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**BROOKHAVEN NATIONAL LABORATORY  
2015 ENVIRONMENTAL MONITORING  
REPORT  
CURRENT AND FORMER LANDFILL AREAS**

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**March 14, 2016**

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*Executive Summary*

This report documents the Operations and Maintenance activities undertaken during the calendar year 2015 for the Current Landfill (AOC 3) and the Former Landfill Areas (Former Landfill AOC 2A, Interim Landfill AOC 2D, and Slit Trench AOC 2E). Brookhaven National Laboratory is responsible for performing this work to comply with the post-closure O&M requirements specified in 6 New York State Code of Rules and Regulations (NYCRR) Part 360, Solid Waste Management Facilities, effective December 31, 1988. The landfill caps are functioning as designed and the 2015 results are consistent with results from previous years.

**GROUNDWATER QUALITY**

The groundwater quality at both the Current and Former Landfill Areas remains relatively unchanged from 2014. Volatile organic compounds (VOCs) and metals continue to be detected downgradient of the Current Landfill. The most prevalent VOCs detected above standards are chloroethane, 1,1-dichloroethane and benzene, at maximum concentrations of 124 micrograms per liter ( $\mu\text{g/L}$ ), 35  $\mu\text{g/L}$  and 2  $\mu\text{g/L}$ , respectively. These concentrations are naturally attenuating and are not detected at the site boundary above drinking water standards. As with previous years, arsenic, iron, manganese, and sodium were detected downgradient from the Current Landfill at concentrations above applicable standards. Concentrations of these metals were similar to those detected historically. Maximum concentrations of arsenic, iron, manganese, and sodium in downgradient wells were 29  $\mu\text{g/L}$ , 75,900  $\mu\text{g/L}$ , 5,220  $\mu\text{g/L}$ , and 32,100  $\mu\text{g/L}$ , respectively. These results are an indicator of continued low level leachate generation at this landfill.

Per the schedule, the Former Landfill area monitoring wells were not sampled during 2015 with the exception of well 106-02. The metal results for well 106-02 were all below groundwater standards. Since the pump in this well was replaced, the iron concentration has steadily decreased, indicating that the elevated readings from a 2013 sample were the result of a deteriorating pump and not groundwater contamination from the Former Landfill Areas.

The groundwater monitoring well networks for the Current Landfill is adequate at this time. No change to the monitoring program is recommended. Groundwater characterization is currently being performed to assess the attenuation of VOCs downgradient of well 088-109. Since metals results have returned to background levels, metals sampling in Former Landfill Area monitoring well 106-02 should be reduced to once every two years, making it consistent with the monitoring requirements of the remaining wells in this program.

**WOODED WETLANDS MONITORING**

Because of variability within results in the last few years for both mercury and lead at wooded wetland locations SD-12 and SD-2001, and in response to NYSDEC comments, BNL conducted supplemental sampling at four locations on five foot intervals around the two locations in December 2015 to characterize a roughly 100 square foot area around each location. Results for the supplemental samples indicated elevated mercury and lead results in the sediment lower than those found at locations SD-12 and SD-2001 in 2014. The average supplemental mercury results were

within the Class A sediment guidance value at location SD-2001. The average mercury concentration at location SD-12 and the average lead results at both locations were within the range given for the Class B sediment guidance. Average results for the supplemental samples were lower than the results from locations SD-12 and SD-2001 detected in 2010 and 2014. This indicates that the results are within the range historically detected at these locations. In addition, historical surveys have confirmed the survival of tiger salamanders in the Wooded Wetland. Surface water and sediment sampling of the Wooded Wetland beyond 2016 will be discontinued.

### **SOIL-GAS MONITORING**

Soil-gas monitoring at the Current Landfill indicates that decomposition is still occurring. However, as with prior years, there is no indication that the vapors are migrating beyond the monitoring well network. Therefore, there is no potential risk to the nearby National Weather Service building which is northwest of the Current Landfill. In response to NYSDEC comments, three temporary soil-gas locations were installed in January 2016 and sampled south of the Current Landfill. There were no detections of gasses at these locations. However, BNL plans to repeat sampling these locations in the Spring/Summer of 2016 to confirm the absence of gasses. Soil-gas monitoring at the Former Landfill Area indicates that there is no detection of gasses emanating from the landfill. The soil gas monitoring well networks are sufficient to monitor both landfill areas.

### **MAINTENANCE AND REPAIR**

Monthly inspections and maintenance continued throughout 2015. The grass was cut twice at each landfill during 2015. Small pine seedlings observed growing on the edge of the Current Landfill were either hand pulled or cut back mechanically. Weeds and small pine seedlings were noted growing in the drainage channels of both landfills throughout the year. Small animal burrows were filled in at both Landfills during 2015. The burrows were not large enough to penetrate past the protective layer of the caps. Access to the soil-gas monitoring wells are cleared via mechanical weed whacking. Potholes located on the asphalt access road around the Current Landfill will be repaired in 2016. The removal of small pines and weeds in the drainage channels will continue in 2016.

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## ACRONYMS

AOC	Area of concern	NYSDEC	NY State Dept. of Environmental Conservation
BNL	Brookhaven National Laboratory	NYSDOH	NY State Dept. of Health
BSA	Brookhaven Science Associates	O&M	Operations and Maintenance
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	OU	Operable Unit
CY	Calendar year	PCBs	polychlorinated biphenyls
DCS	Derived concentration technical standard	pCi/L	picocuries per liter
DOE	U.S. Department of Energy	QA/QC	Quality Assurance/Quality Control
DQOs	Data quality objectives	QAPP	Quality Assurance Project Plan
EIMS	Environmental Info. Mgmt. System	Sr-90	Strontium 90
HWMF	Former Hazardous Waste Management Facility	TDS	Total dissolved solids
LEL	Lower explosive limit	TKN	Total Kjeldahl nitrogen
µg/L	Micrograms per liter	TSS	Total suspended solids
mg/L	Milligrams per liter	TVOCs	Total volatile organic compounds
mrem	Millirems	UEL	Upper explosive limit
MS/MSDs	Matrix spike/matrix spike duplicates	USEPA	United States Environmental Protection Agency
NPL	National Priorities List	VOCs	Volatile organic compounds

## **1.0 INTRODUCTION**

This report documents the Operation and Maintenance (O&M) activities conducted and summarizes monitoring data collected during calendar year (CY) 2015 for the Current Landfill (Area of Concern [AOC] 3) and the Former Landfill Areas (Former Landfill AOC 2A, Interim Landfill AOC 2D, and Slit Trench AOC 2E). Brookhaven National Laboratory (BNL) is responsible for performing this work to comply with the post-closure O&M requirements specified in the 6 New York State Code of Rules and Regulations (6NYCRR) Part 360, Solid Waste Management Facilities, effective December 31, 1988. The details of the O&M programs are described in the Final Operations and Maintenance Manuals for the Current Landfill (CDM Federal, 1996a) and the Former Landfill Areas (CDM Federal, 1996b).

The following are the primary objectives of the O&M program:

- Monitor the effectiveness of the impermeable caps in protecting groundwater quality;
- Monitor the potential generation and migration of soil-gas; and
- Maintain and monitor the various components of the closure system (landfill caps, drainage structure, and environmental monitoring systems).

This is the twentieth year of O&M for the Current Landfill, the nineteenth year for the Former Landfill and Slit Trench, and the eighteenth year for the Interim Landfill.

### **1.1 Site Description and Project Background**

BNL is a 5,265-acre site located in central eastern Long Island, New York. The facility is a federally owned and funded international research and learning center managed by Brookhaven Science Associates (BSA) under contract with the United States Department of Energy (DOE). On December 21, 1989, the site was placed on the United States Environmental Protection Agency's (USEPA's) National Priorities List (NPL), a ranking of hazardous waste sites compiled by the federal government as part of the Comprehensive Environmental Response, Compensation and Liability Act



(CERCLA). Placing BNL on the NPL resulted in the establishment of a remediation task list for various locations around the facility. The site subsequently was divided into seven separate remediation work areas known as Operable Units (OU). The Current Landfill and Former Landfill Areas are located in OU I, near the south central portion of the BNL site (see Figure 1).

Current Landfill. The Current Landfill consists of one unlined waste-cell that operated from the late 1960s until 1990 for disposing of waste generated at the Laboratory. An impermeable cap covering the cell was completed in November 1995. Additional information about the cap's construction can be obtained from the *Construction Certification Report for the Current Landfill* (CDM Federal, 1996b). Following the installation of the cap, the post-closure groundwater monitoring program was implemented in January 1996, in accordance with 6 NYCRR Part 360 Section 2.15, Solid Waste Management Facilities (effective December 31, 1988).

Groundwater quality near the Current Landfill is monitored under the O&M program for a wide variety of volatile organic compounds (VOCs), metals, radiological, and water chemistry (landfill leachate) parameters. Monitoring in this vicinity was expanded in 1999 to include a wetland area adjacent to the landfill's eastern boundary. This area, known as the Wooded Wetland area, is a two-acre wetland located between the Former Hazardous Waste Management Facility (HWMF) and the Current Landfill. The wetland contains low permeability soils near the surface. The wetland receives surface runoff from the Current Landfill and surrounding roadways. It is usually flooded during the spring/early summer and dry in late summer/fall. Monitoring of the Wooded Wetland area has been incorporated into the Current Landfill Monitoring Program and consists of sampling and analyzing surface water and sediment every other year to evaluate the potential for leachate migrating into this area, as originally performed under the *OUI Ecological Risk Assessment* (CDM Federal, 1999).

As required under 6 NYCRR Part 360, groundwater quality must be monitored for a minimum of five years, after which the permittee may request modification of the sampling and analysis requirements. In October 2001, BNL submitted the *Five-Year Evaluation Report for the Current Landfill* (BNL, 2001). This report assessed groundwater trends over the five years after capping, and proposed changes to the sampling program. These changes were implemented in CY 2002. In July

2006, and March 2011 BNL issued the additional five-year review reports which discussed all remediation areas at the site. Review of the Current Landfill was included in these reports. The next five-year review will be issued in 2016.

*Former Landfill Area.* The Former Landfill Area encompasses three closely located landfill units; the Former Landfill, the Slit Trench, and the Interim Landfill. The Former Landfill is an unlined waste-disposal area originally used by the United States Army starting in 1918. Waste disposal operations ceased in 1966, and the landfill was covered with soil. The Interim Landfill also is unlined, and was reportedly used for approximately one year between the time the Former Landfill was closed and the Current Landfill was opened. The Slit Trench is unlined as well, and is believed to have operated between 1960 and 1967 for disposal of construction and demolition debris (CDM Federal, 1996).

The Former Landfill and Slit Trench were capped in November 1996 and the Interim Landfill was capped in October 1997. Additional information about the construction of the caps can be found in the *Construction Certification Report for the Former Landfill* (Roy F. Weston, 1997) and *Construction Certification Report for the Interim Landfill Capping* (PW Grosser, 1997). BNL started O&M activities in December 1996 at the Former Landfill and Slit Trench, and in November 1997 at the Interim Landfill. Under this O&M program, groundwater quality in downgradient wells in the vicinity of the Former Landfill is monitored for VOCs, metals, radionuclides, and landfill-leachate parameters.

In March 2002, BNL submitted a *Five-Year Evaluation Report for the Former Landfill* (P.W. Grosser, 2002), which assessed trends in groundwater quality over the five-year period following capping and proposed changes to the sampling program. These changes were implemented in CY 2003. In July 2006 and March 2011, BNL issued the additional five-year review reports which discussed all remediation areas at the site. Review of the Former Landfill was included in these reports. The next five-year review will be issued in 2016.

## 1.2 Overview of the Monitoring Program

### *Groundwater Monitoring*

Data quality objectives (DQOs) for each of BNL's groundwater monitoring programs are presented in the *BNL Environmental Monitoring Plan* (BNL, 2015). The design of the data collection network was optimized as part of the process. Such optimization continues annually as part of the O&M program and is based on the interpretation of new data as well as historical trends. The primary DQO decision identified for the landfill monitoring programs is "Are the controls effectively improving groundwater quality below and downgradient of the landfill?"

Groundwater samples are collected from monitoring wells positioned upgradient and downgradient of each landfill area. Analytical data are reviewed, and determinations are made regarding the effectiveness of landfill controls.

The additional monitoring programs for the landfill areas consist of:

*Soil-gas Monitoring.* Measurements of methane, Lower Explosive Limit (LEL), and hydrogen sulfide are taken quarterly from monitoring locations surrounding the Current Landfill and annually from monitoring locations surrounding the Former Landfill to evaluate the movement of soil-gas from the landfills. Samples were collected from three supplemental soil-gas locations south east of the Current Landfill during January 2016 at the request of the NYSDEC.

*Wooded Wetland Monitoring.* Surface water and sediment in the wooded wetland adjacent to the eastern boundary of the Current Landfill are sampled every two years to evaluate possible effects of landfill leachate on tiger salamander habitats. Routine samples were collected in 2014 and are scheduled for collection again in 2016. Supplemental samples were collected in December 2015 around two locations with elevated metals concentrations at the request of the NYSDEC.

*Routine Visual Inspection, Maintenance, and Repair.* Monthly inspections are performed to monitor the structural and/or operational status of the landfill caps, drainage structures, and environmental monitoring systems.

*Leachate Discharge.* Visual inspections of the landfills are performed monthly to monitor for signs of leachate discharge. If observed, samples of the leachate are collected and analyzed. Leachate was not observed during 2015.

These activities are discussed in greater detail in Sections 2 through 5 of this report. Section 6 contains the conclusions and recommendations. References are included in Section 7.

## 2.0 GROUNDWATER MONITORING

### 2.1 Monitoring Well Networks

#### 2.1.1 Current Landfill

Since January 1996, groundwater quality at the Current Landfill has been monitored using ten downgradient wells and one background monitoring well. Figure 2 depicts the location of the monitoring wells. Figure 3 shows the water table contours for this area in December 2015. The depths of the screen intervals for the Current Landfill wells are listed below.

Well ID	Screen Interval (ft BLS)	Screen Zone
087-09*	24–34	Shallow Glacial
087-11	11–21	Shallow Glacial
087-23	25–40	Shallow Glacial
087-24	70–80	Intermediate Glacial
087-26	70–80	Intermediate Glacial
087-27	5–20	Shallow Glacial
088-109	6–21	Shallow Glacial
088-110	10–25	Shallow Glacial
088-21	5–20	Shallow Glacial
088-22	70–80	Intermediate Glacial
088-23	120–130	Deep Glacial

BLS = Below Land Surface

\*Background well

Screen zones were determined based on the following characteristics:

- Shallow Glacial Zone: typical water table within 10 ft of the screen zone.
- Intermediate Glacial Zone: typical water table between 10 ft and 100 ft above the screen zone.
- Deep Glacial Zone: typical water table >100 ft above the screen zone.

### 2.1.2 Former Landfill

Since January 1997, groundwater quality at the Former Landfill area has been monitored using 14 shallow monitoring wells (three background and 11 downgradient). The locations of the 14 monitoring wells are presented in Figure 4. The direction of groundwater flow in the OU I area of the site is generally to the south-southeast. Figure 3 shows the December 2015 water table contours for the area. The screen zones for Former Landfill Area wells are summarized below.

Well ID	Screen Interval (ft BLS)	Screen Zone
086-42*	65-75	Intermediate Glacial
086-72*	41.5-56.5	Shallow Glacial
087-22*	43-53	Shallow Glacial
097-17	29-39	Shallow Glacial
097-64	29-44	Shallow Glacial
097-277	40-55	Shallow Glacial
106-02	55-65	Intermediate Glacial
106-30	29-44	Shallow Glacial
106-20	85-95	Intermediate Glacial
106-21	55-65	Shallow Glacial
106-43	43-53	Shallow Glacial
106-44	44-54	Shallow Glacial
106-45	44-55	Shallow Glacial
106-64	30-40	Shallow Glacial

BLS = Below Land Surface

\*Background well

Screen zones were determined based on the following characteristics:

- Shallow Glacial Zone: typical water table within 10 ft of the screen zone.
- Intermediate Glacial Zone: typical water table between 10 ft and 100 ft above the screen zone.

### 2.1.3 Sampling Frequency and Analytical Parameters

The majority of monitoring wells for the Current Landfill were sampled semiannually, during June and December 2015 for VOCs, metals, and water chemistry parameters. A quarterly VOC sampling frequency was maintained for well 088-109, due to the continued presence of elevated levels of chloroethane. Radionuclides were sampled once, in December for wells 087-23, 087-27, 088-21, and 088-109.

Based on changes recommended in the 2012 *Environmental Monitoring Report, Current and*

*Former Landfill Areas*, all Former Landfill Area wells except for 106-02 were scheduled to be sampled every two years. During 2015, Former Landfill Area monitoring well 106-02 was sampled for metals. All other wells and parameters are scheduled to be sampled in 2016.

R&C Formation, Ltd. of Babylon, New York conducted the groundwater sampling, and Test America of St. Louis, Missouri analyzed the samples. See Table 1 for a summary of analyses performed, by well and sampling round.

#### ***2.1.4 Quality Assurance / Quality Control***

The groundwater samples were collected and analyzed in accordance with strict quality assurance/quality control (QA/QC) requirements as described in the BNL SOPs for groundwater monitoring. The analytical results for groundwater samples collected during 2015 satisfied the data-quality objectives. The sampling team personnel are responsible for assuring that a master calibration/maintenance log is maintained for each field-measuring device (e.g., pH, conductivity, turbidity meters). The sample coordinator provided a calibration/maintenance log for equipment supplied to the contractor's sampling teams.

The analytical results of samples collected for the Current and Former Landfill Area projects underwent data verification, using BNL standard operating procedures EM-SOP-203, Chemical Data Verification, and EM-SOP-204, Radiochemical Data Verification. These procedures are designed to verify the accuracy and/or completeness of analytical data. The data verification process is implemented to detect the most common analytical problems that affect the quality of the results. To accomplish this task, QA/QC items such as the following were checked: holding times, matrix spikes, laboratory and field blanks, and field logs. If items are found that can affect the use and interpretation of the data, they are either corrected, as in the case of unreadable information on the field logs, or the data are "qualified," as in the case of contamination of the blanks or violations of the holding time.

Guidance on the collection of QA/QC samples is contained in the QAPP, and in BNL procedure EM-SOP-200, Collection and Frequency of Field Quality Control Samples. The QA/QC samples collected included trip blanks, field blanks, matrix spike/matrix spike duplicate (MS/MSDs), and

blind duplicates.

Trip blanks were analyzed for aqueous VOCs only. One trip blank was shipped to the analytical laboratory with each set of samples submitted for VOC analyses. One duplicate sample was collected from the Current Landfill during the second and fourth quarters, and one duplicate sample was collected during the fourth quarter from the Former Landfill. No errors were detected in the duplicate analyses. Matrix spike/matrix spike duplicate (MS/MSD) samples were collected at the same frequency as the duplicates. Sample results with concentrations of these compounds within the appropriate range of the associated blank value were declared non-detect. The amount of qualified data was within acceptable limits and did not adversely impact the review of the groundwater quality.

## **2.2 Landfill Groundwater Monitoring Results**

This section summarizes the results for VOCs, metals, water-chemistry parameters, and radionuclides detected for the Current Landfill and metals results for the Former Landfill Area in 2015. The historical trends in concentrations of key contaminants are assessed and shown graphically in Figures 5 through 9. Summary tables of all 2015 landfill groundwater data are presented in Tables 2 through 6. Detections that exceed groundwater standards are in bold text. The tables include groundwater standards, laboratory results, minimum detection limits, and laboratory data qualifiers.

The groundwater standards used for evaluating nonradiological groundwater data are those contained in the NYSDEC Division of Water Technical and Operational Guidance Series 1.1.1 Ambient Water Quality Standards and Guidance Values (June 1998, with addendums April 2000 and June 2004) (NYSDEC 1998, 2000, and 2004) and 6NYCRR Part 703.5. Groundwater standards for radiological isotopes were supplemented with New York State Department of Health's (NYSDOH's) strontium-90 and tritium standards for drinking water. There were no groundwater standards for the gamma constituents; therefore a Groundwater Screening Level was used. This value is based on a dose equivalent of 4 millirems (mrem)/year and was calculated as 4% of the DOE Derived Concentration Technical Standards (DCS) (DOE-STD-1196-2011) for the isotope of concern. These values are listed under the "groundwater standards" column in the summary tables

and annotated where appropriate. Laboratory results that exceed the lower of the groundwater standards or the Cleanup Goals listed in the Record of Decision (ROD) are highlighted in the data summary tables to facilitate review of the information.

The laboratory data qualifiers included in the tables vary for the different analyses. Explanations for the data qualifiers are included in the notes in each table. Complete 2015 laboratory data reports, chain of custody forms, and well-sampling logs for both landfills are archived and available upon request. In addition, analytical results are stored in the BNL Environmental Information Management System (EIMS) database.

### ***2.2.1 Current Landfill***

#### ***2.2.1.1 Volatile Organic Compounds (VOCs)***

Benzene and chloroethane have historically been the primary groundwater contaminants detected downgradient of the Current Landfill. Benzene was detected above its standard of 1 microgram per liter ( $\mu\text{g/L}$ ) in two monitoring wells: 087-11, and 088-109. Chloroethane and 1,1-dichloroethane were detected above the groundwater standards of 5  $\mu\text{g/L}$  in one downgradient monitoring well, 088-109, during 2015 (Table 2). No other VOCs were detected above groundwater standards during 2015.

Benzene exceeded the 1  $\mu\text{g/L}$  standard in well 087-11 during the June sampling event, and equaled the standard in 088-109 during the September sampling event. The highest detection of benzene was 1.7  $\mu\text{g/L}$  during the June event in well 087-11. Chloroethane exceeded the 5  $\mu\text{g/L}$  standard in well 088-109 during the June, September and December sampling events. The maximum chloroethane concentration was 124  $\mu\text{g/L}$  detected in well 088-109 during the June sampling event, which is well below the historic high of 560  $\mu\text{g/L}$  detected in this well in 1998. 1,1-Dichloroethane was detected above the standard of 5  $\mu\text{g/L}$  in well 088-109 during the June and September sampling events. The high concentration of 1,1-dichloroethane was 35  $\mu\text{g/L}$  in June. There is no apparent seasonal or water table elevation correlation with VOC concentrations in this well based on an assessment of historical data.



Figure 5 plots the concentration trends of total VOCs (TVOC), benzene, and chloroethane. As shown, VOCs remained relatively stable at low concentrations except for chloroethane in well 088-109. Overall, the trend plots also show a distinct decrease in VOC concentrations from the high concentrations seen prior to the installation of the cap. This reflects the positive effects of the capping on the groundwater quality downgradient of the landfill.

### **2.2.1.2 Water Chemistry Parameters**

Groundwater samples near the Current Landfill were analyzed semi-annually for ammonia, total Kjeldahl nitrogen (TKN), cyanide, sulfate, nitrite, nitrate, total nitrogen, chloride, alkalinity, total dissolved solids (TDS or residue, nonfilterable), and total suspended solids (TSS or residue, filterable) during 2015 (Table 1). The results are provided in Table 3. Elevated levels of these parameters can be indicative of the presence of landfill leachate. During 2015, ammonia was the only water chemistry parameter detected above standards.

Ammonia was detected above the standard of 2 milligrams per liter (mg/L), with exceedances in background well 087-09 and two downgradient wells (087-11, and 088-109), as shown in Table 3. The highest concentration of 5.3 mg/L was reported for well 088-109 in December. The levels of ammonia detected in downgradient wells are consistent with historic data.

Chloride was not detected above the standard of 250 mg/L in any wells in 2015. Background well 087-09 had the highest concentration of chloride at 67.3 mg/L in December. Figure 6 plots these trends. The trends for downgradient wells show the low levels of chloride concentrations in the vicinity of the Current Landfill.

Alkalinity, in the form of bicarbonate, is the concentration of anions available to neutralize acid, and is often used as an indicator of leachate contamination. The alkalinity in background well 087-09 ranged from 23 to 25 mg/L during 2015. The highest alkalinity concentration during 2015 was detected in downgradient, shallow Upper Glacial aquifer well 088-109, at 201 mg/L in December. There is no groundwater standard for alkalinity. The historical concentration trends plotted in Figure 6 show overall stable to decreasing levels of alkalinity.

During 2015, all sulfate concentrations remained below the groundwater standard of 250 mg/L. The highest sulfate value reported for 2015 was detected in the June sample from monitoring well 088-110 at a concentration of 25.6 mg/L. This is consistent with historic background levels at the Current Landfill.

TDS and TSS results were similar to those from previous years. TDS and TSS concentrations in background well 087-09 ranged from 146 mg/L to 167 mg/L, and 4.4 mg/L to 6 mg/L, respectively. The maximum concentrations observed in downgradient wells were 244 mg/L and 54 mg/L of TDS and TSS, respectively.

No water chemistry parameters have exceeded groundwater standards in downgradient wells 087-24, 088-22, and 088-23, since 1998. These wells are all screened in the mid to deep-Upper Glacial aquifer to monitor the vertical extent of contamination from the Current Landfill. A comparison of downgradient and background wells shows that leachate continues to be generated from the Current Landfill, albeit at low concentrations. Decreasing to stable trends in concentrations of contaminants indicate that the capping continues to effectively reduce the generation and migration of leachate.

### **2.2.1.3 Metals**

Historically, iron is detected consistently above groundwater standards in the majority of wells surrounding the landfill. Precipitated iron from the BNL Water Treatment Plant was disposed of at the Current Landfill during past operations. Concentrations in upgradient well 087-09 are still lower than in several downgradient wells, suggesting continued leachate migration from the landfill into the groundwater.

During 2015, chromium, iron, and sodium in the background well, and arsenic, iron, manganese, and sodium in several downgradient wells were detected above their respective groundwater standards (Table 4).

Arsenic was reported above the standard of 10 µg/L in wells 087-23, and 088-110 at a high concentration of 29 µg/L. Arsenic detections have historically been observed at similar levels in Current Landfill wells.

Iron was reported above the standard of 300 µg/L in all wells except 087-24, 087-26, 088-21, and 088-22. The background concentrations ranged up to 925 µg/L while downgradient concentrations ranged up to 75,900 µg/L (well 087-11). Iron trend graphs are plotted on Figure 7.

Manganese ranged from 37 µg/L to 39 µg/L in background well 087-09, and up to 5,220 µg/L (well 087-23) in the downgradient wells.

Background and downgradient sodium levels ranged up to 32,100 µg/L.

Chromium was detected above the standards of 50 µg/L in background well 087-09. Chromium in well 087-09 was detected at concentrations up to 224 µg/L. However, chromium was not detected in any of the downgradient wells.

#### **2.2.1.4 Radionuclides**

No radionuclides were detected above groundwater standards during 2015 (Table 5). Tritium was the only radionuclide detected during 2015. Tritium was detected significantly below the groundwater standard of 20,000 pCi/L with a maximum value of 318 pCi/L in well 087-27 (Figure 8). Tritium and strontium-90 concentrations have not exceeded groundwater standards in any wells since 1998.

#### **2.2.2 Former Landfill**

Based on changes recommended in the *2012 Environmental Monitoring Report, Current and Former Landfill Areas*, all wells except for 106-02 were scheduled to be sampled every two years. Well 106-02 continues to be sampled annually for metals. The Former Landfill Area monitoring wells were last sampled during 2014 and are scheduled for their next sampling in 2016.

##### **2.2.2.1 Metals**

The sampling results are summarized in Table 6, and concentration trend plots for iron are shown on Figure 9. All metal detections were below groundwater standards during 2015.

From December 2008 until 2012, iron had shown an increasing trend in well 106-02. However, iron is the only parameter in the well to have an increasing trend. All other metals are stable at historic background levels. In an effort to find the source of iron, the pump was pulled and examined from well 106-02. It was determined that the pump was approximately 14 years old. This pump was replaced with a new pump in 2013. The iron concentration in this well decreased from the historic high concentration of 2,190 µg/L in 2012 to 606 µg/L in 2013, 148 µg/L in 2014, and to nondetectable levels in 2015.

### **3.0 WOODED WETLAND MONITORING**

Historic water column data does not indicate that the metals are moving into water where uptake could occur in tiger salamanders through ingestion, transdermal absorption, or across gill membranes. However, because of variable results in the last few years for both mercury and lead in sediment at wooded wetland locations SD-12 and SD-2001, and in response to NYSDEC comments, BNL conducted supplemental sampling at four locations on five foot intervals around each of the two locations in December 2015 to characterize a roughly 100 square foot area around each location (Figure 10). Results are presented in Table 7 and include averages for the sample results, as well as comparative values. The comparative values include the benchmark maximum sediment concentration for adult tiger salamanders and BNL background concentrations from the Final Focused Ecological Risk Assessment for Operable Unit I/VI (CDM 1999), and the Class A, B and C guidance values from Screening and Assessment of Contaminated Sediment, (NYSDEC 2014). Class A sediments are classified as low risk to aquatic life. Class B sediments are classified as a slight to moderate risk to aquatic life. Class C sediments are classified as highly contaminated and likely pose a risk to aquatic life.

#### **3.1 Mercury**

Sediment sampling results for locations SD-12 and SD-2001 taken in May 2014 indicated levels of mercury at 430 µg/kg and 335 µg/kg respectively. The mercury value for the 2014 SD-12 location was above both the benchmark maximum sediment concentration and the BNL background sediment concentration. The 2014 SD-2001 mercury sample was above the benchmark maximum sediment concentration but below the BNL background sediment concentration.

For the SD-12 location, 2015 supplemental sampling resulted in mercury concentrations ranging from 128 µg/kg to 273 µg/kg with the average of the four supplemental sample values of 211 µg/kg. The average of the four supplemental samples plus the 2014 SD-12 result is 255 µg/kg. The averaged concentrations fall between the benchmark maximum sediment concentration and BNL background concentration. The average concentrations are at the low end of the range for

Class B sediment guidance values for mercury.

For the SD-2001 location, the average concentration for the four 2015 supplemental samples was 188  $\mu\text{g}/\text{kg}$  which also falls between the benchmark maximum sediment concentration and BNL background concentration, and meets the Class A sediment guidance criteria. The average of the four supplemental samples plus the 2014 sample is 218  $\mu\text{g}/\text{kg}$  and is slightly above the Class A criteria.

### **3.2 Lead**

Sampling results for locations SD-12 and SD-2001 taken in May 2014 indicated levels of lead at 135,000  $\mu\text{g}/\text{kg}$  and 110,000  $\mu\text{g}/\text{kg}$  respectively. The lead value for the 2014 SD-12 location was above the benchmark maximum sediment concentration, the BNL background sediment concentration, as well as the Class C sediment criteria. The 2014 SD-2001 lead sample was also above the benchmark maximum sediment concentration and the BNL background sediment concentration, but within the Class B sediment criteria.

For the SD-12 location, 2015 supplemental sampling resulted in lead concentrations ranging from 65,200  $\mu\text{g}/\text{kg}$  to 116,000  $\mu\text{g}/\text{kg}$  with the average of the four supplemental sample values of 83,750  $\mu\text{g}/\text{kg}$ . The average lead concentration for the supplemental samples plus the 2014 SD-12 sample was 94,000  $\mu\text{g}/\text{kg}$ . These averages are between the benchmark maximum sediment concentration and BNL background concentration, and are also within the range for the Class B sediment guidance values.

The average concentrations for the SD-2001 2015 supplemental samples were 66,200  $\mu\text{g}/\text{kg}$  and 74,960  $\mu\text{g}/\text{kg}$  for the supplemental and the 2014 sample. These averages were below the benchmark maximum sediment concentration and BNL background concentration, and fall within the range of the Class B sediment guidance values.

### **3.3 Water Table Evaluation**

In an effort to confirm whether the water in the wooded wetlands is fed by groundwater or surface runoff, the sediment elevation of locations SD-12, and SD-2001 were surveyed in February 2016. The elevation of these locations is approximately 45 ft above mean sea level.

Figure 11 plots the water table elevation from 2006 until the present versus the elevation of the sediment in the wooded wetlands. Except for one measurement, the water table has remained below the sediment. Therefore, groundwater leaching from the Current Landfill should not be impacting the quality of the water or sediment in the wooded wetlands.

### **3.4 Further Analysis and Investigation**

The 2015 supplemental sample results around locations SD-12 and SD-2001 had lower values than those obtained from the same locations in 2014. In addition, the average results from the 2015 supplemental samples were lower than those obtained in 2010 from SD-12 and SD-2001. This indicates that the results are within the range historically detected at these locations.

As part of the investigation, BNL looked for obvious potential sources of the two metals. A piece of galvanized duct work was found to the south of the two sampling locations. Three soil samples were obtained around the duct work. Results indicated that concentrations of both mercury and lead were significantly below the benchmark maximum sediment concentrations and BNL background concentrations (Table 7).

As part of the standard BNL sampling procedure, personnel look for indications of leachate around the Current Landfill and in the Wooded Wetland. No leachate was observed.

Rain water from the surface of the Current Landfill will drain off the northeast section of the landfill into the Wooded Wetland. A drainage channel, along the southeast side of the Current Landfill channels rainwater to the Wooded Wetland to the north and to a wooded area to the south. The slope of the drainage channel allows water entering the drain from the approximate location of well 088-109 to flow to the north while rainwater entering south of well 088-109 flows to the south (Figure 10).

## 4.0 SOIL-GAS MONITORING

### 4.1 Soil-gas Monitoring Networks

Soil-gas readings were collected from wells surrounding the Current Landfill in March, June, September, and December 2015 and from the Former Landfill in August 2015. Methane, lower explosive limit (LEL), and hydrogen sulfide were measured using a Landtek GEM 2000. The LEL for methane is 5.3% and the upper explosive limit (UEL) is 15%.

