19B	0.38	0.0	0.56	0
MW-19C	0.25	0.0	0.26	0
MW-19D	0.52	0.0	0.21	0
MW-20A	0.40	0.0	0.57	0
MW-20B	0.46	0.0	0.57	0
MW-20C	0.48	0.0	0.58	0
MW-21A	0.20	0.0	0.25	0
MW-21B	0.29	0.0	0.45	0
MW-21C	0.25	0.0	0.37	0
MW-21D	0.20	0.0	0.32	0
MW-22A	0.41	0.0	0.49	0
MW-22B	0.40	0.0	0.47	0
MW-22C	0.43	0.0	0.48	0
MW-23A	0.10	0.0	0.08	0
MW-23B	0.31	0.0	0.00	0
MW-23C	0.16	0.0	0.02	0
MW-23D	0.24	0.0	NA/B	NA/B
MW-24A	0.11	0.0	0.12	0
MW-24B	0.28	0.0	0.17	0
MW-24C	0.14	0.0	0.03	0
MW-25A	0.69	0.0	0.89	0
MW-25B	0.06	0.0	0.72	0
MW-25C	0.03	0.0	0.70	0
MW-26A	0.34	0.0	0.36	0
MW-26B	0.18	0.0	0.4	0
MW-26C	0.14	0.0	0.34	0
MW-26D	0.16	0.0	0.38	0

Table-1 Monitoring Well Field Data

Monitoring Point ID	March 2011 Data		April 2011 Data	
	Pressure (in H2O)	Methane (in %)	Pressure (in H2O)	Methane (in %)
MW-27A	0.09	0.0	0.08	0
MW-27B	0.13	0.0	0.12	0
MW-27C	0.19	0.0	0.19	0
MW-28A	0.00	0.0	0.00	0
MW-28B	0.00	0.0	0.02	0
MW-28C	NA/B	NA/B	NA/B	NA/B
MW-37A	0.04	0.0	0.11	0
MW-37B	0.02	0.0	0.08	0
MW-37C	0.04	0.0	0.90	0
MW-38A	0.09	0.0	0.13	0
MW-38B	0.14	0.0	0.19	0
MW-38C	0.19	0.0	0.26	0
MW-40A	0.06	0.0	0.09	0
MW-40B	0.07	0.0	0.10	0
MW-40C	0.08	0.0	0.11	0
MW-40D	0.18	0.0	0.08	0
MW-41A	NA/B	NA/B	NA/O	NA/O
MW-41B	0.08	0.0	NA/O	NA/O
MW-41C	0.11	0.0	NA/O	NA/O
MW-42A	0.04	0.0	0.07	0
MW-42B	0.08	0.0	0.09	0
MW-42C	0.11	0.0	0.11	0
MW-43A	0.07	0.0	NA/O	NA/O
MW-43B	0.09	0.0	NA/O	NA/O
MW-43C	0.09	0.0	NA/O	NA/O
MW-44A	0.03	0.0	0.07	0
MW-44B	0.06	0.0	0.12	0
MW-44C	0.04	0.0	0.17	0
MW-45A	0.0	0.0	0.10	0
MW-45B	0.0	0.0	0.15	0
MW-45C	0.0	0.0	0.15	0
MW-46A	0.02	0.0	0.12	0
MW-46B	0.06	0.0	0.20	0
MW-46C	0.05	0.0	0.19	0
MW-46D	0.03	0.0	0.14	0
MW-47A	0.01	0.0	0.09	0
MW-47B	0.03	0.0	0.15	0
MW-47C	0.05	0.0	0.18	0
MW-48A	0.03	0.0	0.11	0
MW-48B	0.03	0.0	0.14	0
MW-48C	0.07	0.0	0.08	0
MW-49A	0.08	0.0	NA/O	NA/O
MW-49B	0.53	0.0	NA/O	NA/O
MW-49C	0.03	0.0	NA/O	NA/O

