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**BROOKHAVEN NATIONAL LABORATORY  
2010 ENVIRONMENTAL MONITORING  
REPORT  
CURRENT AND FORMER LANDFILL AREAS**

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## ACRONYMS

BNL	Brookhaven National Laboratory	NYSDEC	NY State Dept. of Environmental Conservation
BSA	Brookhaven Science Associates		
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	NYSDOH	NY State Dept. of Health
		O&M	Operations and Maintenance
CLF	Current Landfill	OU	Operable Unit
DCG	Derived concentration guides	PCBs	polychlorinated biphenyls
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
FLF	Former Landfill	TDS	Total dissolved solids
HWMF	Former Hazardous Waste Management Facility	TKN	Total Kjeldahl nitrogen
		TSS	Total suspended solids
LEL	Lower explosive limit	TVOCs	Total volatile organic compounds
MS/MSDs	Matrix spike/matrix spike duplicates	UEL	Upper explosive limit
NPL	National Priorities List	VOCs	Volatile organic compounds

## **1.0 INTRODUCTION**

This report documents the Operation and Maintenance (O&M) activities conducted during calendar year 2010 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 (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 fifteenth year of O&M for the Current Landfill, the fourteenth year for the Former Landfill and Slit Trench, and the thirteenth 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 December 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 receives surface runoff from the Current Landfill and usually is 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 CY02. In July 2006, BNL issued the *Final Five-Year Review Report* which discussed all remediation areas at the site. Review of the Current Landfill was included in this report.

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 in the 1940s. 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 CY03. In July 2006, BNL issued the *Final Five-Year Review Report* which discussed all remediation areas at the site. Review of the Former Landfill Area was included in this report.

## **1.2 Overview of the Monitoring Program**

### ***Groundwater Monitoring***

Data quality objectives for each of BNL's groundwater monitoring programs are presented in the *BNL Environmental Monitoring Plan* (BNL, 2010). 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 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 consists 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 semiannually from monitoring locations surrounding the former Landfill to evaluate the movement of soil-gas from the landfills.

*Wooded Wetland Monitoring.* Surface waters and sediments 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. This work was incorporated into the routine landfill monitoring program, and is carried out every two years (See Appendix A).

*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 2010.

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 February 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 November 2010. 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 Zone: typical water table within 10 ft of the screen zone.
- Intermediate Zone: typical water table between 10 ft and 100 ft above the screen zone.
- Deep 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 eight shallow monitoring wells (three background and five downgradient). The locations of the eight monitoring wells are presented in Figure 4. In addition, monitoring of six wells, 106-20, 106-21, 106-43, 106-44, 106-45 and 106-64 were moved from the Chemical/Animal Holes project to the Former Landfill Area project. This move was made since the analyte of interest

detected in these wells (strontium-90) originated from the Former Landfill. The direction of groundwater flow in the OU I area of the site is generally to the south-southeast. Figure 3 shows the June 2010 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 may and October 2010. One well, 088-109, was sampled quarterly for VOCs due to the presence of chloroethane.

Landfill leachate parameters at the Former Landfill were sampled annually during 2010. Strontium-90 was sampled semiannually in monitoring wells 106-20, 106-21, 106-43, 106-44, 106-45, and 106-64.

R&C Formation, Ltd. of Bellmore, New York conducted the groundwater sampling, and Test America, 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 Groundwater Monitoring Program Quality Assurance Project Plan (QAPP) (BNL, 1999). The analytical results for groundwater samples collected during 2010 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 rounds, and one duplicate sample was

collected during the second round 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. Methyl chloride, methylene chloride were detected in various method field and trip blanks during 2010. 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 both the Current Landfill and Former Landfill Area in 2010. The historical trends in concentrations of key contaminants are assessed and shown graphically in Figures 5 through 12. Summary tables of all 2010 landfill groundwater data are presented in Tables 2 through 10. 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 groundwater data include 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). Groundwater standards for radiological compounds were supplemented with New York State Department of Health's (NYSDOH's) standards for drinking water when a NYSDEC groundwater standard was not available. When there were no groundwater standards for a radiological compound, a Groundwater Screening Level was used. This value is based on a dose equivalent of 4 mrem/year and was calculated as 4% of the DOE Derived Concentration Guides (DCG) (DOE Order 5400.5) 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 Selected 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 2010 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, chloroethane, naphthalene, and trans-1,3-dichloropropene were each detected above their respective groundwater standards in one downgradient monitoring well during 2010 (Table 2). Benzene and chloroethane have historically been the primary groundwater contaminants detected downgradient of the Current Landfill. The concentrations of naphthalene, and trans-1,3-dichloropropene were the first detections above standards for these compounds. No other VOCs were detected above groundwater standards during 2010.

Figure 5 plots the concentration trends of total VOCs (TVOC), benzene, and chloroethane. As shown, VOCs remained relatively stable at low concentrations. 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. Well 087-11 showed an increase in TVOC levels during the fourth quarter 2010 due to the presence of naphthalene.

Benzene exceeded the 1 µg/L standard in well 087-11 during both sampling events. Chloroethane exceeded the 5 µg/L standard in well 088-109 during all four sampling events. The maximum chloroethane concentration was 55 µg/L; which is well below the historic high of 560 ug/L detected in this well in 1998. Benzene was detected at a maximum of 1.69 µg/L in well 087-11. There have been no detections of VOCs exceeding groundwater standards in wells 087-24, 088-22, and 088-23 since 1998. These downgradient wells are screened in the mid to deep Upper Glacial Aquifer as perimeter wells to monitor the vertical extent of contamination from the Current Landfill.

Napthalene was detected in well 087-11 during the October sampling round at a concentration of 12.7 µg/L which is above the standard of 10 µg/L. Well 087-23 detected trans-1,3-Dichloropropene at 0.41 µg/L during the October sampling round above the standard of 0.4 µg/L. Both compounds were not detected in any other wells above groundwater standards.

#### **2.2.1.2 Water Chemistry Parameters**

Groundwater samples near the Current Landfill were analyzed 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 2010 (Table 1). The results are provided in Table 3. Elevated levels of these parameters can be indicative of the presence of landfill leachate. During 2010, ammonia was the only water chemistry parameter detected above standards.

Ammonia was detected above the standard of 2 mg/L, with exceedances in three downgradient well (087-11, 087-27, and 088-110) during two sampling events, as shown in Table 3. The highest concentration of 3.88 mg/L was reported for well 087-11 in October. The levels of ammonia detected are consistent with historic data.

Chloride was not detected above the standard of 250 mg/L in any wells. Well 087-09 had the highest concentration of chloride at 96.4 mg/L in October. Figure 6 plots these trends. With the exception of well 087-23, the trends for downgradient wells show the low and stable nature of chloride concentrations in the vicinity of the Current Landfill.

During 2010, all sulfate concentrations remained below the groundwater standard of 250 mg/L. The highest sulfate value reported for 2010 was detected in the October sample from monitoring well 088-110 at a concentration of 21.6 mg/L. This is consistent with historic background levels at 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 19.7 mg/L to 37.9 mg/L during 2010. The highest alkalinity concentration during 2010 was detected in downgradient, shallow Glacial aquifer well 087-11, at 154 mg/L in October. There is no groundwater standard for alkalinity. The concentration trends plotted in Figure 6 show an overall

decrease in alkalinity following the capping of the landfill. Alkalinity levels in the background well remained stable during this period.

Total dissolved solids and TSS results were similar to those from previous years. TDS and TSS concentrations in background well 087-09 ranged from 214 mg/L to 220 mg/L, and 25.3 mg/L to 34 mg/L, respectively. The maximum concentrations observed in downgradient wells were 234 mg/L and 290 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 trends in concentration indicate that the capping is effectively reducing 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 87-09 are still lower than in the downgradient wells, suggesting continued leachate migration from the landfill.

During 2010, aluminum, antimony, chromium, iron, manganese, nickel, and sodium in the background well and aluminum, arsenic, iron, manganese, and sodium, in downgradient wells were detected above their respective groundwater standards (Table 4). Iron in the downgradient wells peaked at a maximum of 108,000 µg/L in well 088-110 during May. In contrast to background concentrations, in well 87-09, iron ranged from 4,070 µg/L to 8,620 µg/L.

Aluminum was detected in background well 087-09 at concentrations up to 212 µg/L, which is above the groundwater standard of 200 µg/L. Aluminum was only detected in one downgradient well above the groundwater standard. Well 088-21 reported a concentration of 467 µg/L for aluminum during the May sampling round but was down to 145 µg/L during the October sampling round.



Manganese ranged from 189 µg/L to 654 µg/L in background well 087-09, and up to 6,240 µg/L in the downgradient wells. Background sodium levels ranged from 28,100 to 59,300 µg/L; whereas downgradient levels reached a high of 66,400 µg/L.

Arsenic was reported above the standard of 10 µg/L in wells 088-22, 088-109 and 088-110 at a concentrations of 10.4 µg/L and 37.9 µg/L, respectively. Arsenic detections have historically been observed at similar levels in Current Landfill wells. Antimony was detected above the standard of 3 µg/L in upgradient well 087-09 at a concentration of 19.8 µg/L in May but dropped to a nondetect in October. Antimony was not detected in any downgradient wells. Nickel and chromium were detected above the standard of 100 µg/L and 50 µg/L, respectively, in background well 087-09. However, neither was detected above standards in any of the downgradient wells.

#### **2.2.1.4 Radionuclides**

No radionuclides were detected above groundwater standards during 2010 (Table 5). Strontium-90 (Sr-90), and tritium were the only radionuclides detected during 2010. Sr-90 was detected in wells 088-21 and 088-22 at concentrations of 2.35 pCi/L and 1.44 pCi/L, respectively, during October. These are well below the standard of 8 pCi/L. Tritium was detected significantly below the groundwater standard of 20,000 pCi/L with a maximum value of 432 pCi/L in well 088-23 (Figure 8). Tritium and Sr-90 concentrations have not exceeded groundwater standards in any wells since 1998.

### **2.2.2 Former Landfill**

#### **2.2.2.1 VOCs**

During 2010, there were no detections of VOCs above groundwater standards in wells in the Former Landfill Area (Table 6). The compounds consistently found in the Former Landfill Area monitoring wells include 1,1,1-trichloroethane, 1,1,2,2-tetrachloroethane, 1,1-dichloroethane, trichloroethene and chloroform. Chloroform was reported in several wells during the year at concentrations ranging from 0.11 µg/L to 2.01 µg/L, well below the groundwater standard of 7 µg/L. 1,1,1-Trichloroethane detections ranged from 0.29 µg/L to 0.87 µg/L. These concentrations are well below the standard of 5 µg/L. The remaining compounds were all detected in well 106-30 at concentrations below 1 µg/L. Figure 9 shows plots of the historical VOC detections for the Former Landfill Area monitoring wells.

During 2010, VOCs were detected at the Former Landfill Area in several wells, but only at trace concentrations, indicating that the cap on the landfill is operating as intended.

#### **2.2.2.2 Water Chemistry Parameters**

Groundwater samples from monitoring wells in the Former Landfill Area were analyzed for sulfate, nitrite, nitrate, total nitrogen, chloride, alkalinity, TDS (TDS or residue, non-filterable) and TSS (TSS or residue, filterable). During 2010, none of the of water chemistry parameters exceeded applicable groundwater standards (Table 7). In general, all of the landfill leachate indicator parameter concentrations in the downgradient wells were indistinguishable from concentrations in the upgradient wells in 2010. These trends indicate that the landfill cap is effective.

Sulfate concentrations ranged from 9.13 mg/L to 9.36 mg/L in the background wells, and from 6.51 mg/L to 18 mg/L in downgradient wells, significantly below the standard of 250 mg/L.

Nitrogen in the form of nitrate (NO<sub>3</sub>), and chloride were consistently low with concentrations up to 0.6 mg/L and 10.6 mg/L, respectively in the background wells and concentrations up to 1.3 mg/L and 13.6 mg/L, respectively in the downgradient wells. The trends plotted in Figure 10 indicate chloride concentrations are stable over time. TKN concentrations were nondetect in the background wells, and ranged from nondetect to 0.036 mg/L in the downgradient wells.

Alkalinity concentrations ranged from 5.6 mg/L to 23 mg/L in background wells and from 5.56 mg/L to 22.7 mg/L in downgradient wells. The trends plotted in Figure 10 demonstrate that the alkalinity concentrations in 2010 continue to be at background levels.

TDS concentrations ranged from 41 mg/L to 61 mg/L in the background wells, and from 44 mg/L to 88 mg/L in the downgradient wells. TSS concentrations were nondetect in the background wells, and ranged from nondetect to 15.2 mg/L in the downgradient wells.

#### **2.2.2.3 Metals**

The sampling results are summarized in Table 8, and concentration trend plots for iron are shown on Figure 11. Antimony was the only metal detected that exceeded the groundwater standards in

downgradient wells during 2010. Upgradient well 086-72 had a concentration of 4.7 ug/L. Downgradient wells 097-64 and 106-02 had concentrations of 3.43 µg/L and 5.19 ug/L, respectively. These are above the standard of 3 µg/L.

#### **2.2.2.4 Pesticides/PCBs**

There were no detections of pesticides or polychlorinated biphenyls (PCBs) during 2010. The sampling results are summarized in Table 9.

#### **2.2.2.5 Radionuclides**

Tritium was not detected in any wells during 2010. Strontium-90 was detected in five wells in 2010 below the groundwater standard of 8 pCi/L. Detects ranged from 0.468 pCi/L in well 106-21 to 2.68 pCi/L in well 106-44. The sampling results are summarized in Table 10, and concentration trend plots are shown on Figure 12.

### **3.0 WOODED WETLAND MONITORING**

Sampling at the Wooded Wetland is performed as part of the compliance monitoring for the Current Landfill. Prior to the capping of the Current Landfill, leachate was periodically observed in the wetland. The monitoring is focused on metal concentrations in the sediment and surface water to evaluate potential risks to the local Tiger Salamander population. See Appendix A for a detailed discussion of the sampling and analytical results, and associated figures and data tables.

#### **Surface Water**

Seven surface water samples from the Southern and Northern Ponds were collected in May 2010. Of the metals, only iron had an average concentration above the 1,000 µg/L critical toxicity concentration. The average iron concentrations of the Southern and Northern ponds were 1,488 µg/L and 1,214 µg/L, respectively (Appendix A, Table 6). Although the average concentrations were higher than the critical toxicity concentration, they were lower than the BNL background concentration of 1,990 µg/L (Appendix A, Table 2B).

Aluminum had average concentrations of 227 µg/L and 210 µg/L in the South and North Ponds, respectively. Both ponds were below the critical toxicity concentration of 525 µg/L.

The average zinc concentrations in the South Pond and North Pond were 14.1 µg/L and 11.08 µg/L, respectively, which are below both the critical toxicity concentration of 23.8 µg/L and the background concentration of 62.9 µg/L.

Metals in water are the primary source of absorption by Tiger Salamanders. No significant change in dissolved metals indicates that the wooded wetland is not experiencing an increase in metals concentration.

## **Sediment**

Seven sediment samples were collected from the Wooded Wetland Area in May 2010. The results for 2010 indicate that average metals concentrations in sediments in the South Pond are less than the maximum concentration benchmarks (Appendix A, Table 5). In the North Pond, the average concentrations of copper, lead and mercury (36.7 ug/kg, 111.9 ug/kg, and 0.36 ug/kg, respectively) were above the maximum sediment concentrations (Appendix A, Table 5). However, the average copper and mercury results were below the background sediment concentrations. Overall, with the exception of the lead result from the North Pond, the results are consistent with previous years. The average lead concentration was above both the maximum and background concentrations. The average concentration of lead in the water column during 2010 was the lowest since sampling began in 1994. This indicates that the lead will not likely have an adverse impact on Tiger Salamanders.

Based on the 2010 sampling results, sampling of the Wooded Wetlands should continue once every two years as part of the annual O&M landfills monitoring activities. A complete copy of the *2010 Wooded Wetlands Report* is included in Appendix A of this report.

## **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 2010 and from the Former Landfill in June, and December 2010.

Methane, lower explosive limit (LEL), and hydrogen sulfide were measured using a Landtec GA-90. 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 11 describes each soil-gas well located adjacent to the landfill. Their locations are illustrated on Figure 13.

#### **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 11 and their locations shown in Figure 14.

#### **4.1.3 Sampling Frequency**

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

<b>Sampling Event</b>	<b>Current Landfill</b>	<b>Former Landfill</b>
Round 1	March 2010	June 2010
Round 2	June 2010	December 2010
Round 3	September 2010	None
Round 4	December 2010	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 quarterly 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 13). Potential receptors, or areas where methane can accumulate in the vicinity of the Current Landfill, include the National Weather Service building located 480 ft north northwest of the Current Landfill on the north side of Brookhaven Avenue. Should methane extend to the south side of Brookhaven Avenue, active measures will be required to control its migration. The four outpost soil-gas wells, 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.

The results of the soil-gas monitoring for 2010 are summarized in Table 12. Appendix B 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. These levels 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 D).

Outpost wells, GSGM-1 to GSGM-4, located along the south side of Brookhaven Avenue showed no methane during 2010, indicating that the methane accumulation and migration does not extend to this area. Should methane extend to these outpost wells on the south side of Brookhaven Avenue, active measures will 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 102 ppm. Well SGM-12A located near the south-eastern section of the landfill, had the highest

hydrogen sulfide concentration, which was above the 10 ppm exposure limit; however it 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 – GSGM-4), there is no evidence that hydrogen sulfide is migrating toward the National Weather Service building.

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

Appendix D contains the results of methane monitoring for the Current Landfill from 1996 through 2009. Generally the levels of methane and hydrogen sulfide in the wells along the northwest landfill boundary and southeast corner have remained stable.

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

A total of 12 soil-gas monitoring well clusters are positioned around the Former Landfill Area. During 2010, the well clusters were monitored two times. 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/Animal 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 two sampling events, there was no methane detected. Hydrogen sulfide was only detected once during 2010. The detection of 1 ppm came during the June round in well SGMW-09A. Table 13 details the 2010 soil-gas monitoring results for the Former Landfill Area. Appendix B 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. Hydrogen-sulfide gas also was measured during this survey. The hydrogen sulfide results are consistent with historic values. Appendix D includes the results of monitoring methane in the Former Landfill Area for 1996 through 2009.

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

## **5.0 MAINTENANCE AND REPAIR**

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. A copy of the inspection reports is included in Appendix C. Due to an oversight, the December Landfill inspections did not occur. Maintenance and repair work completed or required 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. Small cracks in the asphalt road next to the Current Landfill were noted on the inspection logs. The cracks do not impact the structural integrity of the road. Also small pine seedlings were noted growing around the edge of the landfill. Maintenance was conducted in September 2010 which included removing the seedlings. The grass was cut during the fall.

### **5.2 Drainage Structures**

The drainage structures at both the Current and Former Landfill areas were maintained and any obstructions removed. They were observed to be operational and structurally sound during the site inspections. From July through August 2010, vegetation was noted growing in the drainage channels of the Current Landfill and Former Landfill Area. A combination of weed whacking and herbicide was used and the vegetation was not noted in subsequent inspections.



### **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.

### **5.4 Related Structures**

No other structures (stairs and fencing) required maintenance during 2010.

## **6.0 CONCLUSIONS AND RECOMMENDATIONS**

### **6.1 Groundwater Monitoring**

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

- VOCs Benzene, chloroethane, naphthalene, and/or trans-1,3-dichloropropene were detected in downgradient wells 087-11, and/or 088-109 at concentrations above groundwater standards. Naphthalene was detected once in well 087-11 during the October sampling round at a concentration of 12.7 µg/L which is above the standard of 10 µg/L. Well 087-23 detected trans-1,3-Dichloropropene at 0.41 µg/L during the October sampling round above the standard of 0.4 µg/L. The maximum chloroethane concentration was 55 µg/L in well 088-109. Benzene was detected at a maximum of 1.7 µg/L in well 088-11. During 2010, TVOC concentrations in these two wells ranged up to 57 µg/L indicating that low level VOCs continue to emanate from the landfill. However, an analysis of the trends of VOCs indicated the concentrations are stable to decreasing.
- Concentrations of landfill water chemistry parameters and metals such as ammonia and iron continue to have results in downgradient wells above the upgradient values. This suggests that leachate continues to emanate from the landfill, but at low levels.
- Tritium and Sr-90 continue to be detected in the wells downgradient of the Current Landfill, but at concentrations well below groundwater standards. These concentrations were consistent with historical observations.

- Since 1998, there have been no detections of VOCs, water chemistry parameters or radionuclides exceeding groundwater standards in wells 087-24, 088-22, and 088-23. These wells are all screened in the mid-to deep-Upper Glacial Aquifer to monitor the vertical extent of contamination from the Current Landfill.
- Although low levels of contaminants continue to be detected, the landfill controls are effective as evidenced by the improving quality of groundwater downgradient of the landfill.

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

The groundwater monitoring well network is adequate at this time. No changes to the monitoring frequency are recommended.

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

- The Former Landfill Area is not a significant source of VOC contamination. No VOCs were detected above groundwater standards in 2010. VOC concentrations in the downgradient wells were at or near the minimum detectable limits.
- Landfill-leachate indicators in downgradient wells were detected at concentrations approximating those in the background monitoring wells, indicating that leachate generation is minimal to nonexistent.
- The Former Landfill Area no longer appears to be a source of Sr-90 contamination. Only trace amounts of Sr-90 were detected near the Former Landfill Area (Well 097-64). The Sr-90 detected in wells 097-64, 106-21, 106-44, 106-45 and 106-64 has been decreasing with time and is currently not above groundwater standards.
- The implemented landfill controls are effective, as evidenced by the improving quality of groundwater downgradient of the landfill.

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

The groundwater monitoring well network is adequate at this time. No changes to the monitoring frequency are recommended.

## **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.

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

The soil-gas monitoring program is adequate at this time, since methane gas is still being produced and leachate is continuing to discharge from the landfill.

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

Methane and hydrogen sulfide levels at the Former Landfill Area continue to show little to no landfill gas.

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

The soil-gas monitoring program is adequate at this time. No changes to the monitoring frequency are recommended.

## **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. To prevent ruts in the landfills caused by the weight of the lawn mowers and moist surface conditions, the cutting of the grass is only conducted when optimal soil conditions are evident. The grass was cut during the fall. Access to the soil-gas monitoring wells are cleared via mechanical weed whacking.

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

Monthly inspections and maintenance will continue in accordance with the O&M requirements. 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 the fall. Access to the soil-gas monitoring wells are cleared via mechanical weed whacking.

## 7.0 REFERENCES

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Table 1. Analytical Requirements for Groundwater Samples

Well ID	Project	Decision Subunit	EPA 524.2 VOCs	Pesticides Method 608	PCBs Method 608	TSS/TDS	Sulfates/Chloride/Alkalinity	TK Nitrogen	Total Nitrogen	Nitrates	Nitrites	Ammonia	TAL Metals	Cyanide	EPA 900 Gross Alpha/Beta	EPA 901 Gamma Spec	EPA 906 Tritium	EPA 905 Sr-90	Blind Duplicate/MS/MSD	Frequency (events/year)
087-09	CLF	Background	Xb			Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb		X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>		2b
087-11	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
087-23	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		X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>		2b
087-26	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
087-27	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>	X	4
088-110	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
088-21	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>			Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb		X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>		2b
088-23	CLF	Downgradient	X <sup>a</sup>			Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb	Xb		X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>		2b
086-42	FLF	Background	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>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X	X <sup>a</sup>		1a
086-72	FLF	Background	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>	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
087-22	FLF	Background	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>	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
097-17	FLF	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>	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
097-277	FLF	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>	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
097-64	FLF	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>	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>	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>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>		1a
106-30	FLF	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>	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	1a
106-20	FLF	Downgradient																Xb		2b
106-21	FLF	Downgradient																Xb		2b
106-43	FLF	Downgradient																Xb		2b
106-44	FLF	Downgradient																Xb		2b
106-45	FLF	Downgradient																Xb		2b
106-64	FLF	Downgradient																Xb		2b

a - Sample during fourth quarter.  
b - Sample during second and fourth quarter.

Table 2. Current Landfill - Summary of 2010 VOC Data

Analyte	Groundwater Standards (ug/L)	087-09 5/27/2010		087-09 10/19/2010		087-11 5/27/2010		087-11 10/19/2010		087-23 5/27/2010		087-23 10/21/2010		087-24 10/21/2010	
		(ug/L)	U	(ug/L)	U	(ug/L)	U	(ug/L)	U	(ug/L)	U	(ug/L)	U	(ug/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	1.02		1.69		0.25	J	0.34	J	0.5	U
Benzene, 1,2,4-trimethyl	5	0.5	U	0.5	U	0.5	U	0.12	J	0.5	U	0.37	J	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	0.16	J	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	0.31	J	0.48	J	0.2	J	0.27	J	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	2.43		4.19		2.3		1.51		0.5	U
Chloroform	7	0.5	U	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	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	0.89		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	0.5	U	0.5	U	0.5	U	0.2	J	0.5	U	0.5	U	0.5	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	0.46	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	0.4	U	2.21	U	0.51	U	2.42	U	0.44	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	0.5	U	0.5	U	0.5	U	12.7		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	0.24	J	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
o-Xylene	5	0.5	U	0.5	U	0.5	U	0.42	J	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	0.37	J	0.5	U	0.27	J	0.5	U
sec-Butylbenzene	5	0.5	U	0.5	U	0.5	U	0.2	J	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	0.11	J	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	0.15	J	0.42	J	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	0.41	J	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	--	0.4		2.21		4.42		24.37		3.19		3.87		0	

U - Not detected

J - Estimated value.

Table 2. Current Landfill - Summary of 2010 VOC Data

Analyte	Groundwater Standards (ug/L)	087-26 5/27/2010		087-26 10/19/2010		087-27 5/27/2010		087-27 10/19/2010		088-109 2/2/2010		088-109 5/27/2010		088-109 7/16/2010	
		(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/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
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	1.01		1.6		1.53	
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	0.5	U	0.9		0.145	J	0.28	J	0.58	
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	0.12	J
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	0.5	U	0.27	J	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
Chloroethane	5	0.5	U	0.5	U	0.5	U	1.58		34.9		55		31.6	
Chloroform	7	0.5	U	0.5	U	0.5	U	0.5	U	0.19	J	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	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	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	0.44	U	0.5	U	0.5	U	0.5	U	0.5	U	0.85	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	0.41	U	2.19	U	0.44	U	2.37	U	0.5	U	0.39	U	1.63	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	0.5	U	0.27	J	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	0.5	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
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	0.2	J	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
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	0.5	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
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	--	0.41		2.9		0.44		5.32		36.245		57.27		36.31	

U - Not detected

J - Estimated value.



Table 2. Current Landfill - Summary of 2010 VOC Data

Analyte	Groundwater Standards (ug/L)	088-109		088-110		088-110		088-21		088-21		088-22		088-23	
		10/19/2010	5/27/2010	10/19/2010	5/27/2010	10/19/2010	5/27/2010	10/19/2010	5/27/2010	10/19/2010	5/27/2010	10/19/2010	5/27/2010	10/19/2010	5/27/2010
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	0.48	J	1.46		0.83		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	0.84		0.62		0.64		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	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-	--	0.2	J	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	0.13	J	0.5	U	0.41	J	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
Chloroethane	5	13.6		3.12		1.87		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	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	0.13	J	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	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	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	1.52	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.59	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	2.68	U	0.39	U	2.27	U	0.29	U	2.25	U	2.01	U	2.18	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	0.5	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
o-Dichlorobenzene	3	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
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	0.11	J	0.5	U	0.25	J	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
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	0.5	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
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	--	19.56		5.72		6.27		0.29		2.25		2.01		2.77	

U - Not detected

J - Estimated value.

Table 3. Current Landfill - Summary of 2010 Water Chemistry Data

<i>Analyte</i>	Groundwater Standards (mg/L)	087-09 5/27/2010 (mg/L)		087-09 10/19/2010 (mg/L)		087-11 5/27/2010 (mg/L)		087-11 10/19/2010 (mg/L)		087-23 5/27/2010 (mg/L)		087-23 6/2/2010 (mg/L)		087-23 10/21/2010 (mg/L)	
Alkalinity (as CaCO <sub>3</sub> )	--	37.9		19.7	0.725J	138		154	0.725J	90.7				56.6	
Ammonia (as N)	2	0.242	J	0.167	J	<b>3.66</b>	J	<b>3.88</b>	J	0.469	J			0.511	
Chloride	250	31.8	J	96.4	J	34.5	J	20.3	J	10.3	J			45.9	J
Cyanide	0.2	0.0017	UJ	0.0017	U	0.0017	UJ	0.0017	U			0.0017	U	0.0017	U
Nitrate (as N)	10	0.894	J	0.607	J	0.033	UJ	0.033	UJ	0.033	UJ			0.033	U
Nitrite (as N)	1	0.033	UJ	0.033	U	0.033	UJ	0.033	U	0.033	UJ			0.033	U
Nitrite + Nitrate-N	10	0.995	J	0.9	J	0.05	UJ	0.051	J	0.05	UJ			0.0925	U
Nitrogen	--	1.72	J	1.5	J	4.48	J	4.67	J	0.578	J			0.788	
Sulfate	250	6.63	J	11.4	J	7.62	J	3.58	J	4.85	J			13	J
TDS	--	124	J	216	J	220	J	214	J	126	J			177	J
Total Kjeldahl Nitrogen	--	0.726	J	0.602	J	4.44	J	4.62	J	0.544	J			0.695	
TSS	--	30.4	J	26	J	25.3	J	34	J	25.4	J			8	J

U - Not detected

J - Estimated value.

Table 3. Current Landfill - Summary of 2010 Water Chemistry Data

<i>Analyte</i>	Groundwater Standards (mg/L)	087-24 5/27/2010 (mg/L)		087-24 10/21/2010 (mg/L)		087-26 5/27/2010 (mg/L)		087-26 10/19/2010 (mg/L)		087-27 5/27/2010 (mg/L)		087-27 10/19/2010 (mg/L)		088-109 5/27/2010 (mg/L)	
Alkalinity (as CaCO3)	--	18.1		23.8		13.3	U	16.2	0.725J	66.1		61.7	0.725J	89.1	
Ammonia (as N)	2	0.032	UJ	0.031	J	0.016	UJ	0.032	J	0.302	J	0.943	J	1.23	J
Chloride	250	44.4	J	17.5	J	16.5	J	68.8	J	2.81	J	26	J	16.1	J
Cyanide	0.2	0.0017	UJ	0.0017	U	0.0017	UJ	0.0017	U	0.0017	UJ	0.0017	U	0.0017	UJ
Nitrate (as N)	10	0.461	J	0.467		0.455	J	0.479	J	0.171	J	0.0876	J	0.033	UJ
Nitrite (as N)	1	0.033	UJ	0.033	U	0.033	UJ	0.033	U	0.033	UJ	0.033	U	0.033	UJ
Nitrite + Nitrate-N	10	0.434	J	0.482	U	0.425	J	0.505	J	0.103	J	0.05	J	0.05	UJ
Nitrogen	--	0.494	J	0.558		0.47	J	0.543	J	0.378	J	1.15	J	1.32	J
Sulfate	250	13	J	13.4	J	12	J	8.75	J	4.99	J	10.2	J	10.8	J
TDS	--	145	J	70	J	94	J	190	J	89	J	134	J	147	J
Total Kjeldahl Nitrogen	--	0.06	J	0.076	U	0.045	J	0.038	J	0.275	J	1.11	J	1.3	J
TSS	--	0.663	UJ	0.76	U	0.852	J	1.14	UJ	16.2	J	7.2	J	11.1	J

U - Not detected

J - Estimated value.

Table 3. Current Landfill - Summary of 2010 Water Chemistry Data

<i>Analyte</i>	Groundwater Standards (mg/L)	088-109 10/19/2010 (mg/L)		088-110 5/27/2010 (mg/L)		088-110 10/19/2010 (mg/L)		088-21 5/27/2010 (mg/L)		088-21 10/19/2010 (mg/L)		088-22 5/27/2010 (mg/L)		088-22 10/19/2010 (mg/L)	
<b>Alkalinity (as CaCO3)</b>	--	142	0.725J	81.1		87.5	0.725J	48.5		23.3	0.725J	15.5		15.2	0.725J
<b>Ammonia (as N)</b>	2	<b>3.49</b>	J	1.47	J	<b>2.28</b>	J	0.042	UJ	0.019	J	0.043	UJ	0.022	J
<b>Chloride</b>	250	25.2	J	37.4	J	33.4	J	71.2	J	45.7	J	16.6	J	18.4	J
<b>Cyanide</b>	0.2	0.0017	U	0.0017	UJ	0.0017	U	0.0017	UJ	0.0017	U	0.0017	UJ	#####	U
<b>Nitrate (as N)</b>	10	0.033	UJ	0.033	UJ	0.104	J	0.391	J	0.301	J	0.479	J	0.477	J
<b>Nitrite (as N)</b>	1	0.033	U	0.033	UJ	0.033	U	0.033	UJ	0.033	U	0.033	UJ	0.033	U
<b>Nitrite + Nitrate-N</b>	10	0.0715	J	0.05	UJ	0.0745	J	0.345	J	0.342	J	0.455	J	0.53	J
<b>Nitrogen</b>	--	3.85	J	1.7	J	2.71	J	0.789	J	0.642	J	0.536	J	0.617	J
<b>Sulfate</b>	250	11.3	J	16.3	J	21.6	J	6.27	J	4.75	J	11.8	J	11.8	J
<b>TDS</b>	--	234	J	181	J	216	J	194	J	122	J	83	J	72	J
<b>Total Kjeldahl Nitrogen</b>	--	3.78	J	1.68	J	2.63	J	0.444	J	0.3	J	0.081	J	0.087	J
<b>TSS</b>	--	20.7	J	290	J	34	J	16.8	J	8.8	J	1.42	J	22.7	J

U - Not detected

J - Estimated value.