#### 4.1.1 Current Landfill

Along the perimeter of the Current Landfill, 58 points were sampled for soil-gas, which includes four outpost soil-gas well clusters, GSGM-1 to GSGM-4, located along the south side of Brookhaven Avenue. The sampling points include 12 soil-gas well clusters consisting of three sampling intervals per cluster, and 11 soil-gas well couplets consisting of two sampling intervals per couplet. Table 8 describes each soil-gas well adjacent to the landfill. Their locations are illustrated on Figure 12.

#### 4.1.2 Former Landfill Area

Twenty-four sampling points were monitored for the Former Landfill Area. These points include 12 well couplets consisting of two sampling points per couplet. Details of each soil-gas well are given in Table 8 and their locations shown in Figure 13.

#### 4.1.3 Sampling Frequency

Soil-gas was monitored for each landfill in the following months.

Sampling Event	Current Landfill	Former Landfill
Round 1	March 2015	August 2015
Round 2	June 2015	None
Round 3	September 2015	None
Round 4	December 2015	None



## **4.2 Results of Soil-Gas Monitoring**

Action levels for soil-gas are specified in 6 NYCRR Part 360-2.17(f) in terms of percent LEL, which is primarily related to the amount of methane present. This discussion focuses primarily on the methane levels detected during monitoring. Hydrogen sulfide is monitored, but has no regulatory action level. 6 NYCRR Part 360-2.17(f) specifies that active measures to control decomposition gases are required when the concentration of methane or other explosive gases exceeds 25 percent of the LEL (or 1.3% methane) in facility structures, or 100 percent (%) of the LEL (or 5.3% methane) at the site boundary.

### **4.2.1 Current Landfill**

A total of 23 soil-gas monitoring well clusters are positioned around the Current Landfill (Figure 12) and were sampled quarterly during 2015. Potential receptors, or areas where methane can accumulate in the vicinity of the Current Landfill, include the National Weather Service office building located 480 feet north northwest of the Current Landfill on the north side of Brookhaven Avenue. The four outpost soil-gas locations, GSGM-1 to GSGM-4, located along the south side of Brookhaven Avenue, are used to monitor the northern extent of the migration of landfill gas. Should methane extend to the south side of Brookhaven Avenue at concentrations exceeding 25 percent of the LEL (or 1.3% methane), active measures may be required to control its migration. This is a BNL administration limit that would trigger further evaluation. In response to an NYSDEC comment on the 2014 Annual Landfills Report, three additional temporary soil gas points were installed in January 2016, southeast of the Current Landfill, (Figure 12).

The results of the soil-gas monitoring for 2015 are summarized in Table 9. Appendix A contains the field notes recorded during the sampling events. Instrument measurements show that methane continues to be generated in several areas of the landfill. The percent of the LEL is elevated along the western side and the southeast boundary of the Current Landfill. In addition, one point, SGM-19, along the northern side of the Current Landfill had elevated LEL readings in June 2015. The elevated levels in these areas have remained stable since 1996 when monitoring began and the current gas venting system appears to be controlling gas accumulation. These data are consistent with previous years (see Appendix C).

Outpost wells, GSGM-1 to GSGM-4, located along the south side of Brookhaven Avenue showed no methane during 2015, indicating that the methane accumulation and migration does not extend to this area. Should methane at concentrations exceeding 25 percent of the LEL (or 1.3% methane) extend to these outpost wells on the south side of Brookhaven Avenue, active measures may be required to control its migration.

Hydrogen sulfide is a product of anaerobic decay in landfills and can produce an odor like rotten eggs. It is a nuisance, but rarely a toxicity problem. For reference, the National Institute of Occupational Safety and Health sets an exposure limit of 10 parts per million (ppm) hydrogen sulfide in the breathing zone for an 8-hour period.

Hydrogen sulfide measurements collected from the soil-gas monitoring wells ranged from 0 ppm to 46 ppm. Well SGM-2A located along the west section of the landfill, had the highest hydrogen sulfide concentration, which was above the 10 ppm exposure limit. However, the measurement was taken from a vapor point screened –2.5 – 7.5 ft below the surface and not from the ambient breathing zone. Like methane, receptors to hydrogen sulfide are considered to be in areas such as basements where the gas can accumulate. Based upon the readings obtained from the outpost soil-gas wells along the south side of Brookhaven Avenue (GSGM-1 to GSGM-4), there is no evidence that hydrogen sulfide is migrating toward the National Weather Service building.

The results of the three temporary soil-gas locations are presented on Table 10. Samples were collected at two depths, (2.5 ft, and 10 ft below land surface) at each location. These sites are located approximately 200 feet downgradient of the Current Landfill. Methane, LEL and hydrogen sulfide were not detected. In addition, samples were collected from permanent soil-gas wells SGM-10A through C and SGM-13A and B for comparison purposes. An elevated LEL reading above 100% was only detected in one of the five permanent soil-gas wells. These wells often have significantly higher results during warmer and dryer times of the year.

#### ***4.2.1.1 Trend in Soil-Gas Data***

Appendix C contains the results of methane and hydrogen sulfide monitoring for the Current Landfill from 1996 through 2014. Generally the levels of methane and hydrogen sulfide in the wells along the northwest landfill boundary and southeast corner have remained elevated but stable.

#### ***4.2.2 Former Landfill Area***

A total of 12 soil-gas monitoring well clusters are positioned around the Former Landfill Area (Figure 13). During 2015, the well clusters were monitored once in August. The only existing operating facility within the immediate vicinity of the Former Landfill Area is Building 670, located approximately 650 feet to the southeast. This building houses the Chemical Holes Sr-90 groundwater treatment system. Because this facility does not have a basement, there is minimal potential for hazardous levels of landfill gases to accumulate in this structure.

Based upon the sampling event, there was no methane or hydrogen sulfide detected. Table 11 details the 2015 soil-gas monitoring results for the Former Landfill Area. Appendix A contains the field notes recorded during the sampling events.

##### ***4.2.2.1 Trends in Soil-Gas Data***

The results of monitoring the Former Landfill Area continue to be consistent with the initial survey of the methane gas migration conducted in 1995, during which concentrations between 0% to 0.1% methane were recorded. Methane has not been detected since 2005. Hydrogen sulfide gas also was measured during this survey. The hydrogen sulfide has not been detected since 2010. Appendix C includes the results of methane and hydrogen sulfide monitoring in the Former Landfill Area for 1996 through 2014.

Presently, there is no measured pathway for methane gas migration, nor do the concentrations represent an explosive hazard, as shown by the non-detectable readings on the LEL meter. The age of the Former Landfill Area and the types of materials disposed of would likely result in low levels or the absence of methane or hydrogen sulfide.

## **5.0 MAINTENANCE AND REPAIR**

With the exception of January and February 2015, monthly site inspections were performed by BNL at the Current and Former Landfill areas to monitor the structural and/or operational status of the landfill cap, gas vents, drainage structure, fences and environmental monitoring system (groundwater wells, soil-gas wells) in accordance with the O&M Manuals. During January and February, large amounts of snow and ice covered the access roads and prevented BNL personnel from safely inspecting the Landfills. A copy of the inspection reports is included in Appendix B. Maintenance and repair work completed by BNL is discussed below.

### **5.1 Landfill Cap and Gas Vents**

To prevent ruts in the landfills caused by the weight of the lawn mowers during periods of above normal precipitation, the cutting of the grass is only conducted when optimal soil conditions are evident. The grass was cut during June and October at the Current Landfill and during July and October at the Former Landfill. Small cracks in the asphalt road next to the Current Landfill were noted on the inspection logs. Also, a couple of potholes were noted along the asphalt road next to the Former Landfill. The cracks and potholes do not impact the structural integrity of the road; however there was vegetation growing in some of the cracks. Phragmites impinging on the asphalt access road at the Current Landfill were cut back. Small pine seedlings observed growing on the edge of the Former Landfill cap were either hand pulled or cut back mechanically. The seedlings only penetrated the top soil cover. Several small animal burrows on the Former Landfill were filled in. A large burrow on the Current Landfill on the south east slope was filled in and seeded. The burrow was approximately 12 inches deep and did not penetrate past the protection layer of the cap.

### **5.2 Drainage Structures**

The drainage structures at both the Current and Former Landfill areas were maintained. They were observed to be operational and structurally sound during the site inspections. Small pine seedlings and weeds were noted growing in the drainage channels of both landfills during various times of the year. During June, the weeds and pine seedlings were sprayed with herbicide on the north, south and west sides of the Current Landfill.

### **5.3 Environmental Monitoring System**

The monitoring wells and soil-gas monitoring wells associated with the landfills required no significant maintenance. Access to the soil-gas monitoring wells was cleared via mechanical weed whacking prior to each sampling event.

### **5.4 Related Structures**

No structures required maintenance during 2015.

## **6.0 CONCLUSIONS AND RECOMMENDATIONS**

### **6.1 Groundwater Monitoring**

#### ***6.1.1 Conclusions for the Current Landfill***

- Benzene was detected in downgradient wells 087-11 and 088-109 at concentrations slightly above the groundwater standard with a maximum concentration of 1.7 µg/L. The other VOCs detected above the groundwater standard were chloroethane and 1,1-dichloroethane which were only detected in one downgradient monitoring well (088-109), during 2015. The maximum concentration of 1,1-dichloroethane during 2015 was 35 µg/L. During 2015, chloroethane concentrations ranged up to 124 µg/L indicating that VOCs continue to emanate from the landfill. An analysis of the trends of VOCs indicated the concentrations are stable to decreasing. These concentrations are naturally attenuating and are not detected at the site boundary above the drinking water standard.
- Concentrations of landfill water chemistry parameters and metals such as ammonia and iron in several downgradient wells were above the upgradient values. This suggests that leachate continues to emanate from the landfill into groundwater, but at low levels.
- Tritium continued to be detected in well 087-27 downgradient of the Current Landfill, but at concentrations well below groundwater standards. This is consistent with historical observations. There have been no detections of radionuclides above the drinking water standards since 1998.
- Although low levels of contaminants continue to be detected, the landfill controls are effective at reducing the impact of the Current Landfill on groundwater quality as evidenced by the improving quality of groundwater downgradient of the landfill.

#### ***6.1.2 Recommendations for the Current Landfill***

Due to the consistent elevated levels of chloroethane in monitoring well 088-109, temporary wells will be drilled in early 2016, north and south of this location to determine the extent and maximum chloroethane concentrations. Groundwater modeling will be used to assess the

attenuation of these VOCs utilizing the updated data set as recommended in the 2014 Groundwater Status Report.

### ***6.1.3 Conclusions for the Former Landfill Area***

- No metals exceeded the groundwater standards in well 106-02 downgradient of the Former Landfill Area. After replacing the pump in well 106-02 in 2013, the iron concentration has decreased from an historic high of 2,190 µg/L in 2012 to non-detect in 2015. Therefore, it is concluded that the pump was the source of the iron in well 106-02.

### ***6.1.4 Recommendations for the Former Landfill Area***

The following change is recommended for the Former Landfill Areas monitoring well network:

- Since iron results have returned to background levels in 2014 and 2015, metals sampling in well 106-02 should be reduced to once every two years, making it consistent with the monitoring requirements of the remaining wells in this program.

## **6.2 Soil-Gas Monitoring**

### ***6.2.1 Conclusions for the Current Landfill***

Methane and hydrogen sulfide levels in wells located along the west landfill boundary and southeast corner have remained stable and have not shown any significant increases or decreases over time. No gas migration has been observed this year at the outpost soil-gas wells along Brookhaven Avenue. No methane or hydrogen sulfide were detected in the three temporary soil-gas wells installed south east of the Current Landfill.

### ***6.2.2 Recommendations for the Current Landfill***

Since the permanent soil-gas well tested in conjunction with the temporary wells had lower readings than expected, temporary soil-gas wells CLF-SG-01 through CLF-SG-03 will be resampled in the spring/summer of 2016 to confirm the winter results.

### ***6.2.3 Conclusions for the Former Landfill Area***

Methane and hydrogen sulfide levels at the Former Landfill Area continue to show no landfill gas. Methane has not been detected near or above standards since monitoring began in 1996.

#### ***6.2.4 Recommendations for the Former Landfill Area***

The soil-gas monitoring program is adequate at this time.

### **6.3 Maintenance and Repair**

Maintenance of the landfill caps will continue in accordance with the O&M requirements.

#### ***6.3.1 Current Landfill***

Monthly inspections and maintenance will continue in accordance with the O&M requirements. Access to the soil-gas monitoring wells will be cleared via mechanical weed whacking. Potholes located on the asphalt access road will be repaired in 2016.

#### ***6.3.2 Former Landfill Area***

Monthly inspections and maintenance will continue in accordance with the O&M requirements. Access to the soil-gas monitoring wells will be cleared via mechanical weed whacking. Continue removal of small pines and weeds in the drainage channel during 2016.

### **6.4 Wooded Wetlands**

While values for both mercury and lead concentrations are above the maximum sediment concentration, historic water column data does not indicate that the metals are moving into water where uptake could occur in tiger salamanders through ingestion, transdermal absorption, or across gill membranes. In addition, historical surveys have confirmed the survival of tiger salamanders in the Wooded Wetland. Surface water and sediment sampling of the Wooded Wetland beyond 2016 will be discontinued.



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Table 1. 2015 Analytical Requirements for Groundwater Samples

Well ID	Project	Decision Subunit	EPA 524.2 VOCs	TSS/TDS	Sulfates/Chloride/Alkalinity	TK Nitrogen	Total Nitrogen	Nitrates	Nitrites	Ammonia	TAL Metals	Cyanide	EPA 901 Gamma Spec	EPA 906 Tritium	EPA 905 Sr 90	Frequency (events/year)
087-09	CLF	Background	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb				2b
087-11	CLF	Downgradient	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb				2b
087-23	CLF	Downgradient	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	2b
087-24	CLF	Downgradient	X <sup>a</sup>	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb				2b
087-26	CLF	Downgradient	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb				2b
087-27	CLF	Downgradient	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	2b
088-109	CLF	Downgradient	X	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	4
088-110	CLF	Downgradient	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb				2b
088-21	CLF	Downgradient	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	2b
088-22	CLF	Downgradient	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>				1a
088-23	CLF	Downgradient	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>				1a
106-02	FLF	Downgradient									X <sup>a</sup>					1a

NOTES:

a: Collect in 4th Quarter only.

b: Collect in 2nd and 4th Quarters.

Table 2. Current Landfill - Summary of 2015 VOC Data

Analyte	Groundwater Standards (µg/L)	087-09		087-09		087-11		087-11		087-23		087-23		087-24	
		6/11/2015 (µg/L)	U	12/16/2015 (µg/L)	U	6/11/2015 (µg/L)	U	12/16/2015 (µg/L)	U	6/11/2015 (µg/L)	U	12/16/2015 (µg/L)	U	12/16/2015 (µg/L)	U
1,1,1,2-Tetrachloroethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethylene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloropropene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichloropropane	0.04	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	0.6	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichloropropane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2,2-Dichloropropane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene	1	0.5	U	0.5	U	1.73		0.74		0.51		0.46	J	0.5	U
Benzene, 1,2,4-trimethyl	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene, 1,3,5-trimethyl-	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene, 1-methylethyl-	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromobenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromodichloromethane	50	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	50	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon tetrachloride	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	5	0.5	U	0.5	U	0.48	J	0.5	U	0.38	J	0.68		0.5	U
Chlorobromomethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	5	0.5	U	0.5	U	3.01		1.91		2.29		1.46		0.5	U
Chloroform	7	0.19	J	0.18	J	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,2-Dichloroethylene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,3-Dichloropropene	0.4	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cymene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
DBCP	0.04	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromochloromethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromomethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
EDB	0.05	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethene, 1,2-dichloro-, (E)-	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorobutadiene	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
m-Dichlorobenzene	3	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
m/p xylene	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl bromide	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl chloride	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl tert-butyl ether	10	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene chloride	5	0.5	U	0.5	U	0.5	U	0.23	J	0.5	U	0.5	U	0.5	U
n-Butylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
n-Propylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Naphthalene	10	0.17	BJ	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Chlorotoluene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Dichlorobenzene	3	0.5	U	0.5	U	0.16	J	0.5	U	0.5	U	0.5	U	0.5	U
o-Xylene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Chlorotoluene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Dichlorobenzene	3	0.5	U	0.5	U	0.5	U	0.5	U	0.21	J	0.54		0.5	U
sec-Butylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
tert-Butylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethylene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	5	0.5	U	0.5	U	0.26	J	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	0.4	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethylene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
524.2 TVOC	--	0.36		0.18		5.64		2.88		3.39		3.14		0	

Table 2. Current Landfill - Summary of 2015 VOC Data

Analyte	Groundwater Standards (µg/L)	087-26 6/11/2015 (µg/L)		087-26 12/16/2015 (µg/L)		087-27 6/11/2015 (µg/L)		087-27 12/16/2015 (µg/L)		088-109 3/27/2015 (µg/L)		088-109 6/11/2015 (µg/L)		088-109 9/9/2015 (µg/L)		088-109 12/16/2015 (µg/L)	
1,1,1,2-Tetrachloroethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.31	J	34.9		16.3		1.96	
1,1-Dichloroethylene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloropropene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichloropropane	0.04	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	0.6	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichloropropane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2,2-Dichloropropane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene	1	0.5	U	0.5	U	0.63		0.71		0.5	U	0.8		1.04		0.77	
Benzene, 1,2,4-trimethyl	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene, 1,3,5-trimethyl-	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene, 1-methylethyl-	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.7	
Bromobenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromodichloromethane	50	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	50	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon tetrachloride	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	5	0.5	U	0.5	U	0.78		0.72		0.5	U	0.5	U	0.5	U	0.5	U
Chlorobromomethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	5	0.5	U	0.5	U	0.9		1.57		0.5	U	124		52.3		19.9	
Chloroform	7	0.5	U	0.5	U	0.71		0.5	U	1.3		2.5	U	0.5	U	0.5	U
cis-1,2-Dichloroethylene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,3-Dichloropropene	0.4	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cymene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
DBCP	0.04	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromochloromethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromomethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1	U	0.5	U
EDB	0.05	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethene, 1,2-dichloro-, (E)-	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorobutadiene	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
m-Dichlorobenzene	3	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
m/p xylene	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl bromide	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl chloride	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl tert-butyl ether	10	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene chloride	5	0.5	U	0.5	U	0.5	U	0.5	U	0.24	J	0.5	U	0.5	U	0.22	J
n-Butylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
n-Propylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Naphthalene	10	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Chlorotoluene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Dichlorobenzene	3	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Xylene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Chlorotoluene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Dichlorobenzene	3	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
sec-Butylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
tert-Butylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethylene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	0.4	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethylene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1	U	0.5	U
524.2 TVOC	--	0		0		3.02		3		1.85		159.7		17.34		23.55	

Table 2. Current Landfill - Summary of 2015 VOC Data

Analyte	Groundwater Standards (µg/L)	088-110 6/11/2015 (µg/L)		088-110 12/16/2015 (µg/L)		088-21 6/11/2015 (µg/L)		088-21 12/17/2015 (µg/L)		088-22 12/17/2015 (µg/L)		088-23 12/17/2015 (µg/L)	
1,1,1,2-Tetrachloroethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	5	0.35	J	0.23	J	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethylene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloropropene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichloropropane	0.04	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	0.6	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichloropropane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2,2-Dichloropropane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene	1	0.3	J	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene, 1,2,4-trimethyl	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene, 1,3,5-trimethyl-	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene, 1-methylethyl-	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromobenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromodichloromethane	50	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	50	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon tetrachloride	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobromomethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	5	1.34		0.97		0.5	U	0.5	U	0.5	U	0.5	U
Chloroform	7	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,2-Dichloroethylene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,3-Dichloropropene	0.4	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cymene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
DBCP	0.04	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromochloromethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromomethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
EDB	0.05	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethene, 1,2-dichloro-, (E)-	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorobutadiene	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
m-Dichlorobenzene	3	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
m/p xylene	5	1	U	1	U	1	U	1	U	1	U	1	U
Methyl bromide	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl chloride	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl tert-butyl ether	10	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene chloride	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
n-Butylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
n-Propylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Naphthalene	10	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Chlorotoluene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Dichlorobenzene	3	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Xylene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Chlorotoluene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Dichlorobenzene	3	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
sec-Butylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
tert-Butylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethylene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	0.4	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethylene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
524.2 TVOC	--	1.99		1.2		0		0		0		0	

Table 3. Current Landfill - Summary of 2015 Water Chemistry Data.

<i>Analyte</i>	Groundwater (mg/L)	087-09	087-09	087-11	087-11	087-23	087-23	087-24
		6/11/2015 (mg/L)	12/16/2015 (mg/L)	6/11/2015 (mg/L)	12/16/2015 (mg/L)	6/11/2015 (mg/L)	12/16/2015 (mg/L)	6/11/2015 (mg/L)
Alkalinity (as CaCO <sub>3</sub> )	--	23.1	24.9	183	166	80.7	101	20.6
Ammonia (as N)	2	0.0996	<b>3.54</b>	<b>2.56</b>	1.61	0.633	0.509	0.0717
Chloride	250	53.3	67.3	32.3	18	10.9	16.3	22.6
Cyanide	0.2	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U
Nitrate (as N)	10	1.06	1.02	0.132 UJ	0.171 J	0.066 U	0.066 U	0.461
Nitrite (as N)	1	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U
Nitrite + Nitrate-N	10	0.881	1.05	0.085 U	1.7 U	0.085 U	1.7 U	0.51
Nitrogen	--	1.06	4.65	2.71	1.7 U	0.563	1.7 U	0.579
Sulfate	250	14.1	10.8	11.2	6.29	15.2	5.99	13.1
TDS	--	146	167	244	227	88.6	149	77.1
Total Kjeldahl Nitrogen	--	0.174	3.6	2.71	1.49	0.563	0.416	0.0691 J
TSS	--	4.33	6	11	9.87	19.2	2.11 J	0.633 U

J - Estimated value.

U - Not detected.



Table 3. Current Landfill - Summary of 2015 Water Chemistry Data.

<i>Analyte</i>	Groundwater (mg/L)	087-24	087-26	087-26	087-27	087-27	088-109	088-109						
		12/16/2015 (mg/L)	6/11/2015 (mg/L)	12/16/2015 (mg/L)	6/11/2015 (mg/L)	12/16/2015 (mg/L)	6/11/2015 (mg/L)	12/16/2015 (mg/L)						
Alkalinity (as CaCO <sub>3</sub> )	--	21.7	17.5	21.7	116	170	167	201						
Ammonia (as N)	2	0.0653	0.0573	0.0374	J	1.63	0.985	2.66	5.3					
Chloride	250	24.4	13.8	15.4		22.5	32	14.8	22.9					
Cyanide	0.2	0.00167	U	0.00167	U	0.00167	U	0.00167	U	0.00167	U			
Nitrate (as N)	10	0.499	0.459	0.501		0.132	U	0.165	U	0.165	U	0.33	U	
Nitrite (as N)	1	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	0.038	U	
Nitrite + Nitrate-N	10	0.491	0.48	0.452		0.085	U	1.7	U	0.085	U	1.7	U	
Nitrogen	--	0.496	0.48	0.452		1.49		1.7	U	2.63		4.85	J	
Sulfate	250	12.2	14.2	12.9		11.6		10.5		9.21		5.82		
TDS	--	101	77.1	74.3		150		241		174		229		
Total Kjeldahl Nitrogen	--	0.033	U	0.033	U	0.033	U	1.49		0.948		2.63		4.85
TSS	--	0.6	U	0.633	U	0.947	J	20		7.6		46.2		24.2

J - Estimated value.

U - Not detected.

Table 3. Current Landfill - Summary of 2015 Water Chemistry Data.

<i>Analyte</i>	Groundwater (mg/L)	088-110 6/11/2015 (mg/L)	088-110 12/16/2015 (mg/L)	088-21 6/11/2015 (mg/L)	088-21 12/17/2015 (mg/L)	088-22 12/17/2015 (mg/L)	088-23 12/17/2015 (mg/L)
Alkalinity (as CaCO3)	--	167	76.6	16.5	15.2	22.6	20.8
Ammonia (as N)	2	0.326	0.785	0.316	0.0557	0.0914	0.0255 J
Chloride	250	31.2	38.1	57.2	38.3	13.9	15.9
Cyanide	0.2	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U
Nitrate (as N)	10	0.066 HU	0.0686 J	0.263	0.267	0.461	0.0355 J
Nitrite (as N)	1	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U
Nitrite + Nitrate-N	10	0.085 U	1.7 U	0.282	0.24	0.41	1.7 U
Nitrogen	--	0.259	1.7 U	0.563	0.245	0.41	1.7 U
Sulfate	250	25.6	18.1	3.78 J	5.83	14.2	17.4
TDS	--	149	167	121	130	95.7	85.7
Total Kjeldahl Nitrogen	--	0.259	0.653	0.281	0.033 U	0.033 U	0.033 U
TSS	--	54	7.07	1.87 J	1.5 J	0.814 U	1.86 J

J - Estimated value.

U - Not detected.

Table 4. Current Landfill - Summary of 2015 Metals Data.

<i>Analyte</i>	Groundwater Standards (µg/L)	087-09 6/11/2015 (µg/L)		087-09 12/16/2015 (µg/L)		087-11 6/11/2015 (µg/L)		087-11 12/16/2015 (µg/L)		087-23 6/11/2015 (µg/L)		087-23 12/16/2015 (µg/L)		087-24 6/11/2015 (µg/L)		087-24 12/16/2015 (µg/L)		087-26 6/11/2015 (µg/L)	
Aluminum	200	129	B	199	B	100	B	81.4	B	68	U	68	U	68	U	68	U	68	U
Antimony	3	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U
Arsenic	10	1.7	U	1.7	U	9.06		7.61		<b>15.5</b>		<b>10.1</b>		1.7	U	1.7	U	1.7	U
Barium	1000	33.3	B	40.4	B	25.4	B	21.4	B	22.9	B	22.6	B	10.9	B	11	B	22.4	B
Beryllium	3	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cadmium	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Calcium	--	12900		12800		20000		20800		6770		6420		6690		6440		5760	
Chromium	50	<b>133</b>		<b>224</b>		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cobalt	--	1	U	1	U	2.7	B	8.62	B	7.4	B	8.73	B	1.28	B	1.08	B	1.53	B
Copper	200	7.81	B	10.2	B	3	U	3	U	3	U	3	U	3	U	3	U	3	U
Iron	300	<b>602</b>		<b>925</b>		<b>75900</b>		<b>65500</b>		<b>46800</b>		<b>47000</b>		30	U	30	U	107	
Lead	25	0.76	B	0.814	B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Magnesium	35000	5390		4180	B	7150		5000		1960	B	1630	B	4500	B	4200	B	4270	B
Manganese	300	37.1		38.9		<b>1670</b>		<b>1710</b>		<b>3170</b>		<b>5220</b>		2	U	2	U	2	U
Mercury	0.7	0.067	U	0.067	U	0.136	B	0.067	U	0.067	U	0.067	U	0.067	U	0.067	U	0.067	U
Nickel	100	10.7	B	17.3	B	1.62	B	6.6	B	1.94	B	1.71	B	1.5	U	1.5	U	1.5	U
Potassium	--	1110	B	1650	B	3450	B	2550	B	1070	B	1040	B	1330	B	1260	B	1350	B
Selenium	10	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U
Silver	50	1	U	1	U	1.15	B	3.07	B	1.17	B	3.13	B	1	U	1	U	1	U
Sodium	20000	<b>29600</b>		<b>32100</b>		<b>22300</b>		10700		7470		7180		15500		15200		10800	
Thallium	0.5	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U
Vanadium	--	2.63	B	3.2	B	1.67	B	1.24	B	1	U	1	U	1	U	1	U	1	U
Zinc	2000	5.86	B	11	B	3.3	U	92.7		3.3	U	8.73	B	3.3	U	3.3	U	3.3	U

U - Not detected.

B - Result between the IDL and MDL.

Table 4. Current Landfill - Summary of 2015 Metals Data.

<i>Analyte</i>	Groundwater Standards (µg/L)	087-26		087-27		087-27		088-109		088-109		088-110		088-110		088-21		088-21		088-22		088-23	
		12/16/2015 (µg/L)		6/11/2015 (µg/L)		12/16/2015 (µg/L)		6/11/2015 (µg/L)		12/16/2015 (µg/L)		6/11/2015 (µg/L)		12/16/2015 (µg/L)		6/11/2015 (µg/L)		12/17/2015 (µg/L)		12/17/2015 (µg/L)		12/17/2015 (µg/L)	
Aluminum	200	68	U	68	U	68	U	77.7	B	180	B	68	U	68	U	68	U	68	U	68	U	68	U
Antimony	3	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U
Arsenic	10	1.7	U	6.56		8		5.38		9.02		<b>29.2</b>		8.28		1.7	U	1.7	U	1.7	U	1.87	B
Barium	1000	22.5	B	30.8	B	35.5	B	77	B	62.9	B	31.1	B	26.6	B	15.1	B	17.9	B	26.2	B	7.52	B
Beryllium	3	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cadmium	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Calcium	--	5870		17600		21700		33000		35600		14900		14700		6780		5690		6660		4540	B
Chromium	50	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cobalt	--	1.91	B	2.52	B	2.73	B	2.71	B	1.53	B	1	B	3.19	B	1	U	1	U	1.45	B	2.11	B
Copper	200	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U
Iron	300	198		<b>47700</b>		<b>57300</b>		<b>43500</b>		<b>48100</b>		<b>35200</b>		<b>40100</b>		125		124		267		<b>7640</b>	
Lead	25	0.5	U	0.5	U	0.5	U	0.533	B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Magnesium	35000	4390	B	5020		5510		7880		7930		3890	B	3950	B	3570	B	3380	B	3630	B	1600	B
Manganese	300	2.19	B	<b>1120</b>		<b>2500</b>		<b>2000</b>		<b>1100</b>		<b>3220</b>		<b>2000</b>		38.3		46.6		22.9		<b>1460</b>	
Mercury	0.7	0.067	U	0.098	B	0.067	U	0.119	B	0.067	U	0.082	B	0.067	U	0.067	U	0.067	U	0.067	U	0.067	U
Nickel	100	1.5	U	1.5	U	1.5	U	2.13	B	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	2.94	B
Potassium	--	1330	B	3290	B	3500	B	5070		8360		2590	B	2940	B	1580	B	1090	B	1320	B	1210	B
Selenium	10	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U
Silver	50	1	U	1	U	3.08	B	1.14	B	2.17	B	1.28	B	1.86	B	1	U	1	U	1	U	1	U
Sodium	20000	10100		18100		<b>25100</b>		10000		13100		<b>25200</b>		18500		<b>31900</b>		<b>21000</b>		12200		12900	
Thallium	0.5	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U
Vanadium	--	1	U	1	U	1.1	B	1.02	B	1.36	B	1	U	1	U	1	U	1	U	1	U	1	U
Zinc	2000	3.3	U	3.3	U	8.54	B	3.3	U	6.94	B	3.3	U	5.73	B	3.3	U	3.3	U	3.3	U	9.34	B

U - Not detected.

B - Result between the IDL and MDL.

Table 5. Current Landfill - Summary of 2015 Radionuclide Data.

<i>Analyte</i>	Groundwater Standards pCi/L	087-23 12/16/2015 pCi/L				087-27 12/16/2015 pCi/L				088-109 12/16/2015 pCi/L			
		Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error
<b>Americium-241</b>	1.2	2.22	U	20.2	12.5	4.73	U	15.2	9.2	-0.593	U	4.17	2.75
<b>Beryllium-7</b>	40000	1.38	U	21	11.6	7.8	U	25.9	14.1	-4.28	U	19.3	11.2
<b>Cesium-134</b>	80	0.449	U	2.56	1.43	0.486	U	3.23	1.71	1.61	U	2.8	1.47
<b>Cesium-137</b>	120	-0.603	U	2.32	1.35	0.273	U	3.36	4.23	0.293	U	2.48	1.42
<b>Co-60</b>	200	-1.78	U	2.28	1.4	-0.049	U	3.31	1.77	-0.179	U	2.54	1.42
<b>Cobalt-57</b>	4000	-0.278	U	1.93	1.14	0.16	U	2.44	1.4	0.621	U	1.71	1.02
<b>Europium-152</b>	841	0.83	U	7.25	4.16	-2.65	U	8.33	4.98	1.49	U	6.75	3.94
<b>Europium-154</b>	573	-0.0281	U	7.31	3.96	2.51	U	10.4	5.33	0.017	U	7.19	3.97
<b>Europium-155</b>	4000	-0.856	U	8.67	5.06	0.539	U	10.1	5.79	-0.184	U	6.53	3.93
<b>Manganese-54</b>	2000	-0.501	U	2.21	1.25	-0.0149	U	3.1	1.71	-0.865	U	2.33	1.36
<b>Sodium-22</b>	400	-0.00983	U	2.57	1.39	1.09	U	3.67	1.85	-0.279	U	2.52	1.41
<b>Strontium-90</b>	8	-0.515	U	0.779	0.379	0.0829	U	0.687	0.372	0.557	U	0.77	0.473
<b>Tritium</b>	20000	-62.6	U	246	139	318		252	156	63.1	U	252	148
<b>Zinc-65</b>	360	-0.13	U	4.54	2.96	0.843	U	5.88	3.59	1.32	U	4.91	3.11

U - Not detected.

Table 5. Current Landfill - Summary of 2015 Radionuclide Data.