Table-1 Monitoring Well Field Data

Monitoring Point ID	March 2011 Data		April 2011 Data	
	Pressure (in H <sub>2</sub> O)	Methane (in %)	Pressure (in H <sub>2</sub> O)	Methane (in %)
MW-51A	0.03	0.0	0.13	0
MW-51B	0.07	0.0	0.23	0
MW-51C	0.0	0.0	0.07	0
AS-NW	NM/C	NM/C	0.0	0
AS-NE	NM/C	NM/C	0.01	0
AS-SW	NM/C	NM/C	0.01	0
AS-SC	NM/C	NM/C	NM/C	NM/C
AS-SE	NM/C	NM/C	NM/C	NM/C

Notes:

CNL= Could Not Locate

NA/B= Not Accessable/Broken

NM/C= Not able to get a reading due to water in the line

NA/O=No Access Due to Wasp Nests

Table-2 Monitoring Point Field Data

Monitoring Point ID	March 2011 Field Data			April 2011 Field Data		
	Vacum (in H2O)	Methane (in %)	Oxygen (in %)	Vacum (in H2O)	Methane (in %)	Oxygen (in %)
CWI-4	3.90	0.0	19.7	4.10	0.0	19.8
CWI-6	4.25	0.1	18.2	4.89	0.05	18.0
CWI-7	4.29	0.1	18.3	4.26	0.3	17.1
CWII-1	4.05	0.5	17.6	4.79	0.07	14.4
CWII-2	5.26	1.4	15.5	4.48	0.02	15.2
CWII-3	3.68	1.1	15.6	4.77	0.08	14.1
CWII-4	3.82	1.4	14.7	4.62	0.02	16.0
CWII-5	3.75	0.0	17.1	4.74	0.03	16.2
CWII-6	NA/F	NA/F	NA/F	NA/F	NA/F	NA/F
CWII-7	2.22	0.0	17.8	0.19	0.00	17.7
CWII-8	0.17	0.0	20.2	0.02	0.00	20.1
CWII-9	1.50	0.0	17.8	0.10	0.00	16.0
NW-1	3.84	0.0	20.4	4.01	0.00	20.8
NW-2	4.36	0.0	20.5	4.60	0.00	20.7
NW-3	3.72	0.0	20.1	3.84	0.00	20.5
NW-4	3.34	0.0	20.2	3.59	0.00	20.6
NW-5	2.88	0.0	20.8	2.82	0.00	21.0
NW-6	2.94	0.0	20.6	3.03	0.00	21.1
N-1	NA/O	NA/O	NA/O	NA/O	NA/O	NA/O
N-2	NA/O	NA/O	NA/O	NA/O	NA/O	NA/O
N-3	NA/O	NA/O	NA/O	NA/O	NA/O	NA/O
N-4	NA/O	NA/O	NA/O	NA/O	NA/O	NA/O
N-5	NA/O	NA/O	NA/O	NA/O	NA/O	NA/O
N-6	NA/O	NA/O	NA/O	NA/O	NA/O	NA/O

Notes:

CNL= Could Not Locate

NA/B= Not Accessable/Broken

NM/C= Not able to get a reading due to water in the line

March 2011 Field data collected on March 30 and April 1 2011

April 2011 Field Data collected on April 26

Table-3  
 Summa Cannister Air Sample  
 Volatile Organic Compound Analytical Results