Table 3. Current Landfill - Summary of 2010 Water Chemistry Data

<i>Analyte</i>	Groundwater Standards (mg/L)	088-23 5/27/2010 (mg/L)		088-23 10/19/2010 (mg/L)	
Alkalinity (as CaCO <sub>3</sub> )	--	22.9		26.3	0.725J
Ammonia (as N)	2	0.036	UJ	0.016	UJ
Chloride	250	15.9	J	16	J
Cyanide	0.2	0.0017	UJ	0.0017	U
Nitrate (as N)	10	0.033	UJ	0.233	J
Nitrite (as N)	1	0.033	UJ	0.033	U
Nitrite + Nitrate-N	10	0.0615	J	0.05	J
Nitrogen	--	0.0825	J	0.0821	UJ
Sulfate	250	10.9	J	11.2	J
TDS	--	88	J	84	J
Total Kjeldahl Nitrogen	--	0.033	UJ	0.045	J
TSS	--	3.23	J	3.6	J

U - Not detected

J - Estimated value.

Table 4. Current Landfill - Summary of 2010 Metals Data

<i>Analyte</i>	Groundwater Standards (ug/L)	087-09 5/27/2010 (ug/L)		087-09 10/19/2010 (ug/L)		087-11 5/27/2010 (ug/L)		087-11 10/19/2010 (ug/L)		087-23 5/27/2010 (ug/L)		087-23 10/21/2010 (ug/L)		087-24 5/27/2010 (ug/L)		087-24 10/21/2010 (ug/L)	
Aluminum	200	102	BJ	212		111	BJ	76.3	B	68	UJ	68	U	68	UJ	68	U
Antimony	3	19.8	BJ	3	U	3	UJ	3	U	3	UJ	3	U	3	UJ	3	U
Arsenic	10	1.6	UJ	1.82	BJ	4.56	BJ	5.6	J	9.94	J	9.87	J	1.6	UJ	1.6	UJ
Barium	1000	39.1	BJ	69.9	BJ	30.3	BJ	38.8	BJ	23.9	BJ	40.7	BJ	20	BJ	10.5	BJ
Beryllium	3	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U
Cadmium	5	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U
Calcium	--	9260	J	9940	J	16100	J	19300	J	4900	BJ	3660	BJ	10700	J	5260	J
Chromium	50	797	J	715		1.65	BJ	2.75	B	2.75	BJ	2.1	BJ	1	UJ	1.92	BJ
Cobalt	--	2.99	BJ	1	U	1	UJ	1	U	2.61	BJ	2.74	BJ	1.18	BJ	1.88	BJ
Copper	200	20.6	BJ	25.2		5.01	BJ	3	U	3.47	BJ	3	U	3	UJ	3	U
Iron	300	8620	J	4070	J	59300	J	67700	J	51900	J	43400	J	30	UJ	34.2	BJ
Lead	25	0.5	UJ	1.58	B	0.5	UJ	0.572	B	0.5	UJ	0.5	U	0.5	UJ	0.5	U
Magnesium	35000	4100	BJ	4240	BJ	3900	BJ	4700	BJ	1700	BJ	1670	BJ	7220	J	3840	BJ
Manganese	300	654	J	189	J	1080	J	1350	J	6240	J	4520	J	2	UJ	2	UJ
Mercury	0.7	0.066	UJ	0.066	U	0.066	UJ	0.066	U	0.066	UJ	0.066	U	0.066	UJ	0.066	U
Nickel	100	294	J	14.3	BJ	1.5	UJ	1.5	UJ	1.5	UJ	1.5	U	1.5	UJ	1.5	U
Potassium	--	918	BJ	1200	BJ	5210	J	5720	J	973	BJ	1290	BJ	1640	BJ	1440	BJ
Selenium	10	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U
Silver	50	1	UJ	1	U	1	UJ	1	U	1	UJ	1.15	B	1	UJ	1	U
Sodium	20000	28100	J	59300	J	18500	J	18100	J	5470	J	29400	J	18300	J	14800	J
Thallium	0.5	0.3	UJ	0.3	U	0.3	UJ	0.3	U	0.3	UJ	0.3	U	0.3	UJ	0.3	U
Vanadium	--	3.57	BJ	12.4	BJ	1	UJ	42.1	BJ	1	UJ	1	U	1	UJ	1	U
Zinc	2000	3.3	UJ	5.33	BJ	3.58	BJ	6.85	BJ	5.24	BJ	7.39	BJ	3.3	UJ	3.3	UJ

U - Not detected

J - Estimated value.

B - Analyte also detected in method blank.

Table 4. Current Landfill - Summary of 2010 Metals Data

<i>Analyte</i>	Groundwater Standards (ug/L)	087-26 5/27/2010 (ug/L)		087-26 10/19/2010 (ug/L)		087-27 5/27/2010 (ug/L)		087-27 10/19/2010 (ug/L)		088-109 5/27/2010 (ug/L)		088-109 10/19/2010 (ug/L)		088-110 5/27/2010 (ug/L)		088-110 10/19/2010 (ug/L)	
Aluminum	200	68	UJ	68	U	91.3	BJ	68.3	B	77.3	BJ	68	U	223	J	68	U
Antimony	3	3	UJ	3	U	3	UJ	3	U	3	UJ	3	U	3	UJ	3	U
Arsenic	10	1.6	UJ	1.6	UJ	1.6	UJ	2.27	BJ	1.6	UJ	10.4	J	37.9	J	9.87	J
Barium	1000	22.1	BJ	62	BJ	4.44	BJ	30.9	BJ	32.4	BJ	74.7	BJ	37.6	BJ	40.9	BJ
Beryllium	3	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U
Cadmium	5	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U
Calcium	--	5760	J	15700	J	16100	J	11900	J	24100	J	34200	J	20300	J	18800	J
Chromium	50	1	UJ	1	U	1	UJ	1	U	1.29	BJ	1	U	1.47	BJ	1.33	B
Cobalt	--	1.1	BJ	1.17	B	1	UJ	3.95	B	4.82	BJ	1	U	1	UJ	4.11	B
Copper	200	3.67	BJ	4.15	B	3	UJ	3	U	3	UJ	3	U	6.24	BJ	3	U
Iron	300	384	J	109	J	7900	J	30800	J	16200	J	36400	J	108000	J	43000	J
Lead	25	0.5	UJ	0.5	U	0.5	UJ	0.5	U	0.5	UJ	0.5	U	0.5	UJ	0.5	U
Magnesium	35000	3860	BJ	10400	J	7510	J	2610	BJ	5290	J	5510	J	6570	J	5210	J
Manganese	300	2.15	BJ	2.62	BJ	146	J	877	J	1400	J	814	J	2680	J	2090	J
Mercury	0.7	0.066	UJ	0.066	U	0.066	UJ	0.066	U	0.066	UJ	0.066	U	0.066	UJ	0.066	U
Nickel	100	1.5	UJ	1.5	UJ	1.5	UJ	1.5	UJ	1.5	UJ	1.5	UJ	1.5	UJ	1.5	UJ
Potassium	--	1040	BJ	1980	BJ	971	BJ	2950	BJ	4220	BJ	10800	J	3180	BJ	4790	BJ
Selenium	10	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U
Silver	50	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U	1	UJ	1.16	B
Sodium	20000	12000	J	19900	J	2120	BJ	13100	J	12100	J	18700	J	20800	J	25400	J
Thallium	0.5	0.3	UJ	0.3	U	0.3	UJ	0.3	U	0.3	UJ	0.3	U	0.3	UJ	0.3	U
Vanadium	--	1	UJ	1	UJ	1	UJ	18.3	BJ	1	UJ	22	BJ	1	UJ	26	BJ
Zinc	2000	3.3	UJ	3.3	UJ	3.3	UJ	6.31	BJ	3.87	BJ	3.96	BJ	3.3	UJ	3.62	BJ

U - Not detected

J - Estimated value.

B - Analyte also detected in method blank.

Table 4. Current Landfill - Summary of 2010 Metals Data

<u>Analyte</u>	<u>Groundwater Standards (ug/L)</u>	<u>088-21 5/27/2010 (ug/L)</u>		<u>088-21 10/19/2010 (ug/L)</u>		<u>088-22 5/27/2010 (ug/L)</u>		<u>088-22 10/19/2010 (ug/L)</u>		<u>088-23 5/27/2010 (ug/L)</u>		<u>088-23 10/19/2010 (ug/L)</u>	
Aluminum	200	467	J	145	B	68	UJ	68	U	68	UJ	110	B
Antimony	3	3	UJ	3	U	3	UJ	3	U	3	UJ	3	U
Arsenic	10	1.6	UJ	1.6	UJ	1.6	UJ	12.1	J	1.78	BJ	1.6	UJ
Barium	1000	12.5	BJ	18.1	BJ	25.3	BJ	46	BJ	3.16	BJ	3.65	BJ
Beryllium	3	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U
Cadmium	5	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U
Calcium	--	7780	J	4570	BJ	7190	J	7240	J	5800	J	6220	J
Chromium	50	1.15	BJ	1	U	1	UJ	1	U	1.26	BJ	1.19	B
Cobalt	--	1.96	BJ	1	U	2.32	BJ	3.48	B	1	UJ	1	U
Copper	200	3	UJ	3	U	3	UJ	3	U	3	UJ	3	U
Iron	300	6040	J	1940	J	634	J	9160	J	3330	J	3200	J
Lead	25	1.78	BJ	0.587	B	0.5	UJ	0.5	U	0.5	UJ	0.5	U
Magnesium	35000	3550	BJ	2340	BJ	2330	BJ	2380	BJ	1700	BJ	1770	BJ
Manganese	300	353	J	97.7	J	129	J	961	J	1910	J	1990	J
Mercury	0.7	0.066	UJ	0.066	U	0.066	UJ	0.066	U	0.066	UJ	0.066	U
Nickel	100	1.5	UJ	1.5	UJ	1.5	UJ	1.5	UJ	1.5	UJ	1.5	UJ
Potassium	--	1300	BJ	1960	BJ	1010	BJ	1270	BJ	946	BJ	1080	BJ
Selenium	10	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U
Silver	50	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U
Sodium	20000	66400	J	32500	J	12000	J	11800	J	13900	J	13400	J
Thallium	0.5	0.3	UJ	0.3	U	0.3	UJ	0.3	U	0.3	UJ	0.3	U
Vanadium	--	12.7	BJ	4.6	BJ	1	UJ	6.39	BJ	1	UJ	1.64	BJ
Zinc	2000	3.3	UJ	3.3	UJ	3.3	UJ	4.54	BJ	3.3	UJ	5.46	BJ

U - Not detected

J - Estimated value.

B - Analyte also detected in method blank.



Table 5. Current Landfill - Summary of 2010 Radionuclide Data

<i>Analyte</i>	Groundwater Standards pCi/L	087-09 10/19/2010 pCi/L				087-11 10/19/2010 pCi/L				087-23 10/21/2010 pCi/L			
		Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error
<b>Americium-241</b>	1.2	3.25	U	11.6	7.65	-15.8	U	17.3	10.8	5.75	U	24.5	14.2
<b>Beryllium-7</b>	40000	-1.44	U	33.2	19.4	13	U	38.4	21.6	2.68	U	38.6	22.2
<b>Cesium-134</b>	80	-2.31	U	3.13	2.14	-0.999	U	3.77	2.39	2.27	U	4.74	2.6
<b>Cesium-137</b>	120	-0.363	U	3.06	1.85	2.32	U	3.85	2.1	-0.11	U	3.73	2.23
<b>Co-60</b>	200	0.657	U	3.3	1.88	-0.708	U	2.98	1.88	2.36	U	4.24	2.19
<b>Cobalt-57</b>	4000	0.48	U	2.76	1.69	0.709	U	2.95	1.71	1.01	U	3.49	2.08
<b>Europium-152</b>	841	5.43	U	9.32	5.3	1.45	U	9.17	5.51	-3.54	U	11.2	6.97
<b>Europium-154</b>	573	-1.25	U	6.78	4.22	-5.04	U	8.4	5.72	-0.66	U	10.1	6.14
<b>Europium-155</b>	4000	4.02	U	10.9	6.51	-0.657	U	11.1	6.52	6.06	U	14.4	8.43
<b>Manganese-54</b>	2000	-1.46	U	2.85	1.87	-0.0415	U	3.09	1.87	1.18	U	4.06	2.33
<b>Sodium-22</b>	400	-0.587	U	2.4	1.52	-2.05	U	3	2.07	-0.933	U	3.59	2.3
<b>Strontium-90</b>	8	0.0947	U	0.791	0.426	0.375	U	0.782	0.462	-0.157	U	0.777	0.402
<b>Tritium</b>	20000	-149	U	248	134	791		253	178	41.3	U	270	157
<b>Zinc-65</b>	360	-1.27	U	6.52	3.97	-0.333	U	7.17	4.25	-0.255	U	8.52	5.08

U - Not detected

J - Estimated value.

Table 5. Current Landfill - Summary of 2010 Radionuclide Data

<i>Analyte</i>	Groundwater Standards pCi/L	087-24 10/21/2010 pCi/L				087-26 10/19/2010 pCi/L				087-27 10/19/2010 pCi/L				088-109 10/19/2010 pCi/L			
		Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error
<b>Americium-241</b>	1.2	4.88	U	11.3	7.36	-15.4	U	23	14.3	0.905	U	24.5	14.3	-2.31	U	6.27	4.31
<b>Beryllium-7</b>	40000	-5.07	U	24.9	15.7	-12.1	U	37.4	23.5	-27.1	U	32.4	22.2	-11.9	U	37.9	23.9
<b>Cesium-134</b>	80	0.594	U	3.26	1.86	-2.99	U	3.75	2.51	-0.00947	U	3.52	2.09	0.423	U	4.98	2.87
<b>Cesium-137</b>	120	-0.668	U	2.44	1.51	0.549	U	3.44	1.97	-0.505	U	4.13	2.65	-0.61	U	4.1	2.58
<b>Co-60</b>	200	-0.737	U	2.82	1.84	-0.407	U	3.42	2.06	-0.131	U	3.62	2.15	-0.377	U	3.87	2.33
<b>Cobalt-57</b>	4000	-0.394	U	2.52	1.48	-0.64	U	3.46	2.12	-0.216	U	2.79	1.69	0.269	U	2.55	1.5
<b>Europium-152</b>	841	2.17	U	8.44	4.91	6.57	U	11.4	6.42	2.17	U	9.28	5.35	4.23	U	11	6.17
<b>Europium-154</b>	573	-1.09	U	7.34	4.66	-4.5	U	8.3	5.47	1.87	U	8.62	4.81	-2.49	U	9.02	6.06
<b>Europium-155</b>	4000	4.11	U	10.3	6.15	-7.65	U	14.3	8.92	-1.37	U	11.4	6.9	3.51	U	10.4	5.97
<b>Manganese-54</b>	2000	1.67	U	3.12	1.68	-0.712	U	3.45	2.11	-0.518	U	2.82	1.74	-2.37	U	3.84	2.56
<b>Sodium-22</b>	400	-0.253	U	2.59	1.62	-1.52	U	2.99	1.95	0.364	U	3.05	1.74	-0.873	U	3.21	2.15
<b>Strontium-90</b>	8	-0.0202	U	0.777	0.402	0.495	U	0.656	0.415	0.317	U	0.624	0.371	0.142	U	0.715	0.389
<b>Tritium</b>	20000	285	J	271	166	115	U	250	148	34.1	U	246	142	130	U	252	150
<b>Zinc-65</b>	360	-2.09	U	5.39	3.56	-2.41	U	7.02	4.52	-5.96	U	6.24	4.62	-3.12	U	8.55	5.63

U - Not detected

J - Estimated value.

Table 5. Current Landfill - Summary of 2010 Radionuclide Data

<i>Analyte</i>	Groundwater Standards pCi/L	088-110 10/19/2010 pCi/L				088-21 10/19/2010 pCi/L				088-22 10/19/2010 pCi/L				088-23 10/19/2010 pCi/L			
		Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error
<b>Americium-241</b>	1.2	-8.37	U	23.4	16.1	2.58	U	24.2	14.2	-11.2	U	15.4	9.67	3.4	U	15.4	10.2
<b>Beryllium-7</b>	40000	-11.5	U	32.9	20.2	2.51	U	32.1	19.5	29.4	U	42.1	22.9	-11.7	U	29.9	18.8
<b>Cesium-134</b>	80	0.465	U	3.78	2.24	-0.861	U	3.31	2.08	0.729	U	4.22	2.49	0.33	U	3.2	1.82
<b>Cesium-137</b>	120	0.571	U	3.12	1.81	-0.388	U	2.8	1.69	0.144	U	3.7	2.22	0.578	U	3.2	1.88
<b>Co-60</b>	200	-1.73	U	2.92	2.04	-1.32	U	3.19	2.23	-0.379	U	3.68	2.24	0.228	U	2.99	1.78
<b>Cobalt-57</b>	4000	-0.527	U	3.14	1.95	1.18	U	2.75	1.63	-0.231	U	3.02	1.83	-0.3	U	2.78	1.64
<b>Europium-152</b>	841	-2.4	U	9.25	5.76	-1.4	U	8.76	5.35	0.287	U	10	5.86	-3.56	U	8.49	5.17
<b>Europium-154</b>	573	-1.24	U	8.67	5.4	-4.26	U	7.35	4.97	6.29	U	12.5	6.77	-1.04	U	7.97	5
<b>Europium-155</b>	4000	-4.99	U	12.4	7.82	-0.951	U	10.9	6.61	0.549	U	12.2	7.27	-6.13	U	10.3	6.33
<b>Manganese-54</b>	2000	0.952	U	3.47	2.01	0.898	U	3.05	1.76	-0.913	U	3.27	2.1	-0.173	U	3.2	1.89
<b>Sodium-22</b>	400	-0.403	U	3.1	1.92	-1.47	U	2.63	1.77	2.27	U	4.46	2.41	-0.281	U	2.88	1.79
<b>Strontium-90</b>	8	0.609	U	0.734	0.469	2.35		0.688	0.649	1.44		0.69	0.555	0.0197	U	0.409	0.208
<b>Tritium</b>	20000	29.7	U	248	143	-76	U	250	139	230	U	247	151	434		249	161
<b>Zinc-65</b>	360	0.443	U	7.17	4.21	-4.87	U	5.9	4.01	-0.882	U	7.07	4.29	-0.968	U	6.21	3.85

U - Not detected

J - Estimated value.

Table 6. Former Landfill - Summary of 2010 VOC Data

<i>Analyte</i>	Groundwater Standards (ug/L)	086-42 10/19/2010 (ug/L)	086-72 10/19/2010 (ug/L)	087-22 10/19/2010 (ug/L)	097-17 10/19/2010 (ug/L)	097-277 10/19/2010 (ug/L)	097-64 10/19/2010 (ug/L)	106-02 10/19/2010 (ug/L)	106-30 10/19/2010 (ug/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	0.41 J	0.5 U	0.5 U	0.5 U	0.5 U	0.29 J	0.5 U	0.87 J
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	0.25 J
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	0.5 U	0.5 U	0.5 U	0.54 J
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	0.5 U	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	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	0.5 U
Bromobenzene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	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	0.5 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	0.5 U	0.5 U
Chloroethane	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
Chloroform	7	0.11 J	2.01	0.64	1.12	0.54	0.5 U	0.5 U	0.16 J
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	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	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	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 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	0.85 U	0.5 U	0.5 U	0.56 U	0.68 U	0.89 U	0.72 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	0.5 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	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	0.28 J	0.5 U	0.63 J
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	0.5 U	0.5 U
524.2 TVOC	--	0.52	2.01	0.64	1.12	0.54	0.57	0	2.45

U - Not detected  
 J - Estimated value.

Table 7. Former Landfill - Summary of 2010 Water Chemistry Data

<i>Analyte</i>	Groundwater Standards (ug/L)	086-42		086-72		087-22		097-17		097-277		097-64		106-02		106-30	
		10/19/2010 (ug/L)		10/19/2010 (ug/L)		10/19/2010 (ug/L)		10/19/2010 (ug/L)		10/19/2010 (ug/L)		10/19/2010 (ug/L)		10/19/2010 (ug/L)		10/19/2010 (ug/L)	
<b>Alkalinity (as CaCO<sub>3</sub>)</b>	--	23.3		5.56		5.56		10.6		7.58		22.7		11.6		16.7	
<b>Ammonia (as N)</b>	2000	0.016	J	0.022	J	0.026	J	0.016	U	0.022	J	0.016	U	0.04	J	0.043	J
<b>Chloride</b>	250000	10.6		8.11		5.9		10.4		13.6		7.67		2.68		11.4	
<b>Cyanide</b>	200	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
<b>Nitrate (as N)</b>	10000	0.644		0.102		0.288		0.255		0.413		1.3		0.363		0.716	
<b>Nitrite (as N)</b>	1000	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U
<b>Nitrite + Nitrate-N</b>	10000	0.735		0.057	J	0.263		0.223	J	0.433		1.54		0.365		0.795	
<b>Nitrogen</b>	--	0.735		0.067	J	0.263		0.223	J	0.433		1.54		0.365		0.831	
<b>Sulfate</b>	250000	9.13		9.36		9.15		6.51		15.1		13		11.1		18	
<b>TDS</b>	--	61		41		44		50		65		75		48		88	
<b>Total Kjeldahl Nitrogen</b>	--	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.036	J
<b>TSS</b>	--	0.76	U	0.76	U	3.6		0.8	J	0.76	U	0.76	U	15.2		0.76	U

U - Not detected

J - Estimated value.

Table 8. Former Landfill - Summary of 2010 Metals Data

<i>Analyte</i>	Groundwater Standards (ug/L)	086-42		086-72		087-22		097-17		097-277		097-64		106-02		106-30	
		10/19/2010 (ug/L)		10/19/2010 (ug/L)		10/19/2010 (ug/L)		10/19/2010 (ug/L)		10/19/2010 (ug/L)		10/19/2010 (ug/L)		10/19/2010 (ug/L)		10/19/2010 (ug/L)	
Aluminum	200	68	U	68	U	68	U	68	U	68	U	68	U	106	B	185	B
Antimony	3	3	U	4.72	B	3	U	3	U	3	U	3.43	B	5.19	B	3	U
Arsenic	10	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U
Barium	1000	8.87	B	11.9	B	13.7	B	10.5	B	10.8	B	24.1	B	6.96	B	25.7	B
Beryllium	3	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
Calcium	--	7370		2320	B	2530	B	4110	B	4460	B	11600		5860		9550	
Chromium	50	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cobalt	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Copper	200	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U
Iron	300	30	U	30	U	30	U	33.6	B	30	U	30	U	241		37.8	B
Lead	25	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Magnesium	35000	2400	B	1840	B	1650	B	1510	B	2530	B	1760	B	1280	B	3060	B
Manganese	300	2	U	3.28	B	2.19	B	10.6	B	18.4		4.72	B	2.72	B	36.2	
Mercury	0.7	0.066	U	0.066	U	0.066	U	0.066	U	0.066	U	0.066	U	0.066	U	0.066	U
Nickel	100	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U
Potassium	--	1240	B	771	B	1080	B	758	B	1150	B	1200	B	954	B	876	B
Selenium	10	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Silver	50	1	UN	1	UN	1	UN	1	UN	1	UN	1	UN	1	UN	1	UN
Sodium	20000	9170		5940		4260	B	6590		8910		7620		3350	B	8650	
Thallium	0.5	0.341	B	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
Vanadium	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Zinc	2000	8.71	B	3.3	U	3.3	U	4.86	B	3.59	B	10	B	6.91	B	11.7	B

U - Not detected

J - Estimated value.

B - Analyte also detected in method blank.

Table 9. Former Landfill - Summary of 2010 Pesticide/PCB Data

<i>Analyte</i>	Groundwater Standards (ug/L)	086-42 10/19/2010 (ug/L)	086-72 10/19/2010 (ug/L)	087-22 10/19/2010 (ug/L)	097-17 10/19/2010 (ug/L)	097-277 10/19/2010 (ug/L)	097-64 10/19/2010 (ug/L)	106-02 10/19/2010 (ug/L)	106-30 10/19/2010 (ug/L)
4,4"-DDD	0.3	0.0404 U	0.0381 U	0.0381 U	0.0377 U	0.0381 U	0.0381 U	0.0392 U	0.0381 U
4,4"-DDE	0.2	0.0404 U	0.0381 U	0.0381 U	0.0377 U	0.0381 U	0.0381 U	0.0392 U	0.0381 U
4,4"-DDT	0.2	0.0404 U	0.0381 U	0.0381 U	0.0377 U	0.0381 U	0.0381 U	0.0392 U	0.0381 U
Aldrin	0	0.0202 U	0.019 U	0.019 U	0.0189 U	0.019 U	0.019 U	0.0196 U	0.019 U
alpha-BHC	0.01	0.0202 U	0.019 U	0.019 U	0.0189 U	0.019 U	0.019 U	0.0196 U	0.019 U
Aroclor 1016	0.09	0.505 U	0.476 U	0.476 U	0.472 U	0.476 U	0.476 U	0.49 U	0.476 U
Aroclor 1221	0.09	0.505 U	0.476 U	0.476 U	0.472 U	0.476 U	0.476 U	0.49 U	0.476 U
Aroclor 1232	0.09	0.505 U	0.476 U	0.476 U	0.472 U	0.476 U	0.476 U	0.49 U	0.476 U
Aroclor 1242	0.09	0.505 U	0.476 U	0.476 U	0.472 U	0.476 U	0.476 U	0.49 U	0.476 U
Aroclor 1248	0.09	0.505 U	0.476 U	0.476 U	0.472 U	0.476 U	0.476 U	0.49 U	0.476 U
Aroclor 1254	0.09	0.505 U	0.476 U	0.476 U	0.472 U	0.476 U	0.476 U	0.49 U	0.476 U
Aroclor 1260	0.09	0.505 U	0.476 U	0.476 U	0.472 U	0.476 U	0.476 U	0.49 U	0.476 U
beta-BHC	0.01	0.0202 U	0.019 U	0.019 U	0.0189 U	0.019 U	0.019 U	0.0196 U	0.019 U
Chlordane	0.05	0.253 U	0.238 U	0.238 U	0.236 U	0.238 U	0.238 U	0.245 U	0.238 U
delta-BHC	0.04	0.0202 U	0.019 U	0.019 U	0.0189 U	0.019 U	0.019 U	0.0196 U	0.019 U
Dieldrin	0.004	0.0404 U	0.0381 U	0.0381 U	0.0377 U	0.0381 U	0.0381 U	0.0392 U	0.0381 U
Endosulfan I	0.009	0.0202 U	0.019 U	0.019 U	0.0189 U	0.019 U	0.019 U	0.0196 U	0.019 U
Endosulfan II	--	0.0404 U	0.0381 U	0.0381 U	0.0377 U	0.0381 U	0.0381 U	0.0392 U	0.0381 U
Endosulfan sulfate	--	0.0404 U	0.0381 U	0.0381 U	0.0377 U	0.0381 U	0.0381 U	0.0392 U	0.0381 U
Endrin	0	0.0404 U	0.0381 U	0.0381 U	0.0377 U	0.0381 U	0.0381 U	0.0392 U	0.0381 U
Endrin aldehyde	5	0.0404 U	0.0381 U	0.0381 U	0.0377 U	0.0381 U	0.0381 U	0.0392 U	0.0381 U
Heptachlor	0.04	0.0202 U	0.019 U	0.019 U	0.0189 U	0.019 U	0.019 U	0.0196 U	0.019 U
Heptachlor epoxide	0.03	0.0202 U	0.019 U	0.019 U	0.0189 U	0.019 U	0.019 U	0.0196 U	0.019 U
Lindane	0.05	0.0202 U	0.019 U	0.019 U	0.0189 U	0.019 U	0.019 U	0.0196 U	0.019 U
Toxaphene	0.06	0.505 U	0.476 U	0.476 U	0.472 U	0.476 U	0.476 U	0.49 U	0.476 U

U - Not detected

Table 10. Former Landfill - Summary of 2010 Radionuclide Data

<b>Analyte</b>	<b>Groundwater Standards pCi/L</b>	<b>086-42 10/19/2010 pCi/L</b>				<b>086-72 10/19/2010 pCi/L</b>				<b>087-22 10/19/2010 pCi/L</b>			
		<b>Result</b>	<b>Qual</b>	<b>MDA</b>	<b>Error</b>	<b>Result</b>	<b>Qual</b>	<b>MDA</b>	<b>Error</b>	<b>Result</b>	<b>Qual</b>	<b>MDA</b>	<b>Error</b>
<b>Americium-241</b>	1.2	7.24	U	23.2	13	-0.0351	U	11.8	6.93	-0.18	DL	25.2	16.9
<b>Beryllium-7</b>	40000	8.63	U	38.1	22.4	-22.6	U	27.5	19.3	14.7	U	38.7	21.5
<b>Cesium-134</b>	80	-0.906	U	4.02	2.52	0.361	U	3.67	2.16	0.317	U	4.39	2.61
<b>Cesium-137</b>	120	-0.718	U	3.73	2.27	0.31	U	3.24	1.88	-0.229	U	3.34	2.01
<b>Co-60</b>	200	-2.46	U	3.18	2.31	-0.242	U	3.04	1.85	0.413	U	3.78	2.21
<b>Cobalt-57</b>	4000	0.505	U	3.36	1.97	-0.118	U	2.62	1.6	-1.05	U	3.34	2.11
<b>Europium-152</b>	841	-1.67	U	10.6	6.4	0.633	U	9.29	5.51	-0.282	U	10.1	6.13
<b>Europium-154</b>	573	1.54	U	10.1	5.8	-3.81	U	7.69	5.23	-1.88	U	8.41	5.32
<b>Europium-155</b>	4000	2.64	U	13.8	8.01	-0.0478	U	10.8	6.52	-1.37	U	13.7	8.46
<b>Gross Alpha</b>	15	3.96		1.99	1.86	-0.0501	U	1.71	0.657	-0.302	U	1.78	0.621
<b>Gross Beta</b>	1000	-0.362	U	2.58	1.39	-0.735	U	2.18	1.05	0.519	U	2.13	1.2
<b>Manganese-54</b>	2000	0.236	U	3.34	1.99	1.11	U	3.58	2.04	-1	U	2.99	1.93
<b>Sodium-22</b>	400	0.578	U	3.58	2.06	-1.53	U	2.71	1.87	-0.695	U	2.96	1.88
<b>Strontium-90</b>	8	0.687	U	0.793	0.505	0.331	U	0.772	0.45	0.498	U	0.746	0.457
<b>Tritium</b>	20000	24.4	U	167	92	-88.6	U	170	77.7	-12.6	U	173	89.9
<b>Zinc-65</b>	360	-4.58	U	7.52	5.01	-2.2	U	7.43	4.62	-5.48	U	6.97	4.78



Table 10. Former Landfill - Summary of 2010 Radionuclide Data

<i>Analyte</i>	Groundwater Standards pCi/L	097-17 10/19/2010 pCi/L				097-277 10/19/2010 pCi/L				097-64 10/19/2010 pCi/L				106-02 10/19/2010 pCi/L			
		Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error
<b>Americium-241</b>	1.2	-0.447	U	24	14.2	-2.75	U	13.1	8.97	9.86	U	16	10.1	3.53	U	10.7	6.87
<b>Beryllium-7</b>	40000	11.6	U	31.6	18.6	0.703	U	29.1	17	-18.1	U	27	17.8	5.06	U	29.4	17.4
<b>Cesium-134</b>	80	0.609	U	3.43	2.01	0.264	U	3.04	1.82	0.373	U	3.81	2.18	0.943	U	3.58	2.02
<b>Cesium-137</b>	120	1.12	U	3.03	1.71	0.556	U	3.14	1.84	-0.465	U	2.78	1.74	-2.45	U	2.46	1.7
<b>Co-60</b>	200	1.24	U	3.05	1.68	0.494	U	3.24	1.89	-0.315	U	3.04	1.9	-0.953	U	2.79	1.77
<b>Cobalt-57</b>	4000	-0.545	U	2.69	1.66	-0.644	U	2.33	1.38	-0.439	U	2.7	1.6	-0.504	U	2.63	1.63
<b>Europium-152</b>	841	0.761	U	8.71	5.19	0.111	U	8.21	5.05	3.56	U	9.22	5.26	1.52	U	8.62	5.03
<b>Europium-154</b>	573	-2.46	U	8.12	5.16	-1.29	U	7.48	4.73	-1.7	U	8.75	5.56	-2.66	U	7.09	4.54
<b>Europium-155</b>	4000	3.08	U	11.2	6.68	-1.67	U	9.92	5.77	-4.5	U	10.5	6.31	-0.762	U	10.4	6.34
<b>Gross Alpha</b>	15	0.169	U	1.85	0.845	0.355	U	1.61	0.799	0.418	U	1.63	0.834	0.311	U	1.92	0.921
<b>Gross Beta</b>	1000	0.172	U	1.57	0.828	0.178	U	1.62	0.855	1.76	J	1.52	1.08	0.135	U	2.04	1.09
<b>Manganese-54</b>	2000	1.01	U	2.97	1.71	-0.722	U	2.58	1.59	0.624	U	3.2	1.81	-1.01	U	2.21	1.44
<b>Sodium-22</b>	400	-0.828	U	2.9	1.83	-0.401	U	2.68	1.68	-0.545	U	3.13	1.98	-0.968	U	2.5	1.6
<b>Strontium-90</b>	8	0.0641	U	0.762	0.401	0.377	U	0.781	0.462	1.35		0.904	0.639	0.546	U	0.747	0.463
<b>Tritium</b>	20000	19.1	U	174	94.7	85.5	U	177	104	0	U	171	90.7	18.6	U	170	92.4
<b>Zinc-65</b>	360	4.2	U	6.74	4.01	-2.85	U	5.95	3.93	4.5	U	6.49	3.52	-5.36	U	5.62	4.11