<i>Analyte</i>	Groundwater Standards pCi/L	088-21 12/17/2015 pCi/L			
		Result	Qual	MDA	Error
<b>Americium-241</b>	1.2	0.442	U	19.5	11.1
<b>Beryllium-7</b>	40000	0.86	U	19.9	11.6
<b>Cesium-134</b>	80	-0.384	U	2.29	1.32
<b>Cesium-137</b>	120	-0.341	U	2.5	1.43
<b>Co-60</b>	200	-0.287	U	2.38	1.34
<b>Cobalt-57</b>	4000	0.397	U	2.03	1.19
<b>Europium-152</b>	841	-0.504	U	6.62	3.83
<b>Europium-154</b>	573	-4.98	U	6.44	4.02
<b>Europium-155</b>	4000	-2.29	U	9.08	7.4
<b>Manganese-54</b>	2000	1.71	U	2.47	1.29
<b>Sodium-22</b>	400	-1.76	U	2.26	1.41
<b>Strontium-90</b>	8	0.501	U	0.712	0.44
<b>Tritium</b>	20000	-48.6	U	198	98.5
<b>Zinc-65</b>	360	-0.334	U	4.95	3.21

U - Not detected.

Table 6. Former Landfill - Summary of 2015 Metals Data.

<b><i>Analyte</i></b>	<b>Groundwater Standards (µg/L)</b>	<b>106-02 12/17/2015 (µg/L)</b>	
Aluminum	200	68	U
Antimony	3	3.5	U
Arsenic	10	1.7	U
Barium	1000	19	B
Beryllium	3	1	U
Cadmium	5	1	U
Calcium	--	11800	
Chromium	50	1	U
Cobalt	--	1	U
Copper	200	3	U
Iron	300	30	U
Lead	25	0.5	U
Magnesium	35000	2320	B
Manganese	300	4.27	B
Mercury	0.7	0.067	U
Nickel	100	1.5	U
Potassium	--	1600	B
Selenium	10	1.5	U
Silver	50	1	U
Sodium	20000	9400	
Thallium	0.5	0.45	U
Vanadium	--	1	U
Zinc	2000	5.26	B

Table 7. Wooded Wetland Sediment Metals Results

											Freshwater Sediment Guidance Values <sup>2</sup>		
	SD-12-N 12/4/2015	SD-12-E 12/4/2015	SD-12-S 12/4/2015	SD-12-W 12/4/2015	Average of Supplemental Samples	SD-12 5/14/2014	Average of All Samples	Benchmark Max Sediment Conc. <sup>1</sup>	BNL Background Sediment Conc. <sup>1</sup>	Class A	Class B	Class C	
Mercury (ug/kg)	247	273	128	195	211	430	255	170	410	<200	200 - 1,000	> 1,000	
Lead (ug/kg)	80900	116000	65200	72900	83750	135000	94000	82900	97600	<36,000	36,000 - 130,000	>130,000	
	SD-2001-N 12/4/2015	SD-2001-E 12/4/2015	SD-2001-S 12/4/2015	SD-2001-W 12/4/2015		SD-2001 5/14/2014							
Mercury (ug/kg)	215	124	281	133	188	335	218	170	410	<200	200 - 1,000	> 1,000	
Lead (ug/kg)	74900	41200	103000	45700	66200	110000	74960	82900	97600	<36,000	36,000 - 130,000	>130,000	
	Duct Work Soil-1 12/4/2015	Duct Work Soil-2 12/4/2015	Duct Work Soil-3 12/4/2015										
Mercury (ug/kg)	67.6	59.2	64.7		64			170	410				
Lead (ug/kg)	27300	31400	21200		26633			82900	97600				

1. Final Focused Ecological Risk Assessment for Operable Unit I/VI (CDM 1999)  
 2. Screening and Assessment of Contaminated Sediment, (NYSDEC 2014)



**Table 8  
Soil Gas Monitoring Well Description**

<b>Current Landfill</b>			
<b>Soil Gas Monitoring Well</b>	<b>Screen Location</b>	<b>Top of Screen (Feet BLS)</b>	<b>Bottom Screen (Feet BLS)</b>
SGM-1 PROBE A	Shallow	2.5	7.5
SGM-1 PROBE B	Intermediate	10.5	17.5
SGM-1 PROBE C	Deep	20	29.5
SGM-2 PROBE A	Shallow	2.5	7.5
SGM-2 PROBE B	Intermediate	10.5	16
SGM-2 PROBE C	Deep	19	28
SGM-3 PROBE A	Shallow	2.5	7.5
SGM-3 PROBE B	Intermediate	10.5	17
SGM-3 PROBE C	Deep	20	29
SGM-4 PROBE A	Shallow	2.5	7.5
SGM-4 PROBE B	Intermediate	10.5	20
SGM-4 PROBE C	Deep	23	32
SGM-5 PROBE A	Shallow	2.5	7.5
SGM-5 PROBE B	Intermediate	10.5	22
SGM-5 PROBE C	Deep	25	34
SGM-6 PROBE A	Shallow	2.5	7.5
SGM-6 PROBE B	Intermediate	10.5	18.5
SGM-6 PROBE C	Deep	21.5	30.5
SGM-7 PROBE A	Shallow	2.5	7.5
SGM-7 PROBE B	Intermediate	10.5	16
SGM-7 PROBE C	Deep	19	26
SGM-8 PROBE A	Shallow	2.5	7.5
SGM-8 PROBE B	Intermediate	10.5	16.5
SGM-8 PROBE C	Deep	19.5	28.5
SGM-9 PROBE A	Shallow	2.5	7.5
SGM-9 PROBE B	Intermediate	10.5	20.5
SGM-9 PROBE C	Deep	23.5	32.5
SGM-10 PROBE A	Shallow	2.5	7.5
SGM-10 PROBE B	Intermediate	10.5	15.5
SGM-10 PROBE C	Deep	18.5	27.5
SGM-11 PROBE A	Shallow	2.5	7.5
SGM-11 PROBE B	Intermediate	10.5	16
SGM-12 PROBE A	Shallow	2.5	7.5
SGM-12 PROBE B	Intermediate	10.5	15
SGM-13 PROBE A	Shallow	2.5	7.5
SGM-13 PROBE B	Intermediate	10.5	13
SGM-14 PROBE A	Shallow	2.5	7.5
SGM-14 PROBE B	Intermediate	10.5	13
SGM-15 PROBE A	Shallow	2.5	5.5
SGM-15 PROBE B	Intermediate	8.5	11.5
SGM-16 PROBE A	Shallow	2.5	5.5
SGM-16 PROBE B	Intermediate	8.5	11
SGM-17 PROBE A	Shallow	2.5	5.5

**Table 8  
Soil Gas Monitoring Well Description**

<b>Current Landfill</b>			
<b>Soil Gas Monitoring Well</b>	<b>Screen Location</b>	<b>Top of Screen (Feet BLS)</b>	<b>Bottom Screen (Feet BLS)</b>
<b>SGM-17 PROBE B</b>	<b>Intermediate</b>	<b>8.5</b>	<b>11</b>
<b>SGM-18 PROBE A</b>	<b>Shallow</b>	<b>2.5</b>	<b>7.5</b>
<b>SGM-18 PROBE B</b>	<b>Intermediate</b>	<b>10.5</b>	<b>13.5</b>
<b>SGM-19 PROBE A</b>	<b>Shallow</b>	<b>2.5</b>	<b>7.5</b>
<b>SGM-19 PROBE B</b>	<b>Intermediate</b>	<b>10.5</b>	<b>17</b>

**BLS – Below Land Surface**

<b>Current Landfill Outpost Wells</b>		
<b>Site ID</b>	<b>Depth to Bottom from top PVC (feet)</b>	<b>PVC Stick Up from Ground (feet)</b>
<b>GSGM-1A</b>	<b>12.00</b>	<b>2.50</b>
<b>GSGM-1B</b>	<b>21.00</b>	<b>2.50</b>
<b>GSGM-1C</b>	<b>29.40</b>	<b>2.50</b>
<b>GSGM-2A</b>	<b>14.25</b>	<b>2.50</b>
<b>GSGM-2B</b>	<b>20.05</b>	<b>2.50</b>
<b>GSGM-2C</b>	<b>27.00</b>	<b>2.50</b>
<b>GSGM-3A</b>	<b>13.91</b>	<b>2.50</b>
<b>GSGM-3B</b>	<b>17.75</b>	<b>2.50</b>
<b>GSGM-4A</b>	<b>11.50</b>	<b>2.50</b>
<b>GSGM-4B</b>	<b>15.20</b>	<b>2.50</b>

**Table 8  
Soil Gas Monitoring Well Description**

<b>Former Landfill</b>			
<b>Soil Gas Monitoring Well</b>	<b>Screen Location</b>	<b>Top of Screen (Feet BLS)</b>	<b>Bottom Screen (Feet BLS)</b>
<b>SGM-1 PROBE A</b>	<b>Shallow</b>	<b>2.5</b>	<b>10</b>
<b>SGM-1 PROBE B</b>	<b>Intermediate</b>	<b>15</b>	<b>43</b>
<b>SGM-2 PROBE A</b>	<b>Shallow</b>	<b>2.5</b>	<b>10</b>
<b>SGM-2 PROBE B</b>	<b>Intermediate</b>	<b>15</b>	<b>40</b>
<b>SGM-3 PROBE A</b>	<b>Shallow</b>	<b>2</b>	<b>9.5</b>
<b>SGM-3 PROBE B</b>	<b>Intermediate</b>	<b>14.5</b>	<b>36</b>
<b>SGM-4 PROBE A</b>	<b>Shallow</b>	<b>2.5</b>	<b>10</b>
<b>SGM-4 PROBE B</b>	<b>Intermediate</b>	<b>15</b>	<b>35.5</b>
<b>SGM-5 PROBE A</b>	<b>Shallow</b>	<b>2.5</b>	<b>10</b>
<b>SGM-5 PROBE B</b>	<b>Intermediate</b>	<b>15</b>	<b>37</b>
<b>SGM-6 PROBE A</b>	<b>Shallow</b>	<b>2.7</b>	<b>10.2</b>
<b>SGM-6 PROBE B</b>	<b>Intermediate</b>	<b>22</b>	<b>37.2</b>
<b>SGM-7 PROBE A</b>	<b>Shallow</b>	<b>2.8</b>	<b>10.3</b>
<b>SGM-7 PROBE B</b>	<b>Intermediate</b>	<b>15</b>	<b>42</b>
<b>SGM-8 PROBE A</b>	<b>Shallow</b>	<b>2.5</b>	<b>10</b>
<b>SGM-8 PROBE B</b>	<b>Intermediate</b>	<b>15</b>	<b>47</b>
<b>SGM-9 PROBE A</b>	<b>Shallow</b>	<b>2.5</b>	<b>10</b>
<b>SGM-9 PROBE B</b>	<b>Intermediate</b>	<b>15</b>	<b>52</b>
<b>SGM-10 PROBE A</b>	<b>Shallow</b>	<b>2.5</b>	<b>10</b>
<b>SGM-10 PROBE B</b>	<b>Intermediate</b>	<b>15</b>	<b>52</b>
<b>SGM-11 PROBE A</b>	<b>Shallow</b>	<b>2.5</b>	<b>10</b>
<b>SGM-11 PROBE B</b>	<b>Intermediate</b>	<b>15</b>	<b>46</b>
<b>SGM-12 PROBE A</b>	<b>Shallow</b>	<b>2.5</b>	<b>10</b>
<b>SGM-12 PROBE B</b>	<b>Intermediate</b>	<b>15</b>	<b>43.5</b>

**BLS – Below Land Surface**



Table 10. Temporary Well Soil-Gas Results, January 6, 2016, Current Landfill

CLF-SG-01				
Depth (bls)	Time	LEL %	H2S PPM	CH4 %
2.5'	1038	0	0	0
10'	1130	0	0	0

CLF-SG-02				
Depth (bls)	Time	LEL %	H2S PPM	CH4 %
2.5'	1049	0	0	0
10'	1403	0	0	0

CLF-SG-03				
Depth (bls)	Time	LEL %	H2S PPM	CH4 %
2.5'	1105	0	0	0
10'	1455	0	0	0

SGM-10 A through C				
ID#	Time	LEL %	H2S PPM	CH4 %
087-71 A	1510	0	0	0
087-96 B	1518	50	0	2.5
087-97 C	1529	79	7	3.9
SGM-13 A through B				
ID#	Time	LEL %	H2S PPM	CH4 %
087-74 A	1545	15	0	0.8
087-100 B	1600	312	0	15.6

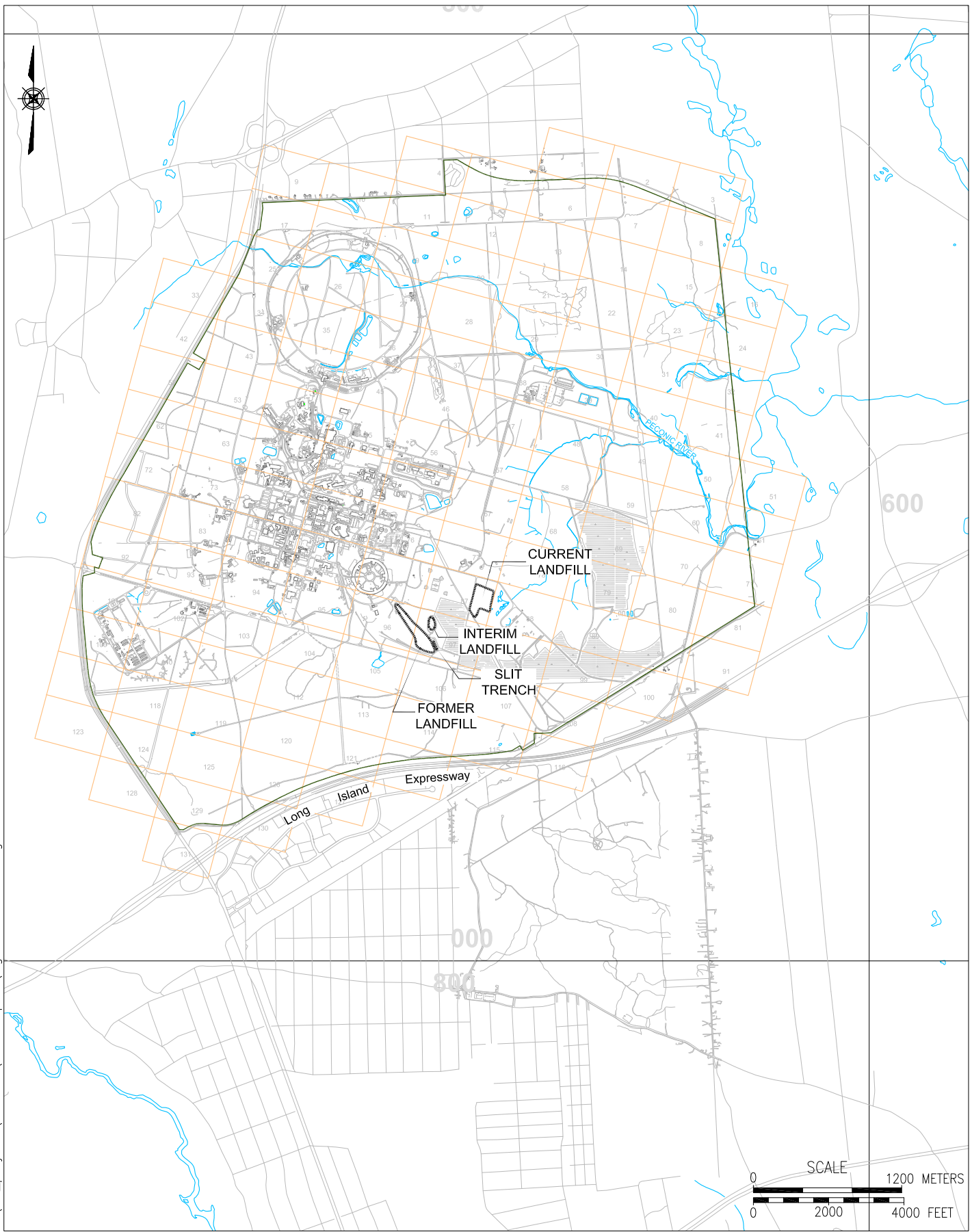
bls - Below land surface.

**Table 11**

**2015 Former Landfill Soil-Gas Monitoring Summary Table**

Soil Gas Monitoring Well	Methane (% By Volume) 8/20/2015	LEL (% By Volume) 8/20/2015	Hydrogen Sulfide (ppm by volume) 8/20/2015	Soil Gas Monitoring Well
SGM-01A	0	0	0	SGM-01A
SGM-01B	0	0	0	SGM-01B
SGM-02A	0	0	0	SGM-02A
SGM-02B	0	0	0	SGM-02B
SGM-03A	0	0	0	SGM-03A
SGM-03B	0	0	0	SGM-03B
SGM-04A	0	0	0	SGM-04A
SGM-04B	0	0	0	SGM-04B
SGM-05A	0	0	0	SGM-05A
SGM-05B	0	0	0	SGM-05B
SGM-06A	0	0	0	SGM-06A
SGM-06B	0	0	0	SGM-06B
SGM-07A	0	0	0	SGM-07A
SGM-07B	0	0	0	SGM-07B
SGM-08A	0	0	0	SGM-08A
SGM-08B	0	0	0	SGM-08B
SGM-09A	0	0	0	SGM-09A
SGM-09B	0	0	0	SGM-09B
SGM-10A	0	0	0	SGM-10A
SGM-10B	0	0	0	SGM-10B
SGM-11A	0	0	0	SGM-11A
SGM-11B	0	0	0	SGM-11B
SGM-12A	0	0	0	SGM-12A
SGM-12B	0	0	0	SGM-12B

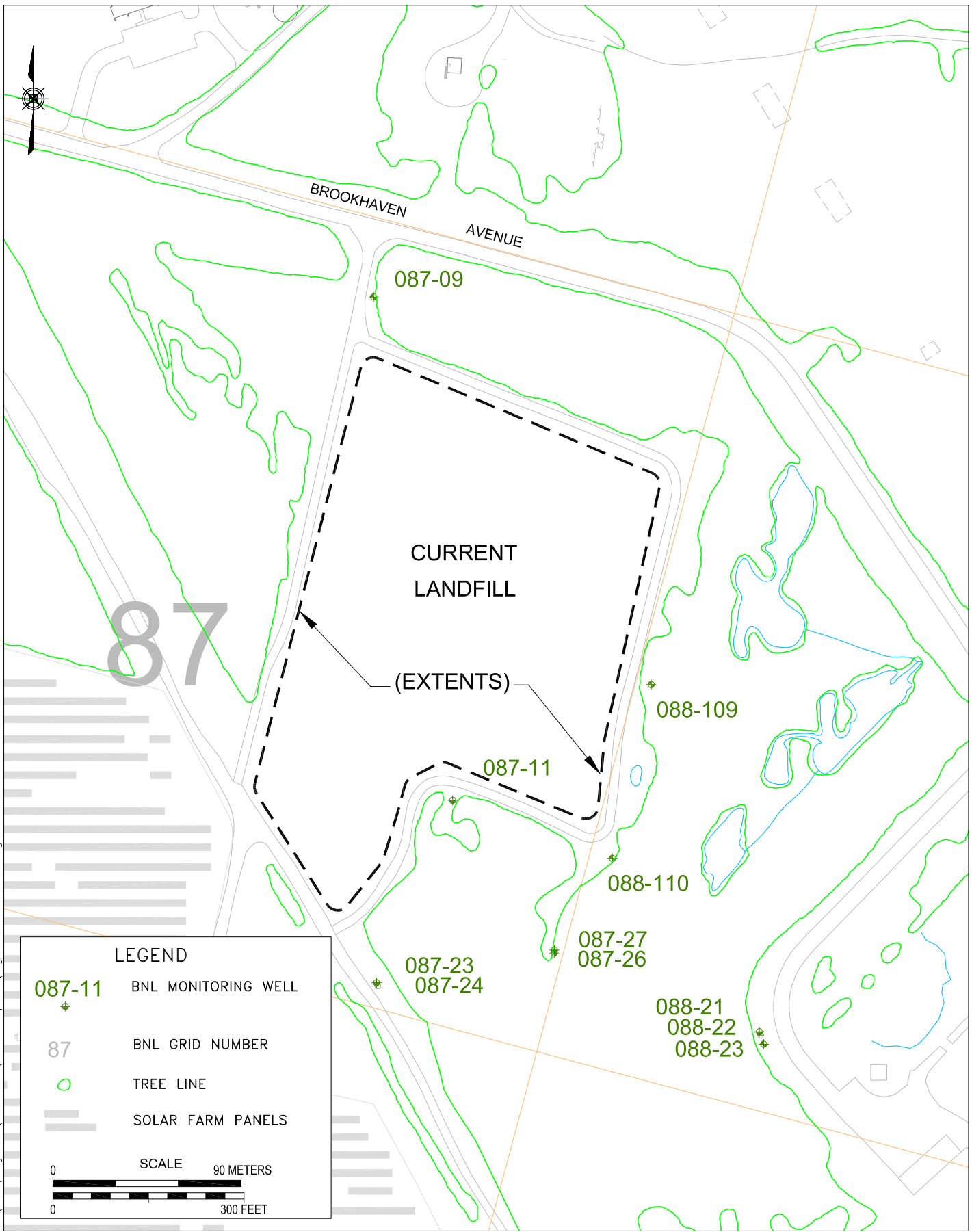
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**SITE LOCATION MAP**  
2015 ENVIRONMENTAL MONITORING REPORT  
CURRENT AND FORMER LANDFILL AREAS

DWN: AJZ	VT:HZ.: -	DATE: 02/19/16	PROJECT NO.: -
CHKD: JEB	APPD: RFH	REV.: -	NOTES: -
FIGURE NO.:		1	

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**LEGEND**

- 087-11 BNL MONITORING WELL
- 87 BNL GRID NUMBER
- TREE LINE
- SOLAR FARM PANELS

**SCALE**

0 90 METERS  
0 300 FEET

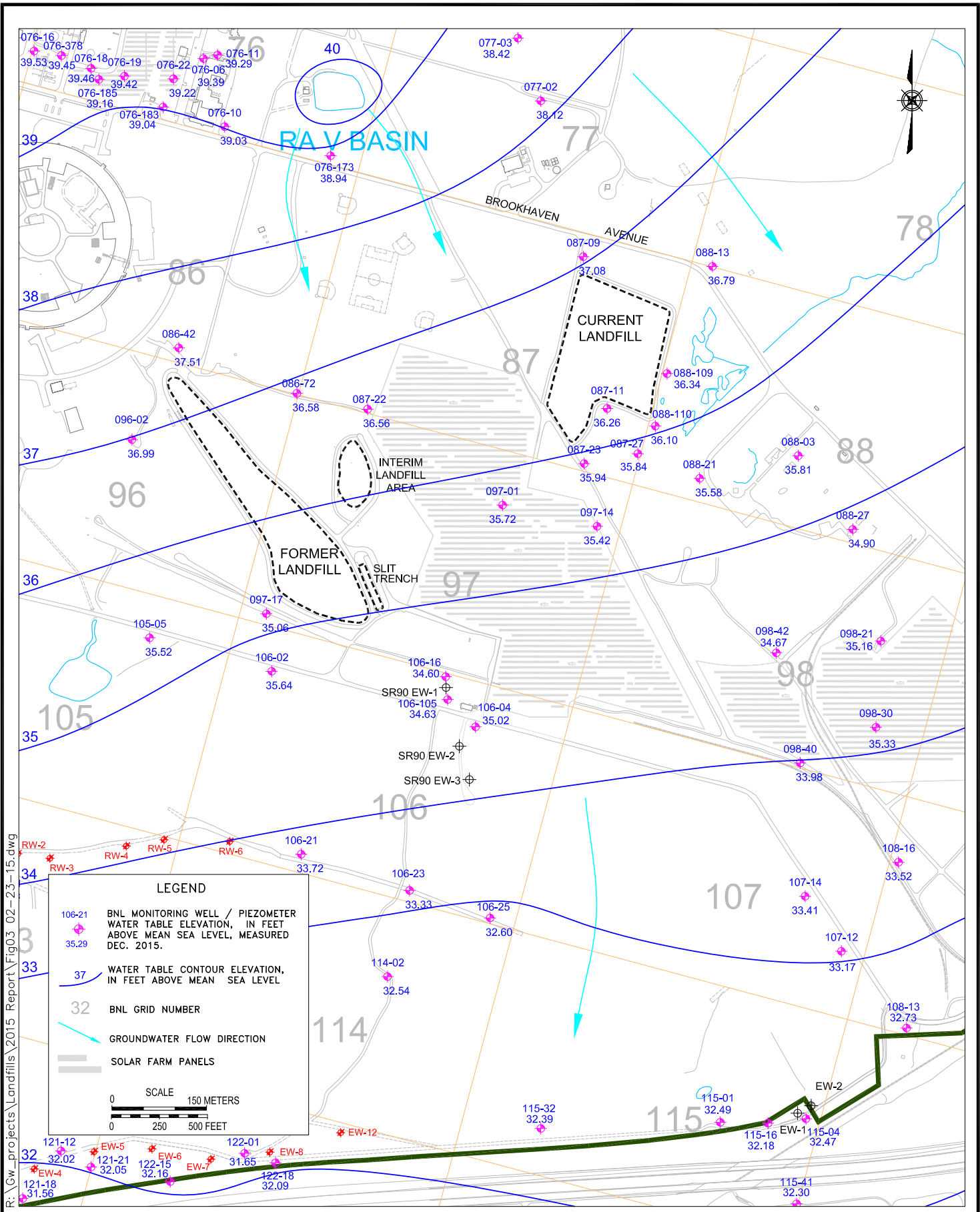


TITLE:

**CURRENT LANDFILL  
MONITORING WELL LOCATIONS  
2015 ENVIRONMENTAL MONITORING REPORT  
CURRENT AND FORMER LANDFILL AREAS**

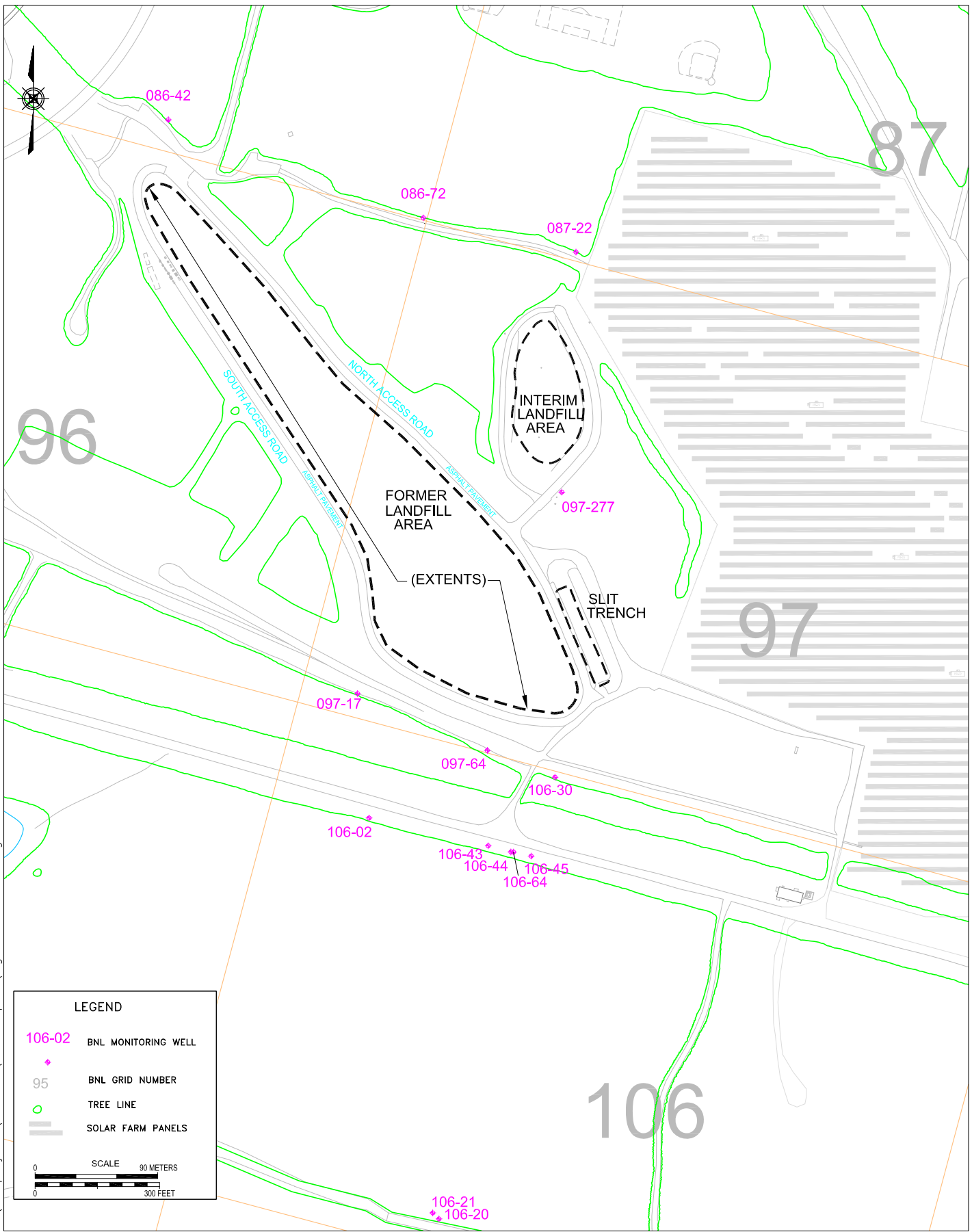
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FIGURE NO.:		2	