Well ID	LFG 987	LFG042611
Date	3/30/2011	4/26/2011
Compound List	(in mg/M <sup>3</sup> )	(in mg/M <sup>3</sup> )
1,1,1-Trichloroethane	<1.09	<2.18
1,1,2,2-Tetrachloroethane	<1.37	<2.74
1,1,2-Trichloroethane	<1.09	<2.18
1,1-Dichloroethane	<0.809	<1.62
1,1-Dichloroethene	<0.792	<1.58
1,2,4-Trichlorobenzene	<1.48	<2.97
1,2,4-Trimethylbenzene	5.12	10.4
1,2-Dibromoethane	<1.54	<3.07
1,2-Dichlorobenzene	<1.20	<2.40
1,2-Dichloroethane	<0.809	<1.62
1,2-Dichloropropene	<0.924	<1.85
1,3,5-Trimethylbenzene	1.33	2.91
1,3-Dichlorobenzene	<1.20	<2.40
1,4-Dichlorobenzene	1.37	<2.40
Benzene	4.91	11.1
Benzyl chloride	<1.03	<2.07
Bromomethane	<0.776	<1.55
Carbon Tetrachloride	<1.26	<2.51
Chlorobenzene	<0.920	<1.84
Chloroethane	<0.527	<1.05
Chloroform	<0.976	2.58
Chloromethane	0.875	0.904
cis-1,2-Dichloroethene	<0.792	<1.58
cis-1,3-Dichloropropene	<0.907	<1.81
Dichlorodifluoromethane	16.3	20.3
Ethylbenzene	5.13	4.81
Freon-113	<1.53	<3.06
Freon-114	46.3	74.8
Hexachlorobutadine	<2.13	<4.26
Methylene chloride	<3.47	<6.94
m&p-Xylene	18.2	16.7
o-Xylene	6.32	7.27
Styrene	<0.851	<1.70
Tetrachloroethene	<1.36	256
Toluene	13.2	20.0
trans-1,2-Dichloroethene	<0.792	<1.58
trans-1,3-Dichloropropene	<0.907	<1.81
Trichloroethene	<1.07	<2.15
Trichlorofluoromethane	3.40	2.95
Vinyl chloride	1.41	3.50

Table-4 Groundwater and Surface Water  
In-Situ Field Monitoring Data

Well ID	Date monitored	DTP (in Ft.)	DTW (in Ft.)	pH (in S.U.)	Turbidity (in NTU)	Specific Conductivity (in US/CM)	Dissolve Oxygen (in mg/L)	Temperature (in degrees Celcius)	ORP (in mV)
CW-1S	3/29/2011	56.01	56.01	6.39	64	0.298	1.93	17.04	13.9
CW-1M	3/29/2011	55.8	55.80	6.88	12	1.054	1.27	17.52	-116.3
CW-2M	3/29/2011	77.53	77.53	6.25	4	0.196	2.4	14.18	49.64
CW-4S	3/29/2011	92.09	92.09	6.82	21	0.073	8.18	12.01	150.4
CW-4M	3/29/2011	91.93	91.93	6.79	10	0.364	8.35	11.07	160.1
EN-1M	CNL	CNL	CNL	CNL	CNL	CNL	CNL	CNL	CNL
EN-6S	3/29/2011	94.67	94.67	5.59	7	0.283	9.39	13.18	197.78
EN-6M	CNL	CNL	CNL	CNL	CNL	CNL	CNL	CNL	CNL
EN-7S	CNL	CNL	CNL	CNL	CNL	CNL	CNL	CNL	CNL
EN-9M	3/29/2011	25.95	25.45	6.32	4	0.604	5.9	18.42	193.5
EN-10M	NA/B	NA/B	NA/B	NA/B	NA/B	NA/B	NA/B	NA/B	NA/B

Notes:

- 1.) CNL=Could Not be Located
- 2.) NA/B= A sample could not be collected due to an obstruction in the well.
- 3.) US/CM=Micro Siemens per centimeter
- 4.) NTU=Nephelometric Turbidity Units
- 5.) mV=milli-Volts

Table-5  
 Groundwater and Surface Water  
 Volatile Organic Compound Analytical Results