Table 10. Former Landfill - Summary of 2010 Radionuclide Data

<i>Analyte</i>	Groundwater Standards pCi/L	106-30 10/19/2010 pCi/L				106-20 5/17/2010 pCi/L				106-20 10/15/2010 pCi/L			
		Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error
Americium-241	1.2	1.67	U	5.69	3.42								
Beryllium-7	40000	14.2	U	33.5	18.8								
Cesium-134	80	-1.02	U	3.52	2.21								
Cesium-137	120	-3.91	U	5.44	3.45								
Co-60	200	1.1	U	3.71	2.03								
Cobalt-57	4000	0.815	U	2.4	1.36								
Europium-152	841	-0.195	U	9.46	5.52								
Europium-154	573	-2.03	U	9.6	5.96								
Europium-155	4000	2.28	U	9.24	5.22								
Gross Alpha	15	0.0708	U	1.73	0.707								
Gross Beta	1000	2.28	J	2.21	1.45								
Manganese-54	2000	-0.948	U	3.05	1.93								
Sodium-22	400	-0.654	U	3.43	2.12								
Strontium-90	8	-0.178	U	0.792	0.416	0.29	U	0.667	0.39	0.366	U	0.595	0.361
Tritium	20000	12.6	U	173	93.4								
Zinc-65	360	-8.48	U	7.13	5.51								

Table 10. Former Landfill - Summary of 2010 Radionuclide Data

<i>Analyte</i>	Groundwater Standards pCi/L	106-21 5/17/2010 pCi/L				106-21 10/15/2010 pCi/L				106-43 5/17/2010 pCi/L			
		Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error
Americium-241	1.2												
Beryllium-7	40000												
Cesium-134	80												
Cesium-137	120												
Co-60	200												
Cobalt-57	4000												
Europium-152	841												
Europium-154	573												
Europium-155	4000												
Gross Alpha	15												
Gross Beta	1000												
Manganese-54	2000												
Sodium-22	400												
Strontium-90	8	-0.171	U	0.637	0.305	0.468	J	0.389	0.271	0.688	U	0.702	0.464
Tritium	20000												
Zinc-65	360												

Table 10. Former Landfill - Summary of 2010 Radionuclide Data

<i>Analyte</i>	Groundwater Standards pCi/L	106-43 10/15/2010 pCi/L				106-44 5/17/2010 pCi/L				106-44 10/15/2010 pCi/L			
		Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error
Americium-241	1.2												
Beryllium-7	40000												
Cesium-134	80												
Cesium-137	120												
Co-60	200												
Cobalt-57	4000												
Europium-152	841												
Europium-154	573												
Europium-155	4000												
Gross Alpha	15												
Gross Beta	1000												
Manganese-54	2000												
Sodium-22	400												
Strontium-90	8	0.17	U	0.504	0.287	2.68		0.662	0.642	0.759	J	0.342	0.286
Tritium	20000												
Zinc-65	360												

Table 10. Former Landfill - Summary of 2010 Radionuclide Data

<b>Analyte</b>	<b>Groundwater Standards pCi/L</b>	<b>106-45 5/17/2010 pCi/L</b>				<b>106-45 10/15/2010 pCi/L</b>				<b>106-64 5/17/2010 pCi/L</b>			
		<b>Result</b>	<b>Qual</b>	<b>MDA</b>	<b>Error</b>	<b>Result</b>	<b>Qual</b>	<b>MDA</b>	<b>Error</b>	<b>Result</b>	<b>Qual</b>	<b>MDA</b>	<b>Error</b>
<b>Americium-241</b>	1.2												
<b>Beryllium-7</b>	40000												
<b>Cesium-134</b>	80												
<b>Cesium-137</b>	120												
<b>Co-60</b>	200												
<b>Cobalt-57</b>	4000												
<b>Europium-152</b>	841												
<b>Europium-154</b>	573												
<b>Europium-155</b>	4000												
<b>Gross Alpha</b>	15												
<b>Gross Beta</b>	1000												
<b>Manganese-54</b>	2000												
<b>Sodium-22</b>	400												
<b>Strontium-90</b>	8	1.24		0.772	0.552	2.14		0.299	0.411	1.81		0.485	0.5
<b>Tritium</b>	20000												
<b>Zinc-65</b>	360												

Table 10. Former Landfill - Summary of 2010 Radionuclide Data

<u>Analyte</u>	<b>Groundwater Standards</b> pCi/L	<b>106-64</b> <b>10/15/2010</b> <b>pCi/L</b>			
		<u>Result</u>	<u>Qual</u>	<u>MDA</u>	<u>Error</u>
<b>Americium-241</b>	1.2				
<b>Beryllium-7</b>	40000				
<b>Cesium-134</b>	80				
<b>Cesium-137</b>	120				
<b>Co-60</b>	200				
<b>Cobalt-57</b>	4000				
<b>Europium-152</b>	841				
<b>Europium-154</b>	573				
<b>Europium-155</b>	4000				
<b>Gross Alpha</b>	15				
<b>Gross Beta</b>	1000				
<b>Manganese-54</b>	2000				
<b>Sodium-22</b>	400				
<b>Strontium-90</b>	8	0.11	U	0.524	0.288
<b>Tritium</b>	20000				
<b>Zinc-65</b>	360				

**Table 11**  
**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
SGM-17 PROBE B	Intermediate	8.5	11

**Table 11  
Soil Gas Monitoring Well Description**

<b>Current Landfill</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>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>

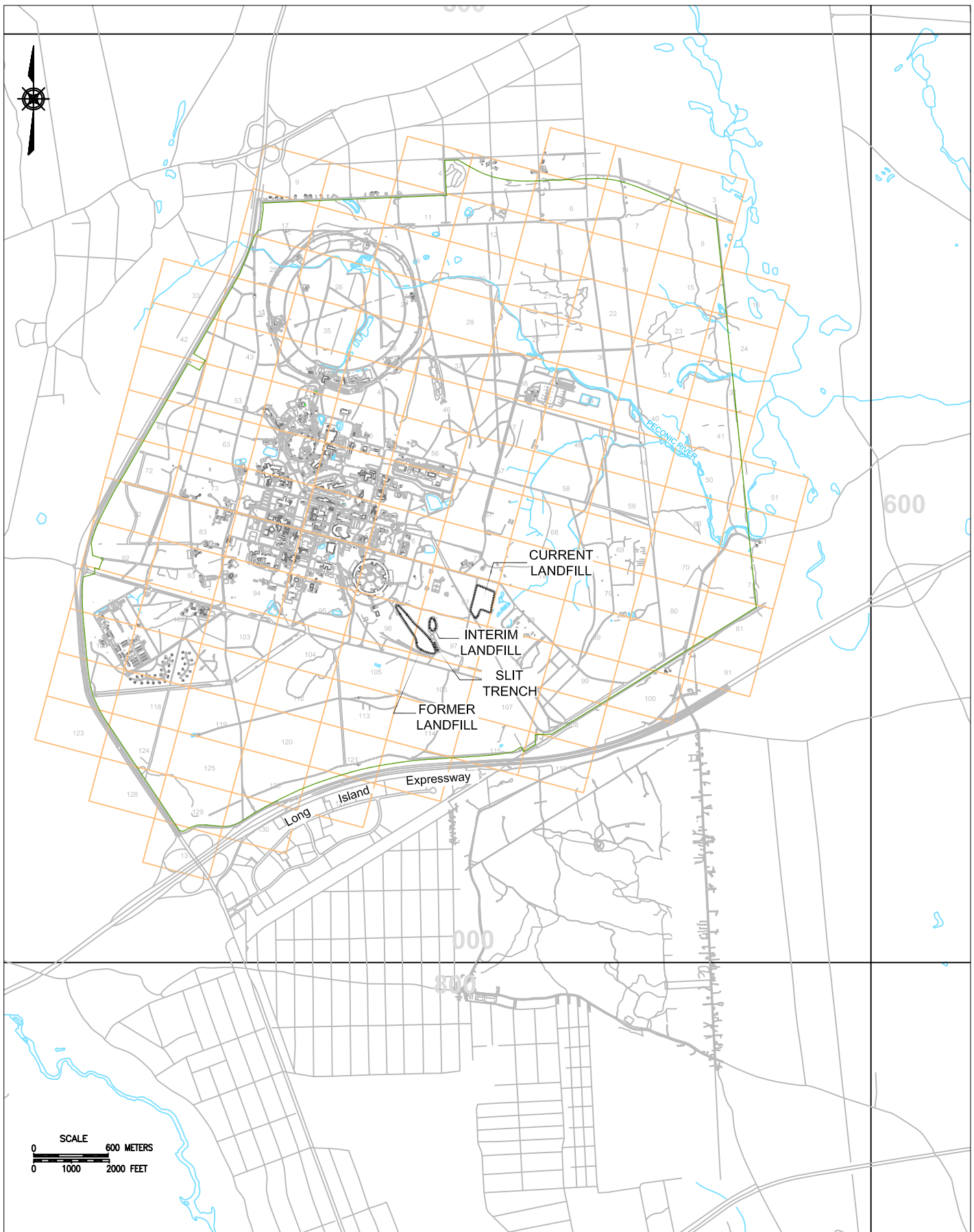
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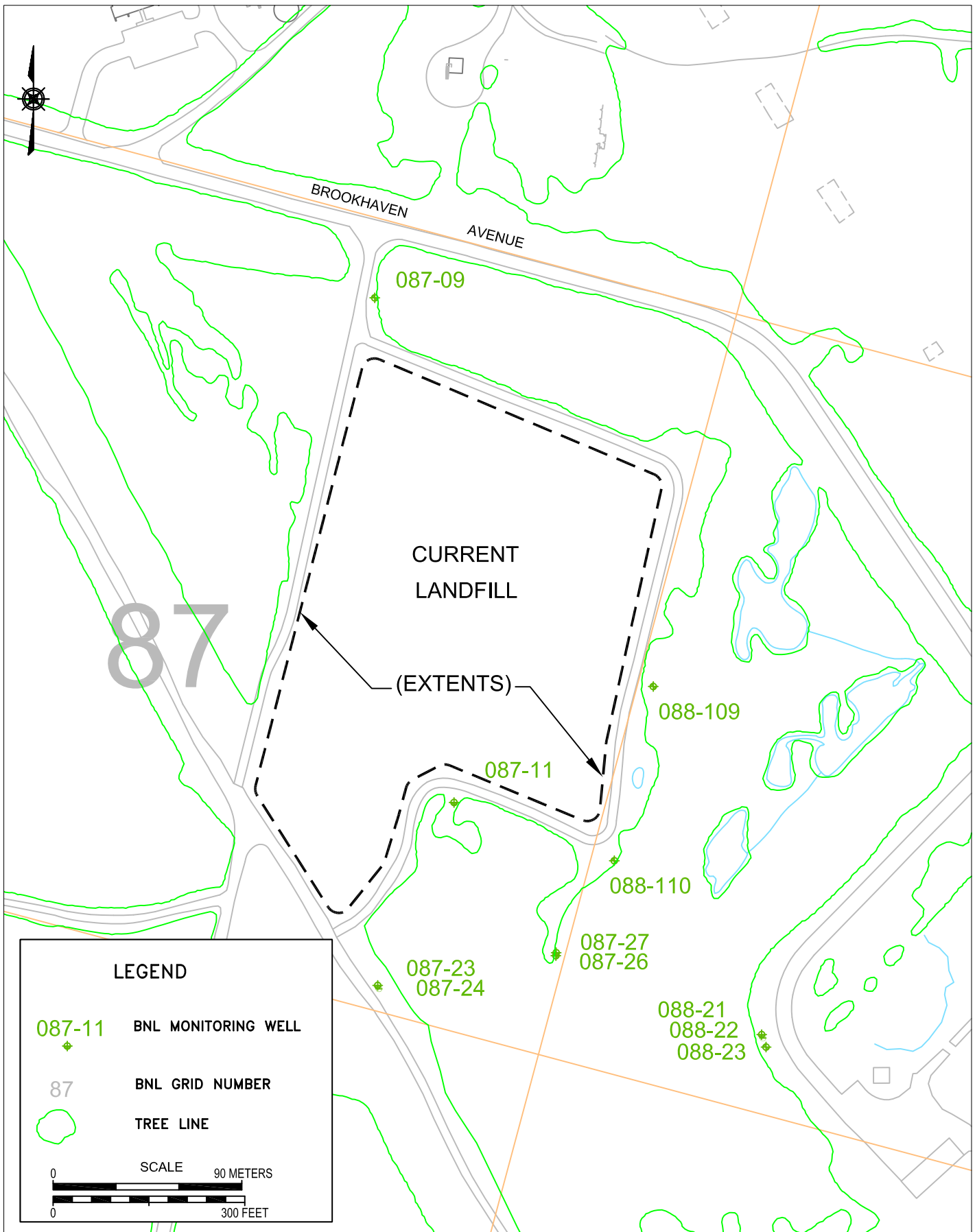
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 2010 ENVIRONMENTAL MONITORING REPORT  
 CURRENT AND FORMER LANDFILL AREAS

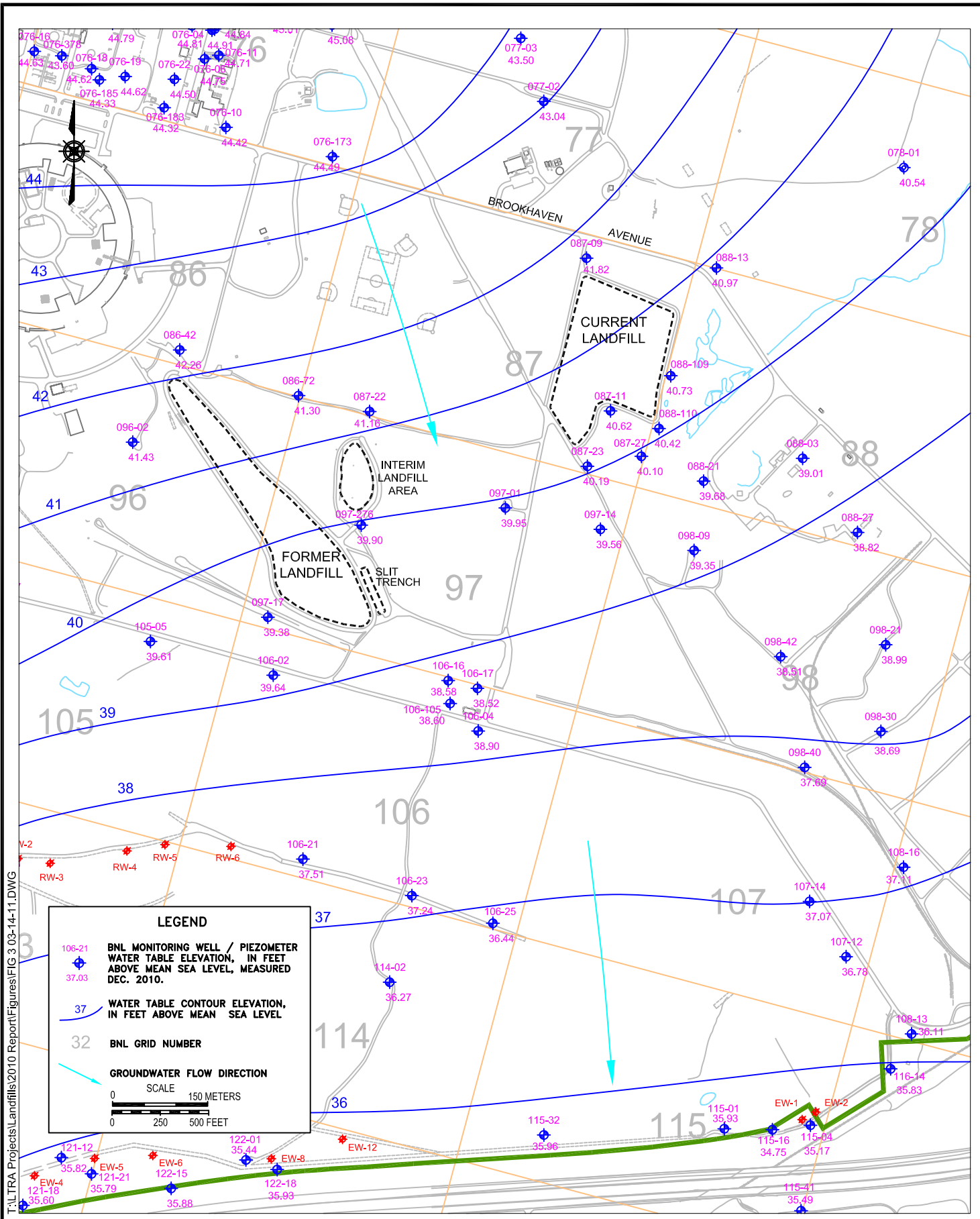
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CHKD: JEB	APPD: RFH	REV.: -	NOTES: -
FIGURE NO.:		1	

R:\Gw\_projects\Landfills\2010 Report\Fig02 03-14-11.dwg



TITLE:  
**CURRENT LANDFILL  
MONITORING WELL LOCATIONS**  
2010 ENVIRONMENTAL MONITORING REPORT  
CURRENT AND FORMER LANDFILL AREAS

DWN: AJZ	VT:HZ.: -	DATE: 03/14/11	PROJECT NO.: -
CHKD: WRD	APPD: RFH	REV.: -	NOTES: -
FIGURE NO.:		2	

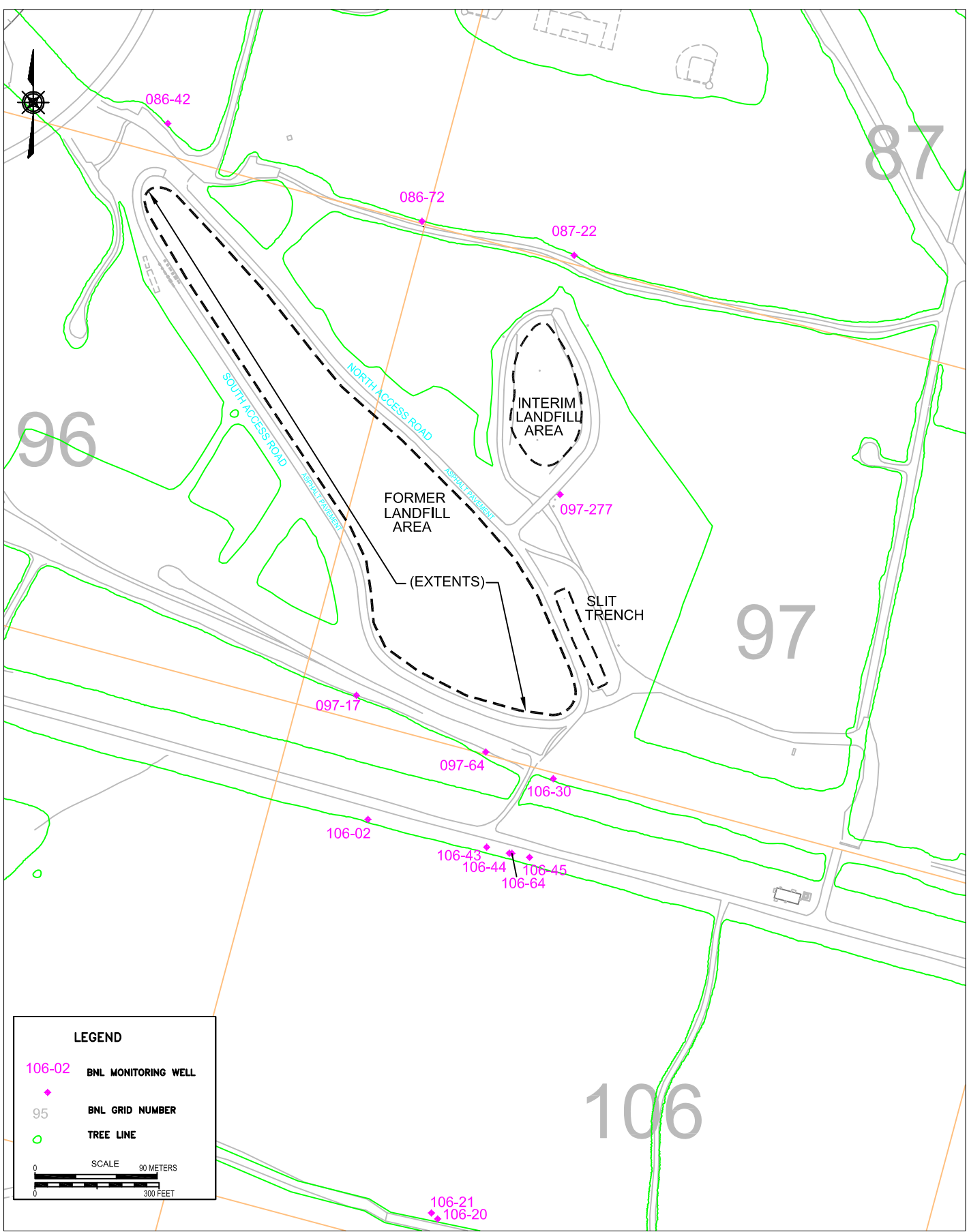


TITLE:  
**WATER TABLE CONTOUR MAP  
2010 ENVIRONMENTAL MONITORING REPORT  
CURRENT AND FORMER LANDFILL AREAS**

DWN: AJZ	VT:HZ.: -	DATE: 03/14/11	PROJECT NO.: -
CHKD: JEB	APPD: RFH	REV.: -	NOTES: -
FIGURE NO.:		3	

T:\ULTRA Projects\Landfills\2010 Report\Figures\FIG 3 03-14-11.DWG

R:\Gw\_projects\Landfills\2010 Report\Fig04 03-14-11.dwg



**LEGEND**

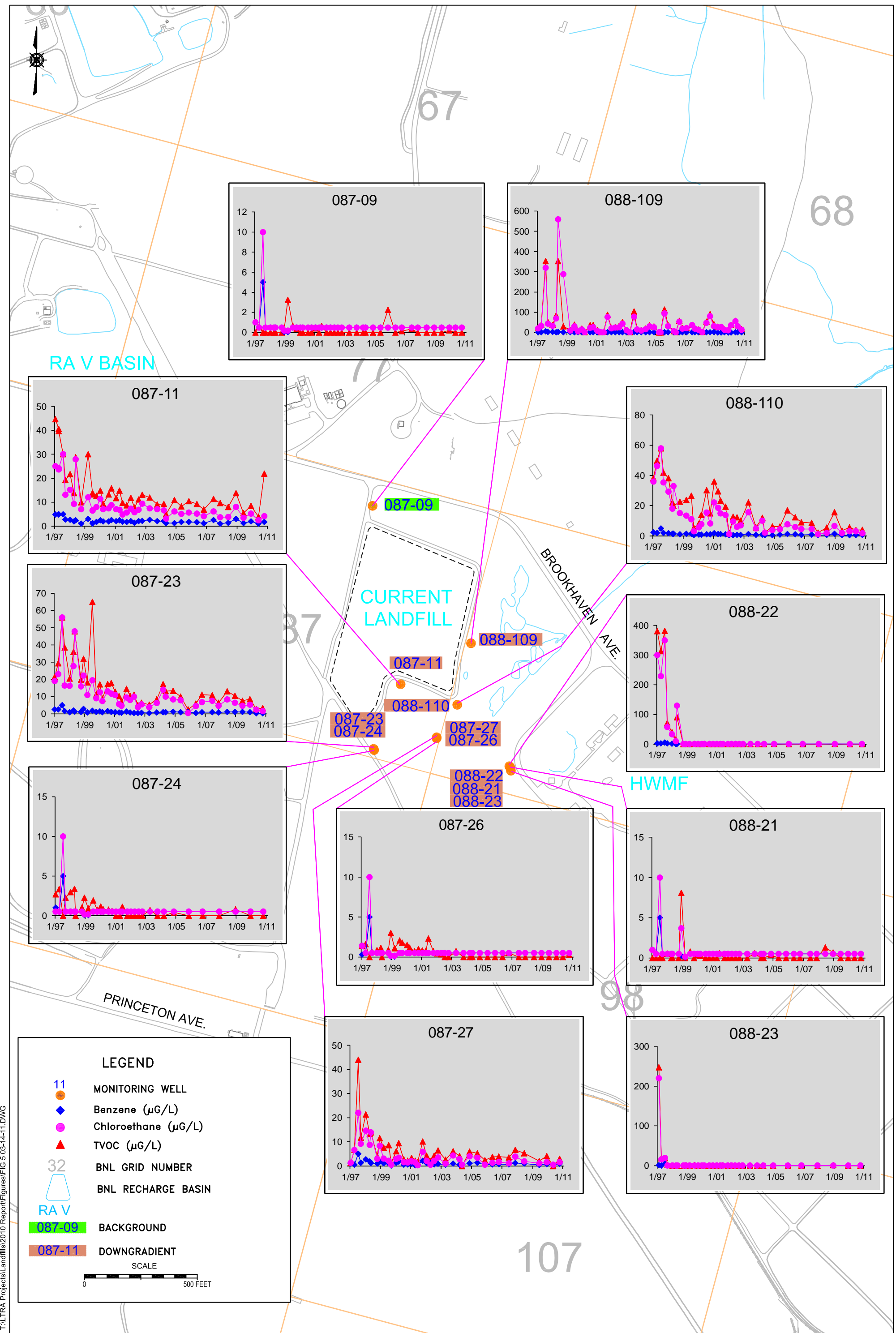
- 106-02 BNL MONITORING WELL
- ◆ BNL GRID NUMBER
- 95 BNL GRID NUMBER
- TREE LINE

SCALE 90 METERS  
0 300 FEET



TITLE:  
**FORMER LANDFILL  
MONITORING WELL LOCATIONS**  
2010 ENVIRONMENTAL MONITORING REPORT  
CURRENT AND FORMER LANDFILL AREAS

DWN: AJZ	VT:HZ.: -	DATE: 03/14/11	PROJECT NO.: -
CHKD: JEB	APPD: RFH	REV.: -	NOTES: -
FIGURE NO.:		4	

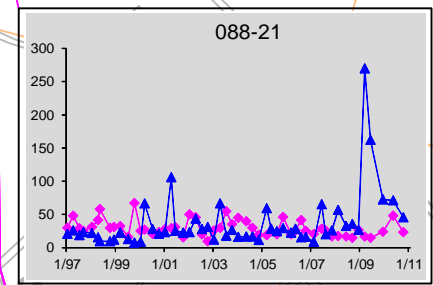
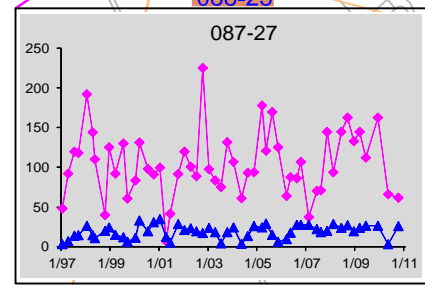
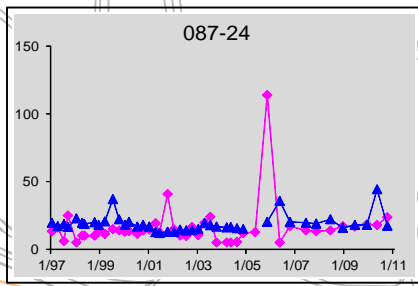
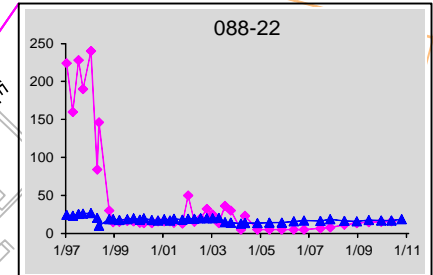
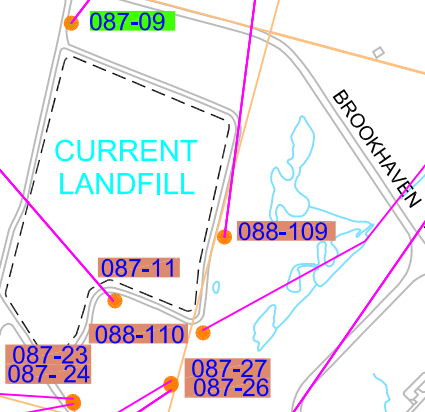
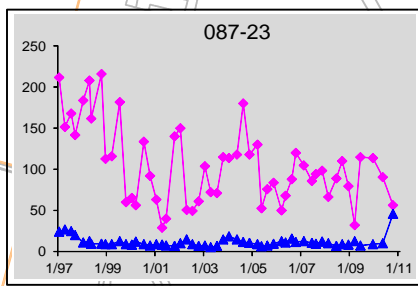
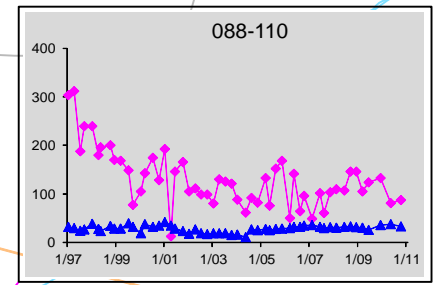
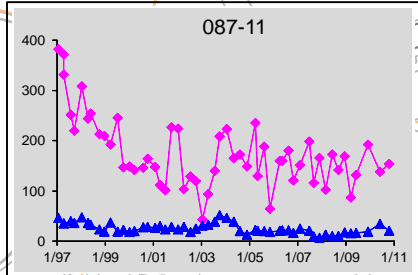
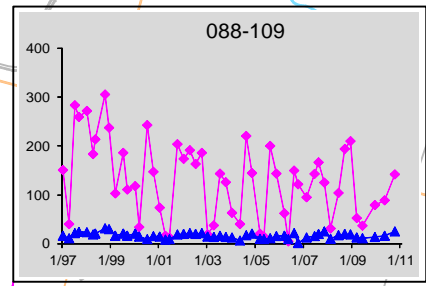
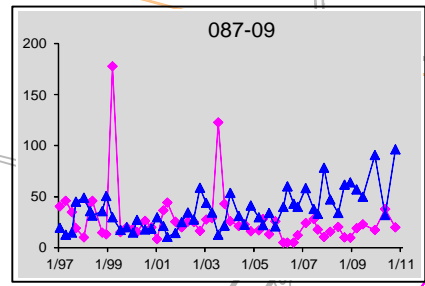


T:\ULTRA Projects\Landfills\2010 Report\Figures\FIG 5 03-14-11.DWG

68



RA V BASIN



HWMF

PRINCETON AVE.