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**LEGEND**

- 106-02 BNL MONITORING WELL
- 95 BNL GRID NUMBER
- TREE LINE
- SOLAR FARM PANELS

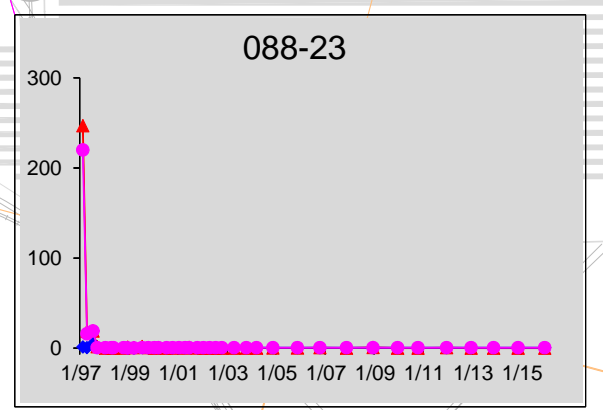
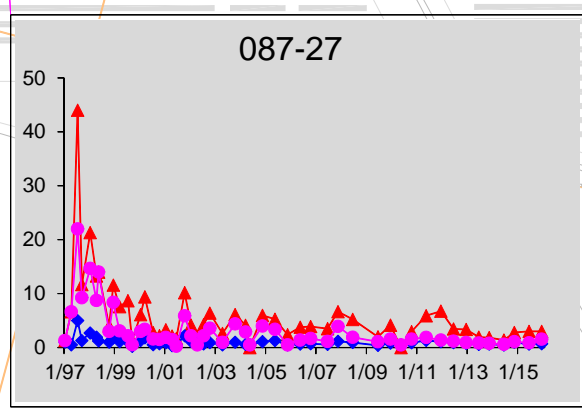
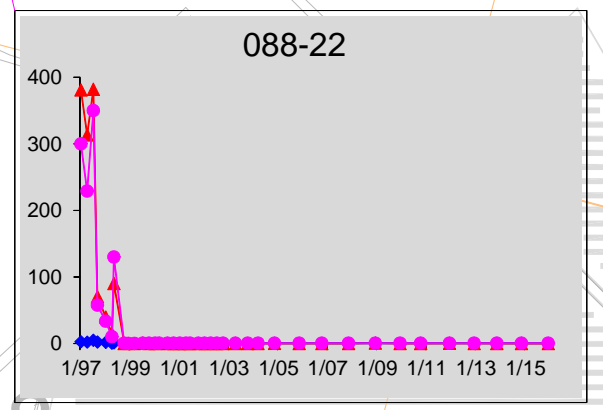
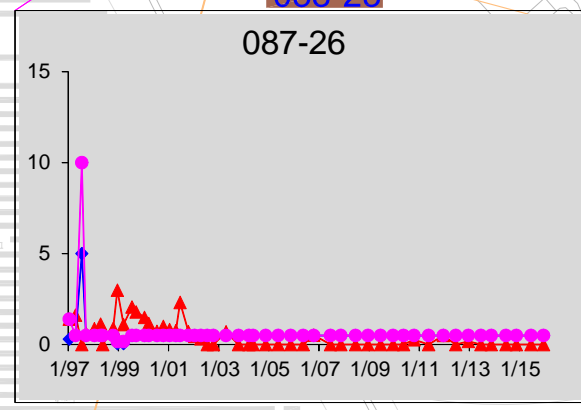
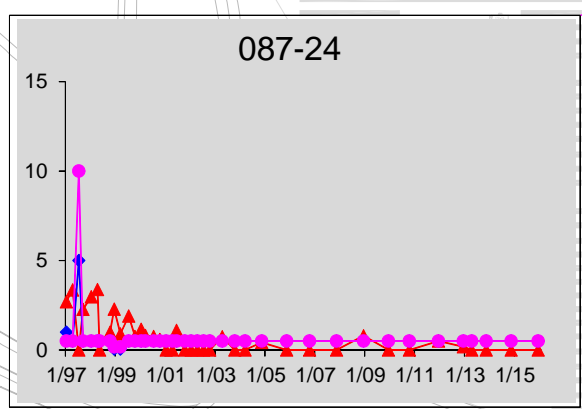
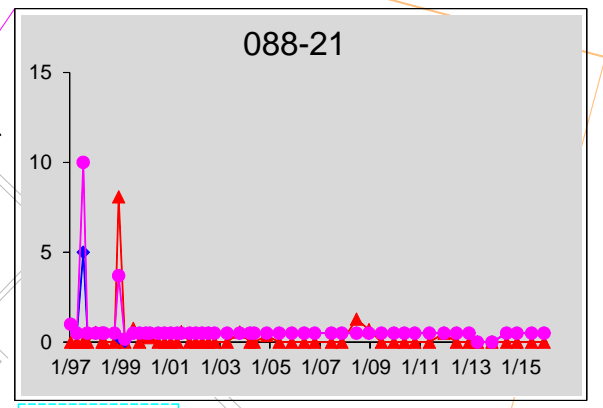
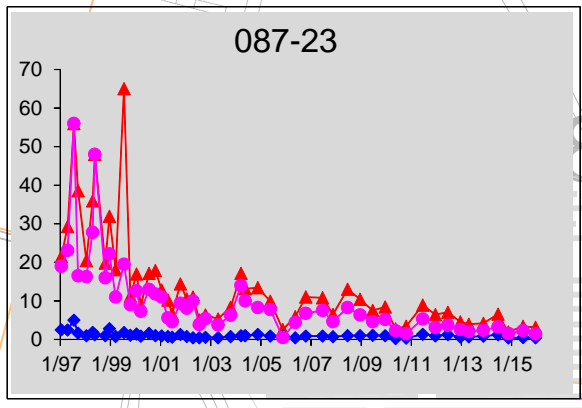
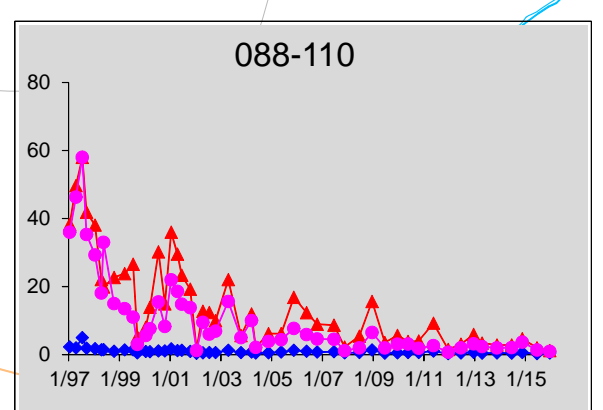
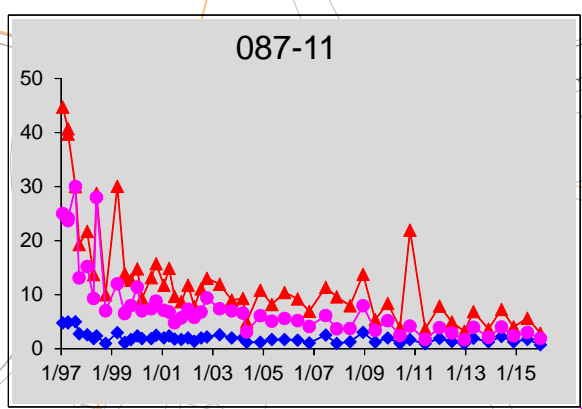
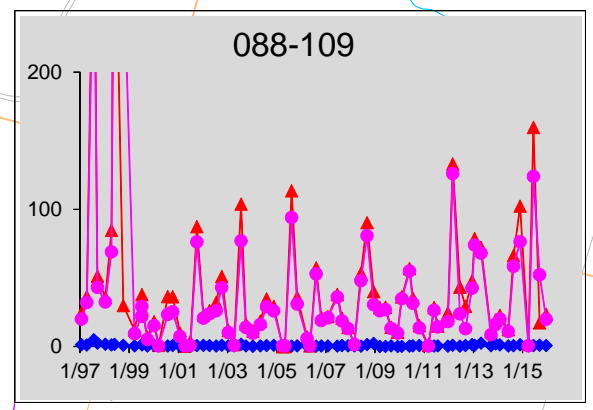
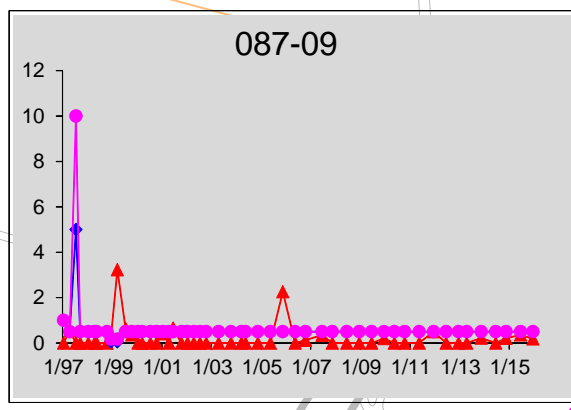
SCALE 90 METERS  
300 FEET



TITLE:

**FORMER LANDFILL  
MONITORING WELL LOCATIONS  
2015 ENVIRONMENTAL MONITORING REPORT  
CURRENT AND FORMER LANDFILL AREAS**

DWN: AJZ	VT:HZ.: -	DATE: 02/19/16	PROJECT NO.: -
CHKD: JEB	APPD: RFH	REV.: -	NOTES: -
FIGURE NO.:		4	



**LEGEND**

- 11 MONITORING WELL
- ◆ Benzene (μG/L)
- Chloroethane (μG/L)
- ▲ TVOC (μG/L)
- 32 BNL GRID NUMBER
- RAV BNL RECHARGE BASIN
- 087-09 BACKGROUND
- 087-11 DOWNGRAIENT
- SOLAR FARM PANELS

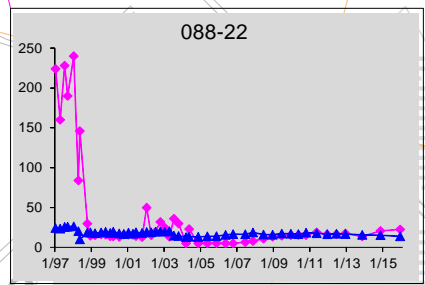
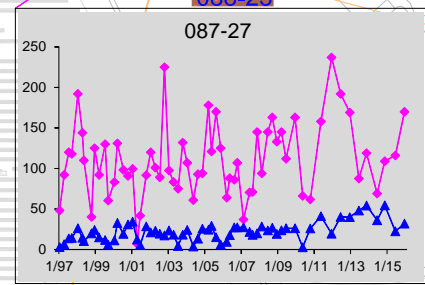
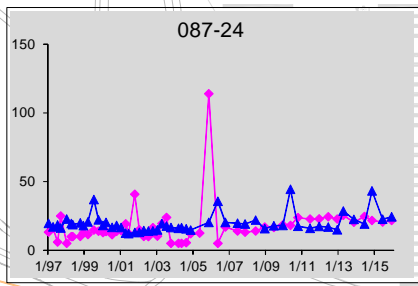
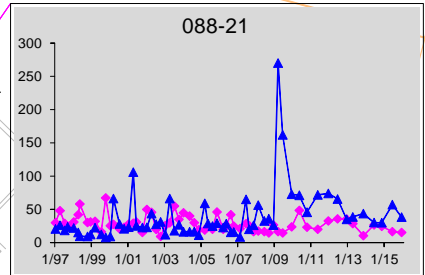
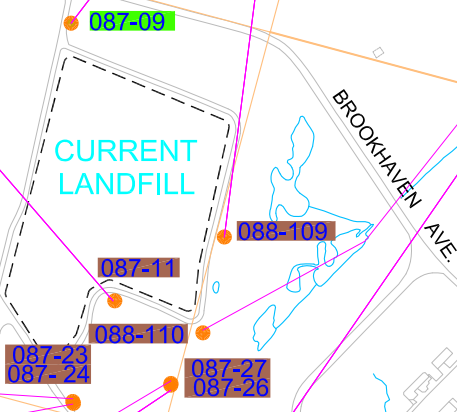
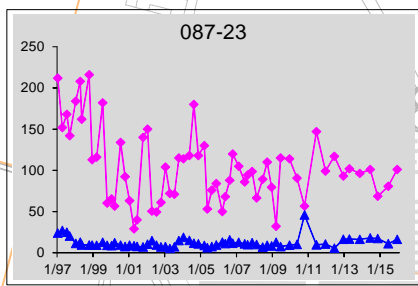
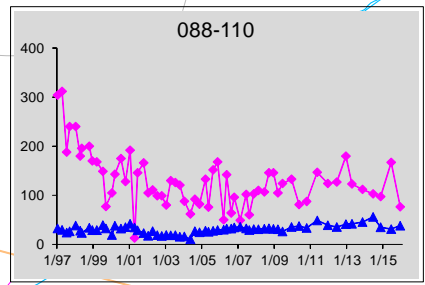
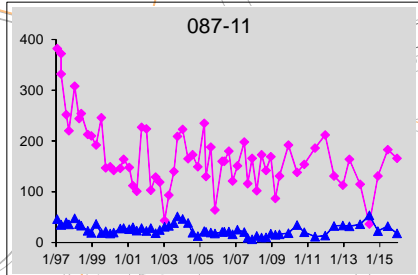
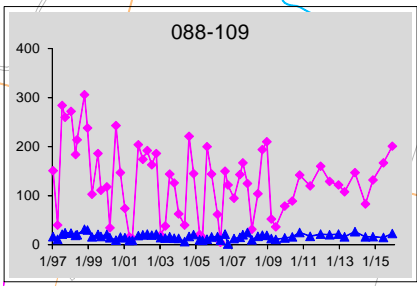
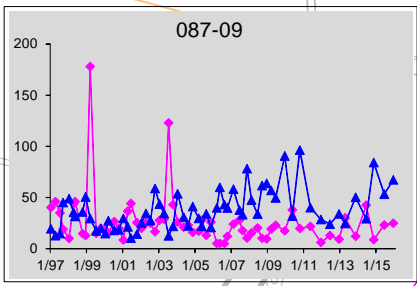
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RA V BASIN



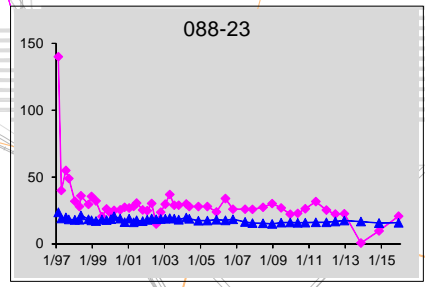
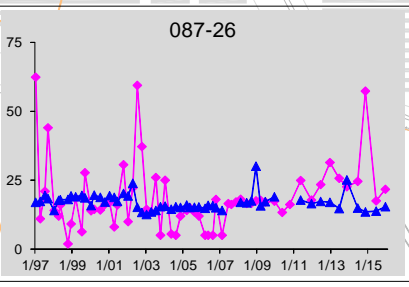
PRINCETON AVE.

98

**LEGEND**

- MONITORING WELL
- Alkalinity (as CaCO3) (mg/l)
- Chloride (mg/l)
- BNL GRID NUMBER
- BNL RECHARGE BASIN
- RA V
- BACKGROUND
- DOWNGRAIDENT
- SOLAR FARM PANELS

SCALE  
0 500 FEET



107

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**BROOKHAVEN**  
NATIONAL LABORATORY

ENVIRONMENTAL  
PROTECTION DIVISION

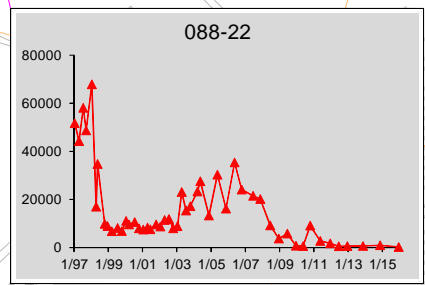
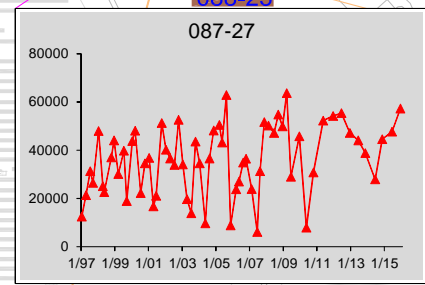
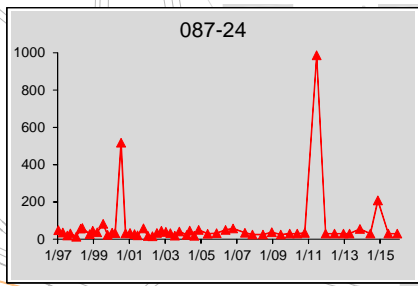
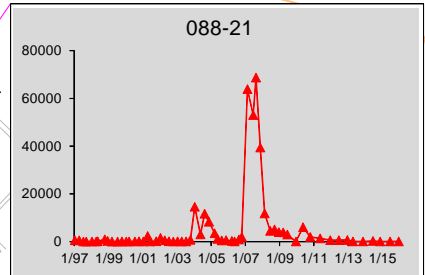
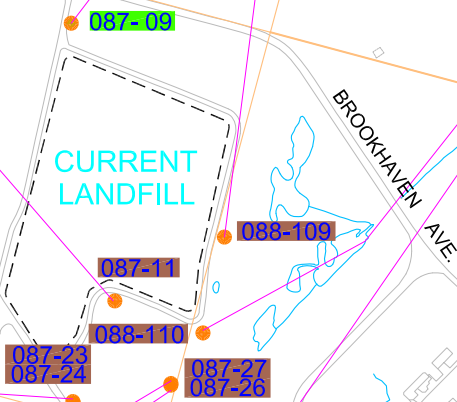
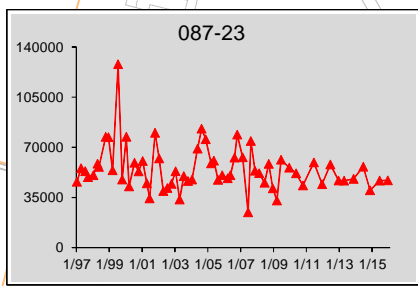
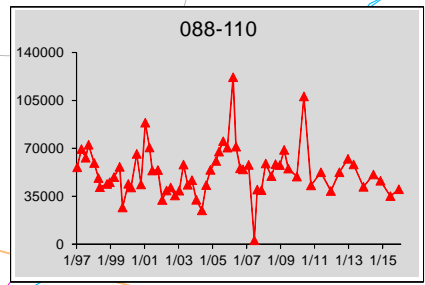
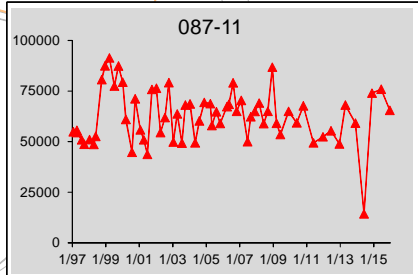
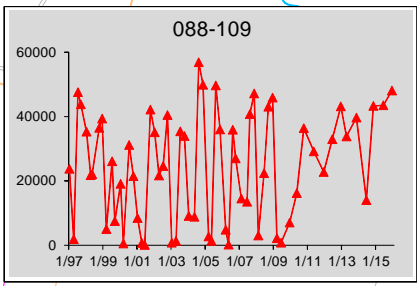
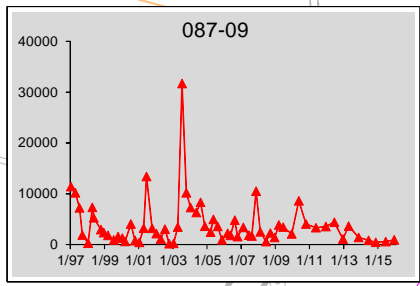
TITLE:  
**CURRENT LANDFILL  
ALKALINITY AND CHLORIDE TREND PLOTS**  
2015 ENVIRONMENTAL MONITORING REPORT  
CURRENT AND FORMER LANDFILL AREAS

DWN: AJZ	VT:HZ.: -	DATE: 02/19/16	PROJECT NO.: -
CHKD: JEB	APPD: RFH	REV.: -	NOTES: -
FIGURE NO.:			6

68



RA V BASIN



PRINCETON AVE.

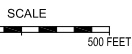
HWME

98

107

LEGEND

- 11 MONITORING WELL
- ▲ IRON (µg/L)
- 32 BNL GRID NUMBER
- RA V BNL RECHARGE BASIN
- 087-09 BACKGROUND
- 088-23 DOWNGRAIDENT
- SOLAR FARM PANELS



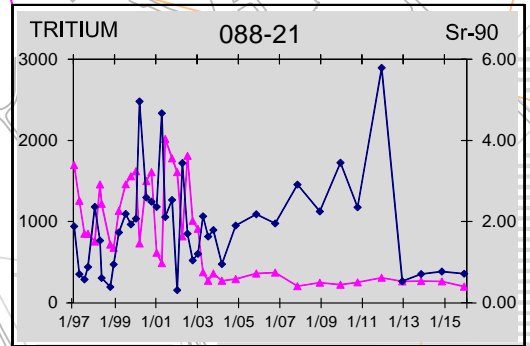
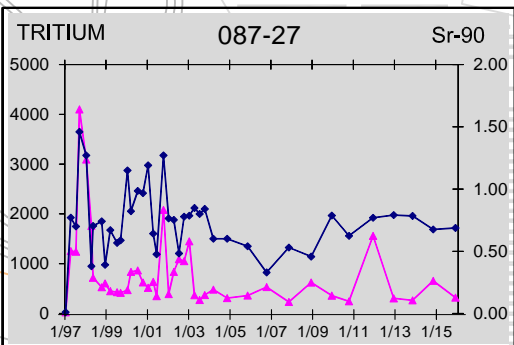
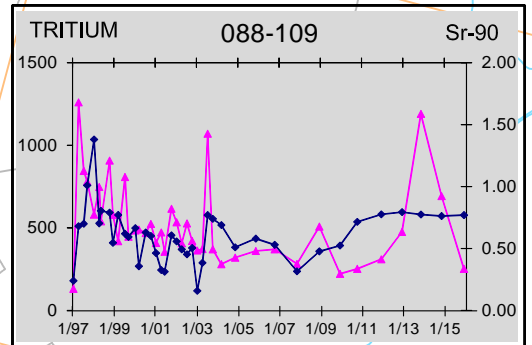
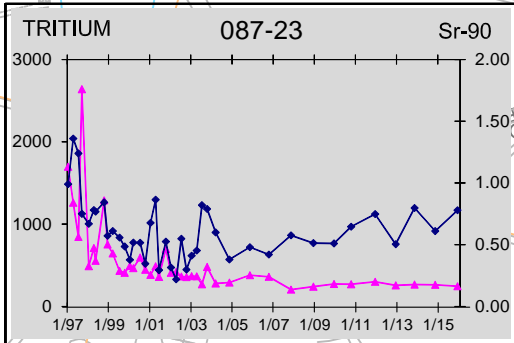
R:\Gw\_projects\Landfills\2015 Report\Fig07 02-19-16.dwg



TITLE: CURRENT LANDFILL IRON TREND PLOTS  
 2015 ENVIRONMENTAL MONITORING REPORT  
 CURRENT AND FORMER LANDFILL AREAS

DWN: AJZ	VT: HZ.: -	DATE: 02/19/16	PROJECT NO.: -
CHKD: JEB	APPD: RFH	REV.: -	NOTES: -
FIGURE NO.:			7

RA V BASIN



CURRENT LANDFILL

BROOKHAVEN AVE.

HWMF

PRINCETON AVE.

R:\Gw\_projects\Landfills\2015 Report\Fig08 02-19-16.dwg

**LEGEND**

- 11 MONITORING WELL
- ◆ Strontium-90 (pCi/L) right scale
- ▲ Tritium (pCi/L) left scale
- 32 BNL GRID NUMBER
- BNL RECHARGE BASIN
- RA V
- 087-09 BACKGROUND
- 088-23 DOWNGRADIENT
- SOLAR FARM PANELS

SCALE  
0 500 FEET

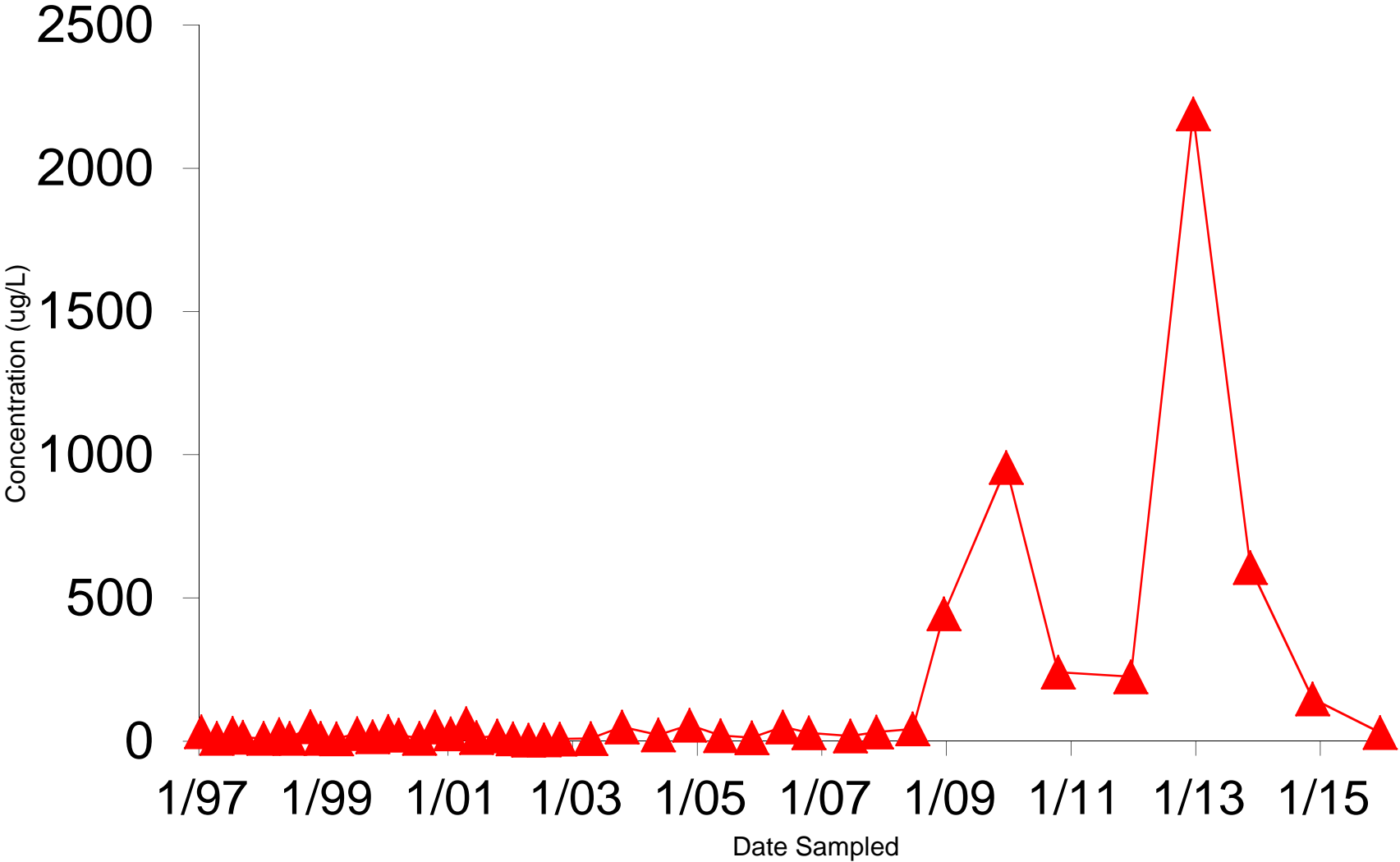
107



TITLE:  
**CURRENT LANDFILL  
 TRITIUM AND SR-90 TREND PLOTS  
 2015 ENVIRONMENTAL MONITORING REPORT  
 CURRENT AND FORMER LANDFILL AREAS**

DWN: AJZ	VT:HZ.: -	DATE: 02/19/16	PROJECT NO.: -
CHKD: JEB	APPD: RFH	REV.: -	NOTES: -
FIGURE NO.:			8

Figure 9. Former Landfill Area  
Well 106-02 Iron Trend Plot





BROOKHAVEN AVE.

CURRENT LANDFILL

NORTH POND

87

88

SD-12

SD-2001

Duct Work

088-109

DRAINAGE CHANNEL

**LEGEND**

- SD-12 SAMPLE POINT LOCATION  
SD=SEDIMENT SAMPLE
- SUPPLEMENTAL SAMPLING POINT LOCATION
- 088-109 GROUNDWATER MONITORING WELL AND ID
- 88 BNL GRID NUMBER
- TREE LINE
- WETLANDS
- DRAIN FLOW ARROW

R:\Gw\_projects\Landfills\2015 Report\Fig10 06-28-16.dwg

**BROOKHAVEN**  
NATIONAL LABORATORY

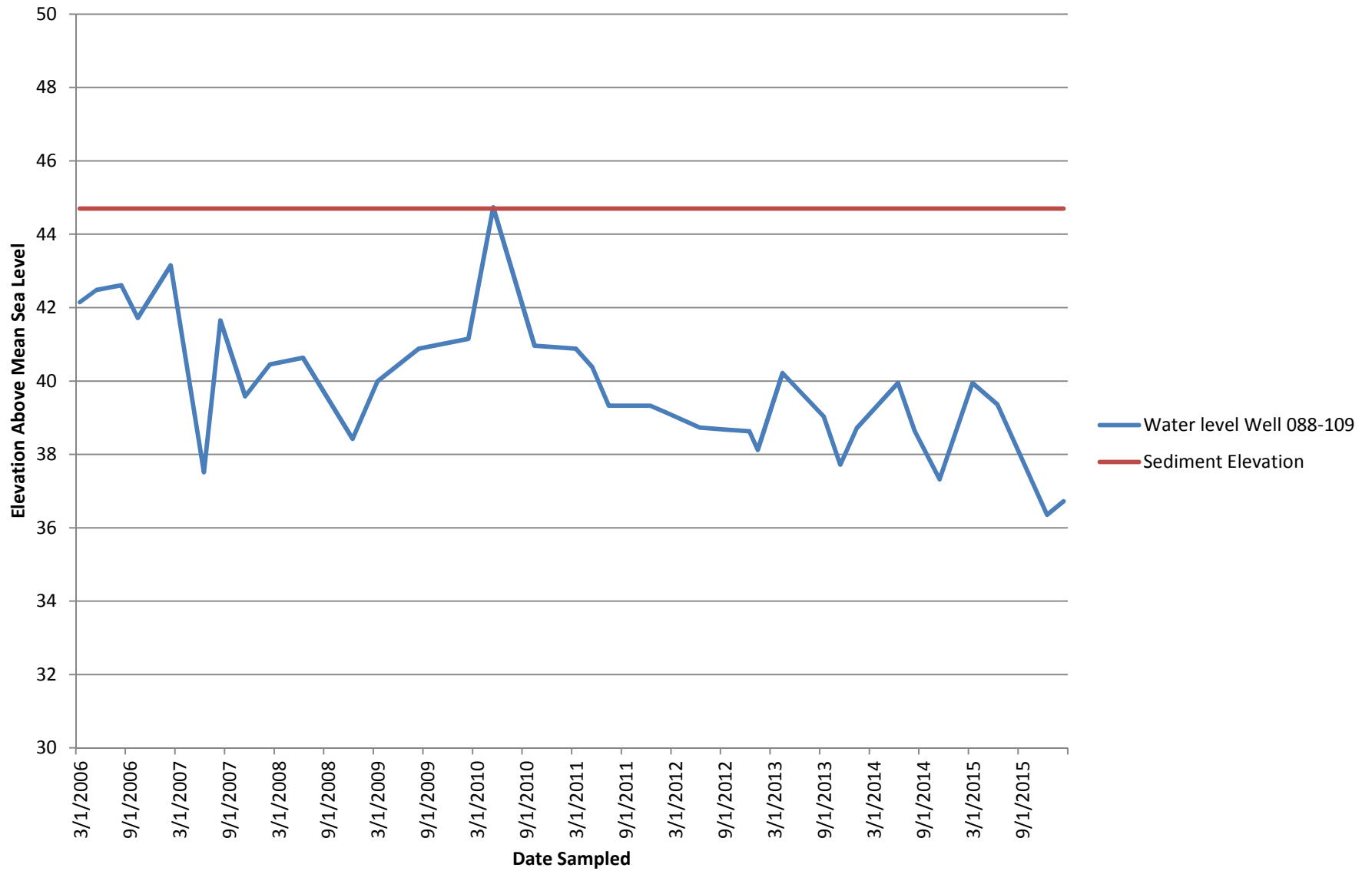
ENVIRONMENTAL PROTECTION  
DIVISION

TITLE: WOODED WETLANDS  
SUPPLEMENTAL  
SAMPLING LOCATIONS  
2015 ENVIRONMENTAL MONITORING REPORT  
CURRENT AND FORMER LANDFILL AREAS

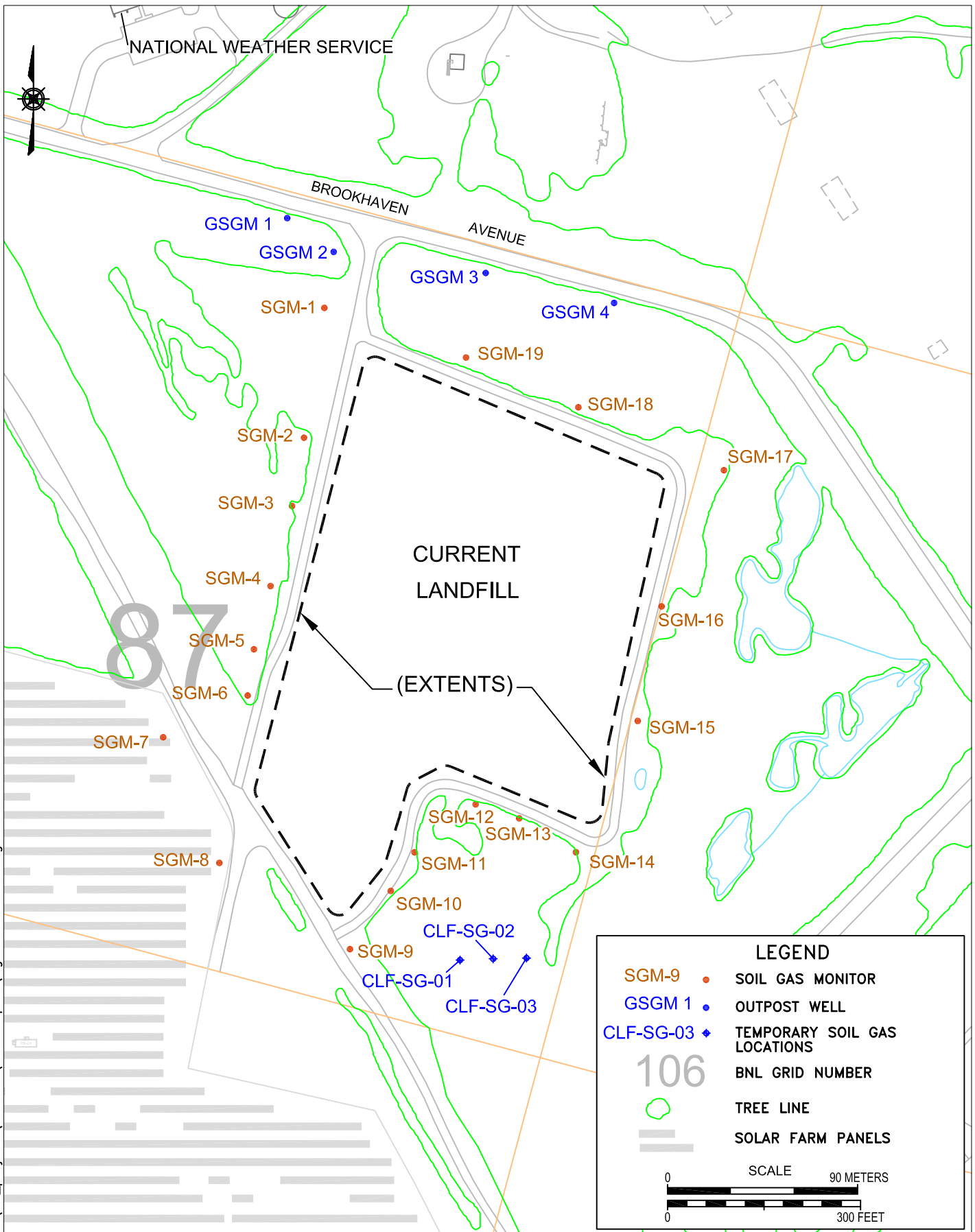
DWN: AJZ	VT:HZ.: -	DATE: 02/25/16	PROJECT NO.: -
CHKD: JEB	APPD: WRD	REV.: 06/28/16	NOTES: -
FIGURE NO.:		10	