Well ID	SW-1	SW-2	SW-3	CW-1S	CW-1M	CW-2M	CW-4S	CW-4M	EN-6S	EN-9M	Duplicate	Trip Blank	Field Blank	NYSDEC Drinking Water Standards	
Date	3/3/2011	3/3/2011	3/3/2011	3/29/2011	3/29/2011	3/29/2011	3/29/2011	3/29/2011	3/29/2011	3/29/2011	3/29/2011	3/29/2011	3/29/2011	3/29/2011	
Compound List															
1,1,1-Trichloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5	
1,1,2,2-Tetrachloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	
1,1,2-Trichloroethane	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	1	
1,1-Dichloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5	
1,1-Dichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	
1,1-Dichloropropene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	
1,2,3-Trichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	
1,2,4-Trichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	
1,2-Dibromo-3-chloropropane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.04	
1,2-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	3	
1,2-Dichloroethane	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.6	
1,2-Dichloropropane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1	
1,3-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	3	
1,4-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	3	
2-Hexanone	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	50	
4-Methyl-2-pentanone	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NGV	
Acetone	<5.0	1.5	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.7	<50	
Benzene	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	0.9	1.1	<0.70	<0.70	1	
Bromochloromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	
Bromodichloromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	50	
Bromoform	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	50	
Bromomethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5	
Carbon Disulfide	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	NGV	
Carbon Tetrachloride	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	
Chlorobenzene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5	
Chloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5	
Chloroform	<5.0	<5.0	0.39J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	7	
Chloromethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NGV	
cis-1,2-Dichloroethene	<1.0	0.46J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	
cis-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4	
Cyclohexane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NGV	
Dibromochloromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	50	
Dibromoethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NGV	
Dichlorodifluoromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	
Isopropylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	
m&p-Xylene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.9	3.4	<1.0	<1.0	5	
Methyl ethyl ketone	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.1	50	
Methyl t-butyl ether (MTBE)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	10	
Methyl Acetate	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.8	NGV	
Methylcyclohexane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NGV	
Methylene chloride	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	5	
o-Xylene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	
Styrene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	930	
Tetrachloroethene	1.4	1.6	0.31J	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	5	
Toluene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	6.1	7.3	<5.0	<5.0	5	
Total Xylenes	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.9	3.4	<1.0	<1.0	10	
trans-1,2-Dichloroethene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5	
trans-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.4	
Trichloroethene	<1.0	0.37J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	
Trichlorofluoromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	
Trichlorotrifluoroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NGV	
Vinyl chloride	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2	

Notes:

- 1.) Shaded box indicates compound above NYSDEC Drinking Water Standards
- 2.) NGV= No Given Value
- 3.) Duplicate Sample collected from EN-9M

Table-6  
 Groundwater and Surface Water Analytical Results  
 Landfill Gas and Control System Monitoring Report  
 March 2011

Well ID	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-7	CW-1S	CW-1M	CW-2M	CW-4S	CW-4M	EN-6S	EN-9M	Duplicate	NYSDEC Drinking Water Standards (in mg/L)
Date	3/3/2011	3/3/2011	3/3/2011	3/3/2011	3/3/2011	3/3/2011	3/3/2011	3/29/2011	3/29/2011	3/29/2011	3/29/2011	3/29/2011	3/29/2011	3/29/2011	3/29/2011	
Compound List																
Calcium	17.7	29.7	14.2	18.7	25.2	21.6	52.5	13.8	22.3	9.19	6.32	27.6	14.8	32.8	32.8	NGV
Hardness(CaCO3)	75.7	128	62.3	79.1	109	87.9	638	62	131	35.8	18.5	108	64.3	143	143	NGV
Magnesium	7.64	13.1	6.51	7.87	11.1	8.25	123	6.68	18.2	3.12	0.65	9.51	6.63	14.8	14.8	35
Alkalinity (CaCO3)	33	69	22	32	57	41	52	105	466	23	<20	43	<20	36	37	NGV
Bicarbonate Alkalinity (CaCO3)	33	69	22	32	57	41	52	105	466	23	<20	43	<20	36	37	NGV
Chloride	55	120	40	71	72	250	1,900	14	56	23	<3.0	22	47	150	130	250
Ammonia as Nitrogen	0.3	0.2	0.12	0.2	0.1	0.4	0.17	7.6	57	0.44	0.22	0.48	0.05	0.04	0.06	2
Nitrate as Nitrogen	3.1	1.3	2.9	3	2.1	1.4	0.77	0.25	0.47	1.4	0.97	6.8	5.7	0.74	0.72	10
Sulfate	20	38	17	22	26	18	260	23	5.5	11	<3.0	33	22	16	16	250
Total Dissolved Solids (TDS)	170	310	150	200	240	580	3,500	140	380	100	32	190	170	380	390	1,000