107

LEGEND

- 11 MONITORING WELL
- ◆ Alkalinity (as CaCO<sub>3</sub>) (mg/l)
- ▲ Chloride (mg/l)
- 32 BNL GRID NUMBER
- BNL RECHARGE BASIN
- RA V BACKGROUND
- 087-09 DOWNGRADIENT



T:\TRA Projects\Landfills\2010 Report\Figures\FIG 6 03-14-11.DWG

**BROOKHAVEN**  
NATIONAL LABORATORY

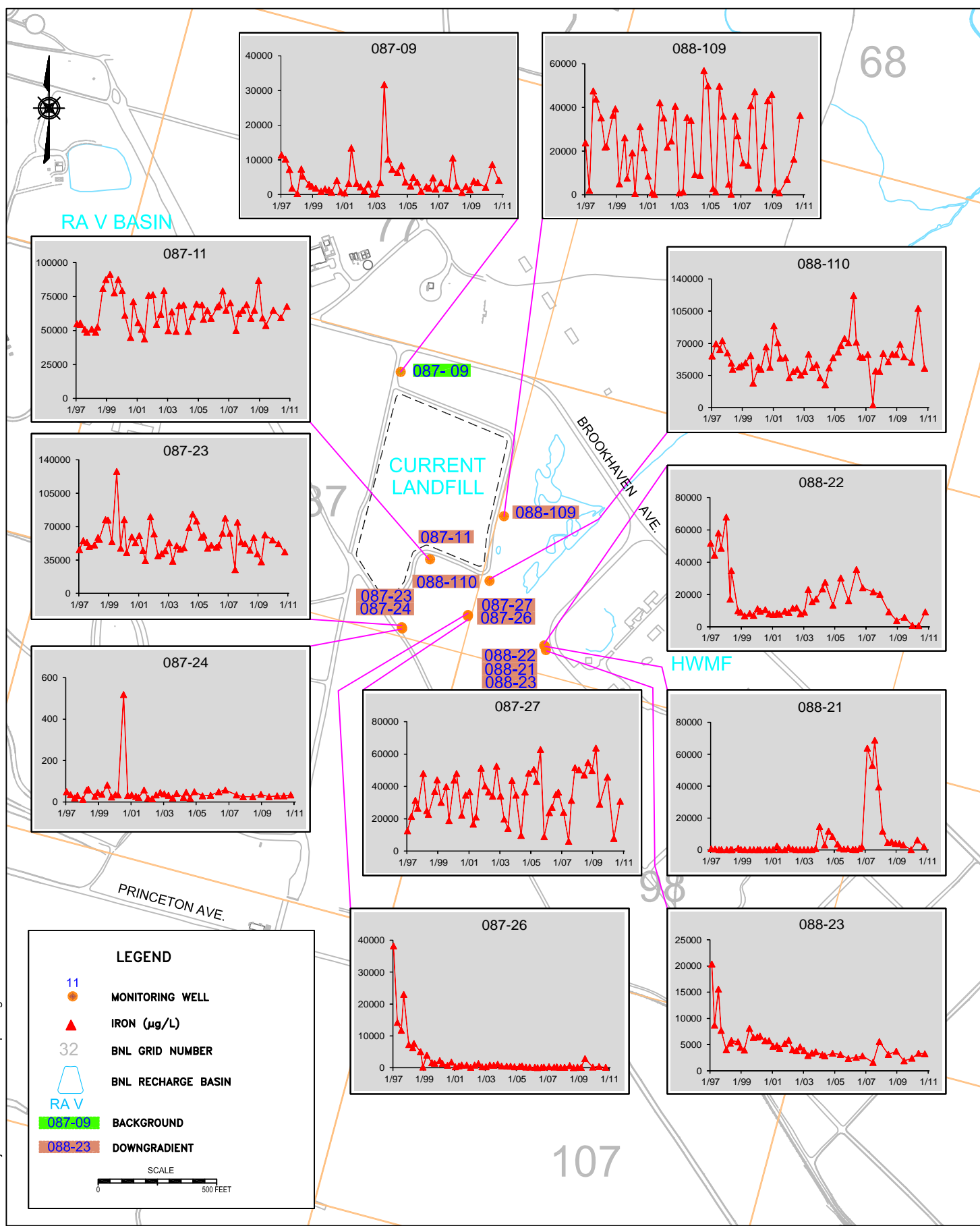
ENVIRONMENTAL  
PROTECTION DIVISION

TITLE:  
CURRENT LANDFILL  
ALKALINITY AND CHLORIDE TREND PLOTS  
2010 ENVIRONMENTAL MONITORING REPORT  
CURRENT AND FORMER LANDFILL AREAS

DWN: AJZ	VT:HZ.: -	DATE: 03/14/11	PROJECT NO.: -
CHKD: JEB	APPD: RFH	REV.: -	NOTES: -
FIGURE NO.:			6



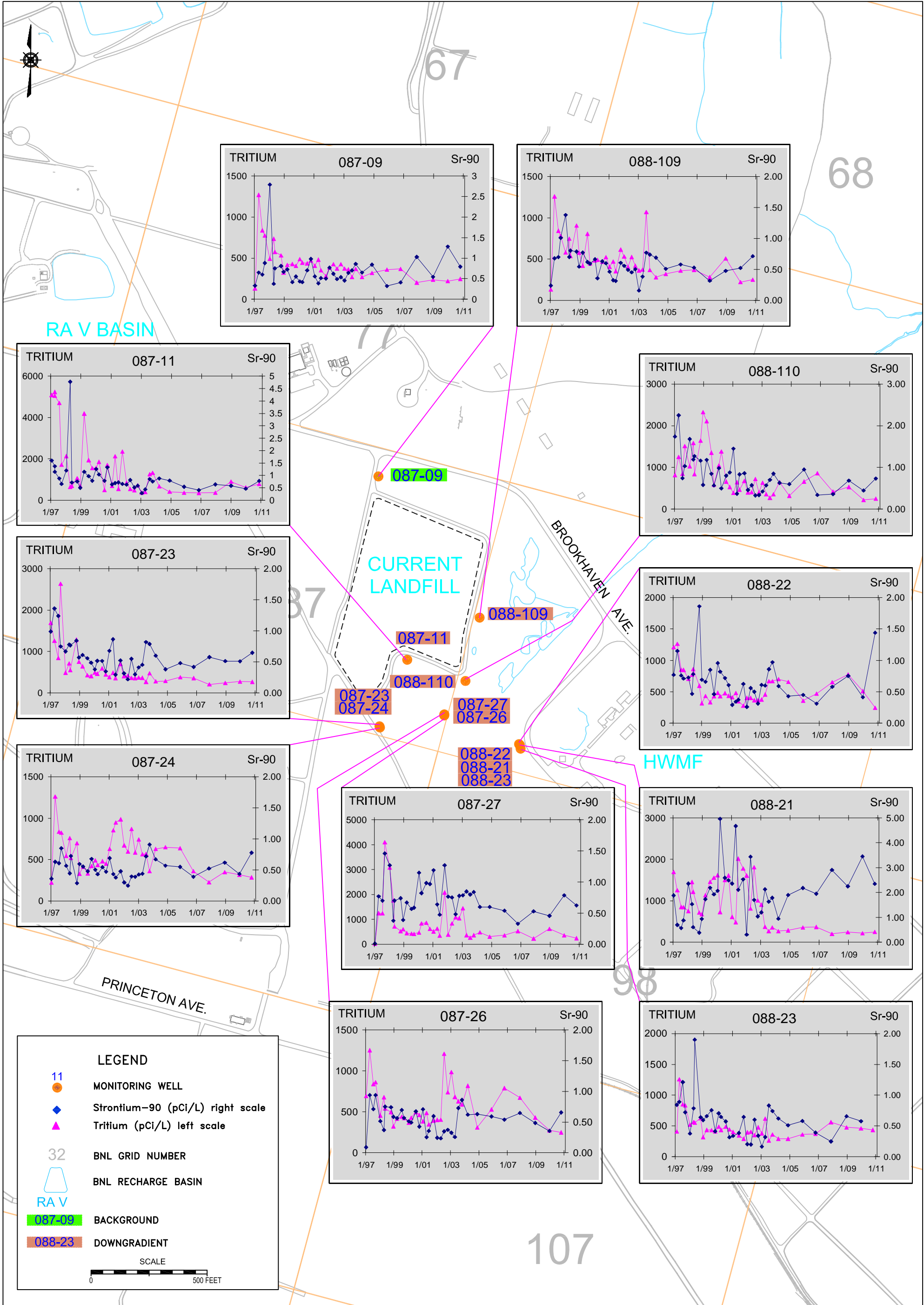
T:\TRA Projects\Landfills\2010 Report\Figures\FIG 7 03-14-11.DWG



**BROOKHAVEN**  
NATIONAL LABORATORY  
ENVIRONMENTAL  
PROTECTION DIVISION

TITLE:  
**CURRENT LANDFILL  
IRON TREND PLOTS**  
2010 ENVIRONMENTAL MONITORING REPORT  
CURRENT AND FORMER LANDFILL AREAS

DWN: AJZ	VT:HZ.: -	DATE: 03/14/11	PROJECT NO.: -
CHKD: JEB	APPD: RFH	REV.: -	NOTES: -
FIGURE NO.:			7

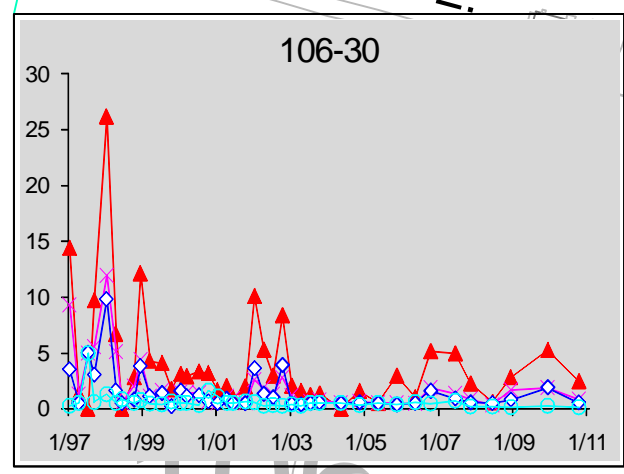
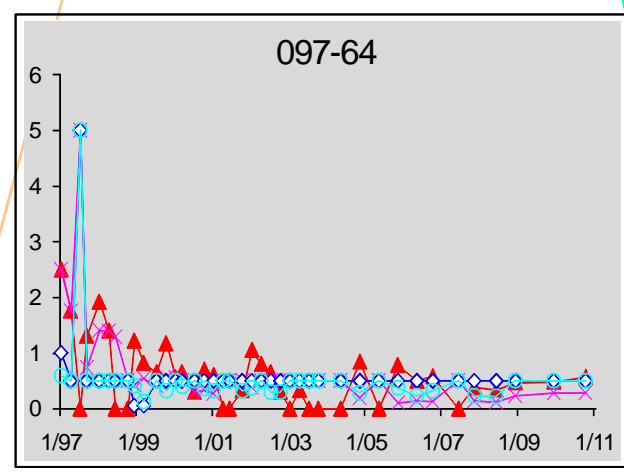
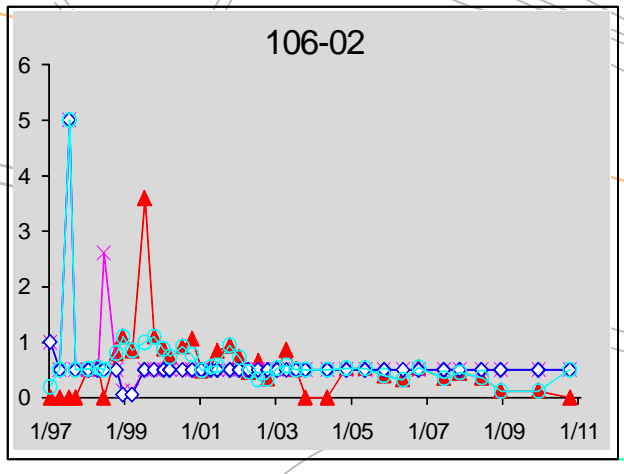
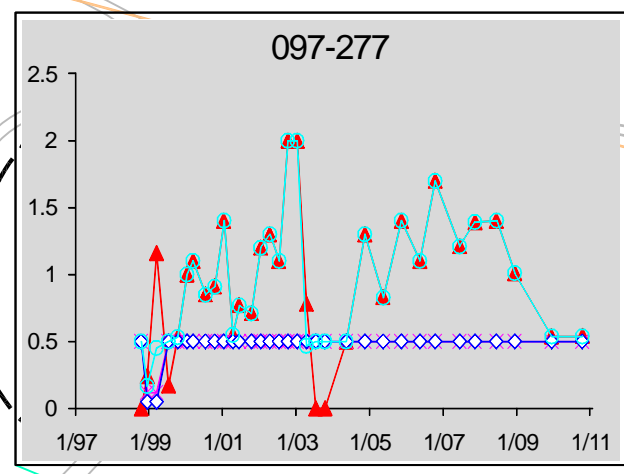
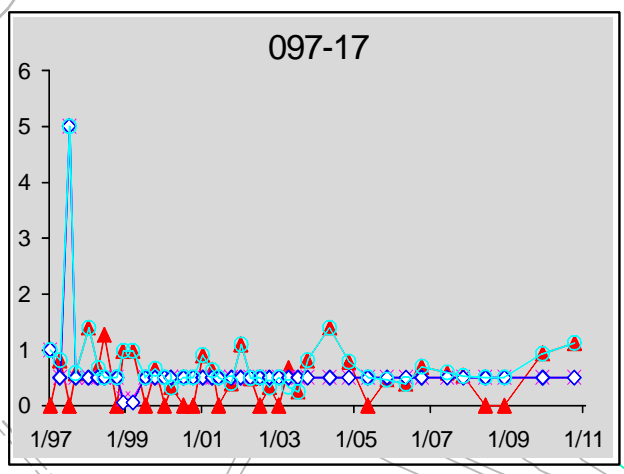
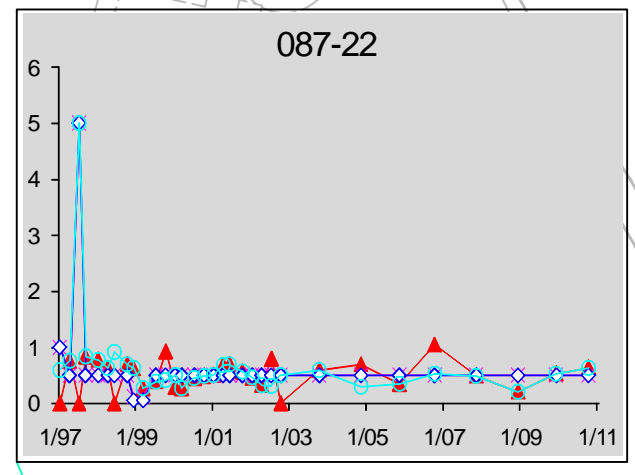
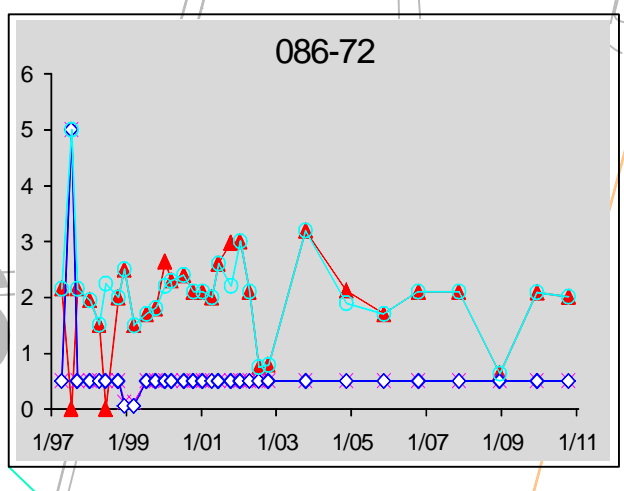
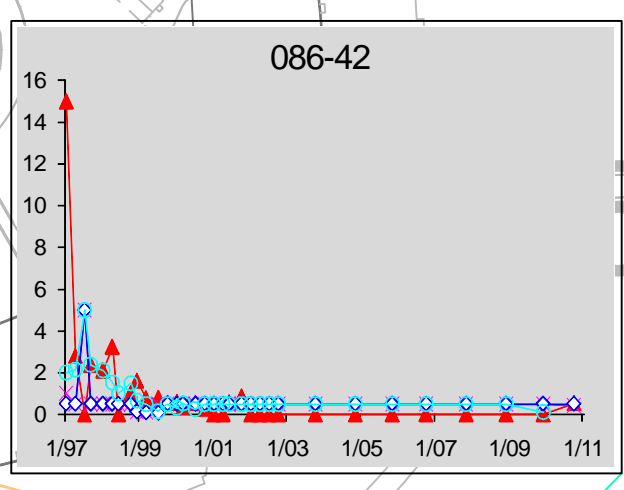


T:\ULTRA Projects\Landfills\2010 Report\Figures\FIG 8 03-14-11.DWG

**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

SCALE  
0 500 FEET



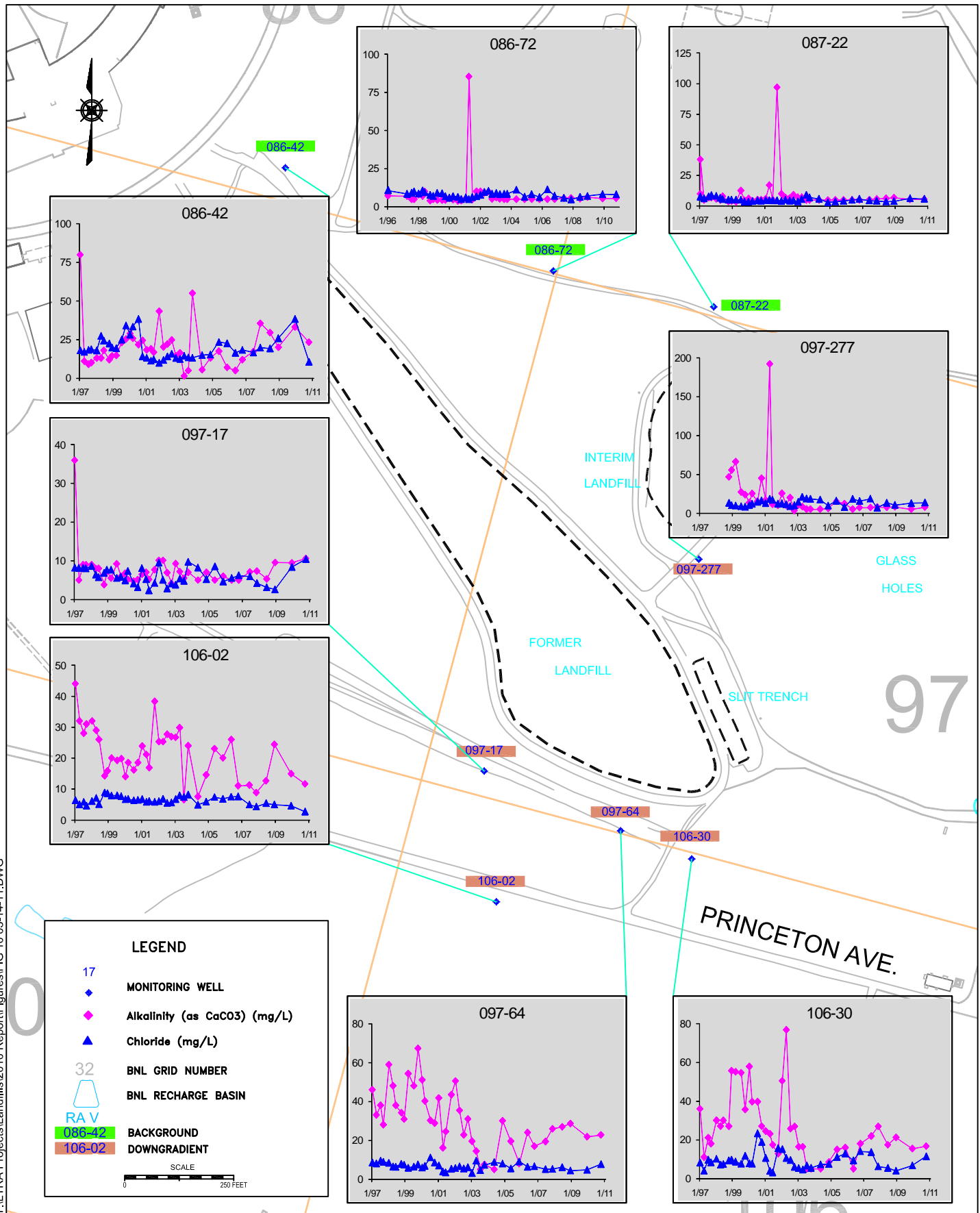
**LEGEND**

- ◆ 17 MONITORING WELL
- × 1,1,1-Trichloroethane (µg/L)
- ◇ 1,1-Dichloroethane (µg/L)
- Chloroform (µg/L)
- ▲ TVOC (µg/L)
- 32 BNL GRID NUMBER
- BNL RECHARGE BASIN
- RAV
- 086-42 BACKGROUND
- 106-02 DOWNGRADIENT

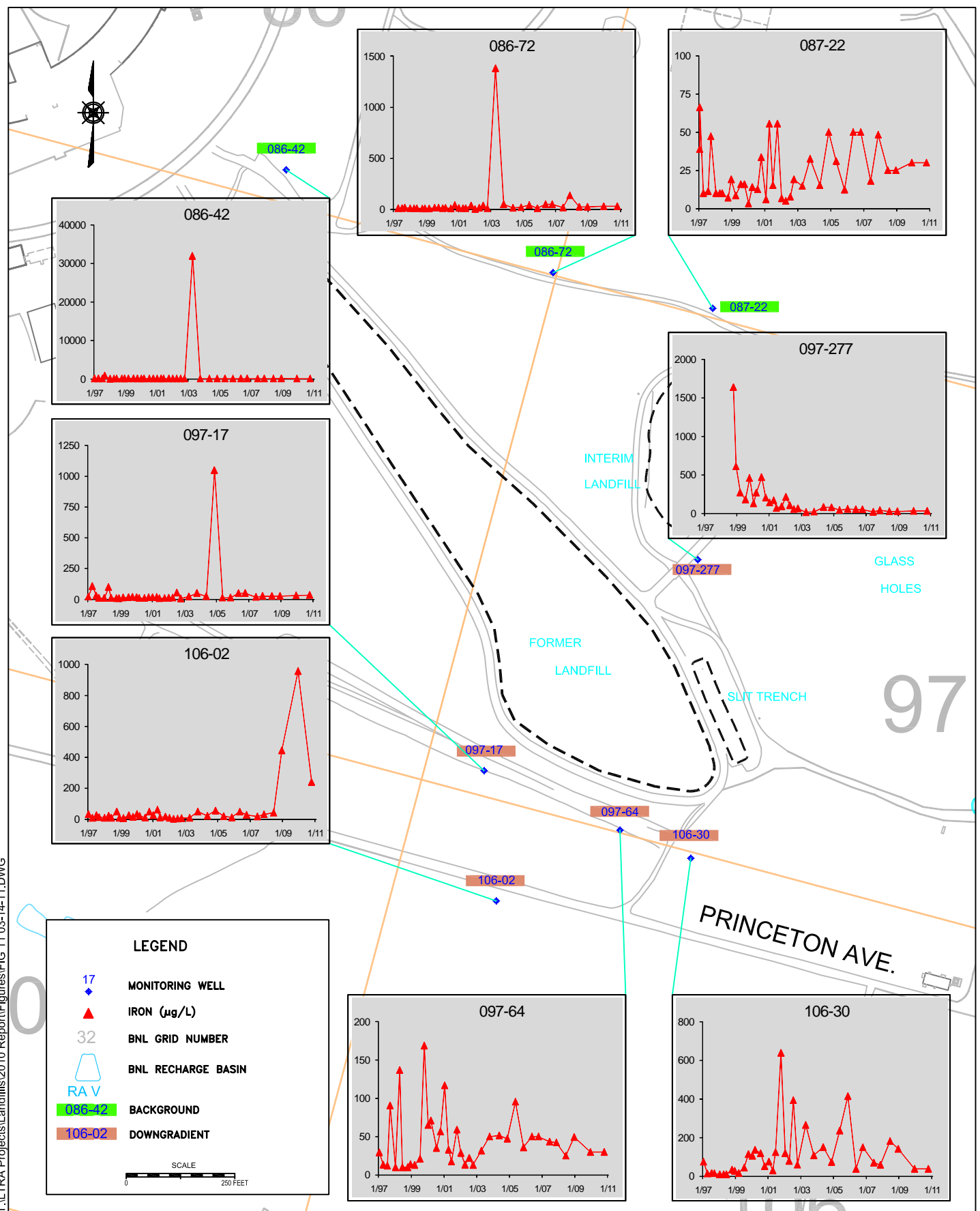
SCALE  
0 250 FEET

T:\ULTRA Projects\Landfills\2010 Report\Figures\FIG 9 03-14-11.DWG

T:\LTRA Projects\Landfills\2010 Report\Figures\FIG-10.03-14-11.DWG



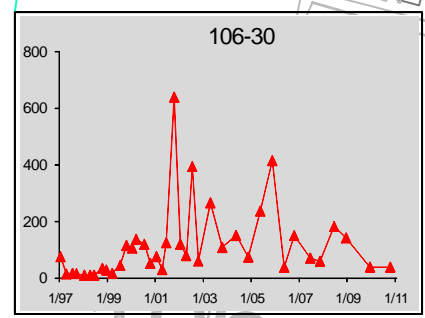
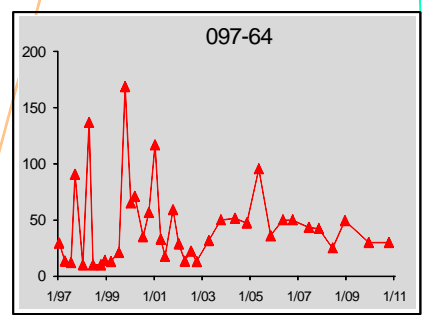
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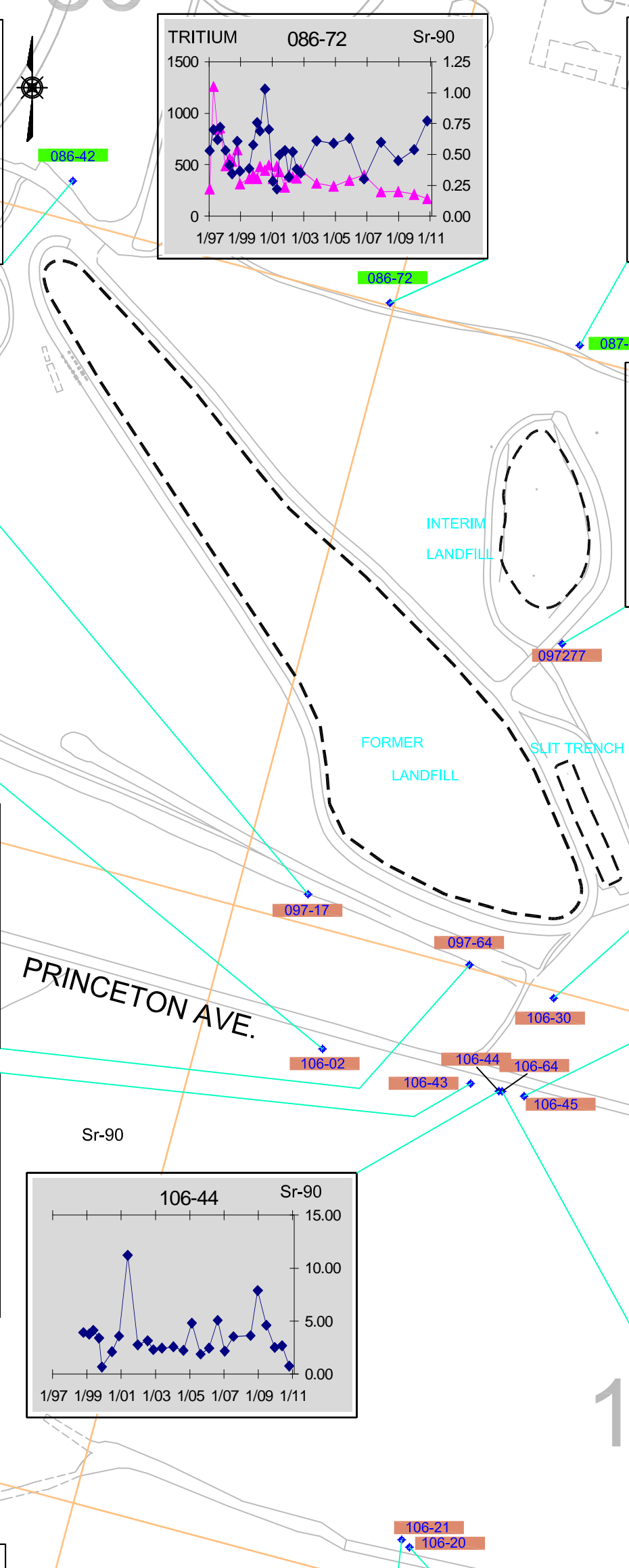
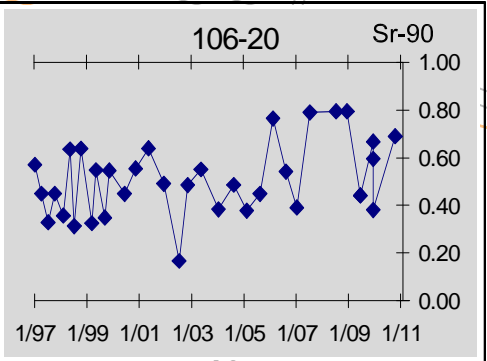
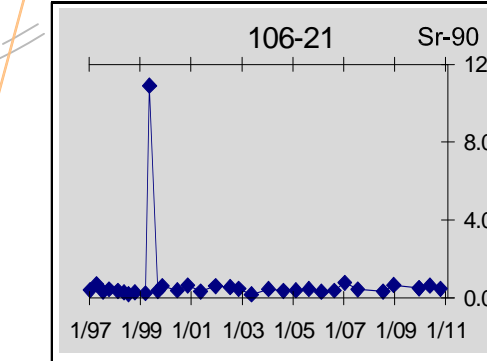
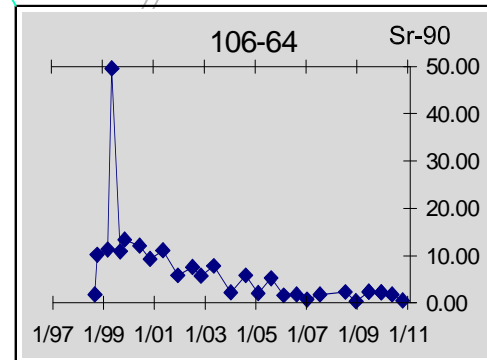
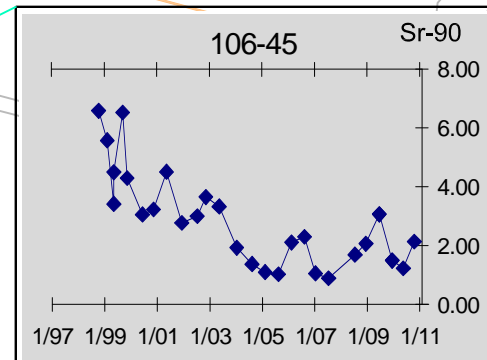
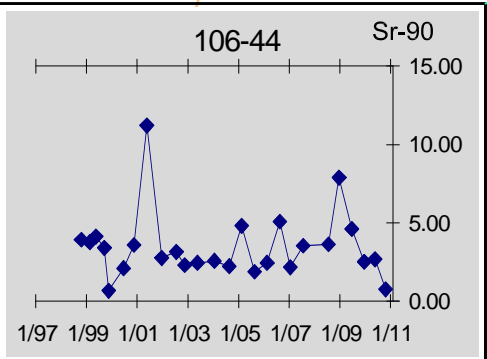
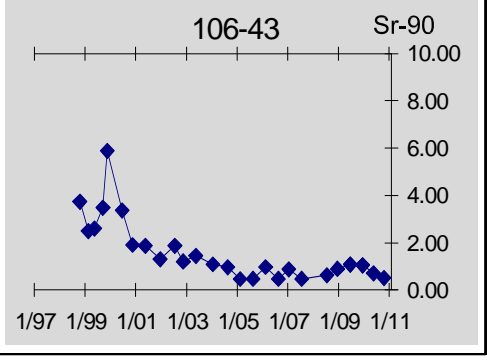
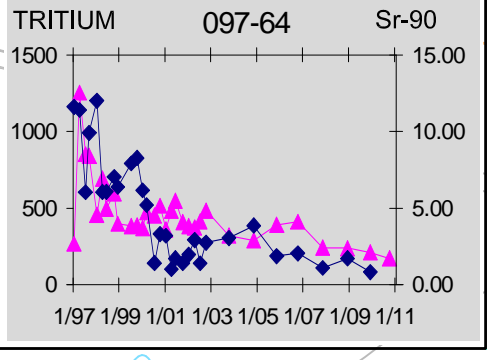
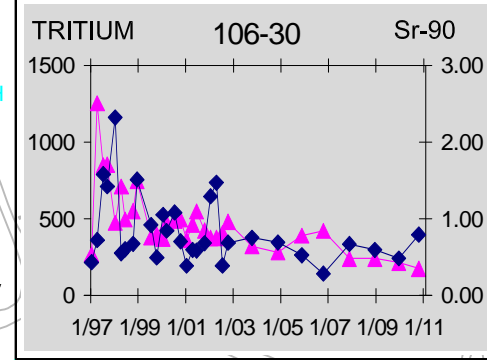
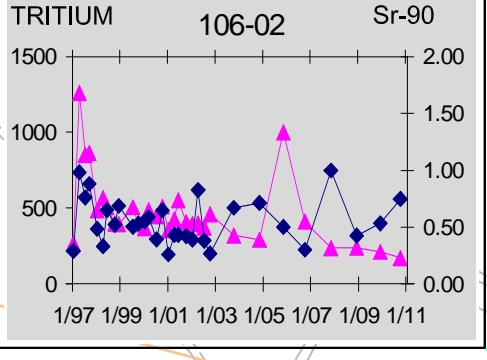
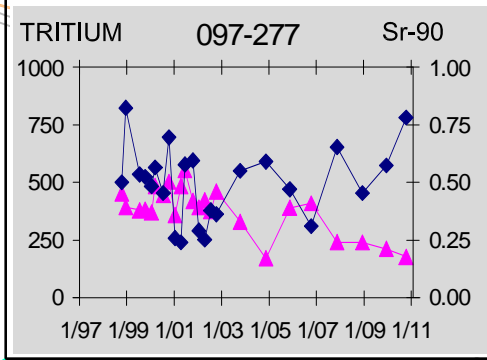
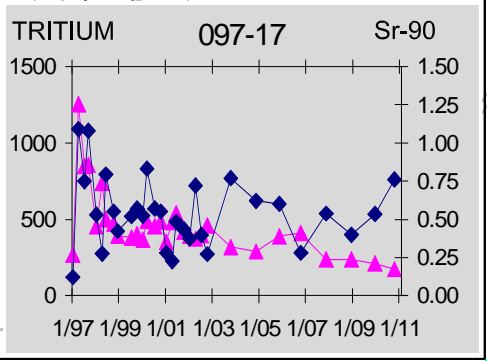
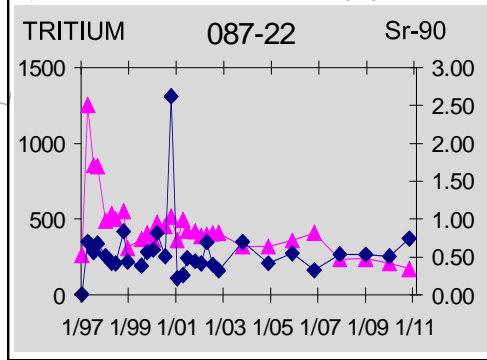
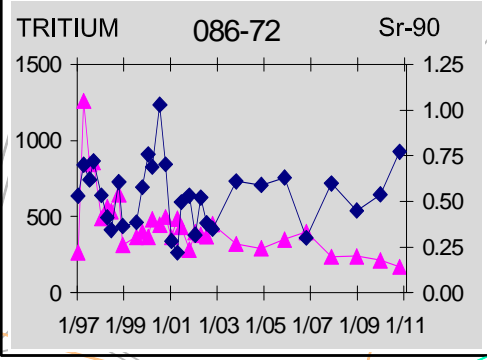
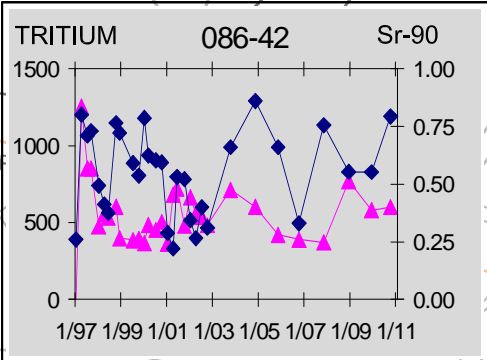