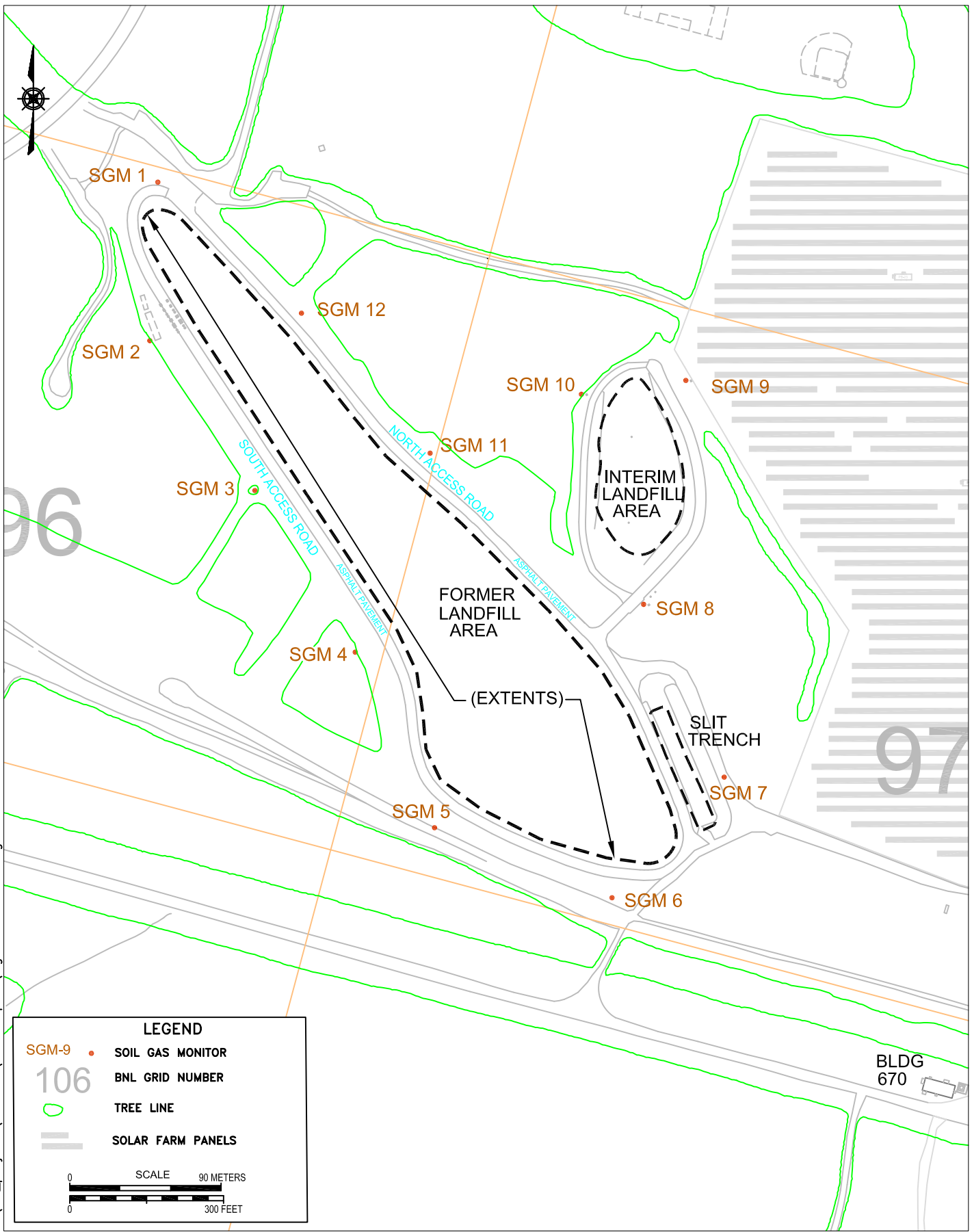
**Figure 11. Comparison of Water Table Elevations to Sediment Elevation of Wooded Wetland**



R:\Gw\_projects\Landfills\2015 Report\Fig12 02-19-16.dwg



R:\Gw\_projects\Landfills\2015 Report\Fig13 02-19-16.dwg



**LEGEND**

- SGM-9 • SOIL GAS MONITOR
- 106 BNL GRID NUMBER
- TREE LINE
- ▬ SOLAR FARM PANELS

SCALE 90 METERS  
0 300 FEET



TITLE:  
**FORMER LANDFILL  
SOIL GAS MONITOR LOCATION MAP  
2015 ENVIRONMENTAL MONITORING REPORT  
CURRENT AND FORMER LANDFILL AREAS**

DWN: AJZ	VT:HZ.: -	DATE: 02/19/16	PROJECT NO.: -
CHKD: JEB	APPD: RFH	REV.: -	NOTES: -
FIGURE NO.:		13	

## Appendix A

### Soil-gas Sampling Field Notes

93

Locatin	3/25/15 m	well ID	Cl Gm 2000	CH4%	Le 2%	H2S%	30-35 H9	Time/Count
GSM-1A		No ID		0	0	0	0	0845
1B			0	0	0	0	0	0850
1C			0	0	0	0	0	0900
2A			0	0	0	0	0	0910
2B			0	0	0	0	0	0918
2C			0	0	0	0	0	0928
3A			0	0	0	0	0	0939
3B			0	0	0	0	0	0945
4A			0	0	0	0	0	1000
4B			0	0	0	0	0	1010



3/24/15 30.24 hrs sum 30°

Location	Well ID	CH4%	Current Depth	Leads	C-1 Check	H2O	Time
SGM-1A	087-82	16.1	7100	322	2		0910
1B	087-78	0.1	3	240	0		0916
1C	087-79	12.0	7100	892	0		0927
2A	087-63	44.6	7100	602	0		0931
2B	087-80	30.1	7100		6		0937
2C	087-81	0	0		0		0947
3A	087-64	30.2	7100	604	1		1000
3B	087-82	30.7	7100	614	0		1006
3C	087-83	0.6	14		0		1016
4A	087-65	38.3	7100	762	0		1018
4B	087-84	32.6	7100	652	0		1021
4C	087-85	0.1	2		0		1034
5A	087-66	7	15		0		1041
5B	087-86	25.7	7100	514	0		1047
5C	087-87	0.1	3		0		1057
6A	087-67	0.1	3		0		1100
6B	087-88	31.6	7100	632	0		1106
6C	087-89	30.7	7100	614	1		1117
7A	087-88	0	0		0		1300
7B	087-90	0	0		0		1308
7C	087-91	0	0		0		1319
8A	087-69	0	0		0		1322
8B	087-92	0	0		0		1335
8C	087-93	0	0		0		1345

3/24/15

Well ID	CH4%	UCC	TH2S	Current
SGM-9A	0.1	2	0	1120
-9B	0	0	0	1126
-9C	0	0	0	1137
10A	2.4	48	0	1140
10B	4.4	88	0	1150
10C	4.2	84	0	1159
11A	2.6	52	0	1400
11B	0.8	18	0	1406
12A	35.6	>10 <sup>711</sup>	3	1410
12B	31.2	>10 <sup>624</sup>	0	1418
13A	0.1	2	0	1422
13B	0	0	0	1429
14A	0	0	0	1435
14B	0	0	0	1441
15A	0	0	0	1448
15B	0	0	0	1457
16A	0	0	0	1502
16B	0	0	0	1508
17A	0	0	0	1513
17B	0	0	0	1518
18A	0	0	0	1523
18B	0	0	0	1529
19A	0	0	0	1535
15B	0	0	0	1548

99

Location	Well ID	Current Well Fill	Current Gas %	Current CH4 %	Leak %	H2S PA
36m - 1A	087-62	>100	9.7	194	1	0850
1B	087-78	>100	9.5	190	1	0856
1C	087-79	>100	7.8	156	0	0906
2A	087-63	>100	39.8	796	0	0910
2B	087-80	>100	43.3	866	11	0918
2C	087-81	>100	44.3	886	1	0928
3A	087-64	>100	37.2	744	13	0938
3B	087-82	>100	48.8	976	17	0937
3C	087-83	>100	50.0	1000	13	0949
4A	087-65	>100	40.9	818	6	0985
4B	087-84	>100	37.9	758	5	1005
4C	087-85	>100	31.0	620	6	1015
5A	087-66	>100	27.8	556	0	1019
5B	087-86	>100	27.2	544	3	1026
5C	087-87	>100	20.8	416	2	1036
6A	087-67	0	0	0	0	1044
6B	087-88	>100	30.8	616	6	1056
6C	087-89	>100	27.9	558	2	1102
7A	087-68	0	0	0	0	1500
7B	087-90	0	0	0	0	1505
7C	087-91	0	0	0	0	1515
8A	087-69	0	0	0	0	1519
8B	087-92	0	0	0	0	1522
8C	087-93	0	0	0	0	1530

(S)

93

Location	Well ID	Current Well Fill	Current Gas %	Current CH4 %	Leak %	H2S PA
36m - 1A	No ID	0	0	0	0	0845
1B		0	0	0	0	0850
1C		0	0	0	0	0900
2A		0	0	0	0	0910
2B		0	0	0	0	0918
2C		0	0	0	0	0928
3A		0	0	0	0	0939
3B		0	0	0	0	0945
4A		0	0	0	0	1000
4B		0	0	0	0	1010

(S)



83° Sump  
29.53 149  
WELL ID

83° Sump  
29.53 149  
WELL ID

Locn	CH4%	LeL%	H <sub>2</sub> S	Time/Count
9A	0	0	0	1108
9B	0	0	0	1115
9C	0	0	0	1124
10A	9.6	>100 142	9	1128
10B	12.5	>100 250	0	1134
10C	10.7	>100 248	0	1144
11A	10.7	>100 214	0	1150
11B	12.6	>100 252	0	1156
12A	38.6	>100 772	16	1205
12B	35.6	>100 712	1	1210
13A	9.0	>100 180	0	1158
13B	33.1	>100 662	7	1200
14A	0.5	11	0	1300
14B	0	0	0	1310
15A	0	0	0	1320
15B	0	0	0	1329
16A	0	0	0	1340
16B	0	0	0	with 1350
17A	0	0	0	1400
17B	0	0	0	with 1408
18A	0	0	0	1411
18B	0	0	0	1418
15A	1.2	26	0	1425
15B	4.0	80	0	1440

(B)

6/25/15

74°  
42.5

74°  
42.5

Locn	CH4%	LeL%	H <sub>2</sub> S	Time/Count
1600	0	0	0	1600
1550	0	0	0	1550
1520	0	0	0	1520
1500	0	0	0	1500
1448	0	0	0	1448
1435	0	0	0	1435
1425	0	0	0	1425
1419	0	0	0	1419
1410	0	0	0	1410
1400	0	0	0	1400

(B)

74°  
42.5

74°  
42.5



Station	WELL ID	Current	Level	Spill	Time	Location	WELL ID	Current	Level	Spill	Time
1A	087-62	0.4	9	0	0905	9A	087-70	0	0	0	1125
1B	087-78	1.3	26	0	0913	9B	087-94	0	0	0	1138
1C	087-79	1.2	25	0	0923	9C	087-95	0	0	0	1145
2A	087-63	13.9	278	0	0930	10A	087-71	6.9	131	5	1430
2B	087-80	42.6	82	14	0936	10B	087-96	9.4	188	2	1436
2C	087-81	44.3	88	2	0946	10C	087-97	8.5	170	4	1446
3A	087-64	10.2	204	6	0951	11A	087-92	10.2	204	16	1449
3B	087-82	44.2	884	23	0958	11B	087-98	11.2	204	1	1456
3C	087-83	44.5	890	21	1005	12A	087-73	31.3	626	18	1500
4A	087-65	31.8	626	5	1010	12B	087-99	33.5	670	2	1507
4B	087-84	29.5	540	9	1018	13A	087-74	17.7	354	1	1515
4C	087-85	21.3	426	5	1029	13B	087-100	22.5	400	13	1523
5A	087-66	19.7	394	0	1035	14A	087-75	0	0	0	1527
5B	087-86	19.8	346	6	1042	14B	087-101	0.1	0	0	1535
5C	087-87	14.7	266	2	1053	15A	088-111	15.0	300	0	1548
6A	087-67	0.2	4	0	1100	15B	088-114	18.2	344	0	1550
6B	087-88	25.6	512	10	1106	16A	088-112	16.4	328	0	1600
6C	087-89	21.7	414	4	1118	16B	088-115	0	0	0	1606
7A	087-68	0	0	0	1305	17A	088-113	0	0	0	1615
7B	087-69	0	0	0	1315	17B	087-116	0	0	0	1622
7C	087-91	0	0	0	1325	18A	087-76	0	0	0	1630
8A	087-69	0	0	0	1338	18B	087-102	0	0	0	1636
8B	087-92	0	0	0	1346	19A	087-77	0	0	0	0920
8C	087-93	0	0	0	1355	19B	087-103	0	0	0	0927

102

103

104

105

167

q3n/15

corner level

MA

TR/level

Location	West ID	CH/15	Level	TR/level
1A	10 DD	0	0	1045
1B		0	0	1039
1C		0	0	1028
2A		0	0	1015
2B		0	0	1005
2C		0	0	0959
3A		0	0	0956
3B		0	0	0950
4A		0	0	0942
4B		0	0	0935

167



(164)

9/30/15

Cumulative  
CH 4%

Yield

Time/amount

Location

Springs

Cumulative  
CH 4%

Leak %

H2SO4

(105)

Location	Well ID	Leak %	H2SO4	Yield	Time/amount	Location	Springs	Cumulative CH 4%	Leak %	H2SO4	(105)
56m - 1A	087-62	50%	0	0	0:45	56m - 1A	087-62	2.5	50%	0	0730
- 1B	087-79	43%	0	0	1:39	- 1B	087-79	2.3	43%	0	0936
1C	087-79	10%	0	0	1:28	1C	087-79	0.4	10%	0	0946
2A	087-63	100	0	0	1:15	2A	087-63	27.4	100	46	0953
2B	087-82	100	0	0	1:25	2B	087-82	36.8	100	76	1000
2C	087-81	100	0	0	0:59	2C	087-81	26.3	100	526	1007
3A	087-64	100	0	0	0:56	3A	087-64	24.4	100	489	1014
3B	087-82	100	0	0	0:50	3B	087-82	17.2	100	344	1025
4A	087-83	100	0	0	0:42	4A	087-83	16.5	100	210	1036
4B	087-85	100	0	0	0:35	4B	087-85	28.0	100	72	1043
4C	087-84	100	0	0		4C	087-84	24.9	100	49	1049
5A	087-66	100	0	0		5A	087-66	10.3	100	206	1100
5B	087-86	100	0	0		5B	087-86	23.4	100	468	1105
5C	087-87	100	0	0		5C	087-87	11.3	100	346	1110
6A	087-67	100	0	0		6A	087-67	0	100	0	1125
6B	087-88	100	0	0		6B	087-88	9.7	100	197	1303
6C	087-89	100	0	0		6C	087-89	0.	100	0	1315
7A	087-68	100	0	0		7A	087-68	0	100	0	1328
7B	087-90	100	0	0		7B	087-90	0	100	0	0940
7C	087-91	100	0	0		7C	087-91	0	100	0	0946
8A	087-69	100	0	0		8A	087-69	0	100	0	0956
8B	087-92	100	0	0		8B	087-92	0	100	0	0910
8C	087-93	100	0	0		8C	087-93	0	100	0	0520
											0935

12/14/15  
80

12/14/15



107

Loc	43 of Loc	30.40" min FP	Current Loss/Day CH 4%	Leak %	12/3/15 KWH	Time/acre
66A	-1A	No ID	0	0	0	1340
	-1B		0	0	0	1347
	-1C		0	0	0	1358
	-2A		0	0	0	1403
	-2B		0	0	0	1411
	-2C		0	0	0	1421
	-3A		0	0	0	1427
	-3B		0	0	0	1435
	-4A		0	0	0	1442
	-4B		0	0	0	1449
			0	0	0	1455
			0	0	0	1504
			0	0	0	1509
			0	0	0	1517
			0	0	0	1523
			0	0	0	1531
			0	0	0	1538
			0	0	0	1544 water
			0	0	0	1549
			0	0	0	1555 water
			0	0	0	1600 water
			0	0	0	1608 water
			0	0	0	1613
			0	0	0	1620

102

Loc	50 Well ID	Current Loss/Day CH 4%	Leak %	12/3/15 KWH	Time/acre
9A	087-70	0	0	0	1340
9B	087-94	0	0	0	1347
9C	087-95	0	0	0	1358
10A	087-71	0	0	0	1403
10B	087-96	6.4	128	0	1411
10C	087-97	4.0	80	0	1421
11A	087-92	9.4	188	9	1427
11B	087-98	7.3	146	0	1435
12A	087-73	37.2	144	34	1442
12B	087-99	10.6	212	1	1449
13A	087-74	0	0	0	1455
13B	087-100	7.0	140	0	1504
14A	087-75	0	0	0	1509
14B	087-101	0	0	0	1517
15A	087-111	0	0	0	1523
15B	087-114	9.4	188	0	1531
16A	087-112	0	0	0	1538
16B	087-115	0	0	0	1544 water
17A	087-113	0	0	0	1549
17B	087-116	0	0	0	1555 water
18A	087-76	0	0	0	1600 water
18B	087-102	0	0	0	1608 water
19A	087-77	0	0	0	1613
19B	087-103	0	0	0	1620

(37)

Zin Mining		85°		Former Lease		79° 14' 40"		8/20/15	
29.96 49		Cul. Chert/Cl. Condrite		LEL%		H2S/A		Time/Comp	
Location	Well ID	CH4%	LEL%	H2S/A	Time/Comp	Location	Well ID	CH4%	LEL%
5A	096-41	0.0	0	0	0940	5A	097-60	0.0	0
5B	096-42	0.0	0	0	0948	5B	097-61	0.0	0
6A	096-43	0.0	0	0	1005	6A	097-62	0.0	0
6B	096-44	0.0	0	0	1013	6B	097-63	0.0	0
7A	096-45	0.0	0	0	1025	7A	096-49	0.0	0
7B	096-46	0.0	0	0	1035	7B	096-50	0.0	0
8A	096-47	0.0	0	0	1040				
8B	096-48	0.0	0	0	1048				
9A	097-50	0.0	0	0	1054				
9B	097-51	0.0	0	0	1100				
	097-52	0.0	0	0	1106				
	097-53	0.0	0	0	1113				
	097-54	0.0	0	0	1120				
	097-55	0.0	0	0	1127				
	097-56	0.0	0	0	1136				
	097-57	0.0	0	0	1145				
	097-58	0.0	0	0	1305				
	097-59	0.0	0	0	1315				

29/10/15

(38)

Zin Mining		8/20/15		Former Lease		8/20/15	
Gen 201		Location		Well ID		CH4%	
Location	Well ID	CH4%	LEL	H2S	Time/Comp	Location	Well ID
5A	097-60	0.0	0	0	1325	5A	097-60
5B	097-61	0.0	0	0	1333	5B	097-61
6A	097-62	0.0	0	0	1339	6A	097-62
6B	097-63	0.0	0	0	1348	6B	097-63
7A	096-49	0.0	0	0	1408	7A	096-49
7B	096-50	0.0	0	0	1415	7B	096-50

29/10/15

## Appendix B

### Monthly Landfill Site Inspection Forms







**BROOKHAVEN NATIONAL LABORATORY  
CURRENT LANDFILL AREA  
SITE INSPECTION FORM**

Name of Inspector(s): Eric Kramer  
 Date of Inspection: 3-27-15  
 Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident  
 Time on Site: \_\_\_\_\_  
 Time off Site: \_\_\_\_\_  
 Weather Conditions: cloudy/cool

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
<b>1.0 Landfill Cap:</b>					
Vegetation	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Cap	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Gas Vents	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
<b>2.0 Drainage Structures:</b>					
Toe Drain	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Drainage Channels	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
French Drains/Outfalls	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Subsurface Drainage Pipes/Outfalls	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Manholes	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Recharge Areas	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
<b>Monitoring System:</b>					
Soil Gas Wells	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Groundwater Wells	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
<b>4.0 Site Access:</b>					
Asphalt Access Road		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
Crushed-Concrete Access Road	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>

**B. Description of Further Action Requirements:**

1. Location: Asphalt Road  
 Observed Conditions: Vegetation in some areas on Road

Recommendations: Will put work order in to scrape roads to remove vegetation

**BROOKHAVEN NATIONAL LABORATORY  
CURRENT LANDFILL AREA  
SITE INSPECTION FORM**

Name of Inspector(s): Eric Kramer  
 Date of Inspection: 4-23-15  
 Purpose of Inspection: Routine  Heavy Rainfall  Reported Incident   
 Time on Site: \_\_\_\_\_  
 Time off Site: \_\_\_\_\_  
 Weather Conditions: \_\_\_\_\_

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
<b>1.0 Landfill Cap:</b>					
Vegetation	X				
Cap	X				
Gas Vents	X				X
<b>2.0 Drainage Structures:</b>					
Toe Drain	X				
Drainage Channels	X				
French Drains/Outfalls	X				X
Subsurface Drainage Pipes/Outfalls	X				X
Manholes	X				X
Recharge Areas	X				X
<b>Monitoring System:</b>					
Soil Gas Wells	X				
Groundwater Wells					X
<b>4.0 Site Access:</b>					
Asphalt Access Road					
Crushed-Concrete Access Road	X	X			
<b>B. Description of Further Action Requirements:</b>					
1. Location:				X	
Observed Conditions:					X

Asphalt Roads  
Vegetation in some Areas on Road

**Recommendations:**  
Work Order In For Vegetation Removal

**BROOKHAVEN NATIONAL LABORATORY  
LTRA SITE INSPECTION FORM**

Location (AOC): Current Landfill and Wooded Wetland \_\_\_\_\_  
 Date of Inspection: 4/29/15 \_\_\_\_\_  
 Name of Inspector(s): R. Howe, J. Burke, K. Schwager, T. Green, D. Paquette, M. Chuc, E. Kramer  
 Purpose of Inspection:  Routine (Scheduled Frequency of 2x/yr)  Heavy Rainfall  Reported Incident

**A. Inspection Checklist**

Component	Observed Condition				Further Action Req'd	
	Excell.	Fair	Poor	Not Applic.	Yes (describe)	No
<b>1. Landfill Cap/Soil Covers/Wetlands:</b>						
Vegetation (e.g. grass)	X					X
Soil (Cap/Cover/Fill)	X				Fill-in ruts, seed	
Other: _____						
<b>2. Drainage Structures:</b>						
Standing Water	X				Water in Wetland	X
Toe Drain	X					X
Drainage Channels	X				Little vegetation	X
French Drains/Outfalls				X		X
Subsurface Drainage Pipes/Outfalls		X				X
Manholes				X		X
Berms				X		X
Roof Drains				X		X
Recharge Areas	X					X
Other: _____						
<b>3. Monitoring System:</b>						
Soil Gas Wells	X				Minimal weeds	X
Groundwater Wells	X					X
Gas Vents	X				No nests or damage	X
Other: __						
<b>4. Site Access:</b>						
Asphalt Access Road	X				Seal asphalt cracks	
Crushed-concrete Access Road				X		X
Fence	X					X
Gates/locks	X				Replace SW gate lock	
Radiological Postings				X		X
Other: Stairs access to cap	X					X
<b>5. Evidence of unauthorized work activities and/or unauthorized access has occurred?</b>						
If yes, describe evidence: _____						<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

**B. Description of Other Observations**

Observed Conditions/Recommendations: The grass on the cap was not yet cut in 2015, however it is at a good length. An area of minor erosion needs to be filled-in by Facilities and Operations (F&O) and seeded. No pine seedlings or animal burrows were observed. Weeds are clear around the asphalt access road around the soil gas and monitoring wells. The vegetation growing through asphalt road need to be removed, then the cracks sealed. There was significant water in the Wooded Wetland. Signs in place and all gates locked. Need to replace the rusted lock on the SW gate. LUIIC Factsheet Changes: No changes for Current Landfill or Wooded Wetlands.

**BROOKHAVEN NATIONAL LABORATORY  
CURRENT LANDFILL AREA  
SITE INSPECTION FORM**

Name of Inspector(s):

Eric Kramer

Date of Inspection:

5-27-15

Purpose of Inspection:

Routine  Heavy Rainfall  Reported Incident

Time on Site:

Time off Site:

Weather Conditions:

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
<b>1.0 Landfill Cap:</b>					
Vegetation		X		X	
Cap	X				X
Gas Vents	X				
<b>2.0 Drainage Structures:</b>					
Toe Drain	X				
Drainage Channels	X				
French Drains/Outfalls	X				X
Subsurface Drainage Pipes/Outfalls	X				X
Manholes	X				X
Recharge Areas	X				X
<b>Monitoring System:</b>					
Soil Gas Wells	X				
Groundwater Wells	X				X
<b>4.0 Site Access:</b>					
Asphalt Access Road		X			
Crushed-Concrete Access Road	X			X	

**B. Description of Further Action Requirements:**

1. Location:

Observed Conditions:

Asphalt Road, Edges, Culverts, Landfill  
Excessive Vegetation Growth in These Areas

Recommendations:

MAY 14th - met with Head of Grounds Group  
To discuss landfill maintenance. Stated he  
will start taking care of some of these items

**BROOKHAVEN NATIONAL LABORATORY  
CURRENT LANDFILL AREA  
SITE INSPECTION FORM**

Name of Inspector(s): Eric Kramer  
 Date of Inspection: 6-29-15  
 Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident  
 Time on Site: \_\_\_\_\_  
 Time off Site: \_\_\_\_\_  
 Weather Conditions: \_\_\_\_\_

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
<b>1.0 Landfill Cap:</b>					
Vegetation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
Cap	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Gas Vents	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
<b>2.0 Drainage Structures:</b>					
Toe Drain	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Drainage Channels	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
French Drains/Outfalls	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Subsurface Drainage Pipes/Outfalls	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Manholes	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Recharge Areas	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
<b>Monitoring System:</b>					
Soil Gas Wells	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Groundwater Wells	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
<b>4.0 Site Access:</b>					
Asphalt Access Road	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Crushed-Concrete Access Road	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>

**B. Description of Further Action Requirements:**

1. Location:

Observed Conditions:

*Note: 6-9 Grounds Sprayed Vegetation Killer*

Recommendations:

*6-26 Grounds Mowed and Scraped Vegetation from Black Top*



**BROOKHAVEN NATIONAL LABORATORY  
CURRENT LANDFILL AREA  
SITE INSPECTION FORM**

Name of Inspector(s): Eric Kramer  
 Date of Inspection: 8-26-15  
 Purpose of Inspection: Routine  Heavy Rainfall  Reported Incident   
 Time on Site: \_\_\_\_\_  
 Time off Site: \_\_\_\_\_  
 Weather Conditions: \_\_\_\_\_

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
<b>1.0 Landfill Cap:</b>					
Vegetation		X		X	
Cap	X				
Gas Vents	X				X
<b>2.0 Drainage Structures:</b>					
Toe Drain	X				
Drainage Channels	X				X
French Drains/Outfalls	X				X
Subsurface Drainage Pipes/Outfalls	X				X
Manholes	X				X
Recharge Areas	X				X
<b>Monitoring System:</b>					
Soil Gas Wells	X				
Groundwater Wells	X				X
<b>4.0 Site Access:</b>					
Asphalt Access Road		X			
Crushed-Concrete Access Road	X			X	

**B. Description of Further Action Requirements:**

1. Location: Edge of Road & Landfill. Blacktop Road  
 Observed Conditions: Land Fill Edges & Edges of Roads needs weed whacking  
Blacktop Road needs scraping/spraying  
 Recommendations: Contacted Grounds about above conditions

**BROOKHAVEN NATIONAL LABORATORY  
CURRENT LANDFILL AREA  
SITE INSPECTION FORM**

Name of Inspector(s): Eric Kramer  
 Date of Inspection: 9-23-15  
 Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident  
 Time on Site: \_\_\_\_\_  
 Time off Site: \_\_\_\_\_  
 Weather Conditions: \_\_\_\_\_

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
<b>1.0 Landfill Cap:</b>					
Vegetation		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Cap	<input checked="" type="checkbox"/>				
Gas Vents	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
<b>2.0 Drainage Structures:</b>					
Toe Drain	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Drainage Channels	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
French Drains/Outfalls	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Subsurface Drainage Pipes/Outfalls	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Manholes	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Recharge Areas	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
<b>Monitoring System:</b>					
Soil Gas Wells	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Groundwater Wells					
<b>4.0 Site Access:</b>					
Asphalt Access Road		<input checked="" type="checkbox"/>			
Crushed-Concrete Access Road	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>

**B. Description of Further Action Requirements:**

1. Location: Edges of Roads to Landfill. Blacktop  
 Observed Conditions: Landfill edges to Edge of Roads needs spraying + weed whacking  
 Recommendations: Blacktop needs scraping  
Will contact Grounds



**BROOKHAVEN NATIONAL LABORATORY  
CURRENT LANDFILL AREA  
SITE INSPECTION FORM**

Name of Inspector(s): Eric Kramer

Date of Inspection: 10-26-15

Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident

Time on Site: \_\_\_\_\_

Time off Site: \_\_\_\_\_

Weather Conditions: \_\_\_\_\_

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
<b>1.0 Landfill Cap:</b>					
Vegetation		X		X	
Cap	X				
Gas Vents	X				X
<b>2.0 Drainage Structures:</b>					
Toe Drain	X				
Drainage Channels	X				X
French Drains/Outfalls	X				X
Subsurface Drainage Pipes/Outfalls	X				X
Manholes	X				X
Recharge Areas	X				X
<b>Monitoring System:</b>					
Soil Gas Wells	X				
Groundwater Wells	X				X
<b>4.0 Site Access:</b>					
Asphalt Access Road					X
Crushed-Concrete Access Road	X	X			
				X	
					X

**B. Description of Further Action Requirements:**

1. Location: Edges of Roads, Blacktop Road

Observed Conditions: Edges need weed whacking. Blacktop needs Scraping

Recommendations: Contact Grounds

# BROOKHAVEN NATIONAL LABORATORY LTRA SITE INSPECTION FORM

Location (AOC): Current Landfill and Wooded Wetland \_\_\_\_\_  
 Date of Inspection: 10/26/15 \_\_\_\_\_  
 Name of Inspector(s): R. Howe, J. Burke, D. Paquette  
 Purpose of Inspection:  Routine (Scheduled Frequency of 2x/yr)     Heavy Rainfall     Reported Incident

## A. Inspection Checklist

Component	Observed Condition				Further Action Req'd	
	Excell.	Fair	Poor	Not Applic.	Yes (describe)	No
<b>1. Landfill Cap/Soil Covers/Wetlands:</b>						
Vegetation (e.g. grass)	X					X
Soil (Cap/Cover/Fill)		X			Fill-in burrow/ruts, seed	
Other: _____						
<b>2. Drainage Structures:</b>						
Standing Water	X				Dry	X
Toe Drain	X					X
Drainage Channels	X				Some vegetation	
French Drains/Outfalls				X		X
Subsurface Drainage Pipes/Outfalls		X				X
Manholes				X		X
Berms				X		X
Roof Drains				X		X
Recharge Areas	X					X
Other: _____						
<b>3. Monitoring System:</b>						
Soil Gas Wells	X				Minimal weeds	X
Groundwater Wells	X					X
Gas Vents	X				No nests or damage	X
Other: __						
<b>4. Site Access:</b>						
Asphalt Access Road	X				Seal asphalt cracks	
Crushed-concrete Access Road				X		X
Fence	X					X
Gates/locks	X				Good	X
Radiological Postings				X		X
Other: Stairs access to cap	X					X
<b>5. Evidence of unauthorized work activities and/or unauthorized access has occurred?</b>						
If yes, describe evidence: _____					<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

## B. Description of Other Observations

Observed Conditions/Recommendations: The grass on the cap was cut a few weeks ago. An area of minor erosion on the west slope and a large animal burrow on the south east slope needs to be filled-in and seeded by Facilities and Operations (F&O). The burrow appears to be about 12 inches in depth. Vegetation in the south culvert needs to be sprayed, and other vegetation along the west road mechanically cut. The Wooded Wetland was dry. Signs in place and all gates locked. Replaced the rusted lock on the SW gate following the spring inspection. LUIIC Factsheet Changes: No changes for Current Landfill or Wooded Wetlands.