Notes:

- 1.) Shaded box indicates compound above NYSDEC Drinking Water Standards
- 2.) NGV= No Given Value

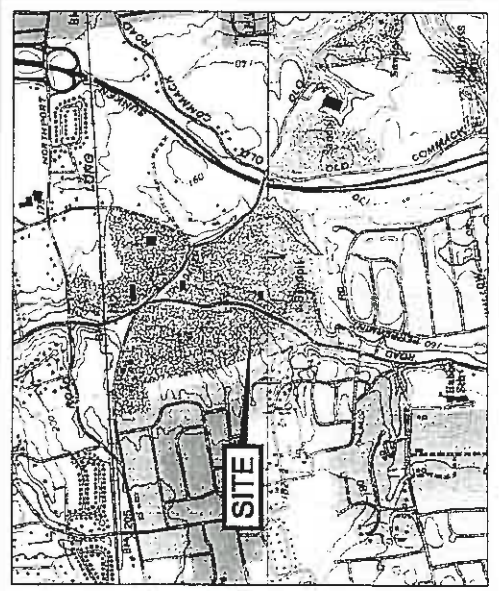


Well ID	CW-1S		CW-1M		CW-2M		CW-4S		CW-4M		EN-6S		EN-9M		Duplicate	NYSDEC Drinking Water Standards
	3/29/2011		3/29/2011		3/29/2011		3/29/2011		3/29/2011		3/29/2011		3/29/2011			
Compound List																
Aluminum	0.071	0.038	0.094	0.214	0.043	0.043	0.02	0.052	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.1
Arsenic	0.019	0.049	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.025
Cadmium	0.0004	0.0002	0.0003	0.011	0.0006	0.0006	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.005
Chromium	0.002	0.011	0.006	0.001	0.001	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05
Iron	9.7	8.56	0.229	1.1	0.116	0.116	0.078	0.136	0.129	0.129	0.136	0.136	0.129	0.129	0.129	0.3
Lead	0.002	<0.002	0.003	0.006	0.002	0.002	<0.002	0.0012	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.025
Magnesium	6.68	18.2	3.12	0.65	9.51	9.51	6.63	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	35
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0007
Potassium	12.7	51.9	3.9	2.2	1.7	1.7	1.9	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	
Sodium	13.1	58.4	15.5	3.2	13.8	13.8	27.9	56.9	57.2	57.2	57.2	57.2	57.2	57.2	57.2	20

Notes:

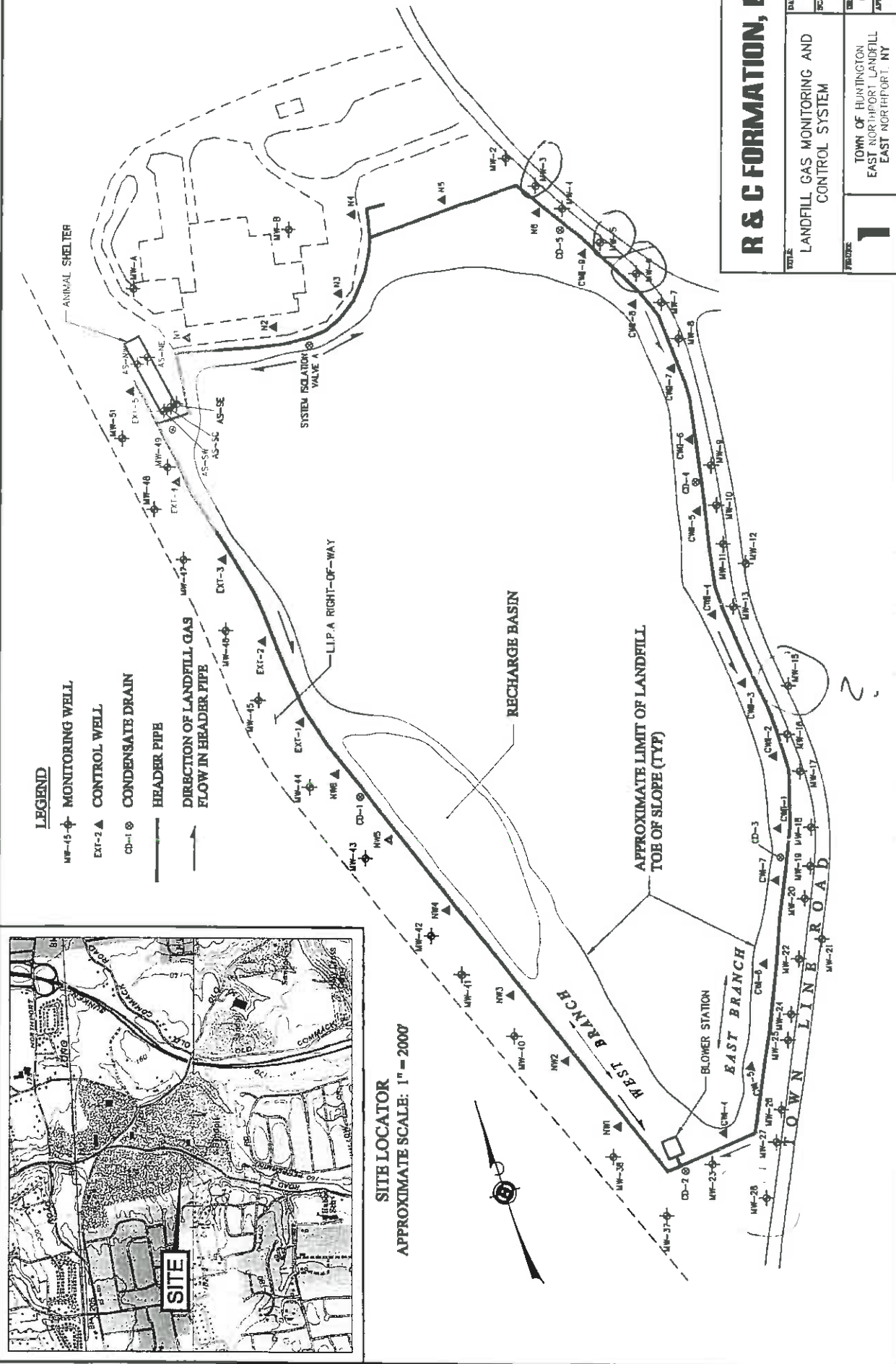
- 1.) Shaded box indicates compound above NYSDEC Drinking Water Standards
- 2.) NGV= No Given Value
- 3.) Duplicate Sample collected from EN-9M

**Figure**



**SITE LOCATOR**  
 APPROXIMATE SCALE: 1" = 2000'

- LEGEND**
- MW-15 ◊ MONITORING WELL
  - EXT-2 ▲ CONTROL WELL
  - CD-1 ⊗ CONDENSATE DRAIN
  - HEADER PIPE
  - DIRECTION OF LANDFILL GAS FLOW IN HEADER PIPE



<b>R &amp; C FORMATION, LTD.</b>	
DATE	9/22/03
SCALE	AS SHOWN
QUANTITY	01006-1A
APPRO. BY	B C
PROJECT	TOWN OF HUNTINGTON EAST NORTHPORT LANDFILL EAST NORTHPORT, NY

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