**LEGEND**

- 17 ◆ MONITORING WELL
- ▲ IRON (µg/L)
- 32 BNL GRID NUMBER
- BNL RECHARGE BASIN
- RAV
- 086-42 BACKGROUND
- 106-02 DOWNGRAIDENT

SCALE  
0 250 FEET





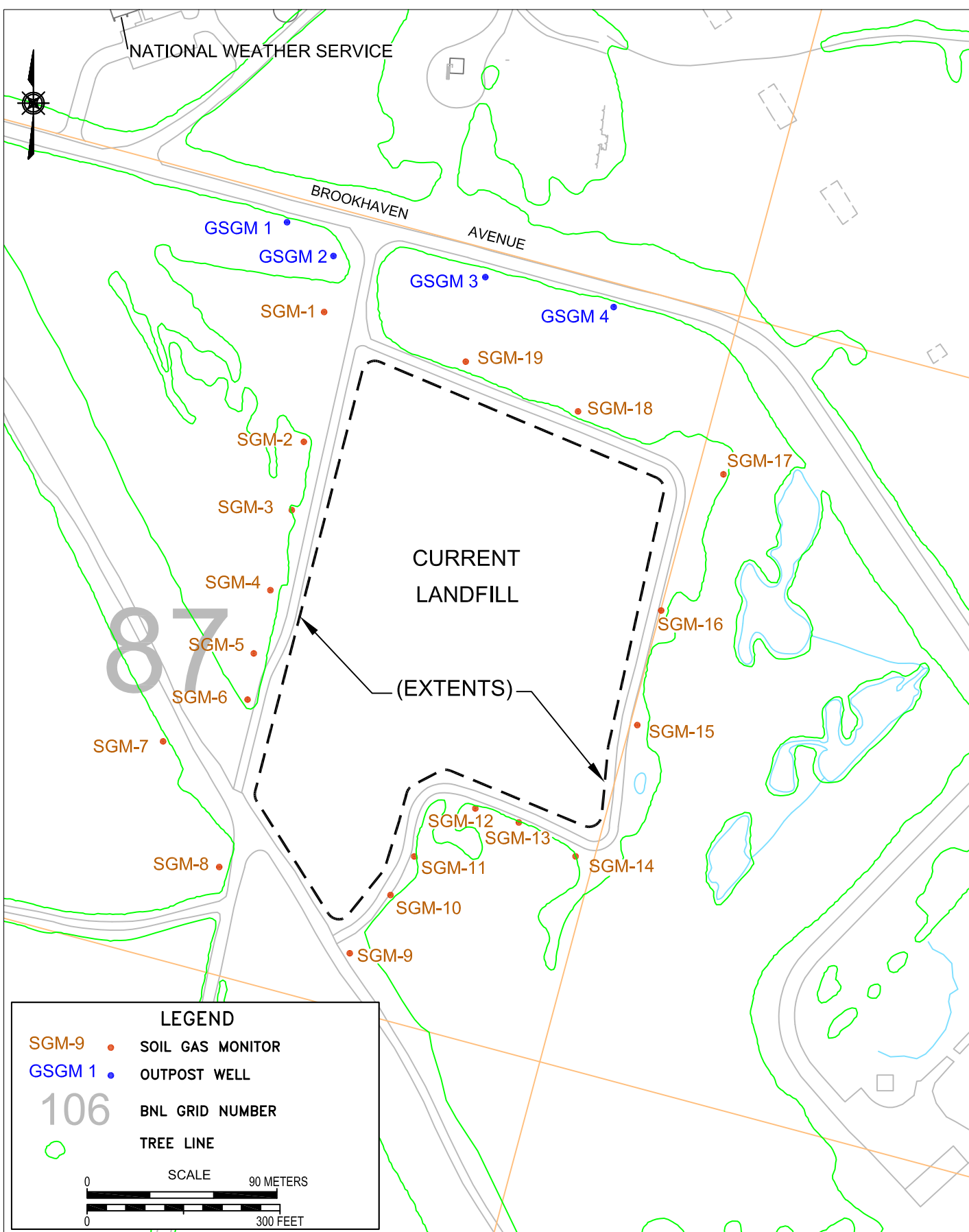
**LEGEND**

- 17 MONITORING WELL
- ◆ Strontium-90 (pCi/L) right scale
- ▲ Tritium (pCi/L) left scale
- 32 BNL GRID NUMBER
- BNL RECHARGE BASIN
- RAV
- 086-42 BACKGROUND
- 106-02 DOWNGRAIDENT

SCALE  
0 250 FEET

T:\LTRA Projects\Landfills\2010 Report\Figures\FIG 12\_03-14-11.DWG

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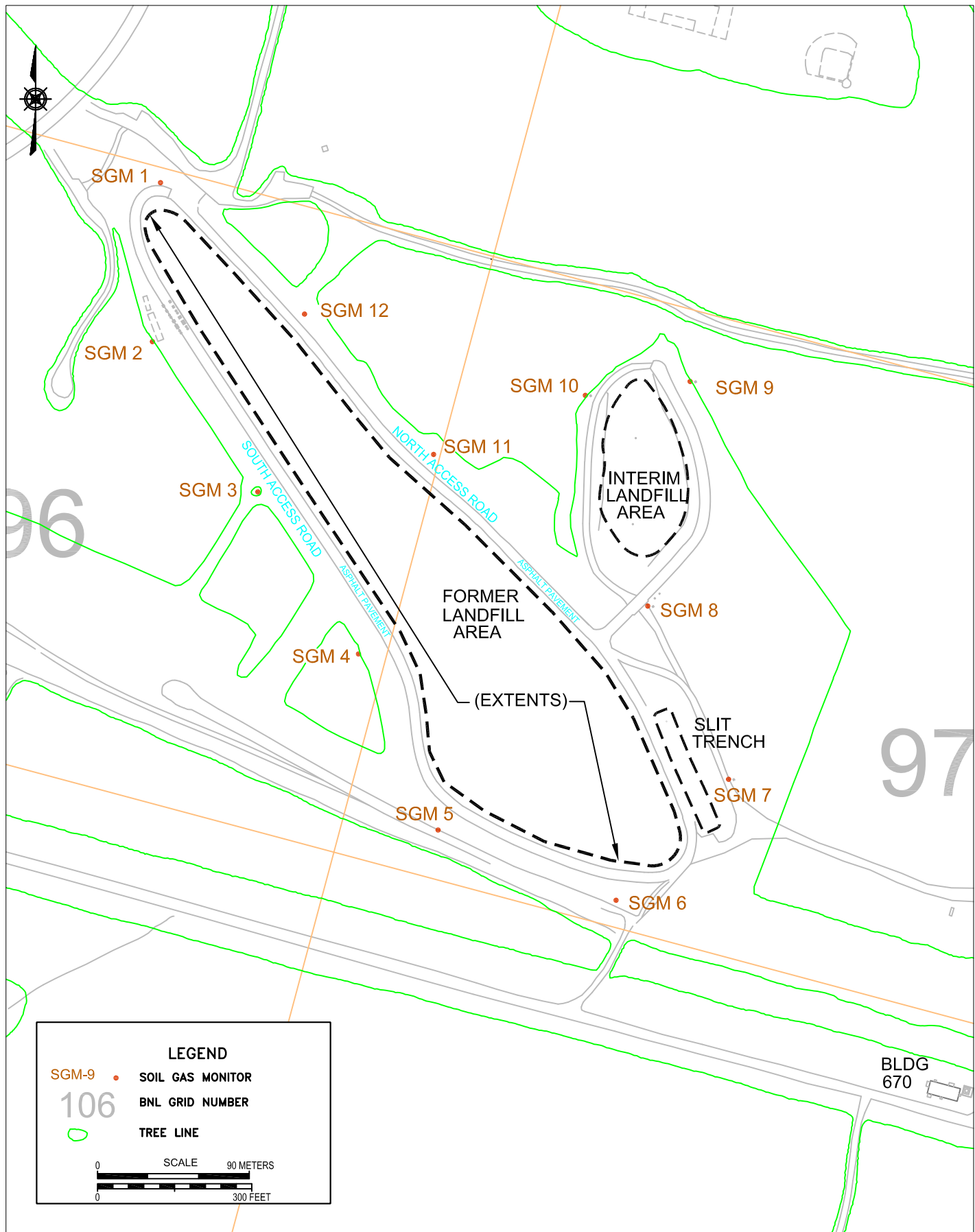
TITLE:

**CURRENT LANDFILL  
SOIL GAS MONITOR LOCATION MAP**

2010 ENVIRONMENTAL MONITORING REPORT  
CURRENT AND FORMER LANDFILL AREAS

DWN: AJZ	VT:HZ.: -	DATE: 03/14/11	PROJECT NO.: -
CHKD: JEB	APPD: RFH	REV.: -	NOTES: -
FIGURE NO.:		13	

R:\Gw\_projects\Landfills\2010 Report\Fig14 03-14-11.dwg



TITLE: **FORMER LANDFILL  
SOIL GAS MONITOR LOCATION MAP**  
2010 ENVIRONMENTAL MONITORING REPORT  
CURRENT AND FORMER LANDFILL AREAS

DWN: AJZ	VT:HZ.: -	DATE: 03/14/11	PROJECT NO.: -
CHKD: JEB	APPD: RFH	REV.: -	NOTES: -

FIGURE NO.: **14**



## Appendix A

### Operable Unit I Wooded Wetlands Supplemental Surface Water and Sediment Sampling and Analysis Report

# WOODED WETLAND REPORT

## 2010

### 1.0 INTRODUCTION

This report summarizes and evaluates the 2010 sediment and surface water sampling performed for Operable Unit I (OUI), Wooded Wetland area at Brookhaven National Laboratory, Upton, New York (BNL). The Wooded Wetland is located east of and adjacent to the Current Landfill and has the potential to receive leachate from the landfill. The wetland consists of a North and South pond. The 2010 sampling of the Wooded Wetland follows the recommendations of the *Focused Ecological Risk Assessment Operable Units I/VI* (CDM, 1999b). This report summarizes the results of the sampling conducted in accordance with the 1999 and 2000 *OUI Wooded Wetlands Supplemental Sampling and Analysis Plans* (BNL, 1999 and BNL, 2000). These plans were prepared as an addendum to the *Sampling and Analysis Plan for the Remedial Investigation/Feasibility Study for Operable Unit I* (SAIC, 1993).

The biannual (i.e. once every two years) sampling focuses on analysis of metals in the sediment and surface water to evaluate their potential risks to the local tiger salamander population. Seven sediment and seven surface water samples were collected in May 2010 from two ponds (North and South), in the Wooded Wetland area.

### 1.1 Background

The Wooded Wetland is a two-acre area located between the Former Hazardous Waste Management Facility and the Current Landfill (Figure 1). The wetland receives surface runoff from the Current Landfill, which was capped in 1995, as well as land runoff from the south. The Wooded Wetland usually is flooded during the spring and early summer, and dry in late summer. In the Current Landfill area, the water table is located approximately 10 to 15 ft below the Wooded Wetlands; therefore, the wetland area does not receive groundwater recharge. High clay content of the near-surface soils allows for perching of water from precipitation and runoff.

An ecological review and assessment of the Wooded Wetland is provided in the *OUI/VI Preliminary Ecological Risk Screening Report* (CDM, 1996b). As part of the Feasibility Study for OUI, a Focused Ecological Risk Assessment was conducted for this area of concern (CDM, 1999b).

Two surface water samples (SW-4 and SW-5) and 14 sediment samples (SD-10 through SD-17) were collected from this area in 1994 during the OUI Remedial Investigation (CDM, 1996a). At six of the sediment locations, samples were collected from two intervals: 0 to 0.5 ft, and 1 to 1.5 ft. Samples were collected from the surface only at the remaining two locations (SD-10 and SD-11).

A gap was identified in the 1994 data set and supplemental sampling was carried out in December 1997 as part of the Ecological Risk Assessment. Only two surface water and two sediment samples were collected and analyzed for metals during this sampling event due to the dry conditions at that

time. Results from all four locations indicated lower concentrations of contaminants in both the surface water and sediment, compared to the May 1994 locations. Figure 1 shows the benchmark 1994 and 1997 surface water/sediment sample locations, respectively.

The results of the surface water samples from four of the locations (SW-17, SW-5S, SW-5N, and SW-E) indicated that the risk for larval salamanders was unlikely to low. At location SW-6, the concentration of metals in the surface water sample indicated a moderate risk. Sediment results from the five locations indicated that the risk to adult salamanders is unlikely. (See the Ecological Risk Assessment, CDM, 1999b.)

In August 2000, four surface water samples (two from each pond), and seven sediment samples (four from the South Pond, three from the North Pond) were collected from the Wooded Wetlands Area. The locations are shown in Figure 2. Background and maximum concentration benchmark values for sediment and water are presented in Tables 2A and 2B (CDM 1999a). From 2001 through 208 and in 2010, eight surface water and sediment samples were taken from the ponds (Table 1). Analytical data for all years are provided in Tables 3 through 6. The following discussions focus on the findings of the 2010 sampling season.

## **2.0 GENERAL PROCEDURES**

### **2.1 Environmental Sampling Procedures**

Sampling was conducted by BNL on May 7, 2010, in accordance with the procedures and sampling locations outlined in the *OUI Sampling and Analysis Plan* (SAIC, 1993), supplementary Wooded Wetlands sampling plans (BNL 1999 and 2000) and BNL standard operating procedures for sampling surface water and sediments. Samples of surface water and sediment were collected at seven locations, as shown on Figure 2. These places were chosen based on the locations where samples were collected in 1994 and 1997. Locations SW/SD-5 and SW/SD-6 were near the two 1997 locations. SW/SD-17, SW/SD-12, and SW/SD-13 were close to three of the 1994 sediment sampling locations. Variability in sampling locations and number of samples were related primarily to seasonal drying of the ponds. Table 1 provides the sampling designation for comparison between samples taken each year since 1999 and 1994, and 1997.

Water and sediment samples were sent to an off-site certified laboratory for analysis. The samples were submitted for the EPA Target Analyte List (TAL) of total metals by EPA Methods 6010B, and mercury by EPA Methods 7470 for aqueous samples and 7471 for sediment samples. In accordance with the July 2000 Sampling and Analysis Plan, quality assurance/quality control samples included a blind duplicate (one per matrix), matrix spike/matrix spike duplicate (one per matrix), and one equipment blank.

## 2.2 Criteria

To determine if sediment or surface water concentrations pose a risk to tiger salamanders, analytical data were compared to benchmark sediment concentrations and critical water concentrations (Tables 2A and 2B) that were calculated in the *Ecological Risk Assessment* (CDM, 1999b). A benchmark sediment dose is a dose above which an observable toxic effect may occur in adult tiger salamanders. Table 2A gives the benchmark sediment concentrations for five metals of concern. BNL background levels are higher than established Maximum Sediment Concentrations except for manganese. Critical water concentrations are surface water concentrations that have the potential to produce observable adverse effects to larval salamanders. The ten metals in the surface water that have an estimated critical concentration are summarized in Table 2B. Three of them have benchmark maximum concentrations greater than the critical levels.

## 2.3 Sample Locations

Seven sediment and seven surface water samples were collected in May 2010 from the North and South Ponds. Four sediment and four surface water samples were taken from the South Pond, and three sediment and three surface water samples were collected from the North Pond. Table 1 list 2010 samples with cross-references of the sampling locations to 1994, 1997, 1999, and 2000 through 2010. Figure 2 shows the sediment and surface water sampling locations.

## 3.0 SUMMARY OF ANALYTICAL RESULTS

The results from the total metals sample analyses of sediment and surface water for each year are summarized in Tables 3 and 4, respectively. Tables 5 and 6 contain comparisons of average sediment and surface water sample results for contaminants of concern to maximum contaminant and background concentrations, for each year.

### 3.1 Sediment

Table 5 summarizes the results for the contaminants of concern, specifically copper, lead, manganese, mercury, and zinc, for the North and South Ponds from 1994, 1997, and 1999 to 2010. These results are compared with the maximum and background sediment concentrations from Table 2A.

To evaluate sediment concentrations in the North and South Ponds for metals, annual averages were calculated from the samples collected. The averages were determined to evaluate trends, since the sediment samples were grab samples collected from a number of locations.

The 2010 results from the four South Pond locations, SD-5, SD-6, SD-16, and SD-17, indicate that the concentrations and average concentrations of the metals of concern at these locations are below the maximum contaminant and background concentrations.

The results from the three North Pond locations, SD-11, SD-12, and SD-2001, indicate that at least one metal had a concentration above the maximum sediment concentration. Location SD-11 reported lead at 85.7 mg/kg which is above the maximum sediment concentration but below the background sediment concentration. The lead concentration of 113 mg/kg for location SD-12 was above both the maximum and background concentrations. The mercury concentration of 0.225 ug/mg for location SD-12 was above the maximum sediment concentration but below the background sediment concentration. For location SD-2001, the copper, lead, mercury, and zinc concentrations of 67.2 mg/kg, 137 mg/kg, 0.735 mg/kg, and 203 mg/kg, respectively, were above both the maximum and background concentrations.

Overall, with the exception of the lead result from the North Pond, the results are consistent with previous years. The average lead concentration was above both the maximum and background concentrations. The average concentration of lead in the water column during 2010 was the lowest since sampling began in 1994. This indicates that the lead will not have an adverse impact on tiger salamanders.

### **3.2 Surface-Water**

Table 6 presents the results of the 10 metals of concern for each of the seven surface water samples collected during 2010. Also shown in Table 6, for comparison, are the surface water results from previous monitoring, along with the critical and benchmark water concentrations from Table 2B. Four surface water samples came from the South Pond (SW-5S, SW-6, SW-16 and SW-17) and three samples were collected from the North Pond (SW-4, SW-5N and SW-2001).

The South Pond samples from 2010 show that concentrations of iron exceeded the critical concentration value at two of four locations (SW-16, and SW17). Comparison of average values for 2010 indicated that iron was the only metal of concern that was above the critical concentration value. However, the average value is below the BNL background concentration of 1,990 µg/L.

The North Pond samples from 2010 indicate concentrations of iron below the critical concentration values at one of the three locations. The concentration of iron at location SW-5N was 1,290 µg/L which is above the critical concentration value of 1,000 µg/L. The average 2010 concentrations for all metals are similar to those in previous years.

## **4.0 CONCLUSIONS & RECOMMENDATIONS**

Overall, the results obtained from the May 2010 sampling indicate that metals in the sediment and the metals of concern in surface water are within the range of variability as compared to previous years' values. The numbers of sediment and water samples collected from the ponds in 2010 were the same as those collected since 2001, so the averages can be directly compared for the parameters analyzed. No substantive effect due to leached metals from the landfill is evident in the sediments or surface

surface water. Therefore, there are no changes to the monitoring program recommended.

Since metals in water are the primary source of absorption by tiger salamanders, no significant change in dissolved metals indicates that the wooded wetland is not experiencing an increase in metals concentration.

Surface water samples indicate an average iron concentration of 1,488 µg/l in the South Pond and 1,214 µg/L in the North Pond are higher than the 1,000 µg/l critical concentration. However, both these values are below the BNL background and benchmark maximum concentrations (see Table 2B). There is a considerable amount of uncertainty reflected in deriving the critical water concentrations established in the Ecological Risk Assessment (CDM, 1999). This is largely due to the limited number of published toxicity values for the tiger salamander related to the metal of concern. The critical water concentration for iron was taken from the *EPA National Recommended Water Quality Criteria for Non-Priority Pollutants* (EPA, April 1999). No maximum value is given under these criteria.

There is considerable uncertainty inherent in establishing the critical water concentrations for these metals and in assigning the actual risk posed to the tiger salamander larvae. This analysis indicates that no significant change has occurred. Since metals in water are the primary source of absorption by tiger salamanders, no significant change in dissolved metals provides indication that the wooded wetland is not experiencing an increase in metals concentration.

## 5.0 REFERENCES

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## ***TABLES***



Table 1  
Sediment and Surface Sample Locations

Table 1. Crosswalk of sample designation between years for sediment and surface water sampling at the wooded wetland.

Sediment Sample Locations													
Pond Sampled	2010 Sample Designation	2008 Sample Designation	2007 Sample Designation	2006 Sample Designation	2005 Sample Designation	2004 Sample Designation	2003 Sample Designation	2002 Sample Designation	2001 Sample Designation	2000 Sample Designation	1999 Sample Designation	1997 Sample Designation	1994 Sample Designation
South	SD-5	SD-5	SD-5	SD-5	SD-5	SD-5	SD-5	SD-5	SD-5	SD-5	SD-B	SD-5	NS
South	SD-6	SD-6	SD-6	SD-6	SD-6	SD-6	SD-6	SD-6	SD-6	SD-6	SD-C	SD-6	NS
South	SD-16	SD-16	SD-16	SD-16	SD-16	SD-16	SD-16	SD-16	SD-16	SD-16	NS	NS	SD-16
South	SD-17	SD-17	SD-17	SD-17	SD-17	SD-17	SD-17	SD-17	SD-17	SD-17	SD-A	NS	SD-17
North	SD-11	SD-11	SD-11	SD-11	SD-11	SD-11	SD-11	SD-11	SD-11	SD-11	NS	NS	SD-11
North	SD-12	SD-12	SD-12	SD-12	SD-12	SD-12	SD-12	SD-12	SD-12	SD-12	SD-D	NS	SD-12
North	NS	NS	NS	NS	NS	NS	NS	NS	NS	SD-13	NS	NS	SD-13
North	SD-2001	SD-2001	SD-2001	SD-2001	SD-2001	SD-2001	SD-2001	SD-2001	SD-2001	NS	NS	NS	NS

Surface-Water Sample Locations													
Pond Sampled	2010 Sample Designation	2008 Sample Designation	2007 Sample Designation	2006 Sample Designation	2005 Sample Designation	2004 Sample Designation	2003 Sample Designation	2002 Sample Designation	2001 Sample Designation	2000 Sample Designation	1999 Sample Designation	1997 Sample Designation	1994 Sample Designation
South	SW-5 S	SW-5 S	SW-5 S	SW-5 S	SW-5 S	SW-5 S	SW-5 S	SW-5 S	SW-5 S	SW-5	SW-B	SW-5	SW-5
South	SW-6	SW-6	SW-6	SW-6	SW-6	SW-6	SW-6	SW-6	SW-6	SW-6	SW-C	SW-6	NS
South	SW-16	SW-16	SW-16	SW-16	SW-16	SW-16	SW-16	SW-16	SW-16	NS	NS	NS	NS
South	SW-17	SW-17	SW-17	SW-17	SW-17	SW-17	SW-17	SW-17	SW-17	NS	SW-A	NS	NS
North	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	NS	NS	SW-4
North	SW-5N	SW-5N	SW-5N	SW-5N	SW-5N	SW-5N	SW-5 N	SW-5 N	SW-5 N	SW-5	SW-D	NS	NS
North	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
North	SW-2001	SW-2001	SW-2001	SW-2001	SW-2001	SW-2001	SW-2001	SW-2001	SW-2001	NS	NS	NS	NS

NS Not Sampled

**Table 2A  
Benchmark Sediment Concentrations for Adult Salamanders\***

<b>Contaminants of Concern</b>	<b>BNL** Background Concentration (mg/kg)</b>	<b>Benchmark Maximum Sediment Concentration (mg/kg)</b>	<b>Maximum Dose (mg/kg/day)</b>	<b>Benchmark Dose (mg/kg/day)</b>	<b>Hazard Quotient***</b>
Copper	52.5	29.0	0.00903	0.232	0.0389
Lead	97.6	82.9	3.86	151	0.0255
Manganese	84.3	541	0.168	556	0.000302
Mercury	0.41	0.17	0.0000529	0.00958	0.00552
Zinc	158	122	6.49	105	0.0618

**NOTES:**

\*OU I Feasibility Study, Appendix L, Final Focused Ecological Risk Assessment for Operable Unit I/VI, 3/31/99.

\*\* Off-site stream sediment concentrations from the upper Peconic River. OU V Remedial Investigation Report, IT Corp. 1996.

\*\*\* Contaminants with hazard quotients greater than 0.0001.

**Table 2B  
Critical Benchmark Water Concentrations for Larval Salamanders\***

<b>Contaminants of Concern</b>	<b>BNL Background Concentration (ug/l) **</b>	<b>Benchmark Maximum Concentration* (ug/l)</b>	<b>Critical Concentration (ug/l) ***</b>
Aluminum	820	762	525
Cadmium	3.5	0.3	12.8
Copper	10.1	8.1	15.0
Cobalt	ND	18.7	50.0
Iron	1,990	4,400	1,000
Lead	ND	4.4	14.6
Mercury	0.18	0.24	2.7
Nickel	ND	3.5	420
Silver	ND	ND	2.4
Zinc	62.9	64.9	23.8

**NOTES:**

\*OU I Feasibility Study, Appendix L, Final Focused Ecological Risk Assessment for Operable Unit I/VI, 3/31/99.

\*\* Based on OU V Remedial Investigation Report, IT Corp., 1996 and OU I/VI Remedial Investigation Report, CDM Federal Corp., 1996.

\*\*\*The critical concentration for contaminants of concern in water represents the reported toxic concentration most applicable to salamanders which is adjusted, where necessary, to the equivalent of the No Observable Adverse Effects Levels (NOAEL).

Table 3  
Annual Wooded Wetland Report  
Sediment Sample Results - Metals Analysis

LOCATION	CONTAMINANT Units : mg/Kg	SAMPLES COLLECTED												
		1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
SD-5 (SD-B)	Aluminum	NS	4,470	11,600	11,000	8,490	10,200	11,300 *	9,200 *	NS	12,600	8450 *N	9850	12500
	Antimony	NS	1.4 U	0.27 U	0.26 U	0.481 B	0.719 UN	0.485 B	0.632 UN	NS	1 U	2.7	0.485 *	0.992 U
	Arsenic	NS	1.1 B	1.4	1.81	1.39 B	1.66	1.8	1.79	NS	2 B	2.2 B	1.4 U	2.61 B
	Barium	NS	18.4 B	19.4	24.4	25.1 B	26.6	28	26.9	NS	31	19.3 *	23.4 B	31.5
	Beryllium	NS	0.15 B	0.23 B	0.364 B	0.34 B	0.327 B	0.406 B	0.401 B	NS	0 B	0.22 B	0.34 *	0.301 U
	Cadmium	NS	0.15 B	0.05 B	0.396 B	0.145 B	0.154 B	0.091 U	0.196 B	NS	0 B	0.164 U	0.156 B	0.301 U
	Calcium	NS	915 B	343 B	432 B	554 B	727 *	394 *N	1110 N	NS	459	294	205 U	777
	Chromium	NS	6.1	9.9	13.9	11.7	11.6	14	10.6 *	NS	16	10.3 *	11.8 N	14.6
	Cobalt	NS	1.3 B	1.7 B	3.15 B	3.36 B	1.97	3.53	1.91	NS	3	2	3.2 *	2.44
	Copper	NS	4.8 B	8.1	9.59	9.03	9.65	11.7	10.5	NS	10 *	7.2 *	11.8	15.8
	Iron	NS	2,560	7,490	7,590	8,670	6,130	8,820 *N	5,700	NS	6,070 EN	5680 N	9550	6520
	Lead	NS	28	19.4	13.4	13.0	21.1 N	12.7	30.1 *	NS	16 *	22.2 *	13.1 *N	63.4
	Magnesium	NS	487 B	1150	1890	2,240	1,420	2,080 *N	1,310 *	NS	2,110 *	1320	2330 *EN	1650
	Manganese	NS	41.5	45.1	82.4	123	78.7 *	88.3 *N	109 *	NS	89 *	54.4	93.8 *	74.2
	Mercury	NS	0.11 U	0.05	0.098	0.053	0.053	0.021	0.052	0.0512	0.047 BN	0.04 B	0.04 *	0.157 B
	Nickel	NS	4.1 B	5.7	8.02	9.25	6.74	8.17	7.31 *	NS	8 *	5.9	8.3 B*	9.35
	Potassium	NS	238 B	397 B	653 B	891	602	889 N	734 E*N	NS	956	409 *	715	646
	Selenium	NS	1.3 U	0.36 B	0.896	0.508 B	0.827	0.468 U	0.384 B	NS	1 U	0.985 U	0.789 *	1.5 U
	Silver	NS	0.44 U	0.29 B	0.151 U	0.126 U	0.172 U	0.235 U	0.166 U	NS	0 U	1.1	0.156 U	0.31 B
	Sodium	NS	42.2 B	27.2 B	33.6 B	50.2 B	40.8	44.9	34.5	NS	55	18.9 B	26.6 U	42.5 B
Thallium	NS	1 U	0.82 U	0.34 U	0.561 U	0.748 U	0.502 U	3.18	NS	1 U	0.821 U	0.09	0.201 B	
Vanadium	NS	15.6 B	17.4	24.1	20.4	21.8	22.5	22.3 *	NS	29 *	18.7 *	20 B	30.7	
Zinc	NS	22.3	25.1	31.4	29.8	31.9	29.5	26.3 *	NS	34 *	23.1 *	27.6 *	31.7	
Cyanide	NS	NA	0.489	NA	NA	NA	NA	NA	NS	NS	NS	NS	NS	

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Annual Wooded Wetland Report  
Sediment Sample Results - Metals Analysis

LOCATION	CONTAMINANT Units : mg/Kg	SAMPLES COLLECTED												
		1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
SD-6 (SD-C)	Aluminum	NS	4,920	9,780	1,670	10,500	1,900	1,390 *	2,000 *	NS	2830	1630 *N	1330 *	1070
	Antimony	NS	1.1 U	0.93 U	0.247 U	0.338 U	0.645 UN	0.417 B	0.481 UN	NS	0.523 U	0.63 B	0.442 U	0.53 U
	Arsenic	NS	0.47 U	1.3 U	0.556 B	1.34	0.535 U	0.372 U	0.366 B	NS	0.785 U	0.785 U	0.433 U	0.607 B
	Barium	NS	15.2 B	21.5	3.57	26.2	4.74	3.27	5	NS	7.1	2.8 *	3.4 *	7.54
	Beryllium	NS	0.11 B	0.08 B	0.07 U	0.336	0.045 B	0.033 B	0.082 B	NS	0.131 U	0.131 U	0.142 U	0.161 U
	Cadmium	NS	0.2 B	0.17 U	0.105 U	0.057 B	0.064 B	0.074 U	0.067 U	NS	0.131 U	0.131 U	0.142 U	0.161 U
	Calcium	NS	487 B	774 B	88.3 B	279 B	136 *	51.5 *N	133 N	NS	150	51	95.6 N	501
	Chromium	NS	6.1	6.5	1.87	13	2.31	1.47	2.33 *	NS	3.6	1.7 *	1.6 *	0.96
	Cobalt	NS	1.4 B	0.81 B	0.344 B	3.68 B	0.308 B	0.397 B	0.393 B	NS	0.65 B	0.32 B	0.31 B	0.263 B
	Copper	NS	4.8 B	7.8	0.72 B	7.27	1.85	0.549 B	1.37	NS	1.7 *	0.73 B*	0.78 B	2.55
	Iron	NS	2,620	5,710	1,040	8,050	1,060	816 *N	1,280	NS	2080 EN	885 N	961 *N	717
	Lead	NS	19.8	63.5	4.62 B	5.28	9.74 N	1.6	10.3 *	NS	5 *	4.5 *	5.9 *EN	8.54
	Magnesium	NS	596 B	568 B	250	2,750	245	214 *N	300 *	NS	503 *	192	218 *	155
	Manganese	NS	29.3	39.3	10.4	144	13.4 *	9.87 *N	15 *	NS	24 *	8	9.7 *	17.5
	Mercury	NS	0.1 U	0.18	0.049	0.004 U	0.011 B	0.006 U	0.019	0.0122 B	0.014 BN	0.026 B	0.017 B*	0.00966 B
	Nickel	NS	4.1 B	5.3	1.28	9.9	1.51	1.05	1.84 *	NS	2.1 *	1.1	1.2	1.48
	Potassium	NS	273 B	268	103 B	1,240	94	100 N	137 E*N	NS	243	61 *	50.1 *	99
	Selenium	NS	1 U	0.95 B	0.328 U	0.374 U	0.359 U	0.381 U	0.227 U	NS	0.785 U	0.785 U	0.722 U	0.76 U
	Silver	NS	0.34 U	0.44 U	0.143 U	0.111 U	0.155 U	0.191 U	0.126 U	NS	0.131 U	0.2 B	0.142 U	0.161 U
	Sodium	NS	35.1 B	96.9 U	11.5 B	50.9 B	18.6	13.9	11 B	NS	21.2	6.5 B	8.8 B	18.5 B
Thallium	NS	0.8 U	2.8 B	0.324 U	0.495 U	0.671 U	0.409 U	1.4 U	NS	0.654 U	0.654 U	0.0578 U	0.0912 U	
Vanadium	NS	11.5 B	20.2 U	3.35 B	16 B	4.85	2.35	4.96 *	NS	5.6 *	2.8 *	3.1 *	2.82	
Zinc	NS	19.7	26 B	5.86	27.6	6.45	3.98	6.67 *	NS	9.5 *	4.6 *	4.8	7.16	
Cyanide	NS	NA	1.27	NA	NA	NA	NA	NA	NS	NS	NS	NS	NS	