**BROOKHAVEN NATIONAL LABORATORY  
CURRENT LANDFILL AREA  
SITE INSPECTION FORM**

Name of Inspector(s): Eric Kramer

Date of Inspection: 11-24-15

Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident

Time on Site: \_\_\_\_\_

Time off Site: \_\_\_\_\_

Weather Conditions: \_\_\_\_\_

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
<b>1.0 Landfill Cap:</b>					
Vegetation	X				
Cap	X				X
Gas Vents	X				X
<b>2.0 Drainage Structures:</b>					
Toe Drain	X				X
Drainage Channels	X				X
French Drains/Outfalls	X				X
Subsurface Drainage Pipes/Outfalls	X				X
Manholes	X				X
Recharge Areas	X				X
<b>Monitoring System:</b>					
Soil Gas Wells	X				X
Groundwater Wells	X				X
<b>4.0 Site Access:</b>					
Asphalt Access Road	X				X
Crushed-Concrete Access Road	X				X

**B. Description of Further Action Requirements:**

1. Location: N/A

Observed Conditions: \_\_\_\_\_

**Recommendations:**

NOTE: Grounds weed whacked LAST MONTH

**BROOKHAVEN NATIONAL LABORATORY  
CURRENT LANDFILL AREA  
SITE INSPECTION FORM**

Name of Inspector(s):

Eric Kramer

Date of Inspection:

12-17-15

Purpose of Inspection:

Routine  Heavy Rainfall  Reported Incident

Time on Site:

\_\_\_\_\_

Time off Site:

\_\_\_\_\_

Weather Conditions:

\_\_\_\_\_

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
<b>1.0 Landfill Cap:</b>					
Vegetation	X				
Cap	X				
Gas Vents	X				X
<b>2.0 Drainage Structures:</b>					
Toe Drain	X				
Drainage Channels	X				X
French Drains/Outfalls	X				X
Subsurface Drainage Pipes/Outfalls	X				X
Manholes	X				X
Recharge Areas	X				X
<b>Monitoring System:</b>					
Soil Gas Wells	X				
Groundwater Wells	X				X
<b>4.0 Site Access:</b>					
Asphalt Access Road	X				
Crushed-Concrete Access Road	X				X

**B. Description of Further Action Requirements:**

1. Location: N/A  
Observed Conditions: \_\_\_\_\_

**Recommendations:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**BROOKHAVEN NATIONAL LABORATORY  
FORMER LANDFILL AREA  
SITE INSPECTION FORM**

Name of Inspector(s):

ERIC KRAMER

Date of Inspection:

FEBRUARY 2015

Purpose of Inspection:

Routine  Heavy Rainfall  Reported Incident

Time on Site:

Time off Site:

Weather Conditions:

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
<b>1.0 Landfill Cap:</b>					
Vegetation					
Cap					
Gas Vents					
<b>2.0 Drainage Structures:</b>					
Toe Drain					
Drainage Channels					
French Drains/Outfalls					
Subsurface Drainage Pipes/Outfalls					
Manholes					
Recharge Areas					
<b>3.0 Monitoring System:</b>					
Soil Gas Wells					
Groundwater Wells					
<b>4.0 Site Access:</b>					
Asphalt Access Road					
Crushed-Concrete Access Road					

**B. Description of Further Action Requirements:**

1. Location:

Observed Conditions:

*\* NOTE: INSPECTIONS COULD NOT BE DONE  
DUE TO SNOW COVERING LANDFILL & ROADS*

Recommendations:







## BROOKHAVEN NATIONAL LABORATORY SITE INSPECTION FORM

Location (AOC): Former Landfill Area (includes the former and interim landfills and slit trench)  
 Date of Inspection: 4/28/15  
 Name of Inspector(s): R. Howe, W. Dorsch, K. Schwager, E. Kramer, D. Paquette, T. Green, J. Burke  
 Purpose of Inspection:  Routine (Scheduled Frequency of 2x/yr)  Heavy Rainfall  Reported Incident

### A. Inspection Checklist

Component	Observed Condition				Further Action Req'd	
	Excell.	Fair	Poor	Not Applic.	Yes (describe)	No
<b>1. Landfill Cap/Soil Covers/Wetlands:</b>						
Vegetation (e.g. grass)	X				Grass is short	X
Soil (Cap/Cover/Fill)	X				Fill in erosion areas	
Other: _____						
<b>2. Drainage Structures:</b>						
Standing Water	X				Little in west culvert	X
Toe Drain	X					X
Drainage Channels	X					X
French Drains/Outfalls	X					X
Subsurface Drainage Pipes/Outfalls	X					X
Manholes				X		X
Berms				X		X
Roof Drains				X		X
Recharge Areas	X				Significant vegetation	X
Other: _____						
<b>3. Monitoring System:</b>						
Soil Gas Wells	X					X
Groundwater Wells	X					X
Gas Vents	X				Vents clear of debris	X
Other: _____	X					X
<b>4. Site Access:</b>						
Asphalt Access Road		X			Repair pothole	
Crushed-concrete Access Road		X				X
Fence				X		X
Gates/locks				X		X
Radiological Postings				X		X
Other: LUIIC Signs	X				All signs in place	X
<b>5. Evidence of unauthorized work activities and/or unauthorized access has occurred?</b>						
If yes, describe evidence: _____						

### B. Description of Other Observations

Observed Conditions/Recommendations: Former Landfill cap is in good condition. No active burrows observed. However, shallow erosional areas on west slope needs to be filled-in by Facilities and Operations (F&O). The grass on all three landfills is short and little vegetation in culverts. F&O needs to fill asphalt cracks and repair pothole. LUIIC Factsheet Changes: None.

**BROOKHAVEN NATIONAL LABORATORY  
FORMER LANDFILL AREA  
SITE INSPECTION FORM**

Name of Inspector(s): Eric Kramer

Date of Inspection: 5-27-15

Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident

Time on Site: \_\_\_\_\_

Time off Site: \_\_\_\_\_

Weather Conditions: \_\_\_\_\_

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
<b>1.0 Landfill Cap:</b>					
Vegetation		X		X	
Cap	X				
Gas Vents	X				X
<b>2.0 Drainage Structures:</b>					
Toe Drain	X				X
Drainage Channels	X				X
French Drains/Outfalls	X				X
Subsurface Drainage Pipes/Outfalls	X				X
Manholes	X				X
Recharge Areas	X				X
<b>Monitoring System:</b>					
Soil Gas Wells	X				X
Groundwater Wells	X				X
<b>4.0 Site Access:</b>					
Asphalt Access Road	X				X
Crushed-Concrete Access Road	X				X

**B. Description of Further Action Requirements:**

1. Location: Edge of Roads, Culverts. IN Culverts

Observed Conditions: Excessive Vegetation Growth

Recommendations: Will Contact Grounds about above issues

**BROOKHAVEN NATIONAL LABORATORY  
FORMER LANDFILL AREA  
SITE INSPECTION FORM**

Name of Inspector(s):

Eric Kramer

Date of Inspection:

6-29-15

Purpose of Inspection:

Routine  Heavy Rainfall  Reported Incident

Time on Site:

Time off Site:

Weather Conditions:

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
<b>1.0 Landfill Cap:</b>					
Vegetation		X		X	
Cap	X				
Gas Vents	X				X
<b>2.0 Drainage Structures:</b>					
Toe Drain	X				
Drainage Channels	X				X
French Drains/Outfalls	X				X
Subsurface Drainage Pipes/Outfalls	X				X
Manholes	X				X
Recharge Areas	X				X
<b>Monitoring System:</b>					
Soil Gas Wells	X				
Groundwater Wells	X				X
<b>4.0 Site Access:</b>					
Asphalt Access Road					
Crushed-Concrete Access Road	X				X

**B. Description of Further Action Requirements:**

1. Location:

Edges of roads, culverts. In culverts

Observed Conditions:

EXCESSIVE VEGETATION GROWTH

Recommendations:

CONTACT GROUND

**BROOKHAVEN NATIONAL LABORATORY  
FORMER LANDFILL AREA  
SITE INSPECTION FORM**

Name of Inspector(s): Eric Kramer

Date of Inspection: 7-27-15

Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident

Time on Site: \_\_\_\_\_

Time off Site: \_\_\_\_\_

Weather Conditions: \_\_\_\_\_

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
<b>1.0 Landfill Cap:</b>					
Vegetation		X		X	
Cap	X				X
Gas Vents					X
<b>2.0 Drainage Structures:</b>					
Toe Drain	X				X
Drainage Channels	X				X
French Drains/Outfalls	X				X
Subsurface Drainage Pipes/Outfalls	X				X
Manholes	X				X
Recharge Areas	X				X
<b>Monitoring System:</b>					
Soil Gas Wells	X				X
Groundwater Wells	X				X
<b>4.0 Site Access:</b>					
Asphalt Access Road	X				X
Crushed-Concrete Access Road	X				X

**B. Description of Further Action Requirements:**

1. Location: Edges of Roads, Culverts. In Culverts

Observed Conditions: Excessive Vegetation Growth

Recommendations: NOTE: 7-21 Top of Landfill Mowed

Will Speak to Grounds about other work

**BROOKHAVEN NATIONAL LABORATORY  
FORMER LANDFILL AREA  
SITE INSPECTION FORM**

Name of Inspector(s):

Eric Kramer

Date of Inspection:

8-26-15

Purpose of Inspection:

Routine  Heavy Rainfall  Reported Incident

Time on Site:

Time off Site:

Weather Conditions:

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
<b>1.0 Landfill Cap:</b>					
Vegetation		X		X	
Cap	X				
Gas Vents	X				X
<b>2.0 Drainage Structures:</b>					
Toe Drain	X				X
Drainage Channels	X				X
French Drains/Outfalls	X				X
Subsurface Drainage Pipes/Outfalls	X				X
Manholes	X				X
Recharge Areas	X				X
<b>Monitoring System:</b>					
Soil Gas Wells	X				X
Groundwater Wells	X				X
<b>4.0 Site Access:</b>					
Asphalt Access Road	X				X
Crushed-Concrete Access Road	X				X

**B. Description of Further Action Requirements:**

1. Location:

Edges of Land Fill, Culverts, In Culverts

Observed Conditions:

Excessive Vegetation Growth

Recommendations:

Sent E-mail to Grounds

**BROOKHAVEN NATIONAL LABORATORY  
FORMER LANDFILL AREA  
SITE INSPECTION FORM**

Name of Inspector(s):

Eric Kramer

Date of Inspection:

9-23-15

Purpose of Inspection:

Routine  Heavy Rainfall  Reported Incident

Time on Site:

Time off Site:

Weather Conditions:

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
<b>1.0 Landfill Cap:</b>					
Vegetation		X		X	
Cap	X				
Gas Vents	X				X
<b>2.0 Drainage Structures:</b>					
Toe Drain	X				
Drainage Channels	X				X
French Drains/Outfalls	X				X
Subsurface Drainage Pipes/Outfalls	X				X
Manholes	X				X
Recharge Areas	X				X
<b>3.0 Monitoring System:</b>					
Soil Gas Wells	X				
Groundwater Wells	X				X
<b>4.0 Site Access:</b>					
Asphalt Access Road	X				
Crushed-Concrete Access Road	X				X

**B. Description of Further Action Requirements:**

1. Location:

Edges of Landfill, Culverts

Observed Conditions:

Excessive Vegetation Growth

Recommendations:

Will contact Grounds about vegetation removal

**BROOKHAVEN NATIONAL LABORATORY  
FORMER LANDFILL AREA  
SITE INSPECTION FORM**

Name of Inspector(s):

Eric Kramer

Date of Inspection:

10-26-15

Purpose of Inspection:

Routine  Heavy Rainfall  Reported Incident

Time on Site:

Time off Site:

Weather Conditions:

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
<b>1.0 Landfill Cap:</b>					
Vegetation		X		X	
Cap	X				X
Gas Vents	X				X
<b>2.0 Drainage Structures:</b>					
Toe Drain	X				X
Drainage Channels	X				X
French Drains/Outfalls	X				X
Subsurface Drainage Pipes/Outfalls	X				X
Manholes	X				X
Recharge Areas	X				X
<b>Monitoring System:</b>					
Soil Gas Wells	X				X
Groundwater Wells	X				X
<b>4.0 Site Access:</b>					
Asphalt Access Road	X				X
Crushed-Concrete Access Road	X				X

**B. Description of Further Action Requirements:**

1. Location:

Edges of Landfill, Culverts

Observed Conditions:

Excessive Vegetation Growth

Recommendations:

Contact Grounds

## BROOKHAVEN NATIONAL LABORATORY SITE INSPECTION FORM

Location (AOC): Former Landfill Area (includes the former and interim landfills and slit trench)  
 Date of Inspection: 10/22/15  
 Name of Inspector(s): R. Howe, Paquette, J. Burke, V. Racaniello  
 Purpose of Inspection:  Routine (Scheduled Frequency of 2x/yr)  Heavy Rainfall  Reported Incident

### A. Inspection Checklist

Component	Observed Condition				Further Action Req'd	
	Excell.	Fair	Poor	Not Applic.	Yes (describe)	No
<b>1. Landfill Cap/Soil Covers/Wetlands:</b>						
Vegetation (e.g. grass)	X				Grass was just cut	X
Soil (Cap/Cover/Fill)	X				Fill in animal burrows	
Other: _____						
<b>2. Drainage Structures:</b>						
Standing Water	X				No water	X
Toe Drain	X					X
Drainage Channels		X			Vegetat in west channel	
French Drains/Outfalls	X					X
Subsurface Drainage Pipes/Outfalls	X					X
Manholes				X		X
Berms				X		X
Roof Drains				X		X
Recharge Areas	X				Significant vegetation	X
Other: _____						
<b>3. Monitoring System:</b>						
Soil Gas Wells	X					X
Groundwater Wells	X					X
Gas Vents	X				No nests in vents	X
Other: _____	X					X
<b>4. Site Access:</b>						
Asphalt Access Road		X			Repair pothole to east	
Crushed-concrete Access Road		X				X
Fence				X		X
Gates/locks				X		X
Radiological Postings				X		X
Other: LUIIC Signs	X				All signs in place	X
<b>5. Evidence of unauthorized work activities and/or unauthorized access has occurred?</b>					<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If yes, describe evidence: _____						

### B. Description of Other Observations

Observed Conditions/Recommendations: Former Landfill, Interim Landfill, and Slit Trench caps are in good condition. Three burrows and shallow erosional areas observed on west slope of Former Landfill need to be filled-in by Facilities and Operations (F&O). The grass on all three landfills was cut within the last two weeks. F&O needs to remove small pine seedlings on west slope of Former Landfill, spray vegetation in western drainage channels, fill asphalt cracks, and repair pothole. Met with the Nonproliferation and National Security Department 10/14/15 to discuss potential upgrades to the Radiation Detector Test and Evaluation Center facility located adjacent to the Former Landfill. Any changes adjacent to the landfill will be discussed with the regulators first. LUIIC Factsheet Changes: None.



**BROOKHAVEN NATIONAL LABORATORY  
FORMER LANDFILL AREA  
SITE INSPECTION FORM**

Name of Inspector(s):

Eric Kramer

Date of Inspection:

11-24-15

Purpose of Inspection:

Routine  Heavy Rainfall  Reported Incident

Time on Site:

Time off Site:

Weather Conditions:

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
<b>1.0 Landfill Cap:</b>					
Vegetation	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Cap	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Gas Vents	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
<b>2.0 Drainage Structures:</b>					
Toe Drain	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Drainage Channels	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
French Drains/Outfalls	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Subsurface Drainage Pipes/Outfalls	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Manholes	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Recharge Areas	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
<b>Monitoring System:</b>					
Soil Gas Wells	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Groundwater Wells	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
<b>4.0 Site Access:</b>					
Asphalt Access Road	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Crushed-Concrete Access Road	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>

**B. Description of Further Action Requirements:**

1. Location:

Observed Conditions:

Recommendations:

NOTE: Grounds weed whacked last month



## Appendix C

### Historical Soil-gas Monitoring Data

# 1996 CURRENT LANDFILL SOIL GAS MONITORING SUMMARY TABLE

1998 Environmental Monitoring Report  
Current and Former Landfills - Brookhaven National Laboratory

Soil Gas Monitoring Well	Methane (% By Volume)			
	April-96	June-96	July-96	December-96
SGMW-01A	21.6	0	16.5	29.8
SGMW-01B	23.2	0	11	28.9
SGMW-01C	24.1	0	11.4	26.8
SGMW-02A	55.1	53	49.5	64.8
SGMW-02B	55.5	52.7	51.4	59
SGMW-02C	55.6	56.4	43.8	58
SGMW-03A	66	61.2	54	62.8
SGMW-03B	62	59.5	45	61.6
SGMW-03C	57.8	58.1	54	57.9
SGMW-04A	49.7	0	48.9	52.4
SGMW-04B	53	0	49.4	54.3
SGMW-04C	52.8	0	48.6	55.9
SGMW-05A	50.1	49.4	46.5	52
SGMW-05B	50.9	47.5	42	53.7
SGMW-05C	48.7	46.9	38.4	51.6
SGMW-06A	40.1	44.2	0.8	0
SGMW-06B	44	46	41.9	0
SGMW-06C	45.2	46.7	42	0
SGMW-07A	8.6	10.4	14.5	6.2
SGMW-07B	76	11.6	0.2	0.8
SGMW-07C	8.4	11.7	3.2	8.7
SGMW-08A	0	0	0.7	0
SGMW-08B	0	0	0	0
SGMW-08C	0	0	0	0
SGMW-09A	0.3	0	0	0
SGMW-09B	1.2	0	0	2.8
SGMW-09C	2.5	0	0	6.7
SGMW-10A	16.7	0.3	0	5.8
SGMW-10B	16.6	22.8	23	22.7
SGMW-10C	14	14.3	15.8	32.5
SGMW-11A	16.4	18.2	11.4	29.2
SGMW-11B	15.7	26.8	23.5	39.3
SGMW-12A	57.5	25.6	25	29.6
SGMW-12B	51.3	0	36.9	57.2
SGMW-13A	46.3	0	32.3	55.7
SGMW-13B	47.5	0	18.7	0
SGMW-14A	34.9	0	26	0
SGMW-14B	41.4	0	18.2	38.6
SGMW-15A	0	44.2	16	0
SGMW-15B	12.7	0.6	3.6	3.4
SGMW-16A	0	0	0	0
SGMW-16B	0	0	0	0
SGMW-17A	0	0	0.7	0
SGMW-17B	0	0	0	0
SGMW-18A	8.6	0	0	0
SGMW-18B	0.6	0	0	7.1
SGMW-19A	40.8	29	0	0
SGMW-19B	36.7	29	16	52.5
GSGM-1A	NA	30.1	6.9	46.5
GSGM-1B	NA	0	0	0
GSGM-1C	NA	0	0	0
GSGM-2A	NA	0	0	0
GSGM-2B	NA	0	0	0
GSGM-2C	NA	0	0	0
GSGM-3A	NA	0	0	0
GSGM-3B	NA	0	0	0
GSGM-4A	NA	0	0	0
GSGM-1B	NA	0	0	0

0 No measurement was recorded.

NA Well was not yet installed.

# 1997 CURRENT LANDFILL SOIL GAS MONITORING SUMMARY TABLE

1998 Environmental Monitoring Report

Current and Former Landfills - Brookhaven National Laboratory

Soil Gas Monitoring Well	Methane (% By Volume)			Hydrogen sulfide (ppm By Volume)		
	March-97	August-97	November-97	March-97	August-97	November-97
SGMW-01A	33.4	17.1	16.4	5	5	8
SGMW-01B	32.5	17.2	15.8	1	4	7
SGMW-01C	34.2	15.9	14.5	1	0	1
SGMW-02A	62.4	47.7	53.2	40	39	137
SGMW-02B	64.7	57	56.7	9	17	43
SGMW-02C	62.6	56.6	55.6	2	0	0
SGMW-03A	65.2	55.7	52.2	3	24	15
SGMW-03B	67.5	55.8	57	7	5	9
SGMW-03C	62.5	55.8	57	3	6	7
SGMW-04A	57.6	53.9	52.5	6	52	6
SGMW-04B	58.2	52.5	55.8	7	29	25
SGMW-04C	58.2	52.5	54.5	6	14	15
SGMW-05A	55.2	47.5	50.5	6	44	29
SGMW-05B	54.4	43.3	45.5	10	21	20
SGMW-05C	53.6	37.5	38.7	3	1	2
SGMW-06A	42.6	44	42.9	7	33	3
SGMW-06B	45	43.5	44.4	10	16	17
SGMW-06C	46	42	43.1	7	13	15
SGMW-07A	10.1	2.3	0	3	0	0
SGMW-07B	8.8	0	0	5	0	6
SGMW-07C	9.9	4.1	0.2	3	0	9
SGMW-08A	0	0	0	1	0	5
SGMW-08B	0	0	0	0	0	9
SGMW-08C	0	0	0	0	0	10
SGMW-09A	0.3	0	0	0	0	15
SGMW-09B	3.4	0	0	0	0	14
SGMW-09C	4.6	0.8	1	0	0	12
SGMW-10A	20.5	28	19	1	19	13
SGMW-10B	19.8	24.5	24	1	0	5
SGMW-10C	0	21.7	20.6	0	0	18
SGMW-11A	24.5	27.6	25.2	20	60	56
SGMW-11B	0	27.8	20.5	0	74	32
SGMW-12A	55.9	48	42	21	89	98
SGMW-12B	0	46.5	44.3	0	0	25
SGMW-13A	28.7	45.2	0.7	2	16	19
SGMW-13B	0	0.4	38.9	0	0	27
SGMW-14A	39.1	20.1	5.2	6	10	24
SGMW-14B	0	0	13.5	0	0	13
SGMW-15A	1.8	0.2	2.5	0	0	14
SGMW-15B	0	0	2.6	0	0	14
SGMW-16A	0	31.7	1.1	0	0	9
SGMW-16B	0	0	0	0	0	0
SGMW-17A	0	0	0	0	0	20
SGMW-17B	0	0	0	0	0	0
SGMW-18A	0	0	0	0	0	14
SGMW-18B	0	0	0	0	0	15
SGMW-19A	35.1	22	10.6	41	51	42
SGMW-19B	0	29	17.3	0	30	12
GSGM-1A	0	0	0	4	0	0
GSGM-1B	0	0	0	5	0	1
GSGM-1C	0	0	0	6	0	0
GSGM-2A	0	0	0	6	0	0
GSGM-2B	0	0	0	6	0	4
GSGM-2C	0	0	0	6	0	0
GSGM-3A	0	0	0	5	0	0
GSGM-3B	0	0	0	4	0	0
GSGM-4A	0	0	0	5	0	8
GSGM-4B	0	0	0	5	0	0

\* Values are calculated, not measured.

◊ No measurement was recorded.

**Bronkhuysen National Laboratory**  
 1998 Landfill Environmental Monitoring Report  
 1998 Current Landfill Soil Gas Monitoring Summary Table.

Soil Gas Monitoring Well	Methane (% By Volume) February-98	Methane (% By Volume) May-98	Methane (% By Volume) August-98	Methane (% By Volume) December-98	Hydrogen sulfide (ppm By Volume) February-98	Hydrogen sulfide (ppm By Volume) May-98	Hydrogen sulfide (ppm By Volume) August-98	Hydrogen sulfide (ppm By Volume) December-98	Soil Gas Monitoring Well
SGMW-01A	26.3	26.1	24.2	20.4	5	0	0	0	SGMW-01A
SGMW-01B	26.1	26.1	24.2	20.4	4	0	0	0	SGMW-01B
SGMW-01C	24	26	26	10.7	1	2	1	2	SGMW-01C
SGMW-02A	27.8	25.3	26.4	17.7	62	3	4	0	SGMW-02A
SGMW-02B	24.1	26	26.4	11.1	63	6	5	4	SGMW-02B
SGMW-02C	21.6	24.7	25	53.1	11	0	0	0	SGMW-02C
SGMW-03A	20.4	20	20.4	32.3	10	0	2	1	SGMW-03A
SGMW-03B	20.4	20	20.4	32.3	33	0	0	0	SGMW-03B
SGMW-03C	20.4	20	20.4	32.3	4	0	0	0	SGMW-03C
SGMW-04A	20.4	20	20.4	32.3	1	0	4	0	SGMW-04A
SGMW-04B	20.4	20	20.4	32.3	17	4	3	0	SGMW-04B
SGMW-04C	20.4	20	20.4	32.3	17	4	3	0	SGMW-04C
SGMW-05A	20.4	20	20.4	32.3	3	6	5	2	SGMW-05A
SGMW-05B	20.4	20	20.4	32.3	3	6	5	2	SGMW-05B
SGMW-05C	20.4	20	20.4	32.3	0	0	0	0	SGMW-05C
SGMW-06A	20.4	20	20.4	32.3	2	7	8	0	SGMW-06A
SGMW-06B	20.4	20	20.4	32.3	16	0	0	1	SGMW-06B
SGMW-06C	20.4	20	20.4	32.3	47.2	0	0	0	SGMW-06C
SGMW-07A	20.4	20	20.4	32.3	0	0	0	0	SGMW-07A
SGMW-07B	20.4	20	20.4	32.3	0	0	0	0	SGMW-07B
SGMW-07C	20.4	20	20.4	32.3	0	0	0	0	SGMW-07C
SGMW-08A	20.4	20	20.4	32.3	1	0	0	0	SGMW-08A
SGMW-08B	20.4	20	20.4	32.3	3	0	0	0	SGMW-08B
SGMW-08C	20.4	20	20.4	32.3	3	0	0	0	SGMW-08C
SGMW-09A	20.4	20	20.4	32.3	1	0	0	0	SGMW-09A
SGMW-09B	20.4	20	20.4	32.3	0	0	0	0	SGMW-09B
SGMW-09C	20.4	20	20.4	32.3	2	0	0	0	SGMW-09C
SGMW-10A	20.4	20	20.4	32.3	5	2	1	0	SGMW-10A
SGMW-10B	20.4	20	20.4	32.3	0	0	0	0	SGMW-10B
SGMW-10C	20.4	20	20.4	32.3	2	0	0	0	SGMW-10C
SGMW-11A	20.4	20	20.4	32.3	16	0	0	0	SGMW-11A
SGMW-11B	20.4	20	20.4	32.3	0	0	0	0	SGMW-11B
SGMW-12A	20.4	20	20.4	32.3	27	2	1	3	SGMW-12A
SGMW-12B	20.4	20	20.4	32.3	11	3	4	0	SGMW-12B
SGMW-13A	20.4	20	20.4	32.3	0	0	0	0	SGMW-13A
SGMW-13B	20.4	20	20.4	32.3	0	0	0	0	SGMW-13B
SGMW-14A	20.4	20	20.4	32.3	0	0	0	0	SGMW-14A
SGMW-14B	20.4	20	20.4	32.3	0	0	0	0	SGMW-14B
SGMW-15A	20.4	20	20.4	32.3	6	0	0	0	SGMW-15A
SGMW-15B	20.4	20	20.4	32.3	0	0	0	0	SGMW-15B
SGMW-16A	20.4	20	20.4	32.3	0	0	0	0	SGMW-16A
SGMW-16B	20.4	20	20.4	32.3	0	0	0	0	SGMW-16B
SGMW-17A	20.4	20	20.4	32.3	0	0	0	0	SGMW-17A
SGMW-17B	20.4	20	20.4	32.3	0	0	0	0	SGMW-17B
SGMW-18A	20.4	20	20.4	32.3	0	0	0	0	SGMW-18A
SGMW-18B	20.4	20	20.4	32.3	0	0	0	0	SGMW-18B
SGMW-18C	20.4	20	20.4	32.3	0	0	0	0	SGMW-18C
SGMW-18D	20.4	20	20.4	32.3	0	0	0	0	SGMW-18D
SGMW-18E	20.4	20	20.4	32.3	0	0	0	0	SGMW-18E
SGMW-18F	20.4	20	20.4	32.3	0	0	0	0	SGMW-18F
SGMW-18G	20.4	20	20.4	32.3	0	0	0	0	SGMW-18G
SGMW-18H	20.4	20	20.4	32.3	0	0	0	0	SGMW-18H
SGMW-18I	20.4	20	20.4	32.3	0	0	0	0	SGMW-18I
SGMW-18J	20.4	20	20.4	32.3	0	0	0	0	SGMW-18J
SGMW-18K	20.4	20	20.4	32.3	0	0	0	0	SGMW-18K
SGMW-18L	20.4	20	20.4	32.3	0	0	0	0	SGMW-18L
SGMW-18M	20.4	20	20.4	32.3	0	0	0	0	SGMW-18M
SGMW-18N	20.4	20	20.4	32.3	0	0	0	0	SGMW-18N
SGMW-18O	20.4	20	20.4	32.3	0	0	0	0	SGMW-18O
SGMW-18P	20.4	20	20.4	32.3	0	0	0	0	SGMW-18P
SGMW-18Q	20.4	20	20.4	32.3	0	0	0	0	SGMW-18Q
SGMW-18R	20.4	20	20.4	32.3	0	0	0	0	SGMW-18R
SGMW-18S	20.4	20	20.4	32.3	0	0	0	0	SGMW-18S
SGMW-18T	20.4	20	20.4	32.3	0	0	0	0	SGMW-18T
SGMW-18U	20.4	20	20.4	32.3	0	0	0	0	SGMW-18U
SGMW-18V	20.4	20	20.4	32.3	0	0	0	0	SGMW-18V
SGMW-18W	20.4	20	20.4	32.3	0	0	0	0	SGMW-18W
SGMW-18X	20.4	20	20.4	32.3	0	0	0	0	SGMW-18X
SGMW-18Y	20.4	20	20.4	32.3	0	0	0	0	SGMW-18Y
SGMW-18Z	20.4	20	20.4	32.3	0	0	0	0	SGMW-18Z

Soil Gas Monitoring Well	Hydrogen sulfide (ppm By Volume) February-00	Hydrogen sulfide (ppm By Volume) May-00	Hydrogen sulfide (ppm By Volume) August-00	Hydrogen sulfide (ppm By Volume) December-00	Soil Gas Monitoring Well
GGGM-1A	0	0	0	0	GGGM-1A
GGGM-1B	0	0	0	0	GGGM-1B
GGGM-1C	0	0	0	0	GGGM-1C
GGGM-2A	0	0	0	0	GGGM-2A
GGGM-2B	0	0	0	0	GGGM-2B
GGGM-2C	0	0	0	0	GGGM-2C
GGGM-3A	2	0	0	0	GGGM-3A
GGGM-3B	0	0	0	0	GGGM-3B
GGGM-4A	0	0	0	0	GGGM-4A
GGGM-4B	2	0	0	0	GGGM-4B

Soil Gas Monitoring Well	Methane (% By Volume) February-00	Methane (% By Volume) May-00	Methane (% By Volume) August-00	Methane (% By Volume) December-00
GGGM-1A	0	0	0	0
GGGM-1B	0	0	0	0
GGGM-1C	0	0	0	0
GGGM-2A	0	0	0	0
GGGM-2B	0	0	20.1	0
GGGM-2C	0	0	0	0
GGGM-3A	0	0	0	0
GGGM-3B	0	0	0	0
GGGM-4A	0	0	0	0
GGGM-4B	0	0	0	0

\* Values are calculated, not measured.  
 \*\* No measurement was recorded.

Brookhaven National Laboratory  
 1988 Landfill Environmental Monitoring Report  
 1988 Current Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume) June-88	Methane (% By Volume) October-88	Methane (% By Volume) December-88	LEL (% By Volume) June-88	LEL (% By Volume) October-88	LEL (% By Volume) December-88	Hydrogen sulfide (ppm By Volume) June-88	Hydrogen sulfide (ppm By Volume) October-88	Hydrogen sulfide (ppm By Volume) December-88	Soil Gas Monitoring Well
SGMW-01A	10.5	17.0	10.0	350	350	374	0	0	0	SGMW-01A
SGMW-01B	10.6	10.1	10.0	370	302	372	0	0	0	SGMW-01B
SGMW-01C	17.2	14.2	10.7	344	200	334	0	0	0	SGMW-01C
SGMW-02A	52.4	62.0	55.0	1010	1062	1110	13	13	26	SGMW-02A
SGMW-02B	54.4	65	58.7	1000	1100	1134	3	3	11	SGMW-02B
SGMW-02C	55.3	55.2	57.5	1100	1104	1150	3	3	3	SGMW-02C
SGMW-03A	58.0	41.5	2.0	1102	0	50	0	0	0	SGMW-03A
SGMW-03B	61.4	60.3	0.3	1220	1100	1226	0	0	1	SGMW-03B
SGMW-03C	55.0	53.3	53.5	1199	1080	1180	0	0	3	SGMW-03C
SGMW-04A	53.0	0	39.1	1070	0	702	0	0	2	SGMW-04A
SGMW-04B	53.5	63.0	62.0	1070	1070	1050	0	0	7	SGMW-04B
SGMW-04C	62.4	55.2	40.7	1010	1104	97.4	2	2	9	SGMW-04C
SGMW-05A	47.8	51.1	47.4	910	1032	944	0	0	8	SGMW-05A
SGMW-05B	40	61.5	40	800	1030	884	0	0	4	SGMW-05B
SGMW-05C	39.7	39	30.2	754	762	788	0	0	4	SGMW-05C
SGMW-06A	41.1	43.2	48.0	820	862	834	0	0	3	SGMW-06A
SGMW-06B	43.2	43.2	40.6	882	882	820	0	0	6	SGMW-06B
SGMW-06C	43.1	0	0	88	0	0	0	0	2	SGMW-06C
SGMW-07A	0.9	0	0	10	0	0	0	0	2	SGMW-07A
SGMW-07B	0	0	0	10	0	0	0	0	2	SGMW-07B
SGMW-07C	4.4	0.17	1.3	10	34	20	0	0	2	SGMW-07C
SGMW-08A	0	0	0	0	0	0	0	0	2	SGMW-08A
SGMW-08B	0	0	0	0	0	0	0	0	2	SGMW-08B
SGMW-08C	0	0	0	0	0	0	0	0	2	SGMW-08C
SGMW-09A	0	0	0	0	0	0	0	0	3	SGMW-09A
SGMW-09B	0	0	0	0	0	0	0	0	3	SGMW-09B
SGMW-09C	0	0	0	0	0	0	0	0	3	SGMW-09C
SGMW-10A	21.4	16.7	20	420	314	400	1	1	2	SGMW-10A
SGMW-10B	18.6	26.7	21.1	350	632	420	0	0	3	SGMW-10B
SGMW-10C	17.0	22.0	15.1	350	454	324	0	0	3	SGMW-10C
SGMW-11A	10.3	31.2	18.0	300	624	300	0	0	3	SGMW-11A
SGMW-11B	19.2	26.0	14.0	304	512	284	10	10	3	SGMW-11B
SGMW-12A	48.8	45.1	47.1	892	884	842	30	30	0	SGMW-12A
SGMW-12B	44.2	48.5	47.0	884	900	854	0	0	0	SGMW-12B
SGMW-13A	50.4	0.1	0	1082	0	954	0	0	0	SGMW-13A
SGMW-13B	0.2	0.2	24.6	4	4	402	0	0	0	SGMW-13B
SGMW-14A	7.0	5.9	7.1	102	110	142	0	0	5	SGMW-14A
SGMW-14B	0	22.0	3.1	0	452	60	0	0	5	SGMW-14B
SGMW-15A	0	1.0	2.9	0	32	50	0	0	3	SGMW-15A
SGMW-15B	0	0	0	0	0	0	0	0	3	SGMW-15B
SGMW-15A	0	0	0	0	0	0	0	0	2	SGMW-15A
SGMW-16A	0	0	0	0	0	0	0	0	2	SGMW-16A
SGMW-16B	0	0	0	0	0	0	0	0	2	SGMW-16B
SGMW-17A	0	0	0	0	0	0	0	0	2	SGMW-17A
SGMW-17B	0	0	0	0	0	0	0	0	2	SGMW-17B
SGMW-18A	0	0	0	0	0	0	0	0	2	SGMW-18A
SGMW-18B	0	0	0	0	0	0	0	0	1	SGMW-18B
SGMW-19A	25.1	23	20.0	802	400	400	10	10	10	SGMW-19A
SGMW-19B	30.1	27.3	20.5	802	544	410	0	0	12	SGMW-19B

Screen in water table



Brookhaven National Laboratory  
 1999 Landfill Environmental Monitoring Report  
 1999 Current Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume) June-99	Methane (% By Volume) December-99	Methane (% By Volume) June-00	LEL (% By Volume) December-99	LEL (% By Volume) October-99	LEL (% By Volume) December-99	Hydrogen sulfide (ppm By Volume) June-00	Hydrogen sulfide (ppm By Volume) December-99	Hydrogen sulfide (ppm By Volume) December-99	Hydrogen sulfide (ppm By Volume) December-99	Soil Gas Monitoring Well
GSGM-1A	0	0	0	0	0	0	0	0	0	0	GSGM-1A
GSGM-1B	0	0	0	0	0	0	0	0	0	0	GSGM-1B
GSGM-1C	0	broken valve	0	0	0	0	0	0	0	0	GSGM-1C
GSGM-2A	0	broken valve	0	0	0	0	0	0	0	0	GSGM-2A
GSGM-2B	0	0	0	0	0	0	0	0	0	0	GSGM-2B
GSGM-2C	0	0	0	0	0	0	0	0	0	0	GSGM-2C
GSGM-3A	0	0	0	0	0	0	0	0	0	0	GSGM-3A
GSGM-3B	0	0	0	0	0	0	0	0	0	0	GSGM-3B
GSGM-4A	0	0	0	0	0	0	0	0	0	0	GSGM-4A
GSGM-4B	0	0	0	0	0	0	0	0	0	0	GSGM-4B

\*\* No measurement was recorded.



Brookhaven National Laboratory  
 2001 Landfill Environmental Monitoring Report  
 2001 District Landfill Gas Monitoring Summary Table

Soil Cell Monitoring Point	Methane (% By Volume)		Hydrogen Sulfide (ppm by volume)		Hydrogen Sulfide (ppm by volume)		Hydrogen Sulfide (ppm by volume)		Hydrogen Sulfide (ppm by volume)		
	March-01	June-01	March-01	June-01	March-01	June-01	March-01	June-01	March-01	June-01	
56ANV-07A	52.2	33.1	44.0	262	300	0	0	0	0	0	0
56ANV-07B	2.9	0.0	43.4	0	0	0	0	0	0	0	0
56ANV-07C	16.3	20.4	329	1856	369	0	0	0	0	0	0
56ANV-07D	59.8	57.9	1200	0	>1,000	0	0	0	0	0	0
56ANV-07E	0.0	0.0	1100	0	>1,000	0	0	0	0	0	0
56ANV-07F	0.0	0.0	0	0	>1,000	0	0	0	0	0	0
56ANV-07G	30.0	61.0	750	1160	>1,000	0	0	0	0	0	0
56ANV-07H	97.2	90.8	154.4	0	>1,000	0	0	0	0	0	0
56ANV-07I	0.0	0.0	0.58	0	>1,000	0	0	0	0	0	0
56ANV-07J	42.9	0.0	82.0	0	>1,000	0	0	0	0	0	0
56ANV-07K	50.6	0.0	101.0	0	>1,000	0	0	0	0	0	0
56ANV-07L	0.0	0.0	0.0	0	>1,000	0	0	0	0	0	0
56ANV-07M	46.0	40.2	0.12	0	>1,000	0	0	0	0	0	0
56ANV-07N	43.0	0.0	0.0	0	>1,000	0	0	0	0	0	0
56ANV-07O	10.4	0.0	0.0	0	>1,000	0	0	0	0	0	0
56ANV-07P	0.0	0.0	0.0	0	>1,000	0	0	0	0	0	0
56ANV-07Q	0.0	0.0	0.0	0	>1,000	0	0	0	0	0	0
56ANV-07R	0.0	0.0	0.0	0	>1,000	0	0	0	0	0	0
56ANV-07S	0.0	0.0	0.0	0	>1,000	0	0	0	0	0	0
56ANV-07T	0.0	0.0	0.0	0	>1,000	0	0	0	0	0	0
56ANV-07U	0.0	0.0	0.0	0	>1,000	0	0	0	0	0	0
56ANV-07V	0.0	0.0	0.0	0	>1,000	0	0	0	0	0	0
56ANV-07W	0.0	0.0	0.0	0	>1,000	0	0	0	0	0	0
56ANV-07X	0.0	0.0	0.0	0	>1,000	0	0	0	0	0	0
56ANV-07Y	0.0	0.0	0.0	0	>1,000	0	0	0	0	0	0
56ANV-07Z	0.0	0.0	0.0	0	>1,000	0	0	0	0	0	0
56ANV-08A	10.0	16.0	210	320	300	0	0	0	0	0	0
56ANV-08B	11.2	10.0	224	370	0.12	0	0	0	0	0	0
56ANV-08C	0.0	13.2	190	264	970	0	0	0	0	0	0
56ANV-08D	0.0	21.6	170	430	800	0	0	0	0	0	0
56ANV-08E	0.1	10.3	172	380	800	0	0	0	0	0	0
56ANV-08F	43.0	65.4	0.0	0.0	1074	0	0	0	0	0	0
56ANV-08G	44.4	66.1	0.0	4	1002	0	0	0	0	0	0
56ANV-08H	10.3	0.1	320	1302	0	0	0	0	0	0	0
56ANV-08I	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-08J	17.4	6.2	0	124	160	0	0	0	0	0	0
56ANV-08K	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-08L	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-08M	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-08N	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-08O	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-08P	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-08Q	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-08R	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-08S	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-08T	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-08U	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-08V	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-08W	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-08X	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-08Y	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-08Z	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09A	31.0	20.2	230	784	672	0	0	0	0	0	0
56ANV-09B	20.3	28.1	400	730	824	0	0	0	0	0	0
56ANV-09C	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09D	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09E	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09F	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09G	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09H	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09I	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09J	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09K	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09L	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09M	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09N	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09O	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09P	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09Q	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09R	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09S	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09T	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09U	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09V	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09W	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09X	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09Y	0.0	0	0	0	0	0	0	0	0	0	0
56ANV-09Z	0.0	0	0	0	0	0	0	0	0	0	0

⊗ No Measurement was collected due to other work in the area.  
 Measurements in {} are calculated, not measured.



2003 Current Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume) April-03	Methane (% By Volume) July-03	Methane (% By Volume) October-03	Methane (% By Volume) December-03	LEL (% By Volume) April-03	LEL (% By Volume) July-03	LEL (% By Volume) October-03	LEL (% By Volume) December-03	Hydrogen Sulfide (ppm by volume) April-03	Hydrogen Sulfide (ppm by volume) July-03	Hydrogen Sulfide (ppm by volume) October-03	Hydrogen Sulfide (ppm by volume) December-03	Soil Gas Monitoring Well
SGMW-01A	17.6	22.1	21.1	21.5	352	444	422	436	2	-	0	-	SGMW-01A
SGMW-01B	18.6	16.2	19.7	19.8	372	324	394	396	3	-	81	-	SGMW-01B
SGMW-01C	18.0	13.9	20.0	17.3	360	282	400	348	3	-	80	-	SGMW-01C
SGMW-02A	58.2	41.2	5.0	22.2	(1164)	324	100	442	14	-	68	-	SGMW-02A
SGMW-02B	55.7	0.0	0.1	0.0	(1140)	0	2	0	32	-	13	-	SGMW-02B
SGMW-02C	59.1	0.0	0	42.7	536	0	0	858	9	-	0	-	SGMW-02C
SGMW-03A	26.8	57.8	55.0	0.0	(1182)	(1156)	(1100)	0	19	-	0	-	SGMW-03A
SGMW-03B	69.1	0.0	54.2	11.7	(1078)	0	(1084)	234	23	-	95	-	SGMW-03B
SGMW-03C	63.9	0.0	0.2	41.0	(1052)	0	4	820	3	-	0	-	SGMW-03C
SGMW-04A	54.1	0.0	0.5	9.4	966	0	10	186	3	-	109	-	SGMW-04A
SGMW-04B	53.9	0.0	0.2	47.0	938	0	4	940	7	-	27	-	SGMW-04B
SGMW-04C	52.6	0.0	0.1	41.5	862	0	2	832	15	-	0	-	SGMW-04C
SGMW-05A	48.3	48.0	54.9	23.4	966	960	(1098)	468	2	-	163	-	SGMW-05A
SGMW-05B	46.9	43.8	53.8	38.8	938	876	(1076)	776	3	-	0	-	SGMW-05B
SGMW-05C	43.1	0.0	41.8	32.3	862	0	836	648	3	-	0	-	SGMW-05C
SGMW-06A	40.3	5.8	15.5	15.5	806	116	310	420	1	-	0	-	SGMW-06A
SGMW-06B	42.9	0.0	0.0	20.7	858	0	0	896	3	-	0	-	SGMW-06B
SGMW-06C	43.6	0.0	0.1	44.8	872	0	2	900	2	-	0	-	SGMW-06C
SGMW-07A	0.8	0.0	0.0	45.1	16	0	0	0	1	-	0	-	SGMW-07A
SGMW-07B	0.9	0.0	0.1	0.0	18	0	2	0	2	-	0	-	SGMW-07B
SGMW-07C	4.0	0.0	0.1	0.0	80	0	2	0	0	-	0	-	SGMW-07C
SGMW-08A	0.0	0	0.1	0.0	0	0	2	0	0	-	27	-	SGMW-08A
SGMW-08B	0.0	0	0	0.0	0	0	0	0	0	-	0	-	SGMW-08B
SGMW-08C	0.0	0	0	0.0	0	0	0	0	0	-	0	-	SGMW-08C
SGMW-09A	0	0	0.1	0.0	0	0	2	0	0	-	13	-	SGMW-09A
SGMW-09B	0	0	0	0.0	0	0	0	0	0	-	0	-	SGMW-09B
SGMW-09C	0.1	0	0.1	0.0	2	0	2	0	0	-	0	-	SGMW-09C
SGMW-10A	18.0	22.0	27.9	5.6	360	440	558	112	1	-	0	-	SGMW-10A
SGMW-10B	15.8	17.7	22.0	0.0	316	354	440	0	1	-	0	-	SGMW-10B
SGMW-10C	14.0	16.6	18.2	0.0	280	332	364	0	2	-	0	-	SGMW-10C
SGMW-11A	15.6	29.3	0.4	17.7	312	586	8	356	1	-	0	-	SGMW-11A
SGMW-11B	13.7	26.0	0.1	0.0	274	520	2	0	13	-	0	-	SGMW-11B
SGMW-12A	60.0	47.6	64.7	0.0	(1200)	952	(1294)	0	0	-	0	-	SGMW-12A
SGMW-12B	50.9	0.3	0.5	1.8	(1018)	6	10	36	1	-	0	-	SGMW-12B
SGMW-13A	30.5	0.0	67.2	66.4	610	0	(1344)	1328	1	-	163	-	SGMW-13A
SGMW-13B	0.0	0.8	0.1	0.0	0	16	2	0	1	-	0	-	SGMW-13A
SGMW-14A	29.4	9.8	8.3	0.0	588	196	2	0	10	-	0	-	SGMW-14A
SGMW-14B	0.2	0	0.1	0.1	4	0	2	2	1	-	0	-	SGMW-14B
SGMW-15A	0.1	0	0.1	0.0	2	0	2	0	1	-	54	-	SGMW-15A
SGMW-15B	0	0	0.1	0.0	0	0	2	0	1	-	0	-	SGMW-15B
SGMW-16A	0.1	0	0	0.0	2	0	0	0	1	-	0	-	SGMW-16A
SGMW-16B	0	0	0	0.0	0	0	0	0	3	-	0	-	SGMW-16B
SGMW-17A	0	0	0	0.0	0	0	0	0	3	-	0	-	SGMW-17A
SGMW-17B	0	0	0	0.0	0	0	0	0	2	-	0	-	SGMW-17B
SGMW-18A	0.1	0	0	0.0	2	0	0	0	2	-	0	-	SGMW-18A
SGMW-18B	0	0.1	0.0	0.0	0	2	0	0	0	-	0	-	SGMW-18B
SGMW-19A	41.8	29.1	40.0	27.0	838	582	800	540	0	-	0	-	SGMW-19A
SGMW-19B	44.0	0.7	33.2	29.5	880	14	664	592	39	-	191	-	SGMW-19B
GSGM-1A	0.1	0	0	0	2	0	0	0	0	-	0	-	GSGM-1A
GSGM-1B	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-1B
GSGM-1C	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-1C
GSGM-2A	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-2A
GSGM-2B	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-2B
GSGM-2C	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-2C
GSGM-3A	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-3A
GSGM-3B	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-3B
GSGM-4A	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-4A
GSGM-4B	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-4B

Measurements in ( ) are calculated, not measured.  
 - H2S pod was not operating correctly.  
 July measurements taken with a Landtec GEM 500.

2004 Current Landfill Soil Gas Monitoring Summary

Soil Gas Monitoring Well	Methane (% By Volume) 3/10/04	Methane (% By Volume) 6/25/04	Methane (% By Volume) 10/7/04	Methane (% By Volume) 11/30/04	LEL (% By Volume) 3/10/04	LEL (% By Volume) 6/25/04	LEL (% By Volume) 10/7/04	LEL (% By Volume) 11/30/04	Hydrogen Sulfide (ppm by volume) 3/10/04	Hydrogen Sulfide (ppm by volume) 6/25/04	Hydrogen Sulfide (ppm by volume) 10/7/04	Hydrogen Sulfide (ppm by volume) 11/30/04	Soil Gas Monitoring Well
SGMW-01A	16.6	14.4	6.8	6.8	332	288	136	136	150	2	3	1	SGMW-01A
SGMW-01B	15.6	8.6	6.0	2.5	312	172	120	50	23	0	0	0	SGMW-01B
SGMW-01C	14.0	0.2	4.2	6.3	280	4	84	126	34	0	0	0	SGMW-01C
SGMW-02A	34.5	8.6	39.7	2.1	692	172	794	42	191	0	11	0	SGMW-02A
SGMW-02B	22.7	0.6	12.7	0.0	454	12	254	0	177	0	0	0	SGMW-02B
SGMW-02C	44.4	0.0	2	4.6	888	0	4	92	0	0	0	0	SGMW-02C
SGMW-03A	25.4	15.2	4.1	0.0	508	304	82	0	0	0	0	0	SGMW-03A
SGMW-03B	52.1	28.0	14.0	0.1	(1042)	560	280	2	0	0	0	0	SGMW-03B
SGMW-03C	51.3	7.3	1.8	0.0	(1026)	146	36	0	0	0	0	0	SGMW-03C
SGMW-04A	37.5	49.1	3.5	1.8	748	982	70	36	0	0	0	0	SGMW-04A
SGMW-04B	43.0	50.7	23.2	14.4	860	(1014)	454	288	0	0	0	0	SGMW-04B
SGMW-04C	36.2	40.9	21.2	14.5	724	818	424	290	0	0	0	0	SGMW-04C
SGMW-05A	36.1	40.0	13.6	3.7	722	800	272	74	150	0	0	0	SGMW-05A
SGMW-05B	36.8	41.4	25.2	13.6	736	828	504	272	0	0	0	0	SGMW-05B
SGMW-05C	29.0	24.0	18.6	13.6	590	480	372	272	0	0	0	0	SGMW-05C
SGMW-06A	31.8	9.7	3.9	1.8	636	194	78	36	0	0	0	0	SGMW-06A
SGMW-06B	40.4	27.4	20.6	0.3	808	548	412	6	0	0	0	0	SGMW-06B
SGMW-06C	42.1	29.8	4.7	13.2	842	596	94	264	0	0	0	0	SGMW-06C
SGMW-07A	0.2	0.1	0.0	0.0	4	2	0	0	4	0	0	0	SGMW-07A
SGMW-07B	0.5	0.1	0.0	0.0	10	2	0	0	0	0	0	0	SGMW-07B
SGMW-07C	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-07C
SGMW-08A	0.0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-08A
SGMW-08B	0.0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-08B
SGMW-08C	0.0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-08C
SGMW-09A	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-09A
SGMW-09B	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-09B
SGMW-09C	0.2	0	0	0.0	4	0	0	0	0	0	0	0	SGMW-09C
SGMW-10A	1.9	16.4	2.0	0.0	38	328	40	0	0	1	0	0	SGMW-10A
SGMW-10B	2.4	16.1	12.0	3.9	48	322	240	78	0	2	0	0	SGMW-10B
SGMW-10C	0.0	14.5	10.0	2.4	0	290	200	48	0	0	0	0	SGMW-10C
SGMW-11A	0.0	16.0	5.5	0.0	0	320	110	0	0	2	0	0	SGMW-11A
SGMW-11B	0.0	14.7	10.1	0.3	0	294	202	6	109	0	0	0	SGMW-11B
SGMW-12A	22.5	48.5	9.9	0.0	450	970	198	0	122	21	0	0	SGMW-12A
SGMW-12B	0.0	0.2	7.2	0.0	0	4	144	0	136	0	0	0	SGMW-12B
SGMW-13A	0.0	0.6	1.0	0.0	0	12	20	0	0	0	0	0	SGMW-13A
SGMW-13B	0.0	0.1	0	1.1	0	2	0	22	191	0	0	0	SGMW-13B
SGMW-14A	0.0	0.1	0.0	0.0	0	2	0	0	130	0	0	0	SGMW-14A
SGMW-14B	0	0.1	0	2.3	0	2	0	46	122	0	0	0	SGMW-14B
SGMW-15A	0.0	0.1	0.0	0.0	0	2	0	0	0	0	0	0	SGMW-15A
SGMW-15B	0	0	0	5.8	0	0	0	116	0	0	0	0	SGMW-15B
SGMW-16A	0	0.1	0	0.0	0	2	0	0	0	0	0	0	SGMW-16A
SGMW-16B	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-16B
SGMW-17A	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-17A
SGMW-17B	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-17B
SGMW-18A	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-18A
SGMW-18B	0	0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-18B
SGMW-19A	6.0	26.7	25.9	13.0	120	534	518	260	0	0	0	4	SGMW-19A
SGMW-19B	5.8	30.0	27.7	9.2	116	600	554	184	0	0	0	0	SGMW-19B
GSGM-1A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-1A
GSGM-1B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-1B
GSGM-1C	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-1C
GSGM-2A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-2A
GSGM-2B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-2B
GSGM-2C	0	0	0	0	0	0	0	0	0	1	0	0	GSGM-2C
GSGM-3A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-3A
GSGM-3B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-3B
GSGM-4A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-4A
GSGM-4B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-4B

Measurements in ( ) are calculated, not measured.  
H2S pod suspected of not operating correctly in March.

2005 Current Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume) 3/30/05	Methane (% By Volume) 7/21/05	Methane (% By Volume) 10/21/05	Methane (% By Volume) 12/28/05	LEL (% By Volume) 3/30/05	LEL (% By Volume) 7/21/05	LEL (% By Volume) 10/21/05	LEL (% By Volume) 12/28/05	Hydrogen Sulfide (ppm by volume) 3/30/05	Hydrogen Sulfide (ppm by volume) 7/21/05	Hydrogen Sulfide (ppm by volume) 10/21/05	Hydrogen Sulfide (ppm by volume) 12/28/05	Soil Gas Monitoring Well
SGMW-01A	8.8	5.4	5	6.7	176	108	100	134	1	3	2	2	SGMW-01A
SGMW-01B	3.0	2.9	3	3.8	60	58	60	76	0	0	0	0	SGMW-01B
SGMW-01C	7.5	5.6	5.5	6.1	150	112	110	122	1	0	0	0	SGMW-01C
SGMW-02A	0.3	13.7	1.7	3.0	6	274	34	60	0	0	0	1	SGMW-02A
SGMW-02B	0.2	0.7	27.2	12.4	4	14	544	248	1	0	6	3	SGMW-02B
SGMW-02C	0.3	0.1	247	0.0	6	2	494	0	1	0	0	0	SGMW-02C
SGMW-03A	0.7	36.8	0.7	0.0	14	736	14	0	0	0	0	0	SGMW-03A
SGMW-03B	0.5	2.5	47.6	11.0	10	50	952	220	1	0	2	1	SGMW-03B
SGMW-03C	0.1	0.2	39.9	0.0	2	4	798	0	0	0	1	0	SGMW-03C
SGMW-04A	0.2	10.7	46.2	9.3	4	214	924	186	0	1	0	0	SGMW-04A
SGMW-04B	6.5	25.1	42.4	18.0	130	502	848	360	0	0	1	1	SGMW-04B
SGMW-04C	6.3	0.2	38.2	14.1	126	4	764	282	0	0	0	2	SGMW-04C
SGMW-05A	0.7	14.3	36.6	10.2	14	286	732	204	1	1	1	1	SGMW-05A
SGMW-05B	13.4	21.1	34.6	22.8	268	422	692	456	0	1	0	0	SGMW-05B
SGMW-05C	9.2	18.8	27.3	18.3	184	376	546	366	0	1	0	0	SGMW-05C
SGMW-06A	0.2	2.4	29.7	8.1	4	48	594	162	1	1	0	0	SGMW-06A
SGMW-06B	7.7	24.4	29.7	16.8	154	488	594	336	1	1	0	0	SGMW-06B
SGMW-06C	8.6	24.7	27.2	14.9	172	494	544	298	1	1	1	0	SGMW-06C
SGMW-07A	0.0	0.0	0.0	0.0	0	0	0	0.0	0	0	0	0	SGMW-07A
SGMW-07B	0	0.0	0.0	0.0	0	0	0	0.0	0	0	0	0	SGMW-07B
SGMW-07C	0.0	0.0	0.0	0.0	0	0	0	0.0	1	1	0	0	SGMW-07C
SGMW-08A	0.0	0	0	0.0	0	0	0	0.0	0	0	0	0	SGMW-08A
SGMW-08B	0.0	0	0	0.0	0	0	0	0.0	0	0	0	0	SGMW-08B
SGMW-08C	0.0	0	0	0.0	0	0	0	0.0	0	0	0	0	SGMW-08C
SGMW-09A	0	.2	0	0.0	0	4	0	0.0	0	1	1	0	SGMW-09A
SGMW-09B	0	.2	0	0.0	0	4	0	0.0	1	0	0	0	SGMW-09B
SGMW-09C	0	.2	0	0.0	0	4	0	0.0	0	0	0	0	SGMW-09C
SGMW-10A	0.2	2.7	12.3	0.0	4	54	246	0.0	1	0	1	0	SGMW-10A
SGMW-10B	0.2	12.0	16.7	1.6	4	240	334	32	1	2	0	0	SGMW-10B
SGMW-10C	0.1	1.6	14.3	1.2	2	32	286	24	1	0	1	1	SGMW-10C
SGMW-11A	0.2	6.0	17.2	0.0	4	120	344	0	0	1	20	0	SGMW-11A
SGMW-11B	0.2	13.2	19.6	0.0	4	264	392	0	1	1	4	0	SGMW-11B
SGMW-12A	0.2	3.9	40.1	4.0	4	78	802	80	0	0	51	3	SGMW-12A
SGMW-12B	0.1	0.8	25.7	0.0	2	16	514	0	0	0	0	0	SGMW-12B
SGMW-13A	0.1	6.2	0.1	0.0	2	124	2	0	0	1	1	0	SGMW-13A
SGMW-13B	0.2	.4	.2	0.0	4	8	4	0	0	2	1	0	SGMW-13A
SGMW-14A	0.3	0.1	5.6	0.1	6	2	112	2	0	1	2	0	SGMW-14A
SGMW-14B	0	.2	.2	0.0	0	4	4	0	0	1	1	0	SGMW-14B
SGMW-15A	0.0	.2	0.1	0.0	0	4	2	0	0	0	1	0	SGMW-15A
SGMW-15B	0	.1	.1	0.0	0	2	2	0	0	0	0	0	SGMW-15B
SGMW-16A	0	.2	0	0.0	0	4	0	0	0	1	0	0	SGMW-16A
SGMW-16B	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-16B
SGMW-17A	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-17A
SGMW-17B	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-17B
SGMW-18A	0	0	0	0.0	0	0	0	0	0	0	1	0	SGMW-18A
SGMW-18B	0	0	0.0	0.0	0	0	0	0	0	0	0	1	SGMW-18B
SGMW-19A	5.6	6.3	29.2	15.7	112	126	584	314	0	1	20	2	SGMW-19A
SGMW-19B	0.0	0.0	31.8	8.1	0	0	636	162	0	0	46	0	SGMW-19B
GSGM-1A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-1A
GSGM-1B	0	0	0	0	0	0	0	0	0	0	0	1	GSGM-1B
GSGM-1C	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-1C
GSGM-2A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-2A
GSGM-2B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-2B
GSGM-2C	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-2C
GSGM-3A	0	0	0	0	0	0	0	0	0	1	0	0	GSGM-3A
GSGM-3B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-3B
GSGM-4A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-4A
GSGM-4B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-4B

Measurements in ( ) are calculated, not measured.

2006 Current Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume) 2/24/06	Methane (% By Volume) 6/23/06	Methane (% By Volume) 9/28/06	Methane (% By Volume) 12/27/06	LEL (% By Volume) 2/24/06	LEL (% By Volume) 6/23/06	LEL (% By Volume) 9/28/06	LEL (% By Volume) 12/27/06	Hydrogen Sulfide (ppm by volume) 2/24/06	Hydrogen Sulfide (ppm by volume) 6/23/06	Hydrogen Sulfide (ppm by volume) 9/28/06	Hydrogen Sulfide (ppm by volume) 12/27/06	Soil Gas Monitoring Well
SGMW-01A	8.6	11.9	12.5	11.3	174.0	238	250	226	0	0	6	0	SGMW-01A
SGMW-01B	0.0	0.0	11.0	3.1	0	0	220	62	0	0	1	0	SGMW-01B
SGMW-01C	0.0	0.0	10.5	0.2	0	0	210	4	0	0	5	0	SGMW-01C
SGMW-02A	13.9	18.1	46.9	1.4	282.0	362	938	28	0	0	9	0	SGMW-02A
SGMW-02B	6.8	12.8	33.4	0.2	142.0	256	668	4	0	0	27	0	SGMW-02B
SGMW-02C	0.0	0.8	30.5	0.3	0	16	610	6	0	0	0	0	SGMW-02C
SGMW-03A	19.3	26.8	27.0	0.2	386.0	536	540	4	0	0	8	0	SGMW-03A
SGMW-03B	0.0	11.9	48.5	0.1	0	238	970	2	0	0	12	0	SGMW-03B
SGMW-03C	0.0	1.5	45.0	0.3	0	30	900	6	0	0	7	0	SGMW-03C
SGMW-04A	0.0	16.4	52.1	0.2	0	328	1040	4	0	0	1	0	SGMW-04A
SGMW-04B	10.0	31.6	48.8	0.0	200.0	632	976	0	0	0	2	0	SGMW-04B
SGMW-04C	0.0	22.2	42.1	0.0	0	444	842	0	0	0	0	0	SGMW-04C
SGMW-05A	0.9	16.3	44.8	0.0	20.0	326	896	0	0	0	0	0	SGMW-05A
SGMW-05B	1.4	26.3	41.3	0.0	89.0	526	826	0	0	0	3	3	SGMW-05B
SGMW-05C	0.0	20.7	33.8	0.0	0	414	676	0	0	0	1	0	SGMW-05C
SGMW-06A	0.0	11.5	41.5	0.0	0	230	830	0	0	0	1	0	SGMW-06A
SGMW-06B	0.0	21.3	40.3	0.0	0	426	806	0	0	0	2	0	SGMW-06B
SGMW-06C	0.0	21.7	37.3	0.0	0	434	746	0	0	0	0	0	SGMW-06C
SGMW-07A	0.0	0.0	0.3	0.0	0	0	6	0	0	0	0	0	SGMW-07A
SGMW-07B	0.0	0.0	0.3	0.0	0	0	6	0	0	0	0	0	SGMW-07B
SGMW-07C	0.0	0.0	0.3	0.0	0	0	6	0	0	0	0	0	SGMW-07C
SGMW-08A	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-08A
SGMW-08B	0.0	0.0	0.0	0.0	0	0	0	0	0	0	2	0	SGMW-08B
SGMW-08C	0.0	0.0	0.0	0.0	0	0	0	0	0	0	2	0	SGMW-08C
SGMW-09A	0.0	0.1	0.0	0.0	0	2	0	0	0	0	0	0	SGMW-09A
SGMW-09B	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-09B
SGMW-09C	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-09C
SGMW-10A	0.0	9.8	15.4	0.0	0	196	308	0	0	0	0	0	SGMW-10A
SGMW-10B	0.0	12.0	18.0	0.0	0	240	360	0	0	0	2	0	SGMW-10B
SGMW-10C	0.0	10.6	16.2	0.0	0	212	324	0	0	0	2	0	SGMW-10C
SGMW-11A	0.0	7.6	15.3	0.0	0	152	306	0	0	0	2	0	SGMW-11A
SGMW-11B	0.0	9.8	14.9	0.0	0	196	298	0	0	0	25	0	SGMW-11B
SGMW-12A	0.0	16.7	41.3	0.0	0	336	826	0	0	0	18	0	SGMW-12A
SGMW-12B	1.1	2.0	0.0	0.0	22	40	0	0	0	0	0	0	SGMW-12B
SGMW-13A	0.0	0.0	0.2	0.0	0	0	4	0	0	0	0	0	SGMW-13A
SGMW-13B	0.0	0.0	0.2	0.0	0	0	4	0	0	0	0	0	SGMW-13B
SGMW-14A	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-14A
SGMW-14B	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-14B
SGMW-15A	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-15A
SGMW-15B	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-15B
SGMW-16A	0.0	0.0	0.0	0.0	0	0	0	0	0	0	1	0	SGMW-16A
SGMW-16B	0.0	0.0	0.0	0.0	0	0	0	0	0	0	1	0	SGMW-16B
SGMW-17A	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-17A
SGMW-17B	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-17B
SGMW-18A	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-18A
SGMW-18B	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-18B
SGMW-19A	16.7	17.3	16.6	23.9	340	348	332	478	0	0	2	5	SGMW-19A
SGMW-19B	1.7	9.4	18.0	0.0	32	186	360	0	0	0	1	0	SGMW-19B
GSGM-1A	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-1A
GSGM-1B	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-1B
GSGM-1C	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-1C
GSGM-2A	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-2A
GSGM-2B	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-2B
GSGM-2C	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-2C
GSGM-3A	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-3A
GSGM-3B	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-3B
GSGM-4A	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-4A
GSGM-4B	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-4B

Measurements in ( ) are calculated, not measured.