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LOCATION	CONTAMINANT Units : mg/Kg	SAMPLES COLLECTED												
		1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
SD-16	Aluminum	5,110 *	NS	NS	1,780	1,240	2,660	716 *	6,120 *	NS	2310	6620 *N	3910 *	6670
	Antimony	8.7 U	NS	NS	0.226 U	0.302 U	0.702 UN	0.568 B	0.859 BN	NS	0.685 U	2 B	0.549 U	0.698 U
	Arsenic	0.59 B	NS	NS	0.566 B	0.377 B	0.582 U	0.357 U	0.411 U	NS	1.03 U	2.3 B	0.74 B	1.33 B
	Barium	7.1 B	NS	NS	5.25	3.6 B	9.13	1.89	28.5	NS	7.7	17.6 *	12.6 *	20
	Beryllium	0.25 U	NS	NS	0.064 U	0.036 B	0.071 B	0.023 U	0.23 B	NS	0.171 U	0.28 B	0.177 U	0.212 U
	Cadmium	1.2 U	NS	NS	0.096 U	0.031 U	0.132 B	0.071 U	0.292 B	NS	0.171 U	0.233 U	0.38 B	0.212 U
	Calcium	125 B	NS	NS	216 B	137 B	451 *	62 *N	2160 N	NS	144	619	616 N	525
	Chromium	5.5	NS	NS	2.41	1.63	3.21	1.44	5.7 *	NS	3.6	6.9 *	3.9 *	7.68
	Cobalt	1.2 U	NS	NS	0.347 B	0.248 B	0.372 B	0.197 B	1	NS	0.42 B	1.5	0.72 B	1.06
	Copper	1 B	NS	NS	1.48	0.904 B	3.78	0.389 B	8.14	NS	2.2 *	9.5 *	8	11.7
	Iron	1,730 *	NS	NS	1,120	817	1320	569 *N	2960	NS	1520 EN	3810 N	2000 *N	2620
	Lead	4.4 NJ	NS	NS	9.99	3.19	16.1 N	1.7	39.5 *	NS	8.8 *	15 *	15.7 *EN	70.1
	Magnesium	259 B	NS	NS	239 B	185 B	293	109 *N	580 *	NS	357 *	837	378 *	534
	Manganese	11.5 *	NS	NS	12.4	9.68	17.7 *	8.07 *N	45 *	NS	16.7 *	41.5	25.8 *	19.6
	Mercury	0.01 B	NS	NS	0.064	0.003 U	0.033	0.005 U	0.028	0.0336	0.027 BN	0.038 B	0.05 B*	0.0886 B
	Nickel	7.5 U	NS	NS	1.43	1.2 B	2.01	0.78	4.74 *	NS	1.6 *	4.5	3.2	5.71
	Potassium	138 U	NS	NS	113 B	114 B	133	54.5 N	414 E*N	NS	225	240 *	131 *	281
	Selenium	0.25 U	NS	NS	0.365 B	0.334 U	0.391 U	0.366 U	0.323 U	NS	1.03 U	1.4 U	0.891 U	0.997 U
	Silver	1 U	NS	NS	0.131 U	0.099 U	0.168 U	0.183 U	0.18 U	NS	0.171 U	0.78 B	0.177 U	0.321 B
	Sodium	39 B	NS	NS	14.4 B	17 B	22.9	11.5	17 B	NS	26.5	16.7 B	17.9 B	31 B
Thallium	0.25 U	NS	NS	0.295 U	0.442 U	0.73 U	0.393 U	2.03	NS	0.856 U	1.16 U	0.0712 U	0.12 U	
Vanadium	5.1 B	NS	NS	5.26 B	2.39 B	6.58	1.6	15.1 *	NS	6.2 *	15.8 *	11.4 *	21.4	
Zinc	4.7 B	NS	NS	7.34	6.48	12.9	2.58	29.1 *	NS	7.3 *	29.9 *	33.5	20.8	
Cyanide	3.1 U	NS	NS	NA	NA	NA	NA	NA	NS	NS	NS	NS	NS	

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LOCATION	CONTAMINANT Units : mg/Kg	SAMPLES COLLECTED												
		1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
SD-17 (SD-A)	Aluminum	3,550	NS	3,500	2,840	1,440	1,870	2,870 *	1,080 *	NS	11100	4390 *N	2280 *	9370
	Antimony	8.8 U	NS	0.26 U	0.198 U	0.312 U	0.614 UN	0.415 B	0.492 UN	NS	0.577 U	1.7 B	0.569 U	0.501 U
	Arsenic	0.25 U	NS	1.1	0.397 B	0.424 B	0.51 U	0.435 B	0.296 U	NS	1.2 B	1.3 B	0.55 B	1.61
	Barium	8.8 B	NS	21.6	6.32	5.34 B	4.96	5.63	2.96	NS	29.4	15.9 *	11.4 *	21
	Beryllium	0.25 U	NS	0.17 B	0.056 U	0.037 B	0.042 B	0.052 B	0.072 U	NS	0.29 B	0.204 U	0.183 U	0.197 B
	Cadmium	1.3 U	NS	0.11 B	0.092 B	0.075 B	0.055 B	0.077 U	0.069 U	NS	0.28 B	0.27 B	0.3 B	0.152 U
	Calcium	80.4 B	NS	785	240 B	136 B	183 *	137 *N	107 N	NS	636	878	1030 N	488
	Chromium	4.4	NS	7.4	2.54	1.98	1.99	2.68	1.21 *	NS	13	4.3 *	2.6 *	9.58
	Cobalt	1.3 U	NS	1.1 B	0.209 B	0.196 B	0.166 B	0.504 B	0.114 U	NS	1.8	0.85 B	0.62 B	1.45
	Copper	2.9 B	NS	8.2	1.64	1.41 B	1.42	12.6	1.39	NS	7.1 *	8.9 *	5.9	8.09
	Iron	1,590	NS	1,750	757	740	742	1210 *N	614	NS	3580 EN	2260 N	1580 *N	4280
	Lead	4.1 NJ	NS	21.3	6.98	6.15	5.29 N	4.71	2.49 *	NS	16.1 *	26 *	23.2 *EN	25.3
	Magnesium	389 B	NS	665 B	157 B	162 B	169	280 *N	128 *	NS	1190 *	379	301 *	827
	Manganese	14.8	NS	40.1	10.9	12.3	9.72 *	16 *N	9.49 *	NS	54.6 *	31.3	27 *	36
	Mercury	0.02 B	NS	0.028 U	0.038	0.003 U	0.014	0.012 B	0.012 B	0.0618	0.037 BN	0.064 B	0.067 B*	0.09 B
	Nickel	7.6 U	NS	4.3	1.13	1.25 B	1	3.34	0.792 *	NS	5.8 *	3.3	2.7	5.24
	Potassium	140 U	NS	216 B	88.7 B	91.6 B	83.2	117 N	69.4 E*N	NS	566	146 *	95 *	268
	Selenium	0.25 U	NS	0.57 B	0.412 B	0.482 B	0.342 U	0.396 U	0.232 U	NS	0.866 U	1.22 U	0.901 U	0.772 U
	Silver	1 U	NS	0.22 B	0.115 U	0.103 U	0.147 U	0.199 U	0.129 U	NS	0.144 U	0.51 B	0.183 U	0.152 U
	Sodium	16.5 B	NS	31.9 B	9.14 B	19.3 B	17	15.6	5.21 U	NS	42.9	15.8 B	20.8 B	22.1 B
Thallium	0.25 U	NS	0.79 U	0.259 U	0.457 U	0.639 U	0.425 U	1.43 U	NS	0.722 U	1.02 U	0.0721 U	0.12 B	
Vanadium	4.4 B	NS	12.6	4.52 B	2.99 B	3.19	4.09	1.62 *	NS	19.7 *	11.1 *	8.1 *	16.4	
Zinc	8.8	NS	27.5	7.37	4.6	6.37	6.24	3.4 *	NS	33.7 *	32 *	30.1	29.9	
Cyanide	3.2 U	NS	0.243	NA	NA	NA	NA	NA	NS	NS	NS	NS	NS	

Table 3  
Annual Wooded Wetland Report  
Sediment Sample Results - Metals Analysis

LOCATION	CONTAMINANT Units : mg/Kg	SAMPLES COLLECTED												
		1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
SD-11	Aluminum	4,030 *	NS	NS	5,070	12,800	11,400	6,920 *	7,570 *	NS	18500	2710 *N	9280 *	9820
	Antimony	10.9 U	NS	NS	0.311 U	0.532 U	1.51 UN	0.688 U	0.761 UN	NS	1.49 U	1.19 U	1.17 U	2.34 B
	Arsenic	0.31 U	NS	NS	1.07	0.859 B	2.35	1.81	1.27	NS	3.8 B	1.78 U	2 B	3.79
	Barium	9.3 NB	NS	NS	27.1	53.4	61.1	35.4	34.6	NS	72.9	15 *	36 *	44.1
	Beryllium	0.31 U	NS	NS	0.134 B	0.291 B	0.342 B	0.232 B	0.281 B	NS	0.53 B	0.297 U	0.378 U	0.331 U
	Cadmium	1.6 U	NS	NS	0.135 B	0.06 B	0.232 B	0.144 B	0.152 B	NS	0.49 B	0.297 U	0.378 U	0.331 U
	Calcium	125 B	NS	NS	225 B	389	1750 *	551 *N	467 N	NS	2220	502	907 N	1380
	Chromium	4.5	NS	NS	4.99	11.6	10.5	6.48	7.1 *	NS	18.5	1.8 *	8.7 *	8.93
	Cobalt	1.6 U	NS	NS	0.221 B	0.258 B	1.9	0.586 B	0.439 B	NS	2.7	0.593 U	1.1 B	1.27 B
	Copper	R	NS	NS	5.25	7.06	21.3	7.52	7.55	NS	35.8 *	4.9 *	14.5	18.6
	Iron	763 *	NS	NS	938	1,260 B	4,920	1,570 *N	1,660	NS	5190 EN	1100 N	2840 *N	3210
	Lead	6.3 N	NS	NS	8.41	13.2	85.7 N	17.8	16.9 *	NS	122 *	16.6 *	44.5 *EN	85.7
	Magnesium	168 B	NS	NS	118 B	295 B	819	262 *N	293 *	NS	1270 *	112	548 *	457
	Manganese	6.6 *	NS	NS	3.74	9.41	33.9 *	10.5 *N	11.4 *	NS	43.1 *	5.3	21.8 *	19.7
	Mercury	0.03 B	NS	NS	0.074	0.12	0.198	0.056	0.044	0.0729	0.29 N	0.095 B	0.12 B*	0.122 B
	Nickel	9.3 U	NS	NS	2	2.77 B	7.51	3.13	3.3 *	NS	12.1 *	1.7	5.4	6.16
	Potassium	171 U	NS	NS	131 B	308 B	488	285 N	355 E*N	NS	917	90.2 *	285 *	331
	Selenium	0.31 B	NS	NS	1.43	2.68	1.59	0.993 B	0.817 B	NS	2.24 U	1.78 U	1.95 U	1.59 U
	Silver	1.2 U	NS	NS	0.198 B	0.175 U	0.363 U	0.338 U	0.2 U	NS	0.373 U	0.297 U	0.378 U	0.492 B
	Sodium	40.9 B	NS	NS	32.2 B	58.4 B	87.2	44.3	21 B	NS	115	19.5 B	52.2 B	52 B
Thallium	0.31 U	NS	NS	0.723 B	0.779 U	1.57 U	0.724 U	2.22 U	NS	1.86 U	1.48 U	0.32 B	0.191 U	
Vanadium	4.2 B	NS	NS	4.27 B	8.33 B	35.8	9.46	10.3 *	NS	53.3 *	5.9 *	19.8 *	23.4	
Zinc	R	NS	NS	15.4	16.5	61.7	22.3	20.4 *	NS	83 *	13.3 *	32.3	38	
Cyanide	3.9 U	NS	NS	NA	NA	NA	NA	NA	NS	NS	NS	NS	NS	

Table 3  
Annual Wooded Wetland Report  
Sediment Sample Results - Metals Analysis

LOCATION	CONTAMINANT Units : mg/Kg	SAMPLES COLLECTED												
		1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
SD-12 (SD-D)	Aluminum	7,220 *	NS	30,300	4,420	27,900	20,600	13,600 *	10,500 *	NS	9750	31900 *N	37500 *	16300
	Antimony	8.7 U	NS	0.6 U	0.247 U	0.734 B	1.34 BN	1.61 B	1.03 BN	NS	0.804 U	7.2	0.96 U	0.944 U
	Arsenic	0.76 B	NS	5	0.981	6.58 B	4.46	4.17	2.17	NS	1.9 B	7.8	5.8	9.55
	Barium	17.4 B	NS	85.9	32	77.5	68.2	49.5	46.5	NS	49.8	85.9 *	107 *	53.4
	Beryllium	0.25 U	NS	0.73 B	0.129 B	0.82 B	0.546 B	0.348 B	0.399 B	NS	0.29 B	0.81 B	1.1 B	0.473 B
	Cadmium	1.2 U	NS	0.54 B	0.148 B	0.724 B	0.241 B	0.199 B	0.096 U	NS	0.43 B	0.31 B	0.48 B	0.286 U
	Calcium	379 B	NS	1,820	964	2,780	2,020 *	2,260 *N	1,870 N	NS	1500	2310	2170 N	2500
	Chromium	7.8	NS	22.1	4.7	27.8	20.3	13.3	10.9 *	NS	10.7	30.3 *	36.1 *	16
	Cobalt	2.5 B	NS	5.3 B	0.428 B	6.59 B	3.82	3.09	1.65	NS	1.3	7	8.8	4.32
	Copper	R	NS	44.6	7.41	36.6	26.4	20.2	13.6	NS	11.5 *	38.1 *	48.9	24.4
	Iron	5,150	NS	22,000	1,840	18,700	11,700	8,940 *N	5,960	NS	5370 EN	21800 N	26800 *N	11800
	Lead	10.4 NJ	NS	86.3	6.11	71.1	59.8 N	42.3	25.5 *	NS	21.8 *	93.6 *	83.4 *EN	113
	Magnesium	943 B	NS	2220	207 B	3,020	1,610	885 *N	672 *	NS	630 *	3530	3970 *	1760
	Manganese	56 *	NS	125	4.12	147	73.3 *	48.4 *N	33.4 *	NS	23 *	134	148 *	97.3
	Mercury	0.03 B	NS	0.37	0.074	0.272	0.215	0.214	0.079	0.203	0.3 N	0.2 B	0.32 *	0.225
	Nickel	7.5 U	NS	16.5	2.04	19.6	11.6	7.9	5.5 *	NS	5.1 *	20.2	25.1	11.9
	Potassium	292 B	NS	766 B	130 B	1,300 B	774	611 N	570 E*N	NS	551	1000 *	881 *	611
	Selenium	0.25 U	NS	2.2	1.22	2.01	1.74	1.44	1.23	NS	1.21 U	8.08 U	1.53 U	1.57 B
	Silver	1 U	NS	1.3 B	0.146 B	0.441 U	0.284 U	0.47 U	0.18 U	NS	0.201 U	4.7	0.31 U	0.63 B
	Sodium	29.8 B	NS	106 B	31.4 B	133 B	81.1	69.4	26.5	NS	57.7	81.4	95.4	53.7 B
Thallium	0.25 U	NS	1.8 U	0.323 U	1.03 U	1.23 U	1.01 U	2.46	NS	1.01 U	1.4 B	0.37 B	0.446 B	
Vanadium	10.8 B	NS	54.5	3.49 B	59.9	45.7	31.1	18.7 *	NS	17.2 *	64.7 *	80.6 *	38	
Zinc	R	NS	123	5.91	137	70.3	38.4	22.3 *	NS	23.4 *	127 *	179	87.1	
Cyanide	3.1 U	NS	0.708	NA	NA	NA	NA	NA	NS	NS	NS	NS	NS	



Table 3  
Annual Wooded Wetland Report  
Sediment Sample Results - Metals Analysis

LOCATION	CONTAMINANT Units : mg/Kg	SAMPLES COLLECTED												
		1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
SD-13 (SD-E)	Aluminum	9,100 *	NS	8,360	2,090	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Antimony	9.2 U	NS	0.51 U	0.194 U	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Arsenic	1.2 B	NS	1 B	0.46 B	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Barium	22.7 B	NS	21.7	10.2	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Beryllium	0.26 U	NS	0.08 B	0.055 U	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Cadmium	1.3 U	NS	0.18 B	0.083 U	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Calcium	640 B	NS	993 B	264 B	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Chromium	9.1	NS	5.3	2.58	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Cobalt	2.7 B	NS	0.64 B	0.124 B	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Copper	8.1	NS	9.5	1.42	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Iron	7,040 *	NS	3,340	781	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Lead	15.8 NJ	NS	39.9 B	5.14	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Magnesium	1190 B	NS	312	108 B	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Manganese	85 *	NS	16	3.96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Mercury	0.06 B	NS	0.13	0.054	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Nickel	7.9 U	NS	3.2	0.848	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Potassium	300 B	NS	209 B	113 B	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Selenium	0.26 U	NS	0.89 B	0.502 B	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Silver	1.1 U	NS	0.35 B	0.113 U	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sodium	48.4 B	NS	76.1 B	14.1 B	NS	NS	NS	NS	NS	NS	NS	NS	NS
Thallium	0.26 U	NS	1.5 U	0.254 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	
Vanadium	16.3	NS	14.9	2.99 B	NS	NS	NS	NS	NS	NS	NS	NS	NS	
Zinc	27.9	NS	17.3	4.35	NS	NS	NS	NS	NS	NS	NS	NS	NS	
Cyanide	3.3 U	NS	0.847	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	

Table 3  
Annual Wooded Wetland Report  
Sediment Sample Results - Metals Analysis

LOCATION	CONTAMINANT Units : mg/Kg	SAMPLES COLLECTED												
		1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
SD-2001	Aluminum	NS	NS	NS	1,780	46,900	15,800	14,900 *	11,600 *	NS	7030	16300 *N	11800 *	46400
	Antimony	NS	NS	NS	0.226 U	0.821 U	1.32 UN	1.44 B	0.953 BN	NS	0.87 U	4	0.932 U	0.811 U
	Arsenic	NS	NS	NS	0.566 B	9.03	4.21	4.4	2.23	NS	1.5 B	5.3	3.8	11.2
	Barium	NS	NS	NS	5.25	118	52.9	52.1	45.4	NS	56.9	59.1 *	42.7 *	114
	Beryllium	NS	NS	NS	0.064 U	1.23 B	0.434 B	0.359 B	0.397 B	NS	0.28 B	0.46 B	0.36 B	1.36
	Cadmium	NS	NS	NS	0.096 U	1.07 B	0.277 B	0.249 B	0.102 U	NS	0.27 B	0.242 U	0.301 U	0.481 B
	Calcium	NS	NS	NS	216 B	2,310 B	1,900 *	1,720 *N	1,430 N	NS	1370	1910	1840 N	2500
	Chromium	NS	NS	NS	2.41	45.5	15.7	15.1	11.4 *	NS	7.8	15.3 *	11.2 *	44.6
	Cobalt	NS	NS	NS	0.347 B	8.87 B	2.98	3.16	1.7	NS	0.93 B	2.9	2.2	9.21
	Copper	NS	NS	NS	1.48	52.9	23.3	21.2	11.6	NS	8.5 *	22.4 *	20.1	67.2
	Iron	NS	NS	NS	1,120	25,600	8,720	7,180 *N	5,690	NS	2540 EN	9510 N	7130 *N	27700
	Lead	NS	NS	NS	9.99	145	57 N	60.8	29.7 *	NS	9 *	59.3 *	76.9 *EN	137
	Magnesium	NS	NS	NS	239 B	3,940	1,210	853 *N	675 *	NS	315 *	1180	837 *	3810
	Manganese	NS	NS	NS	12.4	158	69.3 *	41.2 *N	40.4 *	NS	21.3 *	57.9	41 *	166
	Mercury	NS	NS	NS	0.064	0.727	0.192	0.18	0.098	0.116	0.13 BN	0.14 B	0.23 *	0.735
	Nickel	NS	NS	NS	1.43	28	10.1	9.12	5.73 *	NS	3.6 *	9.5	7.8	28.5
	Potassium	NS	NS	NS	113 B	1,780	603	599 N	570 E*N	NS	354	457 *	327 *	1280
	Selenium	NS	NS	NS	0.365 B	2.42	1.4	1.31	0.623 B	NS	1.31 U	1.45 U	1.55 U	1.93 B
	Silver	NS	NS	NS	0.131 U	0.689 B	0.316 U	0.441 U	0.192 U	NS	0.218 U	2.1	0.301 U	1.04 B
	Sodium	NS	NS	NS	14.4 B	149 B	74.7	74.9	21.8	NS	51.1	37.5	42.8 B	86.7
Thallium	NS	NS	NS	0.295 U	1.2 U	1.37 U	0.943 U	3.05	NS	1.09 U	1.6 B	0.27 B	0.405 B	
Vanadium	NS	NS	NS	5.26 B	107	40	41.5	22.6 *	NS	7.9 *	34.7 *	34.5 *	109	
Zinc	NS	NS	NS	7.34	186	76.6	42.1	24.2 *	NS	17.7 *	57 *	49.9	203	
Cyanide	NS	NS	NS	NA	NA	NA	NA	NA	NS	NS	NS	NS	NS	

Table 3  
Annual Wooded Wetland Report  
Sediment Sample Results - Metals Analysis

LOCATION	CONTAMINANT Units : mg/Kg	SAMPLES COLLECTED											
		1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08

**NOTES:**

1994 Samples were collected from 0.0' to 0.5'

Number in parenthesis ( ) indicates alternate identification for same location.

NA Not available

NS Not sampled

U Analyte was analyzed for but not detected.

N - Spike sample recovery was not within control limits

J - Estimated value; concentration below method detection limit.

\* - Duplicate precision is not within control limits.

B - Concentraion less than the contract required detection limit, but greater than or equal to the instrument detection limit.

Table 4  
Annual Wooded Wetland Report  
Surface Water Sample Results - Metals Analysis

Location	Contaminant UNITS ug/L	SAMPLES COLLECTED												
		1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
SW-5S (SWB)	Aluminum	38,600	304	1,240	253	385	445 E	429	434	210	301	305	278	199
	Antimony	35 U	2.5 U	1.9 U	4.14 U	2.65 U	4.79 U	3.46 U	5.08 U	4 U	0.5 U	0.5 U	0.5 U	0.6 U
	Arsenic	8.7 B	1.1 U	2.7 U	2.09 U	4.47 B	3.97 U	3.31 U	2.24 U	6 U	1.5 U	1.5 U	1.5 U	1.66 U
	Barium	136 B	11.7 B	19.6	5.32 B	7.7 B	6.32 B	6.91 B	10.2 B	5.1	5	7.8	6.1	6.57
	Beryllium	1.2 U	0.1 B	0.14 U	0.46 U	0.158 U	0.185 U	0.21 U	0.158 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U
	Cadmium	5 U	0.2 U	0.44 B	0.69 U	0.274 B	0.21 U	0.66 U	0.313 U	1 U	0.1 U	0.1 U	0.1 U	0.156 B
	Calcium	29,700	8,860	5,520	2,360 B	3,170 B	3,590 B	2,450 B	2,720 B	2,960	2,170	3090	3270	7740
	Chromium	32.1 U	0.7 U	2.8 B	1.03 B	0.774 B	0.781 B	1.69 U	0.892 B	1.3 B	1 U	1.3 B	1 U	1.23 B
	Cobalt	18.7 B	1.3 U	1.1 B	0.91 U	0.679 B	0.581 U	1.71 B	0.918 B	1 U	0.46 B	0.53 B	0.52 B	0.472 B
	Copper	56.2	0.9 U	13.4	1.63 U	2.24 B	1.52 B	2.58 B	1.39 U	3 U	1.8	2.8	1.2	2.03
	Iron	44,000	347	3,740	1,120	1,100	890	779	1,210	832	757	1220	1170	696
	Lead	NA	2.2 B	5.3	1.38 U	1.47 U	2.16 B	2.4 U	1.72 U	2.5 U	1.1 B	0.89 B	0.95 B	0.955 B
	Magnesium	12,500	2,460 B	1,560 B	985 B	1,060 B	1,230 B	774 B	848 B	939	768	996 E	1030 E	878
	Manganese	1,410	96.1	383	181	339	227	153	176	21	171	215	217	220
	Mercury	0.25 B	0.1 U	0.13 B	0.05 B	0.057 U	0.04 U	0.095 U	0.047 U	0.05 U	0.06 U	0.06 U	0.03 U	0.066 U
	Nickel	30 U	1.6 U	7.6	1.29 U	1.91 B	2.09 B	1.64 U	1.19 B	3.8 B	1.8 B	2	1.8 B	1.73 B
	Potassium	5,720 B	2,430 B	4,790 B	2,340 B	3,470 B	2,700 B	2,010 B	1,860 B	2,240	2,070	2350	2700	2560
	Selenium	1 U	2.4 U	2.6 B	3.66 U	2.93 U	2.67 U	3.39 U	2.81 U	6 U	2.5 U	2.5 U	1 U	1 U
	Silver	4 U	0.8 U	0.89 U	0.94 U	0.871 U	1.15 U	1.7 U	0.835 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U
	Sodium	7,200	3,500 B	4,250 B	1,840 B	2,670 B	2,620 B	2,290 BE	2,530 B	3,020	2,550	3200	3580 N	3040
Thallium	1 U	1.9 U	5.6 U	2.11 U	3.88 U	4.99 U	3.64 U	10 U	5 U	0.4 U	0.4 U	0.3 U	0.3 U	
Vanadium	74.9 B	3.4 B	9.2 B	1.94 B	2.84 B	2.32 B	4.13 B	2.83 B	1.3 B	2 U	2 U	2 U	2 U	
Zinc	252	47.5	65.8	8.12 B	12.4 B	13.7 B	34.4	15.4 B	12.2	15.1	28.6	13.6	19	

Table 4  
Annual Wooded Wetland Report  
Surface Water Sample Results - Metals Analysis

Location	Contaminant UNITS ug/L	SAMPLES COLLECTED												
		1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
SW- 6 (SW-C)	Aluminum	NS	762	110,000	503	523	541 E	413	346	539	405	284	372	284
	Antimony	NS	2.5 U	3.7 U	4.14 U	2.65 U	4.79 U	3.46 U	5.08 U	4 U	0.5 U	0.5 U	0.5 U	0.6 U
	Arsenic	NS	1.1 U	19.8	2.09 U	2.33 U	3.97 U	3.31 U	2.24 U	6 U	2.4 B	1.5 U	1.5 U	1.66 U
	Barium	NS	13.8 B	507	9.62 B	7.9 B	7.37 B	5.89 B	5.74 B	8	6.5	4.8	6.2	5.61
	Beryllium	NS	0.1 B	3.3 B	0.46 U	0.158 U	0.185 U	0.21 U	0.158 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U
	Cadmium	NS	0.1 B	7.4 B	0.69 U	0.272 U	0.21 U	0.66 U	0.313 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U
	Calcium	NS	7,000	28,400	2,660 B	2150 B	2450 B	1540 B	1450 B	2520	1700	1280	2060	2700
	Chromium	NS	0.7 U	99.4	1.41 B	0.779 B	0.533 B	1.69 U	0.643 B	1.2 B	1.3 B	1 U	1 U	1 U
	Cobalt	NS	1.3 U	22.7 B	0.91 U	0.419 U	0.581 U	1.33 B	0.738 B	1 U	0.58 B	0.46 B	0.57 B	0.488 B
	Copper	NS	8.1 B	165	1.92 B	2.48 B	1.55 B	1.91 B	1.39 U	3 U	1.8	1	2.9	1.06
	Iron	NS	692	77,500	2,140	1,250	725	522	595	1,470	890	928	885	886
	Lead	NS	4.4	887	1.38 U	1.47 U	1.24 U	2.4 U	1.72 U	2.5 U	0.89 B	0.51 B	0.81 B	0.65 B
	Magnesium	NS	2,690 B	13200	860 B	810 B	982 B	642 B	624 B	883	717	626 E	710 E	635
	Manganese	NS	256	1,280	107	106	133	78.1	71.6	124	89.3	62.4	92.1	76.9
	Mercury	NS	0.1 U	1	0.085 B	0.057 U	0.04 U	0.095 U	0.047 U	0.05 U	0.06 U	0.06 U	0.03 U	0.066 U
	Nickel	NS	3.4 B	121	1.93 B	2.07 B	2.07 B	1.64 U	1.07 B	2.5 B	2.3	1.6 B	4.1	1.78 B
	Potassium	NS	2,610 B	9,990 B	1,940 B	2,360 B	1,920 B	1,180 B	1,270 B	2,240	1,380	1880	2010	1600
	Selenium	NS	2.4 U	10 B	3.66 U	3.46 B	2.67 U	3.61 B	3.5 B	6 U	2.5 U	2.5 U	1 U	1 U
	Silver	NS	0.8 U	2.3 B	0.94 U	0.871 U	1.15 U	1.7 U	0.835 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U
	Sodium	NS	3,330 B	4,350 B	2,070 B	2,920 B	3,180 B	2,270 BE	2,560 B	3,390	2,660	3430	3750 N	2930
Thallium	NS	1.9 U	11.3 U	2.11 U	3.88 U	4.99 U	3.64 U	10 U	5 U	0.4 U	0.4 U	0.3 U	0.3 U	
Vanadium	NS	9.1 B	348	3.19 B	2.94 B	3.33 B	4.71 B	1.51 B	2 B	2 U	2 U	2 U	2 U	
Zinc	NS	53.2	699	16.8 B	14.1 B	14.4 B	29.9	11.5 B	20.4	14	9.8 B	15.2	11.1	

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Location	Contaminant UNITS ug/L	SAMPLES COLLECTED												
		1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
SW- 16	Aluminum	NS	NS	NS	NS	928	521 E	446	543	618	1110	208	245	234
	Antimony	NS	NS	NS	NS	2.65 U	4.79 U	3.46 U	5.08 U	4 U	0.5 U	0.5 U	0.5 U	0.6 U
	Arsenic	NS	NS	NS	NS	2.33 U	3.97 U	3.31 U	2.24 U	6 U	1.5 U	1.5 U	1.5 U	1.66 U
	Barium	NS	NS	NS	NS	27.3 B	11.2 B	8.81 B	11.7 B	9.8	11.6	5.4	7	9.1
	Beryllium	NS	NS	NS	NS	0.158 U	0.185 U	0.21 U	0.158 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U
	Cadmium	NS	NS	NS	NS	0.272 U	0.21 U	0.66 U	0.313 U	1 U	0.11 B	0.1 U	0.1 U	0.1 U
	Calcium	NS	NS	NS	NS	5,480	6,040	4,200 B	3,150 B	3,790	3,880	2250	3100	4790
	Chromium	NS	NS	NS	NS	1.31 B	0.723 B	2.07 B	1.26 B	1.5 B	1.9 B	1.1 B	1.1 B	1.26 B
	Cobalt	NS	NS	NS	NS	0.627 B	0.581 U	1.69 B	0.812 B	1 U	0.88 B	0.41 B	0.41 B	0.947 B
	Copper	NS	NS	NS	NS	3.3 B	2.21 B	3.09 B	1.39 U	3 U	3.7	0.94 B	1.1	2.38
	Iron	NS	NS	NS	NS	2,320	1,330	1,430	1,480	1,820	2,200	1010	985	2820
	Lead	NS	NS	NS	NS	3.86	1.39 B	2.4 U	1.72 U	2.5 U	3.7	0.52 B	0.85 B	1.03 B
	Magnesium	NS	NS	NS	NS	1,420 B	1,580 B	1,120 B	922 B	1,000	1,180	790 E	839 E	1050
	Manganese	NS	NS	NS	NS	156	158	116	83.6	120	136	69	76.3	176
	Mercury	NS	NS	NS	NS	0.057 U	0.04 U	0.095 U	0.047 U	0.05 U	0.06 U	0.06 U	0.03 U	0.066 U
	Nickel	NS	NS	NS	NS	2.81 B	2.23 B	1.64 U	1.03 B	2.1 B	3.2	1.5 B	1.4 B	1.81 B
	Potassium	NS	NS	NS	NS	2,730 B	2,270 B	1,730 B	1,590 B	1,830	1,990	1620	1580	2060
	Selenium	NS	NS	NS	NS	2.93 U	2.67 U	3.39 U	2.81 U	6 U	2.5 U	2.5 U	1 U	1 U
	Silver	NS	NS	NS	NS	0.871 U	1.15 U	1.7 U	0.835 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U
	Sodium	NS	NS	NS	NS	2,520 B	2,680 B	2,170 BE	2,400 B	2,700	2,620	3040	2840 N	4360
Thallium	NS	NS	NS	NS	3.88 U	4.99 U	3.64 U	10 U	5 U	0.4 U	0.4 U	0.3 U	0.3 U	
Vanadium	NS	NS	NS	NS	4.61 B	2.96 B	5.02 B	3.44 B	4 B	3 B	2 U	2.3 B	2.31 B	
Zinc	NS	NS	NS	NS	15.5 B	14.6 B	34	14.8 B	17.1	28	20.3	10.6	16.4	

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Location	Contaminant UNITS ug/L	SAMPLES COLLECTED												
		1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
SW-17 (SW-A)	Aluminum	NS	NS	1,260	NS	612	441 E	490	485	357	310	163	166	192
	Antimony	NS	NS	2 U	NS	2.65 U	4.79 U	3.46 U	5.08 U	4 U	0.5 U	0.5 U	0.5 U	0.6 U
	Arsenic	NS	NS	2.7 U	NS	3.21 B	3.97 U	3.31 U	2.24 U	6 U	1.5 U	1.5 U	1.5 U	1.66 U
	Barium	NS	NS	21.6	NS	36 B	14.6 B	10.3 B	13 B	8.3	6.6	8	8.8	6.82
	Beryllium	NS	NS	0.14 U	NS	0.158 U	0.185 U	0.21 U	0.158 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U
	Cadmium	NS	NS	0.34 U	NS	0.272 U	0.21 U	0.66 U	0.313 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U
	Calcium	NS	NS	8,570	NS	9,120	7,900	6,930	3,920 B	4,820	3,420	3030	4650	4340
	Chromium	NS	NS	3 B	NS	1.73 B	1.16 B	1.69 U	0.984 B	10	1 U	1 U	1 B	1.21 B
	Cobalt	NS	NS	1.1 B	NS	1.49 B	0.759 B	1.82 B	0.754 B	1 U	0.54 B	0.39 B	0.37 B	0.548 B
	Copper	NS	NS	5	NS	4.2 B	2.21 B	3.26 B	1.39 U	17.6	1.5	0.7 B	0.95 B	1.02
	Iron	NS	NS	5,410	NS	5430	1650	1120	1170	2320	1130	1010	1020	1550
	Lead	NS	NS	6	NS	3.31	2.04 B	2.4 U	1.72 U	2.5 U	1.1 B	0.5 U	0.72 B	0.607 B
	Magnesium	NS	NS	1,950 B	NS	1,950 B	1,780 B	1,530 B	1,050 B	1,130	964	980 E	1120 E	1020
	Manganese	NS	NS	240	NS	469	150	157	102	136	110	71.3	77.9	104
	Mercury	NS	NS	0.12 U	NS	0.057 U	0.04 U	0.095 U	0.047 U	0.05 U	0.06 U	0.06 U	0.03 U	0.066 U
	Nickel	NS	NS	6	NS	3.28 B	2.27 B	1.64 U	1.04 B	6.7	1.8 B	1.5 B	1.1 B	1.58 B
	Potassium	NS	NS	2,480 B	NS	3,310 B	2,400 B	1,960 B	1,550 B	1,910	1,810	1600	1520	1570
	Selenium	NS	NS	2.1 B	NS	3 U	3 U	3 U	3 U	6 U	3 U	2.5 U	1 U	1 U
	Silver	NS	NS	0.89 U	NS	0.871 U	1.15 U	1.7 U	0.835 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U
	Sodium	NS	NS	3,610 B	NS	2,560 B	2,470 B	2,050 BE	2,220 B	2,580	2,260	2880	2640 N	4030
	Thallium	NS	NS	6 U	NS	3.88 U	4.99 U	3.64 U	10 U	5 U	0.4 U	0.4 U	0.3 U	0.3 U
Vanadium	NS	NS	6.5 B	NS	7.54 B	4.11 B	4.25 B	2.63 B	3.4 B	2 U	2 U	2.1 B	2 U	
Zinc	NS	NS	31.5	NS	24	14.2 B	30.1	16.6 B	14	17.5	7 B	11.5	9.78 B	

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Location	Contaminant UNITS ug/L	SAMPLES COLLECTED												
		1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
SW- 4	Aluminum	829	NS	NS	179 B	1,500	1,320 E	326	258	356	461	198	315	217
	Antimony	35 U	NS	NS	4.14 U	2.65 U	4.79 U	3.46 U	5.08 U	5.1 B	0.5 U	0.5 U	0.5 U	0.6 U
	Arsenic	1.3 B	NS	NS	2.09 U	2.33 U	3.97 U	3.31 U	2.24 U	6 U	1.7 B	1.5 U	1.5 U	1.66 U
	Barium	21.9 B	NS	NS	17.4 B	77.9 B	15.1 B	6.39 B	8.11 B	9.9	16.2	8.4	10	14.2
	Beryllium	1 U	NS	NS	0.46 U	0.158 U	0.185 U	0.21 U	0.158 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U
	Cadmium	5 U	NS	NS	0.69 U	0.272 U	0.21 U	0.66 U	0.313 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U
	Calcium	8,150	NS	NS	16,400	7,230	5,350	3,630 B	4,300 B	4,290	4,000	5180	4880	5540
	Chromium	5UUB	NS	NS	0.87 U	1.62 B	1.62 B	1.99 B	0.795 B	4.4 B	1 U	1 U	1.1 B	1 U
	Cobalt	5	NS	NS	0.91 U	1.84 B	0.581 U	1.68 B	0.903 B	1 U	0.48 B	0.46 B	0.4 B	0.688 B
	Copper	8.5 B	NS	NS	1.63 U	5.79 B	3.79 B	2.59 B	1.39 U	10.4	3.5	2.7	1.8	1.03
	Iron	3930	NS	NS	2,600	3,670	1,760	499	996	1,640	702	1190	1100	1500
	Lead	NA	NS	NS	1.38 U	5.61	3.53	2.4 U	1.72 U	4.9 B	1.5 B	0.78 B	1.2 B	0.6 B
	Magnesium	4,260 B	NS	NS	2,780 B	2,170 B	1,930 B	1,340 B	1,560 B	1,520	1,490	1850 E	1860 E	2240
	Manganese	146	NS	NS	135	312	69.5	39.6	112	47.2	23.1	36.6	35	47.1
	Mercury	0.2 B	NS	NS	0.109 B	0.057 U	0.04 U	0.095 U	0.047 U	0.05 U	0.06 U	0.06 U	0.081 B	0.066 U
	Nickel	30 U	NS	NS	1.29 U	3.5 b	2.14 B	1.64 U	0.69 U	2.2 B	1.3 B	1.8 B	1.4 B	1.5 B
	Potassium	2,130 B	NS	NS	3,350 B	2,980 B	2,200 B	1,380 B	1,560 B	1,920	1,260	1690	1770	1460
	Selenium	1 U	NS	NS	3.66 U	2.93 U	2.67 U	3.84 B	2.81 U	6 U	2.5 U	2.5 U	1 U	1 U
	Silver	4 U	NS	NS	0.94 U	0.871 U	1.15 U	1.8 B	0.835 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U
	Sodium	6,850	NS	NS	2,410 B	2,860 B	2,960 B	2,390 BE	2,570 B	2,970	2,320	3920	3690 N	5600
Thallium	1 U	NS	NS	2.48 B	3.88 U	4.99 U	3.64 U	10 U	5 U	0.4 U	0.4 U	0.3 U	0.404 B	
Vanadium	9 U	NS	NS	2.05 B	6.95 B	4.03 B	4.06 B	1.38 B	2.6 B	2 U	2 U	2.5 B	2 U	
Zinc	33.3	NS	NS	2.19 U	28	22	55.8	12.2 B	10.7	183	9.9 B	9.4 B	11	



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Location	Contaminant UNITS ug/L	SAMPLES COLLECTED												
		1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
SW- 5N (SW-D)	Aluminum	NS	NS	945	179 B	575	238 E	1180	133 B	449	394	186	300	189
	Antimony	NS	NS	1.9 U	4.14 U	2.89 B	4.79 U	3.46 U	5.08 U	4 U	0.5 U	0.5 U	0.5 U	0.6 U
	Arsenic	NS	NS	2.7 U	2.09 U	2.33 U	3.97 U	3.31 U	2.24 U	6 U	1.5 U	1.5 U	1.5 U	1.66 U
	Barium	NS	NS	22.8	17.4 B	25.6 B	9.22 B	9.58 B	6.4 B	9.3	6.9	9	9.2	10.4
	Beryllium	NS	NS	0.14 U	0.46 U	0.158 U	0.185 U	0.21 U	0.158 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U
	Cadmium	NS	NS	0.34 U	0.69 U	0.272 U	0.21 U	0.66 U	0.313 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U
	Calcium	NS	NS	7,990	16,400	15,700	11,000	10,500	9,730	11,300	7,220	11100	14100	8970
	Chromium	NS	NS	1.4 B	0.87 U	1.06 B	0.532 U	2.12 B	0.558 B	1.7 B	1 U	1 U	1 U	1 U
	Cobalt	NS	NS	1.1 B	0.91 U	0.515 B	0.581 U	1.78 B	0.541 U	1 U	0.3 B	0.74 B	0.23 B	0.375 B
	Copper	NS	NS	3.2 B	1.63 U	2.28 B	1.3 U	4.09 B	1.39 U	3 U	3.1	1.9	1.4	1.32
	Iron	NS	NS	6,900	2,600	1,290	598	1,070	564	2,000	776	2030	942	1290
	Lead	NS	NS	3.6 B	1.38 U	2.27 B	1.24 U	2.4 U	1.72 U	2.5 U	0.72 B	0.88 B	1.1 B	0.857 B
	Magnesium	NS	NS	2,560 B	2,780 B	2,850 B	2,110 B	2,010 B	2,010 B	2,000	1,760	2580 E	2560 E	2520
	Manganese	NS	NS	146	135	103	33.2	35.2	18	60	33.8	145	32.2	50.3
	Mercury	NS	NS	0.12 U	0.109 B	0.057 U	0.04 U	0.095 U	0.047 U	0.05 U	0.06 U	0.06 U	0.03 U	0.066 U
	Nickel	NS	NS	5 B	1.29 U	1.09 B	0.837 U	1.64 U	0.69 U	1 U	1.1 B	1.5 B	0.9 B	1.24 B
	Potassium	NS	NS	3,910 B	3,350 B	3,160 B	2,210 B	1,600 B	1,370 B	770	1,200	1920	807	908
	Selenium	NS	NS	1.9 U	3.66 U	2.93 U	2.67 U	3.39 U	2.81 U	6 U	2.5 U	2.5 U	1 U	1 U
	Silver	NS	NS	0.89 U	0.94 U	0.871 U	1.15 U	2 B	0.835 U	1.1 B	0.2 U	0.2 U	0.2 U	0.2 U
	Sodium	NS	NS	3,870 B	2,410 B	2,280 B	2,160 B	1,650 BE	1,830 B	2,080	2,090	2680	2330 N	3900
Thallium	NS	NS	5.6 U	2.48 B	3.88 U	4.99 U	3.64 U	10 U	5 U	0.4 U	0.4 U	0.3 U	0.3 U	
Vanadium	NS	NS	4.6 B	2.05 B	2.56 B	1.27 B	4.4 B	1.06 B	4.1 B	2 U	2 U	2.6 B	2 U	
Zinc	NS	NS	21.9	2.19 U	4.96 B	4.54 B	25.4	7.02 B	5.9 B	8.4 B	6.6 B	3.3 B	5.23 B	

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Location	Contaminant UNITS ug/L	SAMPLES COLLECTED												
		1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
SW- E	Aluminum	NS	NS	1,170	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Antimony	NS	NS	1.9 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Arsenic	NS	NS	2.7 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Barium	NS	NS	30.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Beryllium	NS	NS	0.14 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Cadmium	NS	NS	0.34 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Calcium	NS	NS	8,410	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Chromium	NS	NS	3.9 B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Cobalt	NS	NS	2.3 B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Cooper	NS	NS	6.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Iron	NS	NS	6,970	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Lead	NS	NS	4.5 B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Magnesium	NS	NS	2,610 B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Manganese	NS	NS	323	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Mercury	NS	NS	0.12 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Nickel	NS	NS	6.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Potassium	NS	NS	4,140 B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Selenium	NS	NS	1.9 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Silver	NS	NS	0.89 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sodium	NS	NS	3,990 B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Thallium	NS	NS	5.6 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
Vanadium	NS	NS	7.5 B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
Zinc	NS	NS	38.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

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		1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
SW- 2001	Aluminum	NS	NS	NS	NS	466	427 E	4090	119 B	412	1720	1230	85.7	224
	Antimony	NS	NS	NS	NS	2.65 U	4.79 U	3.46 U	5.08 U	4 U	0.5 U	0.5 U	0.5 U	0.6 U
	Arsenic	NS	NS	NS	NS	2.33 U	3.97 U	3.31 U	2.24 U	6 U	1.5 U	1.5 U	1.5 U	1.66 U
	Barium	NS	NS	NS	NS	42.9 B	11.2 B	20.9 B	6.54 B	8.3	16.2	12.4	8.9	14.9
	Beryllium	NS	NS	NS	NS	0.158 U	0.185 U	0.21 U	0.158 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U
	Cadmium	NS	NS	NS	NS	0.272 U	0.21 U	0.66 U	0.313 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U
	Calcium	NS	NS	NS	NS	15,300	11,700	10,400	9,780	10,300	11,000	11,200	11,200	9610
	Chromium	NS	NS	NS	NS	0.977 B	0.532 U	4.52 B	0.503 U	1.6 B	1 U	1.6 B	1 U	1 U
	Cobalt	NS	NS	NS	NS	0.518 B	0.581 U	2.86 B	0.541 U	1 U	1.4	0.7 B	0.19 B	0.551 B
	Copper	NS	NS	NS	NS	1.94 B	2.74 B	7.14 B	1.39 U	3 U	6.4	3	1.2	2
	Iron	NS	NS	NS	NS	1,190	753	3,420	558	1,850	1,990	2080	724	853
	Lead	NS	NS	NS	NS	1.66 B	1.24 U	8.68	1.72 U	2.5 U	3.2	4	0.5 U	0.871 B
	Magnesium	NS	NS	NS	NS	2,760 B	2,180 B	2,320 B	2,020 B	1,940	2,030	2460 E	2190 E	2480
	Manganese	NS	NS	NS	NS	130	103	105	18.9	60.4	328	98.8	27	181
	Mercury	NS	NS	NS	NS	0.057 U	0.04 U	0.095 U	0.047 U	0.05 U	0.06 U	0.06 U	0.088 B	0.066 U
	Nickel	NS	NS	NS	NS	0.815 U	1.08 B	1.64 U	0.69 U	1.9 B	1.8 B	1.9 B	0.89 B	1.33 B
	Potassium	NS	NS	NS	NS	3,050 B	2,130 B	1,960 B	1,360 B	811	1,580	1660	1160	544
	Selenium	NS	NS	NS	NS	2.93 U	2.67 U	3.39 U	2.81 U	6 U	2.5 U	2.5 U	1 U	1 U
	Silver	NS	NS	NS	NS	0.871 U	1.15 U	1.7 U	0.835 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U
	Sodium	NS	NS	NS	NS	2,270 B	2,230 B	1,800 BE	1,830 B	2,010	1,430	2380	2400 N	2290
Thallium	NS	NS	NS	NS	3.88 U	4.99 U	3.64 U	10 U	5 U	0.4 U	0.4 U	0.3 U	0.3 U	
Vanadium	NS	NS	NS	NS	2.32 B	2.13 B	12 B	1.03 B	2.9 B	5.1 B	3 B	2 U	2 U	
Zinc	NS	NS	NS	NS	4.25 B	5.91 B	72.6	7.05 B	7.7 B	72.5	11.4	8.2 B	17	

**NOTES:**

1994 Samples were collected from 0.0' to 0.5'

Number in parenthesis ( ) indicates alternate identification for same location.

NA Not available

NS Not sampled

U - Analyte was analyzed for but not detected.

N - Spike sample recovery was not within control limits

J - Estimated value; concentration below method detection limit.

\* - Duplicate precision is not within control limits.

B - Concentraion less than the contract required detection limit, but greater than or equal to the instrument detection limit.

**Table 5**  
**Wooded Wetlands-Sediment Results and Benchmark Concentrations**  
**Brookhaven National Laboratory, Upton, New York**

**South Pond**

Contaminant units mg/Kg	SD-5 (SD-B)													SD-6 (SD-C)												
	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
Copper	NS	4.8 B	8.1	9.59	9.03	9.65	11.7	10.5	NS	10 *	7.2 *	11.8	15.8	NS	4.8 B	7.8	0.72 B	7.27	1.85	0.549 B	1.37	NS	1.7 *	0.73 B*	0.78 B	2.55
Lead	NS	28	19.4	13.4	13	21.1 N	12.7	30.1 *	NS	16 *	22.2 *	13.1 *N	63.4	NS	19.8	63.5	4.62	5.28	9.74 N	1.6	10.3 *	NS	5 *	4.5 *	5.9 *EN	8.54
Manganese	NS	42	45.1	82.4	123	78.7	88.3 *N	109 *	NS	89 *	54.4	93.8 *	74.2	NS	29.3	39.3	10.4	144	13.4	9.87 *N	15 *	NS	24 *	8 *	9.7 *	17.5
Mercury	NS	0.11 U	0.05	0.098	0.053	0.053	0.021	0.052	0.0512	0.047 BN	0.04 B	0.04 *	0.157 B	NS	0.1 U	0.18	0.049	####	0.011 B	0.006 U	0.019	0.012	0.014 BN	0.026 B	0.017 B*	0.0097 B
Zinc	NS	22	25.1	31.4	29.8	31.9	29.5	26.3 *	NS	34 *	23.1 *	27.6 *	31.7	NS	19.7	26	5.86	27.6	6.45	3.98	6.67 *	NS	9.5 *	4.6 *	4.8	7.16

Contaminant units mg/Kg	SD-16											SD-17 (SD-A)														
	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
Copper	1 B	NS	NS	1.48	0.904	3.78	0.389 B	8.14	NS	2.2 *	9.5 *	8	11.7	2.9 B	NS	8.2	1.64	1.41	1.42	12.6	1.39	NS	7.1 *	8.9 *	5.9	8.09
Lead	4.4 NJ	NS	NS	9.99	3.19	16.1 N	1.7	39.5 *	NS	8.8 *	15 *	15.7 *EN	70.1	4.1 NJ	NS	21.3	6.98	6.15	5.29 N	4.71	2.49 *	NS	16.1 *	26 *	23.2 *EN	25.3
Manganese	11.5	NS	NS	12.4	9.68	17.7	8.07 *N	45 *	NS	16.7 *	41.5	25.8 *	19.6	14.8	NS	40.1	10.9	12.3	9.72	16 *N	9.49 *	NS	54.6 *	31.3	27 *	36
Mercury	0.001 B	NS	NS	0.064	0.003	0.033	0.005 U	0.028	0.0336	0.027 *	0.038 B	0.05 B	0.089 B	0.02 B	NS	0.03 U	0.038	####	0.014	0.012 B	0.012 B	0.062	0.037 BN	0.064 B	0.067 B*	0.09 B
Zinc	4.7 B	NS	NS	7.34	6.48	12.9	2.58	29.1 *	NS	7.3 *	29.9 *	33.5	20.8	8.8	NS	27.5	7.37	4.6	6.37	6.24	3.4 *	NS	33.7 *	32 *	30.1	29.9

**South Pond Averages**

Contaminant units mg/Kg												Max Sediment Conc. <sup>1</sup>	Bkg. Sediment Conc.
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	May-10		
Copper	8.03	3.36	4.7	4.2	6.3	5.4	NS	5.3	6.6	6.62	9.535	29	52.5
Lead	34.73	8.75	6.9	13.1	5.2	20.6	NS	11.5	16.9	14.5	41.8	82.9	97.6
Manganese	41.50	29.03	72.2	29.9	30.6	44.6	NS	46.1	33.8	39.08	36.83	541	84.3
Mercury	0.09	0.06	0.02	0.03	0.01	0.03	0.04	0.03	0.04	0.04	0.09	0.17	0.41
Zinc	26.20	12.99	17.1	14.4	10.6	16.4	NS	21.1	22.4	24	22.39	122	158

**North Pond**

Contaminant units mg/Kg	SD-11													SD-12 (SD-D)												
	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
Copper	NA	NS	NS	5.25	7.06	21.3	7.52	7.55	NS	35.8 *	4.9 *	14.5	18.6	NA	NS	45	7.41	37	26.4	20.2	13.6	NS	11.5 *	38.1 *	48.9	24.4
Lead	6.3 N	NS	NS	8.41	13.2	85.7 N	17.8	16.9 *	NS	122 *	16.6 *	44.5 *EN	85.7	10.4 NJ	NS	86	6.11	71.1	59.8 N	42.3	25.5 *	NS	21.8 *	93.6 *	83.4 *EN	113
Manganese	6.6	NS	NS	3.74	9.41	33.9	10.5 *N	11.4 *	NS	43.1 *	5.3	21.8 *	19.7	56	NS	125	4.12	147	73.3	48.4 *N	33.4 *	NS	23 *	134	148 *	97.3
Mercury	0.030 B	NS	NS	0.074	0.120	0.198	0.056	0.044	0.0729	0.29 N	0.095 B	0.12 B*	0.122 B	0.03 B	NS	0.370	0.074	####	0.215	0.214	0.079	0.203	0.3 N	0.2 B	0.32 *	0.225
Zinc	NA	NS	NS	15.4	16.5	61.7	22.3	20.4 *	NS	83 *	13.3	32.3	38	NA	NS	123	5.91	137	70.3	38.4	22.3 *	NS	23.4 *	127 *	179	87.1

Contaminant units mg/Kg	SD-13 (SD-E)													SD-2001												
	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	May-10
Copper	8.1	NS	9.5	1.42	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	53	23.3	21.2	11.6	NS	8.5 *	22.4 *	20.1	67.2
Lead	15.8 NJ	NS	39.9	5.14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	145	57 N	60.8	29.7 *	NS	9 *	59.3 *	76.9 *EN	137
Manganese	85	NS	16.0	4.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	158	69.3	41.2 *N	40.4 *	NS	21.3 *	57.9	41 *	166
Mercury	0.08 B	NS	0.13	0.054	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	####	0.192	0.18	0.098	0.116	0.13 BN	0.14 B	0.23 *	0.735
Zinc	27.9	NS	17.3	4.35	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	186	76.6	42.1	24.2 *	NS	17.7 *	57 *	49.9	203

**North Pond Averages**

Contaminant units mg/Kg												Max Sediment Conc. <sup>1</sup>	Bkg. Sediment Conc.
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	May-10		
Copper	27.1	4.7	32.2	23.7	16.3	10.9	NS	18.6	21.8	27.8	36.7	29	52.5
Lead	63.1	6.6	76.4	67.5	40.3	24.0	NS	50.9	56.5	68.3	111.9	82.9	97.6
Manganese	70.5	3.9	104.8	58.8	33.4	28.4	NS	29.1	65.7	70.3	94.3	541	84.3
Mercury	0.25	0.07	0.37	0.20	0.15	0.07	0.13	0.24	0.15	0.22	0.36	0.17	0.41
Zinc	70.2	8.6	113.2	69.5	34.3	22.3	NS	41.4	65.8	87.1	109.4	122	158

**NOTES:**

<sup>1</sup> Final Focused Ecological Risk Assessment for Operable Unit I/VI (CDM 1999)

1994 Samples were collected from 0.0' to 0.5'

Number in parenthesis ( ) indicates alternate identification for same location.

NA Not available

NS Not sampled

U Analyte was analyzed for but not detected.

N - Spike sample recovery was not within control limits

J - Estimated value; concentration below method detection limit.

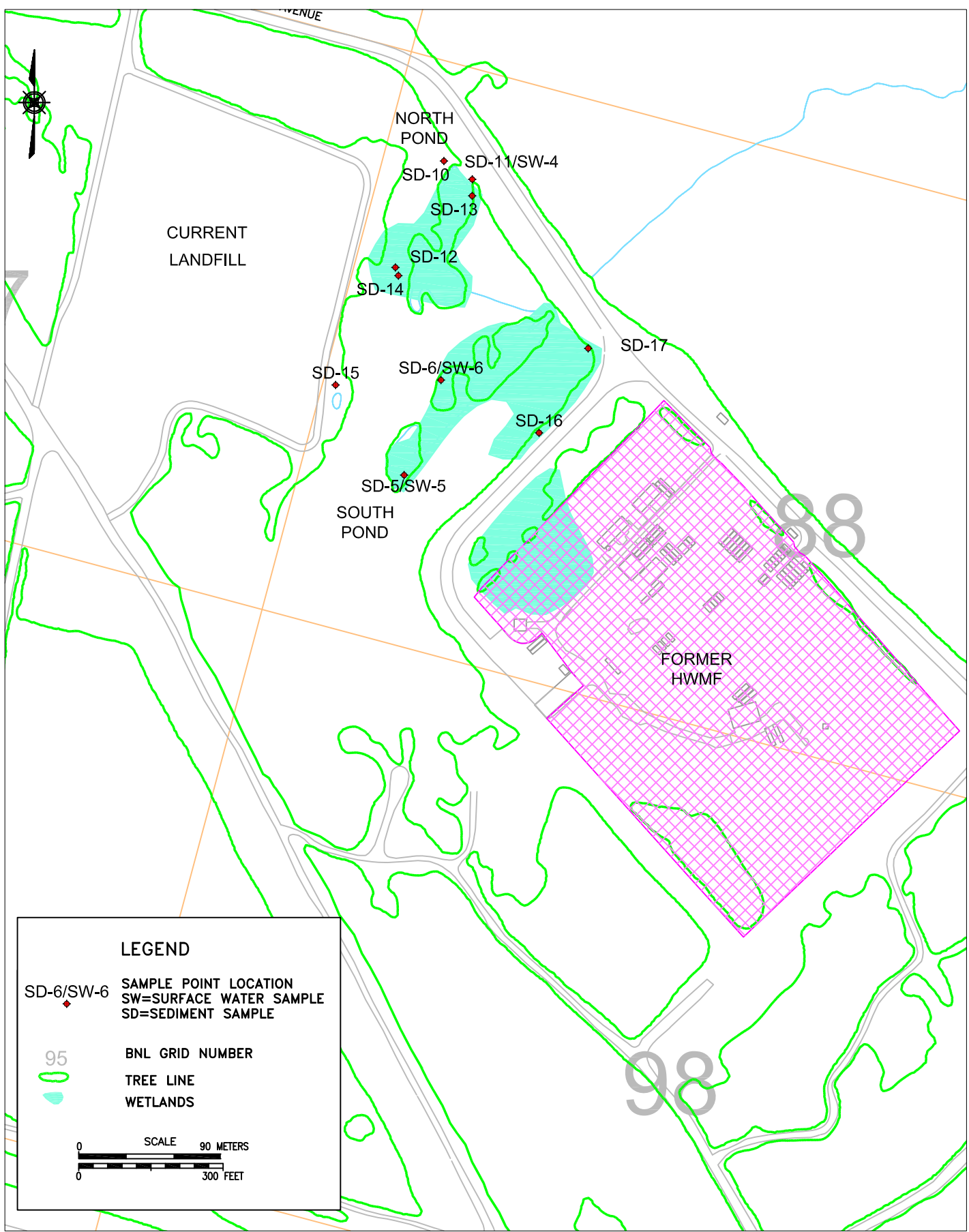
\* - Duplicate precision is not within control limits.

B - Concentration less than the contract required detection limit, but greater than or equal to the instrument detection limit.

E - Exceeded ICP serial dilution.

# *FIGURES*

R:\Gw\_projects\Landfills\2010 Report\wooded wetlands Fig1.dwg



**LEGEND**

SD-6/SW-6 SAMPLE POINT LOCATION  
 SW=SURFACE WATER SAMPLE  
 SD=SEDIMENT SAMPLE

95 BNL GRID NUMBER

TREE LINE

WETLANDS

SCALE 90 METERS  
 0 300 FEET

**BROOKHAVEN**  
 NATIONAL LABORATORY

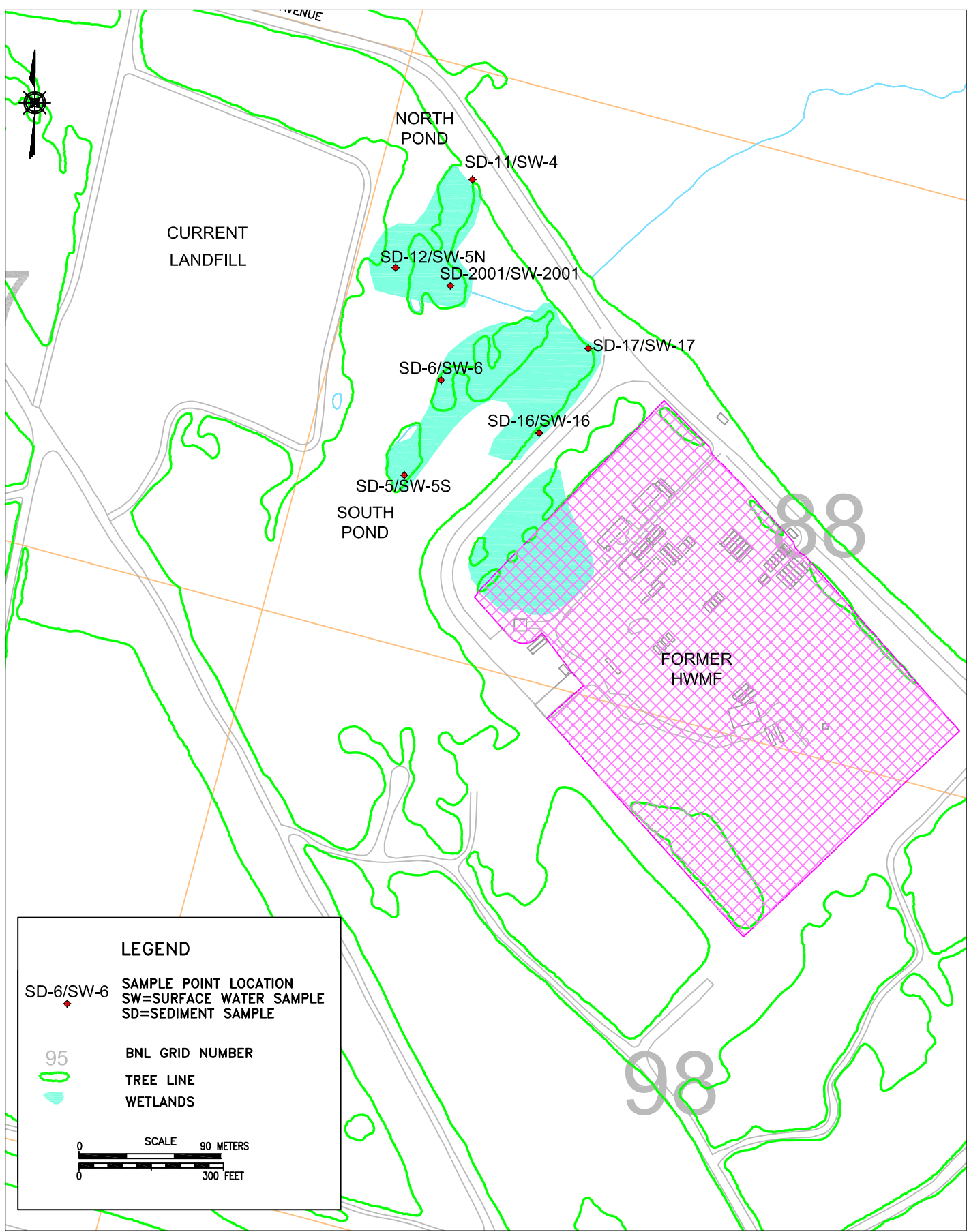
ENVIRONMENTAL PROTECTION  
 DIVISION

TITLE: **WOODED WETLANDS  
 BENCHMARK SURFACE AND SEDIMENT  
 SAMPLE LOCATIONS FROM ECOLOGICAL RISK  
 ASSESSMENT 1994 - 1997**

2010 ENVIRONMENTAL MONITORING REPORT  
 CURRENT AND FORMER LANDFILL AREAS

DWN: KCK	VT:HZ.: -	DATE: 02/18/04	PROJECT NO.: 07928
CHKD: JEB	APPD: WRD	REV.: -	NOTES: -
FIGURE NO.:		1	

R:\Gw\_projects\Landfills\2010 Report\wooded wetlands Fig2.dwg



**LEGEND**

SD-6/SW-6 SAMPLE POINT LOCATION  
 SW=SURFACE WATER SAMPLE  
 SD=SEDIMENT SAMPLE

95 BNL GRID NUMBER

TREE LINE

WETLANDS

SCALE 90 METERS  
 0 300 FEET

**BROOKHAVEN**  
 NATIONAL LABORATORY

ENVIRONMENTAL PROTECTION  
 DIVISION

TITLE: **WOODED WETLANDS  
 SEDIMENT AND SURFACE WATER  
 SAMPLING LOCATIONS**

2010 ENVIRONMENTAL MONITORING REPORT  
 CURRENT AND FORMER LANDFILL AREAS

DWN: KCK	VT:HZ.: -	DATE: 02/18/04	PROJECT NO.: 07928
CHKD: JEB	APPD: WRD	REV.: -	NOTES: -
FIGURE NO.:			2

## Appendix B

### Soil-gas Sampling Field Notes



(36)

Current Landfill

Jim Milligan

Jim Milligan

Current Landfill

(37)

3/17/10 → 3/18/10  
Cal Check of Gen 2000Clear  
6.5"

3/18/10

Culverts at Gen 2000 old

29.71 " H<sub>2</sub>O65  
Some clear

Location	Well ID	CH <sub>4</sub> %	LEL %	H <sub>2</sub> S ppm	Time/connected	Location	Well ID	CH <sub>4</sub> %	LEL %	H <sub>2</sub> S ppm	Time
56m IA	087-62	24.1	>100 482	0	1400	56m 8A	087-69	0.0	0	0	0942
1B	087-78	24.0	>100 481	3	1407	8B	087-92	0.0	0	0	0950
1C	087-74	23.1	>100 462	5	1418	8C	087-93	0.0	0	0	1000
2A	087-63	55.9	>100 1118	0	1420	9A	087-70	0.0	0	0	1005
2B	087-80	24.9	>100 498	3	1426	9B	087-94	0.0	0	0	1012
2C	087-81	56.5	>100 1130	2	1435	9C	087-95	0.0	0	0	1022
3A	087-64	27.2	>100 544	1	1440	10A	087-71	11.1	>100 222	1	1025
3B	087-82	63.8	>100 1276	24	1446	10B	087-96	10.5	>100 210	3	1032
3C	087-83	59.5	>100 1190	1	1456	10C	087-97	9.4	>100 185	0	1042
4A	087-65	30.9	>100 618	0	1504	11A	087-72	11.8	>100 236	2	1045
4B	087-84	49.7	>100 974	5	1510	11B	087-98	10.1	>100 202	0	1052
4C	087-85	46.6	>100 932	5	1519	12A	087-78	51.5	>100 1030	23	1058
5A	087-66	42.9	>100 858	3	1525	12B	087-99	6	12	0	1110
5B	087-86	42.3	>100 846	5	1531	13A	087-74	0.0	0	0	1115
5C	087-87	37.3	>100 746	4	1541	13B	087-100	0.0	0	0	1121
6A	087-67	45.3	>100 906	0	1545	14A	087-75	2.9	58%	0	1129
6B	087-88	45.0	>100 900	3	1552	14B	087-101	0.0	0	0	1139
6C	087-89	45.1	>100 902	3	1602	15A	087-111	0.0	0	0	1300 <sup>sum</sup>
7A	087-68	0.0	0	0	0920	15B	087-114	0.0	0	0	1300
7B	087-90	0.0	0	0	0926	16A	087-112	0.0	0	0	1314
56m 7C	087-91	0.1	2	0	0938	56m 16B	087-115	0.0	0	0	1340