2007 Current Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume) 2/24/07	Methane (% By Volume) 5/17/07	Methane (% By Volume) 9/20/07	Methane (% By Volume) 12/20/07	LEL (% By Volume) 2/24/07	LEL (% By Volume) 5/17/07	LEL (% By Volume) 9/20/07	LEL (% By Volume) 12/20/07	Hydrogen Sulfide (ppm by volume) 2/24/07	Hydrogen Sulfide (ppm by volume) 5/17/07	Hydrogen Sulfide (ppm by volume) 9/20/07	Hydrogen Sulfide (ppm by volume) 12/20/07	Soil Gas Monitoring Well
SGMW-01A	10.0	12.2	5.7	3.1	200.0	244	116.0	62	0.0	1.0	0.0	3.0	SGMW-01A
SGMW-01B	6.4	4.5	6.0	1.6	128	90	118.0	32	0.0	1.0	1.0	0.0	SGMW-01B
SGMW-01C	5.9	0.3	5.5	2.0	118	6	110.0	40	0.0	0.0	1.0	0.0	SGMW-01C
SGMW-02A	0.2	0.4	37.5	17.4	4.0	8	750.0	348	0.0	1.0	1.0	0.0	SGMW-02A
SGMW-02B	0.0	17.6	30.8	10.5	0.0	352	616.0	210	0.0	1.0	1.0	0.0	SGMW-02B
SGMW-02C	0.0	0.4	27.0	1.1	0.0	8	540.0	22	0.0	1.0	1.0	0.0	SGMW-02C
SGMW-03A	0.0	25.1	22.4	0.0	0.0	502	448.0	0.0	0.0	1.0	0.0	0.0	SGMW-03A
SGMW-03B	0.9	0.7	40.0	0.0	18	14	800.0	0.0	0.0	2.0	0.0	0.0	SGMW-03B
SGMW-03C	0.2	0.6	39.7	0.0	4	12	794.0	0.0	0.0	2.0	0.0	0.0	SGMW-03C
SGMW-04A	8.4	0.7	43.7	1.0	168	14	874.0	20	0.0	0.0	3.0	0.0	SGMW-04A
SGMW-04B	17.0	0.7	38.5	3.0	340.0	14	760.0	60	0.0	0.0	1.0	0.0	SGMW-04B
SGMW-04C	12.0	0.7	31.5	0.0	240	14	630.0	0.0	0.0	0.0	1.0	0.0	SGMW-04C
SGMW-05A	10.5	0.6	32.6	0.0	210.0	12	652	0.0	0.0	1.0	0.0	0.0	SGMW-05A
SGMW-05B	17.0	0.7	29.4	1.2	340.0	13	588.0	24	0.0	2.0	1.0	0.0	SGMW-05B
SGMW-05C	13.5	0.7	22.4	0.0	270	13	444.0	0.0	0.0	2.0	1.0	0.0	SGMW-05C
SGMW-06A	11.5	0.8	30.7	0.0	230	16	614	0.0	0.0	1.0	1.0	0.0	SGMW-06A
SGMW-06B	14.3	0.6	29.9	0.0	286	12	598	0.0	0.0	1.0	1.0	0.0	SGMW-06B
SGMW-06C	12.9	0.0	26.4	0.0	258	0.0	528	0.0	0.0	0.0	1.0	0.0	SGMW-06C
SGMW-07A	0.0	0.0	0.1	0.1	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	SGMW-07A
SGMW-07B	0.0	0.0	0.1	0.1	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	SGMW-07B
SGMW-07C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	SGMW-07C
SGMW-08A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	SGMW-08A
SGMW-08B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	SGMW-08B
SGMW-08C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	SGMW-08C
SGMW-09A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	SGMW-09A
SGMW-09B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	SGMW-09B
SGMW-09C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	SGMW-09C
SGMW-10A	0.4	0.0	8.7	0.0	8	0.0	174	0.0	0.0	0.0	2.0	0.0	SGMW-10A
SGMW-10B	0.0	0.0	10.5	0.0	0.0	0.0	210	0.0	0.0	0.0	1.0	0.0	SGMW-10B
SGMW-10C	0.0	0.0	9.0	0.0	0.0	0.0	180	0.0	0.0	0.0	8.0	0.0	SGMW-10C
SGMW-11A	0.0	0.0	8.5	0.0	0.0	0.0	170	0.0	0.0	0.0	2.0	0.0	SGMW-11A
SGMW-11B	0.0	0.0	8.7	0.0	0.0	0.0	174	0.0	0.0	0.0	22.0	0.0	SGMW-11B
SGMW-12A	0.0	0.0	8.1	27.5	0.0	0.0	162	550	0.0	0.0	2.0	39.0	SGMW-12A
SGMW-12B	0.0	0.0	6.1	27.5	0.0	0.0	172	550	0.0	0.0	2.0	0.0	SGMW-12B
SGMW-13A	0.0	0.3	6.0	0.0	0.0	0.0	120	0.0	0.0	0.0	1.0	0.0	SGMW-13A
SGMW-13B	0.0	0.0	4.0	0.0	0.0	0.0	80	0.0	0.0	0.0	1.0	0.0	SGMW-13B
SGMW-14A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	SGMW-14A
SGMW-14B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	SGMW-14B
SGMW-15A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	SGMW-15A
SGMW-15B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	SGMW-15B
SGMW-16A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	SGMW-16A
SGMW-16B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	SGMW-16B
SGMW-17A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	SGMW-17A
SGMW-17B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	SGMW-17B
SGMW-18A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	SGMW-18A
SGMW-18B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	SGMW-18B
SGMW-19A	2.5	4.0	27.0	0.0	50	80	540	0.0	0.0	1.0	29.0	0.0	SGMW-19A
SGMW-19B	0.0	0.0	19.2	0.0	0.0	0.0	384	0.0	0.0	0.0	17.0	0.0	SGMW-19B
GSGM-1A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	GSGM-1A
GSGM-1B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	GSGM-1B
GSGM-1C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	GSGM-1C
GSGM-2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	GSGM-2A
GSGM-2B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	GSGM-2B
GSGM-2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	GSGM-2C
GSGM-3A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	GSGM-3A
GSGM-3B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	GSGM-3B
GSGM-4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	GSGM-4A
GSGM-4B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	GSGM-4B

Measurements in ( ) are calculated, not measured.

2008 Current Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume)				LEL (% By Volume)				Hydrogen Sulfide (ppm by volume)				Soil Gas Monitoring Well
	3/24/2008	7/29/2008	9/30/2008	12/9/2008	3/24/2008	7/29/2008	9/30/2008	12/9/2008	3/24/2008	7/29/2008	9/30/2008	12/9/2008	
SGMW-01A	10.8	3	8.8	11.2	220	96	176	224	3	2	2	0	SGMW-01A
SGMW-01B	9.9	2.9	6.5	11.7	198	58	130	234	0	0.0	0.0	4.0	SGMW-01B
SGMW-01C	9.4	5.7	6.2	9.8	190	112	124	196	0	0	0	4	SGMW-01C
SGMW-02A	34.2	39.1	42.5	37.3	680	788	850	746	11	16	0	0	SGMW-02A
SGMW-02B	3.1	47.2	45	44.3	62	944	900	886	1	12	20	19	SGMW-02B
SGMW-02C	3.2	49.9	52.5	53.3	64	998	1050	1066	1	1	1	3	SGMW-02C
SGMW-03A	13.2	49.1	44	30	264	960	880	600	1	11	6	1	SGMW-03A
SGMW-03B	55.5	53.6	57.8	60.6	1110	1072	1156	142	15	23	36	14	SGMW-03B
SGMW-03C	48.5	51.6	55.9	57.3	970	1032	1118	1146	1	13	26	63	SGMW-03C
SGMW-04A	14.5	43.8	50.6	44.5	290	882	1012	890	1	5	8	0	SGMW-04A
SGMW-04B	40.6	43.4	50.2	44.1	812	870	1004	882	5	16	20	6	SGMW-04B
SGMW-04C	32.7	40.1	45.8	36.1	654	756	916	722	2	0	1	3	SGMW-04C
SGMW-05A	30	36.5	43.7	38.8	600	728	874	776	4	12	5	4	SGMW-05A
SGMW-05B	30.7	35.8	39.7	36.1	614	708	794	722	3	2	6	3	SGMW-05B
SGMW-05C	24	24.6	31.8	28.3	480	502	636	566	3	0	3	2	SGMW-05C
SGMW-06A	18.9	25.3	39.9	40.4	378	510	798	808	0	0	7	0	SGMW-06A
SGMW-06B	30.9	36.4	39.9	40.2	618	724	798	804	1	2	5	7	SGMW-06B
SGMW-06C	28	33.7	37.7	37.3	560	670	754	746	3	0	1	3	SGMW-06C
SGMW-07A	0	0.2	0	0	0	4	0	0	0	0	0	0	SGMW-07A
SGMW-07B	0	0.2	0	0	0	4	0	0	0	0	0	0	SGMW-07B
SGMW-07C	0	0.3	0	0	0	6	0	0	0	0	0	0	SGMW-07C
SGMW-08A	0	0.3	0	0	0	6	0	0	0	0	0	0	SGMW-08A
SGMW-08B	0	0.3	0	0	0	6	0	0	0	0	0	0	SGMW-08B
SGMW-08C	0	0.2	0	0	0	4	0	0	0	0	0	0	SGMW-08C
SGMW-09A	0	0.3	0	0	0	6	0	0	0	0	0	0	SGMW-09A
SGMW-09B	0	0.4	0	0	0	8	0	0	0	0	0	0	SGMW-09B
SGMW-09C	0	0.3	0	0	0	6	0	0	0	0	0	0	SGMW-09C
SGMW-10A	0	12.2	22.5	8.4	0	244	450	168	0	9	19	1	SGMW-10A
SGMW-10B	0	9.9	19.1	10.3	0	200	382	206	0	0	9	2	SGMW-10B
SGMW-10C	0	9.4	15.7	8.3	0	92	314	166	0	0	13	7	SGMW-10C
SGMW-11A	4	14.9	23	11.9	80	300	450	238	5	23	2	4	SGMW-11A
SGMW-11B	2.3	13.7	21.6	6.9	46	274	430	138	0	3	20	0	SGMW-11B
SGMW-12A	32.1	43.4	52.5	47.1	642	868	1050	942	39	65	92	3	SGMW-12A
SGMW-12B	30.6	32.9	43.7	41.3	612	658	874	826	0	1	10	2	SGMW-12B
SGMW-13A	0	0.5	0.6	0.2	0	10	13	4	0	2	0	0	SGMW-13A
SGMW-13B	0	31.9	42.8	36.7	0	648	856	734	0	2	29	4	SGMW-13B
SGMW-14A	0	0.7	2.1	0.5	0	14	42	10	0	0	0	0	SGMW-14A
SGMW-14B	0	0.3	3	0.5	0	6	61	11	0	0	0	0	SGMW-14B
SGMW-15A	0	0.2	2.2	0	0	4	45	0	0	0	0	0	SGMW-15A
SGMW-15B	0	0.2	0	0	0	4	0	0	0	0	0	0	SGMW-15B
SGMW-16A	0	0.2	0	0	0	4	0	0	1	0	0	0	SGMW-16A
SGMW-16B	0	0.5	0	0	0	10	0	0	0	0	0	0	SGMW-16B
SGMW-17A	0	0	0	0	0	0	0	0	1	0	0	0	SGMW-17A
SGMW-17B	0	0.4	0	0	0	8	0	0	0	0	0	0	SGMW-17B
SGMW-18A	0	0.2	0	0	0	4	0	0	0	0	0	0	SGMW-18A
SGMW-18B	0	0.2	0	0	0	4	0	0	0	0	0	0	SGMW-18B
SGMW-19A	14.5	7.5	32.4	0	290	154	648	312	11	3	30	1	SGMW-19A
SGMW-19B	11.5	8.2	28	0	230	164	560	0	8	2	0	0	SGMW-19B
GSGM-1A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-1A
GSGM-1B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-1B
GSGM-1C	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-1C
GSGM-2A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-2A
GSGM-2B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-2B
GSGM-2C	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-2C
GSGM-3A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-3A
GSGM-3B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-3B
GSGM-4A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-4A
GSGM-4B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-4B

Measurements in ( ) are calculated, not measured.











Table 12

2014 Current Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume) 2/25-26/14	Methane (% By Volume) 6/10/14	Methane (% By Volume) 9/3/14	Methane (% By Volume) 12/16-17/14	LEL (% By Volume) 2/25-26/14	LEL (% By Volume) 6/10/14	LEL (% By Volume) 9/3/14	LEL (% By Volume) 12/16-17/14	Hydrogen Sulfide (ppm by volume) 2/25-26/14	Hydrogen Sulfide (ppm by volume) 6/10/14	Hydrogen Sulfide (ppm by volume) 9/3/14	Hydrogen Sulfide (ppm by volume) 12/16-17/14	Soil Gas Monitoring Well
SGMW-01A	12.8	16.2	7.9	11.5	>100	>100	>100	>100	1.0	0.0	0.0	2.0	SGMW-01A
SGMW-01B	12.1	13.2	0	11	>100	>100	0	>100	1.0	0.0	0.0	1.0	SGMW-01B
SGMW-01C	10.4	8.9	0	9.5	>100	>100	0	>100	1.0	0.0	0.0	0.0	SGMW-01C
SGMW-02A	45.7	49.7	44.9	45.9	>100	>100	>100	>100	0.0	2.0	0.0	0.0	SGMW-02A
SGMW-02B	11.3	45.5	47.3	33.3	>100	>100	>100	>100	0.0	13	2.0	3	SGMW-02B
SGMW-02C	26.2	47.0	30.8	30.5	>100	>100	>100	>100	4.0	3.0	1.0	1.0	SGMW-02C
SGMW-03A	15.6	31.8	26.1	19.4	>100	>100	>100	>100	0.0	12.0	8.0	2.0	SGMW-03A
SGMW-03B	44.5	46.4	0	54.6	>100	>100	0	>100	20	0	0.0	22.0	SGMW-03B
SGMW-03C	42.1	49.6	0	51.7	>100	>100	0	>100	16.0	36.0	0.0	45.0	SGMW-03C
SGMW-04A	37.1	48.8	40.8	43.9	>100	>100	>100	>100	0.0	6.0	2.0	0.0	SGMW-04A
SGMW-04B	34.4	44.6	0	41.2	>100	>100	0	>100	4.0	8.0	0.0	8.0	SGMW-04B
SGMW-04C	25.3	39.5	0	33.4	>100	>100	0	>100	5.0	6.0	0.0	4.0	SGMW-04C
SGMW-05A	27.0	35.3	1.2	31.6	>100	>100	25	>100	3.0	0	0.0	0.0	SGMW-05A
SGMW-05B	25.9	26.5	0	31.3	>100	>100	0	>100	3.0	5.0	0.0	3.0	SGMW-05B
SGMW-05C	19.4	22.8	0	24.1	>100	>100	0	>100	2.0	2.0	0.0	1.0	SGMW-05C
SGMW-06A	0.4	0.1	0	0.2	8.0	3.0	0	>100	0.0	0.0	0.0	0.0	SGMW-06A
SGMW-06B	30.1	33.3	0	31.8	>100	>100	0	>100	1.0	8.0	0.0	5.0	SGMW-06B
SGMW-06C	29.9	31.8	0	29.5	>100	>100	0	>100	2.0	3.0	0.0	2.0	SGMW-06C
SGMW-07A	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	SGMW-07A
SGMW-07B	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	SGMW-07B
SGMW-07C	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	SGMW-07C
SGMW-08A	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	SGMW-08A
SGMW-08B	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	SGMW-08B
SGMW-08C	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	SGMW-08C
SGMW-09A	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	SGMW-09A
SGMW-09B	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	SGMW-09B
SGMW-09C	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	SGMW-09C
SGMW-10A	6.8	18.5	9.2	13.1	>100	>100	>100	>100	1.0	8.0	6.0	13.0	SGMW-10A
SGMW-10B	7.2	16.7	15.0	13.6	>100	>100	>100	>100	0.0	1.0	0.0	8.0	SGMW-10B
SGMW-10C	6.1	13.8	19.4	11.2	>100	>100	>100	>100	3.0	0	0.0	9.0	SGMW-10C
SGMW-11A	3.1	16.1	16.5	12.5	62.0	>100	>100	>100	0.0	10.0	0	8.0	SGMW-11A
SGMW-11B	1.4	15.8	0.0	9.9	28.0	>100	0	0	0.0	3.0	0	0.0	SGMW-11B
SGMW-12A	34.2	41.5	36.8	44.4	>100	>100	>100	>100	9.0	0.0	9.0	27.0	SGMW-12A
SGMW-12B	27.5	28.5	33.1	33.8	>100	>100	>100	>100	0.0	0.0	0.0	1.0	SGMW-12B
SGMW-13A	0.2	0.6	17.4	17.1	4.0	13	>100	>100	0.0	0.0	0.0	0.0	SGMW-13A
SGMW-13B	20.2	0.0	0.0	28.0	>100	>100	0	>100	0.0	0.0	0.0	0.0	SGMW-13B
SGMW-14A	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	SGMW-14A
SGMW-14B	0.0	0.0	0.0	3.2	0.0	0.0	0	64.0	0.0	0.0	0.0	0.0	SGMW-14B
SGMW-15A	0.1	0.0	0.0	0.0	2.0	0.0	0	0	0.0	0.0	0.0	0.0	SGMW-15A
SGMW-15B	6.0	0.0	0.0	33.7	>100	>100	0	>100	0.0	0.0	0.0	2.0	SGMW-15B
SGMW-16A	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	SGMW-16A
SGMW-16B	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	SGMW-16B
SGMW-17A	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	SGMW-17A
SGMW-17B	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	SGMW-17B
SGMW-18A	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	SGMW-18A
SGMW-18B	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	SGMW-18B
SGMW-19A	0.3	22.6	0.0	10.2	0.0	>100	0	>100	0.0	14.0	0.0	1.0	SGMW-19A
SGMW-19B	0.4	0.0	0.0	9.8	0.0	>100	0	>100	0.0	0.0	0.0	0.0	SGMW-19B
GSGM-1A	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	GSGM-1A
GSGM-1B	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	GSGM-1B
GSGM-1C	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	GSGM-1C
GSGM-2A	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	GSGM-2A
GSGM-2B	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	GSGM-2B
GSGM-2C	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	GSGM-2C
GSGM-3A	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	GSGM-3A
GSGM-3B	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	GSGM-3B
GSGM-4A	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	GSGM-4A
GSGM-4B	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	GSGM-4B



1996/97 FORMER LANDFILL AREA SOIL GAS MONITORING SUMMARY TABLE

1998 Environmental Monitoring Report

Current and Former Landfills Brookhaven National Laboratory

Soil Gas Monitoring Well	Methane (% By Volume)				Hydrogen Sulfide (ppm by volume)			
	Aug-96	Mar-97	Aug-97	Nov-97	Aug-96	Mar-97	Aug-97	Nov-97
SGMW-01A	0	0	0.3	0	◇	6	-5	0
SGMW-01B	0	0	0.3	0	◇	4	-5	0
SGMW-02A	0	0	0	0	◇	6	-2	0
SGMW-02B	0	0	0	0	◇	3	-2	0
SGMW-03A	0	0	0	0	◇	1	-4	0
SGMW-03B	0	0	0	0	◇	5	-4	0
SGMW-04A	0	0	0.2	0.1	◇	7	-5	8
SGMW-04B	0	0	0.2	0.1	◇	7	-5	9
SGMW-05A	0	0	0	0	◇	7	-2	12
SGMW-05B	0	0	0	0	◇	4	-2	0
SGMW-06A	0	0	0	0	◇	7	-4	0
SGMW-06B	0	0	0.1	0	◇	4	-4	0
SGMW-07A	0	0	◇	◇	◇	7	◇	◇
SGMW-07B	0	0	◇	◇	◇	7	◇	◇
SGMW-08A	0	0	0.1	0	◇	6	-5	0
SGMW-08B	0	0	0.1	0	◇	6	-1	0
SGMW-09A	0	0	0	0	◇	5	-2	1
SGMW-09B	0	0	0	0	◇	4	-2	0
SGMW-10A	0	0	0	0	◇	7	-1	1
SGMW-10B	0	0	0	0	◇	5	-2	0
SGMW-11A	0	0	0.3	0	◇	9	-5	0
SGMW-11B	0	0	0	0	◇	4	-1	0
SGMW-12A	0	0	0.3	0	◇	9	-5	2
SGMW-12B	0	0	0.3	0	◇	5	-5	0

◇ No measurement taken.

Negative numbers reported are due to equipment problems.

# Brookhaven National Laboratory

1998 Landfills Environmental Monitoring Report  
1998 Former Landfill Area Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Hydrogen sulfide (ppm By Volume)				Soil Gas Monitoring Well
	February-98	May-98	August-98	December-98	
SGMW-01A	1	0	1	0	SGMW-07A
SGMW-01B	1	0	0	0	SGMW-07B
SGMW-02A	6	0	0	0	SGMW-08A
SGMW-02B	6	1	0	0	SGMW-08B
SGMW-03A	0	0	1	1	SGMW-09A
SGMW-03B	3	0	2	0	SGMW-09B
SGMW-04A	0	2	0	0	SGMW-10A
SGMW-04B	1	0	0	0	SGMW-10B
SGMW-05A	0	0	3	0	SGMW-11A
SGMW-05B	0	0	1	0	SGMW-11B
SGMW-06A	2	0	0	1	SGMW-12A
SGMW-06B	0	0	0	0	SGMW-12B
SGMW-07A	0	0	0	0	
SGMW-07B	0	0	0	0	
SGMW-08A	0	0	0	0	
SGMW-08B	0	0	0	0	
SGMW-09A	0	0	0	0	
SGMW-09B	0	0	0	0	
SGMW-10A	0	0	0	0	
SGMW-10B	0	0	0	0	
SGMW-11A	0	0	0	0	
SGMW-11B	0	0	0	0	
SGMW-12A	0	0	0	0	
SGMW-12B	0	0	0	0	

Soil Gas Monitoring Well	Methane (% By Volume)			
	February-98	May-98	August-98	December-98
SGMW-01A	0	0	0	0
SGMW-01B	0.1	0	0	0
SGMW-02A	0	0	0	0
SGMW-02B	0	0	0	0
SGMW-03A	0	0	0	0
SGMW-03B	0	0	0	0.1
SGMW-04A	0	0.1	0	0
SGMW-04B	0	0	0	0
SGMW-05A	0	0	0	0
SGMW-05B	0	0	0	0
SGMW-06A	0	0	0	0
SGMW-06B	0	0	0	0
SGMW-07A	0	0	0	0
SGMW-07B	0	0	0	0
SGMW-08A	0	0	0	0
SGMW-08B	0	0	0	0
SGMW-09A	0	0	0	0
SGMW-09B	0	0	0	0
SGMW-10A	0	0	0	0
SGMW-10B	0	0	0	0
SGMW-11A	0	0	0	0
SGMW-11B	0	0	0	0
SGMW-12A	0	0	0	0
SGMW-12B	0	0	0	0

SGM07 was not accessible

Brookhaven National Laboratory  
 1998 Landfill Environmental Monitoring Report  
 1989 Former Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume) June-89	Methane (% By Volume) October-89	Methane (% By Volume) December-89	LEL (% By Volume) June-89	LEL (% By Volume) October-89	LEL (% By Volume) December-89	Hydrogen sulfide (ppm By Volume) June-89	Hydrogen sulfide (ppm By Volume) October-89	Hydrogen sulfide (ppm By Volume) December-89	Soil Gas Monitoring Well
SGMW-01A	0	0	0	0	0	0	0	0	0	SGMW-01A
SGMW-01B	0	0	0	0	0	0	0	0	0	SGMW-01B
SGMW-02A	0	0	0	0	0	0	0	0	0	SGMW-02A
SGMW-02B	0	0	0	0	0	0	0	0	0	SGMW-02B
SGMW-03A	0	0	0	0	0	0	0	0	0	SGMW-03A
SGMW-03B	0	0	0	0	0	0	0	0	0	SGMW-03B
SGMW-04A	0	0	0	0	0	0	0	0	0	SGMW-04A
SGMW-04B	0	0	0	0	0	0	0	0	0	SGMW-04B
SGMW-05A	0	0	0	0	0	0	0	0	0	SGMW-05A
SGMW-05B	0	0	0	0	0	0	0	0	0	SGMW-05B
SGMW-06A	0	0	0	0	0	0	0	0	0	SGMW-06A
SGMW-06B	0	0	0	0	0	0	0	0	0	SGMW-06B
SGMW-07A	0	0	0	0	0	0	0	0	0	SGMW-07A
SGMW-07B	0	0	0	0	0	0	0	0	0	SGMW-07B
SGMW-08A	0	0	0	0	0	0	0	0	0	SGMW-08A
SGMW-08B	0	0	0	0	0	0	0	0	0	SGMW-08B
SGMW-09A	0	0	0	0	0	0	0	0	0	SGMW-09A
SGMW-09B	0	0	0	0	0	0	0	0	0	SGMW-09B
SGMW-10A	0	0	0	0	0	0	0	0	0	SGMW-10A
SGMW-10B	0	0	0	0	0	0	0	0	0	SGMW-10B
SGMW-11A	0	0	0	0	0	0	0	0	0	SGMW-11A
SGMW-11B	0	0	0	0	0	0	0	0	0	SGMW-11B
SGMW-12A	0	0	0	0	0	0	0	0	0	SGMW-12A
SGMW-12B	0	0	0	0	0	0	0	0	0	SGMW-12B

\*\* No measurement was taken.

Brookhaven National Laboratory  
 2000 Landfill Environmental Monitoring Report  
 2000 Former Landfill Gas Monitoring Summary Table

Well	Methane (% By Volume) February-00	Methane (% By Volume) June-00	Methane (% By Volume) September-00	LEL (% By Volume) February-00	LEL (% By Volume) June-00	LEL (% By Volume) September-00	LEL (% By Volume) December-00	Hydrogen Sulfide (ppm by volume) February-00	Hydrogen Sulfide (ppm by volume) June-00	Hydrogen Sulfide (ppm by volume) September-00	Hydrogen Sulfide (ppm by volume) December-00	Soil Gas Monitoring Well
1	0	0	0	0	0	0	0	2	5	1	1	SGMW-01A
2	0	0	0	0	0	0	0	0	0	0	0	SGMW-01B
3	0	0	0	0	0	0	0	0	0	0	0	SGMW-02A
4	0	0	0	0	0	0	0	0	0	0	0	SGMW-02B
5	0	0	0	0	0	0	0	0	0	0	0	SGMW-03A
6	0	0	0	0	0	0	0	0	0	0	0	SGMW-03B
7	0	0	0	0	0	0	0	0	0	0	0	SGMW-04A
8	0	0	0	0	0	0	0	0	0	0	0	SGMW-04B
9	0	0	0	0	0	0	0	0	0	0	0	SGMW-05A
10	0	0	0	0	0	0	0	0	0	0	0	SGMW-05B
11	0	0	0	0	0	0	0	0	0	0	0	SGMW-06A
12	0	0	0	0	0	0	0	0	0	0	0	SGMW-06B
13	0	0	0	0	0	0	0	0	0	0	0	SGMW-07A
14	0	0	0	0	0	0	0	0	0	0	0	SGMW-07B
15	0	0	0	0	0	0	0	0	0	0	0	SGMW-08A
16	0	0	0	0	0	0	0	0	0	0	0	SGMW-08B
17	0	0	0	0	0	0	0	0	0	0	0	SGMW-09A
18	0	0	0	0	0	0	0	0	0	0	0	SGMW-09B
19	0	0	0	0	0	0	0	0	0	0	0	SGMW-10A
20	0	0	0	0	0	0	0	0	0	0	0	SGMW-10B
21	0	0	0	0	0	0	0	0	0	0	0	SGMW-11A
22	0	0	0	0	0	0	0	0	0	0	0	SGMW-11B
23	0	0	0	0	0	0	0	0	0	0	0	SGMW-12A
24	0	0	0	0	0	0	0	0	0	0	0	SGMW-12B

Gas was collected due to other work in the area.

Brookhaven National Laboratory  
 2001 Landfill Environmental Monitoring Report  
 2001 Former Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume)			LEL (% By Volume)			Hydrogen Sulfide (ppm by volume)		
	March-01	June-01	September-01	March-01	June-01	September-01	March-01	June-01	September-01
W-01A	0	0	0	0	0	0	3	N/A	1
W-01B	0	0	0	0	0	0	3	N/A	1
W-02A	0	0	0.1	0	0	0.2	4	N/A	2
W-02B	0	0	0	0	0	0	5	N/A	2
W-03A	0	0	0.1	0	0	0.2	4	N/A	3
W-03B	0	0	0.1	0	0.2	0.2	4	N/A	2
W-04A	0	0	0	0	0	0	5	N/A	0
W-04B	0	0	0	0	0	0	5	N/A	0
V-05A	0	0	0	0	0	0	6	N/A	0
V-05B	0	0	0	0	0	0	5	N/A	0
V-06A	0	0	0	0	0	0	6	N/A	0
V-06B	0	0	0	0	0	0	5	N/A	0
V-07A	0	0	0	0	0	0	5	N/A	0
V-07B	0	0	0	0	0	0	5	N/A	0
V-08A	0	0	0	0	0	0	6	N/A	0
V-08B	0	0	0	0	0	0	7	N/A	0
V-09A	0	0	0	0	0	0	6	N/A	0
V-09B	0	0	0	0	0	0	9	N/A	0
V-10A	0	0	0	0	0	0	6	N/A	0
V-10B	0	0	0	0	0	0	8	N/A	0
V-11A	0	0	0	0	0	0	7	N/A	0
V-11B	0	0	0	0	0	0	4	N/A	0
V-12A	0	0	0	0	0	0	6	N/A	0
V-12B	0	0	0	0	0	0	7	N/A	0
V-12B	0	0	0	0	0	0	8	N/A	0

Measurement was collected due to other work in the area.



2003 Former Landfill Soil Gas Monitoring Summary

Soil Gas Monitoring Well	Methane (% By Volume) March-03	Methane (% By Volume) July-03	Methane (% By Volume) October-03	Methane (% By Volume) December-03	LEL (% By Volume) March-03	LEL (% By Volume) July-03	LEL (% By Volume) October-03	LEL (% By Volume) December-03	Hydrogen Sulfide (ppm by volume) March-03	Hydrogen Sulfide (ppm by volume) July-03	Hydrogen Sulfide (ppm by volume) October-03	Hydrogen Sulfide (ppm by volume) December-03	Soil Gas Monitoring Well
SGMW-01A	0	0	0.1	0	0	0	2	0	0	~	0	~	SGMW-01A
SGMW-01B	0.1	0	0	0	2	0	0	0	1	~	0	~	SGMW-01B
SGMW-02A	0.1	0	0.1	0	2	0	2	0	4	~	0	~	SGMW-02A
SGMW-02B	0	0	0.1	0	0	0	2	0	1	~	0	~	SGMW-02B
SGMW-03A	0	0	0	0	0	0	0	0	1	~	0	~	SGMW-03A
SGMW-03B	0.1	0	0.1	0	2	0	2	0	1	~	0	~	SGMW-03B
SGMW-04A	0.2	0	0.1	0	4	0	2	0	2	~	0	~	SGMW-04A
SGMW-04B	0	0	0.1	0	0	0	2	0	3	~	0	~	SGMW-04B
SGMW-05A	0.1	0	0	0	2	0	0	0	1	~	0	~	SGMW-05A
SGMW-05B	0	0	0.1	0	0	0	2	0	1	~	0	~	SGMW-05B
SGMW-06A	0.1	0	0.2	0	2	0	4	0	2	~	0	~	SGMW-06A
SGMW-06B	0.1	0	0.2	0	0	0	4	0	2	~	0	~	SGMW-06B
SGMW-07A	0.1	0	0.1	0	2	0	2	0	4	~	0	~	SGMW-07A
SGMW-07B	0.2	0	0.1	0	4	0	2	0	5	~	0	~	SGMW-07B
SGMW-08A	0.1	0	0.1	0	2	0	2	0	1	~	0	~	SGMW-08A
SGMW-08B	0.2	0	0.1	0	4	0	2	0	2	~	0	~	SGMW-08B
SGMW-09A	0.1	0	0	0	2	0	0	0	3	~	0	~	SGMW-09A
SGMW-09B	0.1	0	0	0	2	0	0	0	1	~	0	~	SGMW-09B
SGMW-10A	0.2	0	0.1	0	4	0	2	0	2	~	0	~	SGMW-10A
SGMW-10B	0.2	0	0	0	4	0	0	0	4	~	0	~	SGMW-10B
SGMW-11A	0.1	0	0.1	0	2	0	2	0	0	~	0	~	SGMW-11A
SGMW-11B	0.1	0	0.1	0	2	0	2	0	3	~	0	~	SGMW-11B
SGMW-12A	0.1	0	0.1	0	2	0	2	0	4	~	0	~	SGMW-12A
SGMW-12B	0.1	0	0.1	0	2	0	2	0	3	~	0	~	SGMW-12B

July measurements taken with a Landtec GEM 500

~ H2S pod not operational.

2004 Former Landfill Soil Gas Monitoring Summary

Soil Gas Monitoring Well	Methane (% By Volume) 3/11/04	Methane (% By Volume) 6/25/04	Methane (% By Volume) 10/20/04	Methane (% By Volume) 11/30/04	LEL (% By Volume) 3/11/04	LEL (% By Volume) 6/25/04	LEL (% By Volume) 10/20/04	LEL (% By Volume) 11/30/04	Hydrogen Sulfide (ppm by volume) 3/11/04	Hydrogen Sulfide (ppm by volume) 6/25/04	Hydrogen Sulfide (ppm by volume) 10/20/04	Hydrogen Sulfide (ppm by volume) 11/30/04	Soil Gas Monitoring Well
SGMW-01A	0.1	0	0	0.1	2	0	0	2	150	0	0	0	SGMW-01A
SGMW-01B	0	0	0	0	0	0	0	0	63	0	0	0	SGMW-01B
SGMW-02A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-02A
SGMW-02B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-02B
SGMW-03A	0	0	0	0	0	0	0	0	109	0	0	0	SGMW-03A
SGMW-03B	0	0.1	0	0	0	2	0	0	0	2	0	0	SGMW-03B
SGMW-04A	0.1	0.1	0	0	2	2	0	0	0	2	0	0	SGMW-04A
SGMW-04B	0	0.1	0	0	0	2	0	0	0	2	0	0	SGMW-04B
SGMW-05A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-05A
SGMW-05B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-05B
SGMW-06A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-06A
SGMW-06B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-06B
SGMW-07A	0	0	0	NR	0	0	0	NR	0	0	0	NR	SGMW-07A
SGMW-07B	0	0	0	NR	0	0	0	NR	0	0	0	NR	SGMW-07B
SGMW-08A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-08A
SGMW-08B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-08B
SGMW-09A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-09A
SGMW-09B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-09B
SGMW-10A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-10A
SGMW-10B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-10B
SGMW-11A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-11A
SGMW-11B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-11B
SGMW-12A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-12A
SGMW-12B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-12B

NR = Not read, access to well was not possible due to construction.  
H2S pod suspected of not operating correctly in March.























Table 13

2014 Former Landfill Soil-Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume) 6/10/2014	LEL (% By Volume) 6/10/2014	Hydrogen Sulfide (ppm by volume) 6/10/2014	Soil Gas Monitoring Well
SGMW-01A	0	0	0	SGMW-01A
SGMW-01B	0	0	0	SGMW-01B
SGMW-02A	0	0	0	SGMW-02A
SGMW-02B	0	0	0	SGMW-02B
SGMW-03A	0	0	0	SGMW-03A
SGMW-03B	0	0	0	SGMW-03B
SGMW-04A	0	0	0	SGMW-04A
SGMW-04B	0	0	0	SGMW-04B
SGMW-05A	0	0	0	SGMW-05A
SGMW-05B	0	0	0	SGMW-05B
SGMW-06A	0	0	0	SGMW-06A
SGMW-06B	0	0	0	SGMW-06B
SGMW-07A	0	0	0	SGMW-07A
SGMW-07B	0	0	0	SGMW-07B
SGMW-08A	0	0	0	SGMW-08A
SGMW-08B	0	0	0	SGMW-08B
SGMW-09A	0	0	0	SGMW-09A
SGMW-09B	0	0	0	SGMW-09B
SGMW-10A	0	0	0	SGMW-10A
SGMW-10B	0	0	0	SGMW-10B
SGMW-11A	0	0	0	SGMW-11A
SGMW-11B	0	0	0	SGMW-11B
SGMW-12A	0	0	0	SGMW-12A
SGMW-12B	0	0	0	SGMW-12B