(28)

3/18/10

(-) West Ludlow

6.5' Larry

29.6P

Jim Miller

(39)

6/8/10

6/9/10

Current Ludlow

74° Sunny  
29.50"

Jim Miller

C-1 Check  
of Gen 2000

Location	Well ID	CH <sub>4</sub> %	LeL %	H <sub>2</sub> S PPM	Time/Comment	Location	Well ID	CH <sub>4</sub> %	LeL %	H <sub>2</sub> S PPM	Time/Comment
Sum 17A	088-113	0.0	0	0	1443	SGM 1A	087-62	24.0	>100 480	0	1600
17B	088-116	0.0	0	0	water mpp	1B	087-78	0.0	0	0	1607
18A	087-76	0.0	0	0	1450 water	1C	087-79	0.0	0	0	1617
18B	087-102	0.0	0	0	1450 water	2A	087-63	48.2	>100 464	0	1620
19A	087-77	41.9	>100 918	13	1450s	2B	087-80	55.2	>100 1104	4	1626
19B	087-103	5.5	>100 110	0	Water	2C	087-81	0.0	0	0	1635
6SGM 1A	No ID	0.0	0	0	1500	3A	087-64	47.9	>100 958	6	1639
1B		0.0	0	0	1510	3B	087-82	50.4	>100 1008	0	1647
1C		0.0	0	0	1515	3C	087-83	0.0	0	0	1657
2A		0.0	0	0	1436	4A	087-65	24.7	7100 494	0	1707
2B		0.0	0	0	1439	4B	087-84	29.4	7100 588	0	1714
2C		0.0	0	0	1449	4C	087-85	0.0	0	0	1729
3A		0.0	0	0	1428	5A	087-66	31.3	>100 626	2	1739
3B		0.0	0	0	1430	5B	087-86	39.3	>100 786	3	1740
4A		0.0	0	0	1410 water	5C	087-87	33.2	>100 664	4	1750
4B		0.0	0	0	1418	6A	087-67	2.9	59%	0	1759
						6B	087-88	45.1	7100 902	5	1805
						6C	087-89	2.1	3	0	1825
						7A	087-68	0.2	4	0	1500
						7B	087-90	0.0	0	0	1505
						7C	087-91	0.6	12	0	1515

Jim  
3/18/10

6/14/10

29.68" Hg

Current Landfill

Jim Wilson

(43)

6/14/10

29.68" Hg

Current Landfill

Jim Wilson

(44)

Conc check of Gen 2000

Conc check of Gen 2000

Location	Well ID	CH4 %	LEL %	H2S ppm	Time/Comments	Location	Well ID	CH4 %	LEL %	H2S ppm	Time/Comments
SGM	8A	0.0	0	0	6/14/10 1520	SGM	17A	0.0	0	0	1707
	8B	0.0	0	0	1506		17B	0.0	0	0	Water in line 1714
	8C	0.0	0	0	1515		18A	0.0	0	0	1719
	9A	0.0	0	0	1514		18B	0.0	0	0	Water 1725
	9B	0.0	0	0	1526		19A	28.9	>100	578	21
	9C	0.0	0	0	1536		19B	0.0	0	0	Water 1744
	10A	16.2	>100 324	5	1540	SGM 1A	No ID	0.0	0	0	1750
	10B	14.2	>100 284	3	1546		1B	0.0	0	0	1756
	10C	0.0	0	0	Water in pipe 1557		1C	0.0	0	0	1759
	11A	16.0	>100 320	10	1600		2A	0.0	0	0	1806
	11B	0.0	0	0	1606		2B	0.0	0	0	1810
	12A	32.9	>100 1038	67	1610		2C	0.0	0	0	1817
	12B	0.0	0	0	Water in pipe 1616		3A	0.0	0	0	1823
	13A	0.0	0	0	1620		3B	0.0	0	0	1830
	13B	0.0	0	0	1626		4A	0.0	0	0	Water 1838
	14A	0.0	0	0	1630		4B	0.0	0	0	1847
	14B	0.0	0	0	1637						
	15A	0.0	0	0	1640						
	15B	0.0	0	0	Water in pipe 1647						
	16A	0.0	0	0	1653						
	16B	0.0	0	0	1700						

(42)

Current Lact II

29.63 "Hg

9/8/10 check of Gen 2000

Jim Milligan

Current Lact II

(43)

9/8/10 9-1/2/10

29.65 "Hg

Jim Milligan

Location	Well ID	CH4%	LCL%	H <sub>2</sub> S ppm	Time/Comments
SGM - 1A	087-62	14.1	7100 282	1	0920
1B	087-78	11.9	7100 238	1	0926
1C	087-79	10.6	7100 212	10	0935
2A	087-63	47.8	7100 956	32	0940
2B	087-80	55.5	7100 1110	20	0946
2C	087-81	56.9	7100 1138	1	0955
3A	087-64	46.5	7100 930	18	1005
3B	087-82	58.4	7100 1168	36	1012
3C	087-83	58.5	7100 1170	29	1022
4A	087-65	48.2	7100 964	11	1029
4B	087-84	49.2	7100 984	10	1026
4C	087-85	45.6	7100 912	7	1036
5A	087-66	40.4	7100 858	11	1042
5B	087-86	36.9	7100 727	10	1049
5C	087-87	30.8	7100 616	7	1058
6A	087-67	42.7	7100 854	1	1109
6B	087-88	41.5	7100 820	10	1116
6C	087-89	40.8	7100 816	9	1126
7A	087-68	0.0	0	0	1132
7B	087-90	0.0	0	0	1138
7C	087-91	0.0	0	0	1148

Location	Well ID	CH4%	LCL%	H <sub>2</sub> S ppm	Time/Comments
SGM 8A	087-69	0.0	0	0	1300
8B	087-92	0.0	0	0	1306
8C	087-93	0.0	0	0	1316
9A	087-70	0.0	0	0	1323
9B	087-94	0.0	0	0	1338
9C	087-95	0.0	0	0	1347
10A	087-71	18.8	7100 376	17	1355
10B	087-96	16.2	7100 324	6	1406
10C	087-97	14.2	7100 284	11	1417
11A	087-72	16.8	7100 336	17	1422
11B	087-98	15.8	7100 316	35	1430
12A	087-78	37.8	7100 752	102	1440
12B	087-99	1.7	33	1	1450
13A	087-74	0.6	12	0	water
13B	087-100	0.0	0	0	water
14A	087-75	0.0	0	0	1510
14B	087-101	0.0	0	0	1530
15A	088-111	0.0	0	0	1000 9/10
15B	088-114	0.0	0	0	water 1510
16A	088-112	0.0	0	0	1015
16B	088-115	0.0	0	0	water 1028

Current List All Jim Miller 44  
 2965 M7

Current List All 30415 45  
 2965 M7

Location	Well ID	CH <sub>4</sub> %	LeL %	H <sub>2</sub> S PPM	Time/Comment
SGM 17A	088-113	0.0	0	0	1035
17B	088-116	0.0	0	0	water 1045
18A	087-76	0.0	0	0	water 1101
18B	087-102	0.0	0	0	water 1106
19A	087-77	10.1	700 202	10	1112
19B	087-103	14.0	710 280	0	1120
OSM 1A	No ID	0.0	0	0	1345
1B		0.0	0	0	1420
1C		0.0	0	0	1440
2A		0.0	0	0	1305
2B		0.0	0	0	1310
2C		0.0	0	0	1320
3A		0.0	0	0	1145
3B		0.0	0	0	1155
4A		0.0	0	0	1130
4B		0.0	0	0	1137

Jim

Location	Well ID	CH <sub>4</sub> %	LeL %	H <sub>2</sub> S PPM	Time/Comment
SGM 1A	087-62	12.0	>100 240	1	1050
1B	087-78	10.6	>100 212	1	1054
1C	087-79	2.6	>100 172	0	1001
2A	087-63	41.7	>100 834	0	1013
2B	087-80	42.5	>100 850	0	1018
2C	087-81	45.7	>100 914	0	1025
3A	087-64	28.9	>100 578	0	1038
3B	087-82	55.4	>100 1108	15	1042
3C	087-83	48.3	>100 966	0	1049
4A	087-65	17.0	>100 340	0	1103
4B	087-84	35.4	>100 708	4	1107
4C	087-85	22.2	>100 444	0	1114
5A	087-66	16.1	>100 322	2	1126
5B	087-86	24.1	>100 482	2	1130
5C	087-87	20.5	>100 410	0	1136
6A	087-67	20.8	>100 416	0	1323
6B	087-88	37.4	>100 748	4	1327
6C	087-89	35.5	>100 710	1	1338
7A	087-68	0.0	0	0	1040
7B	087-90	0.0	0	0	1045
7C	087-91	0.0	0	0	1055
8A	087-69	0.0	0	0	1106
8B	087-92	0.0	0	0	1115
8C	087-93	0.0	0	0	1125

12/14/10  
 1017  
 1018

46

Current Landfill

12/9/10 Gen 2000 / 20.48 Hg

Location	Well ID	CH4 %	LEL %	H <sub>2</sub> ppm	Temp / Comment
SSM 9-A	87-70	0	0	0	1350
9-B	87-94	0	0	0	1354
9-C	87-95	0	0	0	1404
10A	087-71	0	0	0	1406
10B	087-72	9	19	0	1410
10C	087-97	2.1	41	3	1421
11A	87-72	4.2	84	5	1428
11B	87-98	0.7	14	5	1432
12AB	87-73	28.6	572	4	1443
<del>12B</del>	87-99	21.3	426	0	1449
13A	87-74	0.0	002	0	1458
13B	87-100	0	0	0	1502
14A	87-75	0	0	0	1513
14B	87-101	0	0	0	1517
15A	88-111	0	0	0	1528
15B	88-114	0	0	0	1532
16A	88-112	0	0	0	1545
16B	88-115	0	0	0	1549
17A	88-113	0	0	0	1600
17B	88-116	0	0	0	1604
18A	087-76	0	0	0	0929 12/10
18B	87-102	0	0	0	0933
19A	87-77	9.4	188	0	0943
19B	87-103	17.9	358	0	0945

47

Current Landfill

12/10/10 Gen 2000 / 29.0 Hg

Location	Well ID	CH4 %	LEL %	H <sub>2</sub> ppm	Temp / Comment
SSM 1A	No ID	0	0	0	1126
1B		0	0	0	1130
1C		0	0	0	1142
2A		0	0	0	1057
2B		0	0	0	1103
2C		0	0	0	1171
3A		0	0	0	1043
3B		0	0	0	1046
4A		0	0	0	1025
4B		0	0	0	1029

12/10/10

(19) 6/7/2010

J. Milligan  
Former Landfill

Cal check of Gen 2000  
29.68% H<sub>2</sub> 70° clear

6/7/2010

J. Milligan  
Former Landfill

Cal check of Gen 2000 ok  
29.68% H<sub>2</sub> 70° clear

Location	Well ID	CH <sub>4</sub> %	LCL%	H <sub>2</sub> S ppm	Time/Comments
SGM 1A	096-41	0.0	0.0	0	1600
1B	096-42	0.0	0.0	0	1607
2A	096-43	0.0	0.0	0	1614
2B	096-44	0.0	0.0	0	1620
3A	096-45	0.0	0.0	0	1624
3B	096-46	0.0	0.0	0	1630
4A	096-47	0.0	0.0	0	1635
4B	096-48	0.0	0.0	0	1642
5A	097-50	0.0	0.0	0	1648
5B	097-51	0.0	0.0	0	1657
6A	097-52	0.0	0.0	0	1704
6B	097-53	0.0	0.0	0	1710
7A	097-54	0.0	0.0	0	1714
7B	097-55	0.0	0.0	0	1721
8A	097-56	0.0	0.0	0	1724
8B	097-57	0.0	0.0	0	1729
9A	097-58	0.0	0.0	1	1735
9B	097-59	0.0	0.0	0	1742

Location	Well ID	CH <sub>4</sub> %	LCL%	H <sub>2</sub> S ppm	Time/Comments
SGM -10A	097-60	0.0	0.0	0	1746
10B	097-61	0.0	0.0	0	1754
11A	097-62	0.0	0.0	0	1759
11B	097-63	0.0	0.0	0	1804
12A	097-64	0.0	0.0	0	1810
12B	097-65	0.0	0.0	0	1818

(20)

Cont check of Gen 2000

(2)

J. Miller

12/9/10 m  
12/14/10

Former Landfill

28° 54% Humidity

30.03" Hg

Location	Well ID	CH4%	LEL%	H2S PPM	Time/Comments
SGM 1A	096-41	0.0	0.0	0	0920
1B	096-42	0.0	0.0	0	0927
2A	096-43	0.0	0.0	0	0911
2B	096-44	0.0	0.0	0	0918
3A	096-45	0.0	0.0	0	0923
3B	096-46	0.0	0.0	0	0930
4A	096-47	0.0	0.0	0	0935
4B	096-48	0.0	0.0	0	0943
5A	097-50	0.0	0.0	0	0950
5B	097-51	0.0	0.0	0	0956
6A	097-52	0.0	0.0	0	1000
6B	097-53	0.0	0.0	0	1007
7A	097-54	0.0	0.0	0	1013
7B	097-55	0.0	0.0	0	1023
8A	097-56	0.0	0.0	0	1031
8B	097-57	0.0	0.0	0	1040
9A	097-58	0.0	0.0	0	BP below 1000
9B	097-59	0.0	0.0	0	Fence 1010

12/14/10

called Steve @ BP

provided Access To Area

(2)

12/9/10

J. Miller

28° 54% Humidity

Former Landfill

30.03" Hg

Location	Well ID	CH4%	LEL%	H2S PPM	Time/Comments
SGM -10A	097-60	0.0	0.0	0	1120
-10B	097-61	0.0	0.0	0	1130
-11A	097-62	0.0	0.0	0	1315
-11B	097-63	0.0	0.0	0	1325
-12A	096-44	0.0	0.0	0	1330
-12B	096-50	0.0	0.0	0	1340

JM

12/9/10



## Appendix C

### Monthly Landfill Site Inspection Forms

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

Name of Inspector(s): Eric Kramer

Date of Inspection: 1-20-10

Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident

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

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

Weather Conditions: Clear/cold

**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: \_\_\_\_\_

Recommendations: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_





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

Name of Inspector(s): Eric Kramer

Date of Inspection: 4-26-10

Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident

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

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

Weather Conditions: partly cloudy/cool

**A. Inspection Checklist**

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

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

1. Location: \_\_\_\_\_  
Observed Conditions: \_\_\_\_\_

Recommendations: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

Name of Inspector(s): Eric Kramer

Date of Inspection: 5-14-10

Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident

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

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

Weather Conditions: Clear/Warm

**A. Inspection Checklist**

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

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

1. Location: \_\_\_\_\_  
Observed Conditions: \_\_\_\_\_

Recommendations: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

Name of Inspector(s): Eric Kramer

Date of Inspection: 6-22-10

Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident

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

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

Weather Conditions: clear

**A. Inspection Checklist**

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

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

1. Location: \_\_\_\_\_  
Observed Conditions: \_\_\_\_\_

Recommendations: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

Name of Inspector(s): Eric Kramer  
 Date of Inspection: 7-7-10  
 Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident  
 Time on Site: \_\_\_\_\_  
 Time off Site: \_\_\_\_\_  
 Weather Conditions: Cloudy/warm

**A. Inspection Checklist**

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

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

1. Location: MOST OF LANDFILL, DRAINAGE CHANNELS  
 Observed Conditions: OVERGROWN VEGETATION

Recommendations: PUT IN WORK ORDER FOR VEGETATION REMOVAL.













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

Name of Inspector(s): ERIC KRAMER  
 Date of Inspection: 1-20-10  
 Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident  
 Time on Site: \_\_\_\_\_  
 Time off Site: \_\_\_\_\_  
 Weather Conditions: Clear/Cold

**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>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:**

Location: Asphalt  
 Observed Conditions: Some Cracking / Splitting

Recommendations: Due to water constantly leaching from landfill over cracked asphalt, repair would be extremely difficult. The cracked asphalt has not continued to degrade much over time. Due to this the roads will be closely monitored and repairs will commence if conditions warrant repair.

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

Name of Inspector(s): Eric Kramer

Date of Inspection: 2-23-10

Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident

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

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

Weather Conditions: cloudy / little / 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"/>	<input checked="" type="checkbox"/>
Drainage Channels	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
French Drains/Outfalls	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Subsurface Drainage Pipes/Outfalls	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Manholes	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Recharge Areas	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Monitoring System:</b>					
Soil Gas Wells	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Groundwater Wells	<input checked="" type="checkbox"/>			<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"/>
					<input checked="" type="checkbox"/>
					<input checked="" type="checkbox"/>

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

Location: Roads

Observed Conditions: Cracked Asphalt

Recommendations: CONTINUE MONITORING

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

Name of Inspector(s):

Eric Kramer

Date of Inspection:

3-15-10

Purpose of Inspection:

Routine  Heavy Rainfall  Reported Incident

Time on Site:

Time off Site:

Weather Conditions:

Clear

**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>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:**

**C. Location:**

Road

**D. Observed Conditions:**

Cracked Asphalt

**E. Recommendations:**

Continue Monitoring



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

Name of Inspector(s): Eric Kramer  
 Date of Inspection: 4-26-10  
 Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident  
 Time on Site: \_\_\_\_\_  
 Time off Site: \_\_\_\_\_  
 Weather Conditions: partly cloudy/cool

**A. Inspection Checklist**

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

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

I. Location: Roads  
 Observed Conditions: cracked Asphalt

Recommendations: Continue Monitoring

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

Name of Inspector(s): Eric Kramer  
 Date of Inspection: 5-14-10  
 Purpose of Inspection: Routine  Heavy Rainfall  Reported Incident   
 Time on Site: \_\_\_\_\_  
 Time off Site: \_\_\_\_\_  
 Weather Conditions: Clear/Warm

**A. Inspection Checklist**

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

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

Location: Roads  
 Observed Conditions: Cracked Asphalt

Recommendations: Continue Monitoring

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

Name of Inspector(s): Eric Kramer

Date of Inspection: 6-22-10

Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident

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

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

Weather Conditions: Clear

**A. Inspection Checklist**

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

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

Location: Roads

Observed Conditions: Cracked Asphalt

**C. Recommendations:**

Continue Monitoring

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

Name of Inspector(s): Eric Kramer

Date of Inspection: 7-7-10

Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident

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

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

Weather Conditions: cloudy/warm

**A. Inspection Checklist**

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

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

**C. Location:** Landfill, Drainage channel, Roads

**D. Observed Conditions:** 1) Overgrown Vegetation  
2) Cracked Asphalt

**E. Recommendations:** 1) Put in work order for vegetation removal  
2) Continue monitoring

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

Name of Inspector(s): Eric Kramer

Date of Inspection: 8-24-10

Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident

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

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

Weather Conditions: Clear, HOT

**A. Inspection Checklist**

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

**B. Description of Further Action Requirements:** See last month

**C. Location:** \_\_\_\_\_

**D. Observed Conditions:** \_\_\_\_\_

**E. Recommendations:** \_\_\_\_\_

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

Name of Inspector(s):

Eric Kramer

Date of Inspection:

9-28-10

Purpose of Inspection:

Routine  Heavy Rainfall  Reported Incident

Time on Site:

Time off Site:

Weather Conditions:

Cloudy/warm

**A. Inspection Checklist**

Component	Observed Condition			Further Action Required	
	Excellent	Fair	Poor	Yes	No
1.0 Landfill Cap:					
Vegetation	<input checked="" type="checkbox"/>				
Cap	<input checked="" type="checkbox"/>				
Gas Vents	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
2.0 Drainage Structures:					
Toe Drain	<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"/>
Monitoring System:					
Soil Gas Wells	<input checked="" type="checkbox"/>				
Groundwater Wells	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
4.0 Site Access:					
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:**

**C. Location:** Roads

**D. Observed Conditions:** Cracked Asphalt

**E. Recommendations:** Continue Monitoring

\* ~~veg~~ Overgrown vegetation has been removed.

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

Name of Inspector(s): Eric Kramer  
 Date of Inspection: 10-19-10  
 Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident  
 Time on Site: \_\_\_\_\_  
 Time off Site: \_\_\_\_\_  
 Weather Conditions: Warm

**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>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:**

Location: Roads  
 Observed Conditions: Cracked Asphalt

Recommendations: Continue Monitoring

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

Name of Inspector(s): Eric Kramer  
 Date of Inspection: 11-22-10  
 Purpose of Inspection:  Routine  Heavy Rainfall  Reported Incident  
 Time on Site: \_\_\_\_\_  
 Time off Site: \_\_\_\_\_  
 Weather Conditions: Cold

**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>Monitoring System:</b>					
Soil Gas Wells	/				
Groundwater Wells	/				/
<b>4.0 Site Access:</b>					
Asphalt Access Road					
Crushed-Concrete Access Road		/			
<b>B. Description of Further Action Requirements:</b>					/

**C. Location:** Roads  
**Observed Conditions:** Cracked Asphalt

**Recommendations:** CONTINUE MONITORING.



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

Name of Inspector(s): Eric Kramer  
 Date of Inspection: DECEMBER 2010  
 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
1.0 Landfill Cap: Vegetation Cap Gas Vents					
2.0 Drainage Structures: Toe Drain Drainage Channels French Drains/Outfalls Subsurface Drainage Pipes/Outfalls Manholes Recharge Areas					
Monitoring System: Soil Gas Wells Groundwater Wells					
4.0 Site Access: Asphalt Access Road Crushed-Concrete Access Road					

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

**C. Location:** NO INSPECTION DONE THIS MONTH  
**D. Observed Conditions:** \_\_\_\_\_

**E. Recommendations:**

## Appendix D

### 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	55	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	30.4	51.6
SGMW-06A	40.1	44.1	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	0.3	0	6.7
SGMW-10A	16.7	22.8	0	5.8
SGMW-10B	16.6	14.3	23	22.7
SGMW-10C	14	18.2	15.8	32.5
SGMW-11A	16.4	26.8	11.4	29.2
SGMW-11B	15.7	25.6	23.5	39.3
SGMW-12A	57.5	0	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	44.2	18.2	38.6
SGMW-15A	0	0.6	16	0
SGMW-15B	12.7	0	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	2.6	0	0	0
SGMW-18B	0.6	0	0	7.1
SGMW-19A	40.8	29	0	0
SGMW-19B	36.7	30.1	16	52.5
GSGM-1A	NA	0	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-4B	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
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	24.3	27.6	25.2	20	60	56
SGMW-11B	0	27.8	20.5	0	74	32
SGMW-12A	35.9	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
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	4	<	0
GSGM-1B	0	<	0	5	<	1
GSGM-1C	0	<	0	6	<	0
GSGM-2A	0	<	0	6	<	0
GSGM-2B	0	<	0	6	<	4
GSGM-2C	0	<	0	6	<	0
GSGM-3A	0	<	0	5	<	0
GSGM-3B	0	<	0	4	<	0
GSGM-4A	0	<	0	5	<	8
GSGM-4B	0	<	0	5	<	0

\* Values are calculated, not measured.

< No measurement was recorded.

**Brookhaven National Laboratory**  
 1998 Landfills 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	25.3	25.1	24.2	20.4	5	0	0	0	SGMW-01A
SGMW-01B	25.1	29.1	29	10.7	4	0	0	4	SGMW-01B
SGMW-01C	24	29	25	17.7	1	2	1	2	SGMW-01C
SGMW-02A	57.9	65.3	79.4	61.1	92	3	4	0	SGMW-02A
SGMW-02B	64.1	69	69	54.9	93	6	5	4	SGMW-02B
SGMW-02C	61.6	64.7	65	53.1	11	0	0	0	SGMW-02C
SGMW-03A	20.4	69	79.6	2.5	19	3	2	1	SGMW-03A
SGMW-03B	76.8	74	74	61.1	23	0	0	0	SGMW-03B
SGMW-03C	65.3	65.5	65.3	41.5	4	3	0	1	SGMW-03C
SGMW-04A	11.3	54.2	55	0.4	9	7	4	0	SGMW-04A
SGMW-04B	59.9	55.8	69	26.1	5	4	3	0	SGMW-04B
SGMW-04C	80.8	87.6	57.6	0	17	6	2	0	SGMW-04C
SGMW-05A	48.1	52.4	50	48.9	3	6	5	2	SGMW-05A
SGMW-05B	64	52.1	55.4	47.7	3	4	3	3	SGMW-05B
SGMW-05C	49	50.3	49	41.5	0	3	2	0	SGMW-05C
SGMW-06A	27.3	44.1	29.3	17.6	2	7	8	0	SGMW-06A
SGMW-06B	44.8	46.5	7.0	47.2	15	0	0	1	SGMW-06B
SGMW-06C	46.3	49	5.4	0	0	0	0	0	SGMW-06C
SGMW-07A	2.2	8.9	7.2	0	0	3	4	0	SGMW-07A
SGMW-07B	0	8.6	7	0	0	4	3	0	SGMW-07B
SGMW-07C	4.0	8.5	8.6	8.1	1	8	8	0	SGMW-07C
SGMW-08A	0	0	0	0	2	0	0	0	SGMW-08A
SGMW-08B	0	0	0	0	3	3	3	0	SGMW-08B
SGMW-08C	0	0	0	0	4	1	1	0	SGMW-08C
SGMW-09A	0	0	0	0	8	0	0	0	SGMW-09A
SGMW-09B	0.7	1.4	1.3	0	2	0	0	0	SGMW-09B
SGMW-09C	3	2.7	2.5	0.7	6	2	1	0	SGMW-09C
SGMW-10A	17.9	29.7	30	29.2	0	0	0	0	SGMW-10A
SGMW-10B	23.5	26.4	28.3	26	2	0	0	0	SGMW-10B
SGMW-10C	20.7	24	23	23.7	0	0	0	0	SGMW-10C
SGMW-11A	22.8	31	29.4	17.6	19	0	0	0	SGMW-11A
SGMW-11B	19.9	20	25.3	26.4	0	0	0	0	SGMW-11B
SGMW-12A	53.7	67.2	60.4	33.9	37	2	1	3	SGMW-12A
SGMW-12B	60.3	62	3	38.2	11	3	4	0	SGMW-12B
SGMW-13A	7	61.6	69	0	9	0	0	0	SGMW-13A
SGMW-13B	0.1	0.1	0	0	9	0	0	0	SGMW-13B
SGMW-14A	17.1	21	20	1.2	0	1	2	0	SGMW-14A
SGMW-14B	0	0	15	0	0	0	2	0	SGMW-14B
SGMW-15A	4	1.2	0	0	5	0	0	0	SGMW-15A
SGMW-15B	0	0	0.7	0	0	0	0	0	SGMW-15B
SGMW-16A	0	0	0	0	0	0	0	0	SGMW-16A
SGMW-16B	0	0	0	0	0	1	0	0	SGMW-16B
SGMW-17A	0	0	0	0	0	0	0	0	SGMW-17A
SGMW-17B	0	0	0	0	0	0	0	0	SGMW-17B
SGMW-18A	0.2	0	0	0	0	0	2	0	SGMW-18A
SGMW-18B	0	0	0	0	0	0	0	0	SGMW-18B
SGMW-19A	37.4	47.2	30.4	6.7	60	0	0	1	SGMW-19A
SGMW-19B	39.7	4	4	12	6	1	1	4	SGMW-19B

Soil Gas Monitoring Well	Methane (% By Volume) February-98	Methane (% By Volume) May-00	Methane (% By Volume) August-00	Methane (% By Volume) December-00
GSGM-1A	0	0	0	0
GSGM-1B	0	0	0	0
GSGM-1C	0	0	0	0
GSGM-2A	0	0	0	0
GSGM-2B	0	0	20.1	0
GSGM-2C	0	0	0	0
GSGM-3A	0	0	0	0
GSGM-3B	0	0	0	0
GSGM-4A	0	0	0	0
GSGM-4B	0	0	0	0

Hydrogen sulfide (ppm By Volume) February-98	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
0	0	0	0	GSGM-1A
1	0	0	0	GSGM-1B
0	0	0	0	GSGM-1C
0	0	0	0	GSGM-2A
0	0	1	0	GSGM-2B
2	0	0	0	GSGM-2C
0	0	0	0	GSGM-3A
0	0	0	0	GSGM-3B
0	0	0	0	GSGM-4A
2	0	0	0	GSGM-4B

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

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Soil Gas Monitoring Well	Methane (% By Volume) June-99	Methane (% By Volume) October-99	Methane (% By Volume) December-99	LEL (% By Volume) June-99	LEL (% By Volume) October-99	LEL (% By Volume) December-99	Hydrogen sulfide (ppm By Volume) June-99	Hydrogen sulfide (ppm By Volume) October-99	Hydrogen sulfide (ppm By Volume) December-99	Soil Gas Monitoring Well
SGMW-01A	16.5	17.6	19.0	390	388	394	0	0	2	SGMW-01A
SGMW-01B	16.6	18.1	15.0	376	382	372	0	0	3	SGMW-01B
SGMW-01C	17.2	14.2	18.7	344	266	334	0	0	1	SGMW-01C
SGMW-02A	52.4	52.8	55.8	1048	1052	1118	13	26	26	SGMW-02A
SGMW-02B	54.4	55	58.7	1088	1100	1134	3	0	11	SGMW-02B
SGMW-02C	55.3	55.2	57.5	1108	1104	1150	0	0	3	SGMW-02C
SGMW-03A	56.0	41.5	2.0	1102	830	50	3	0	1	SGMW-03A
SGMW-03B	81.4	80.3	81.3	1228	1188	1228	0	0	4	SGMW-03B
SGMW-03C	55.9	53.3	59.5	1108	1088	1180	0	0	3	SGMW-03C
SGMW-04A	53.8	0	39.1	1070	0	782	0	0	2	SGMW-04A
SGMW-04B	53.5	53.6	52.0	1070	1070	1058	0	0	7	SGMW-04B
SGMW-04C	52.4	55.2	40.7	1048	1104	874	2	0	9	SGMW-04C
SGMW-05A	47.8	51.1	47.4	940	1022	844	0	0	8	SGMW-05A
SGMW-05B	46	51.5	49	880	1030	884	0	0	4	SGMW-05B
SGMW-05C	39.7	35	38.3	784	782	768	0	0	4	SGMW-05C
SGMW-06A	41.1	0.1	38.2	820	2	784	0	0	2	SGMW-06A
SGMW-06B	43.2	43.2	46.8	882	882	834	0	0	7	SGMW-06B
SGMW-06C	43.1	0	48.6	882	0	820	0	0	6	SGMW-06C
SGMW-07A	3.3	0.1	0	88	2	0	0	0	2	SGMW-07A
SGMW-07B	0.9	0	0	18	0	0	0	0	2	SGMW-07B
SGMW-07C	4.4	0.17	1.3	88	34	28	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	3	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	0.1	0	0	2	0	0	3	SGMW-09C
SGMW-10A	21.4	16.7	20	420	314	400	1	0	2	SGMW-10A
SGMW-10B	18.6	26.7	21.1	358	632	420	0	0	3	SGMW-10B
SGMW-10C	17.9	22.0	18.1	358	454	324	0	0	3	SGMW-10C
SGMW-11A	16.3	31.2	16.0	368	824	386	9	0	3	SGMW-11A
SGMW-11B	19.2	26.6	14.8	384	512	294	10	0	3	SGMW-11B
SGMW-12A	46.8	45.1	47.1	938	882	842	30	0	8	SGMW-12A
SGMW-12B	44.2	48.5	47.8	884	830	854	5	0	3	SGMW-12B
SGMW-13A	53.1	0.1	0	1082	2	0	12	0	0	SGMW-13A
SGMW-13B	0.2	0.2	24.6	4	4	482	0	0	2	SGMW-13B
SGMW-14A	7.6	5.9	7.1	182	118	142	0	0	5	SGMW-14A
SGMW-14B	0	22.8	3.4	0	452	58	0	0	2	SGMW-14B
SGMW-15A	0	1.8	2.9	0	32	58	0	0	3	SGMW-15A
SGMW-15B	0	0.1	0	0	2	0	0	0	2	SGMW-15B
SGMW-16A	0	0.1	0	0	2	0	0	0	2	SGMW-16A
SGMW-16B	0	0.1	0	0	2	0	0	0	2	SGMW-16B
SGMW-17A	screen in water table	0.1	0	0	2	0	0	0	2	SGMW-17A
SGMW-17B	screen in water table	0.1	0	0	2	0	0	0	2	SGMW-17B
SGMW-18A	0	0.1	0	0	2	0	0	0	2	SGMW-18A
SGMW-18B	0	1	0.4	0	20	0	0	0	1	SGMW-18B
SGMW-19A	25.1	23	20.3	502	480	480	18	0	16	SGMW-19A
SGMW-19B	30.1	27.3	20.5	602	544	410	8	0	12	SGMW-19B

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

0 = No measurement was recorded.



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Soil Gas Monitoring Well	Methane (% By Volume) February-00	Methane (% By Volume) June-00	Methane (% By Volume) September-00	Methane (% By Volume) December-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
SGMW-01A	20.0	20.6	21.0	10.0	402	410	422	300	0	0	4	0	SGMW-01A
SGMW-01B	10.3	20.3	11.2	14.3	300	400	272	260	1	0	1	0	SGMW-01B
SGMW-01C	17.6	13.7	11.6	15.0	350	270	230	260	0	0	1	0	SGMW-01C
SGMW-02A	40.6	64.0	60	54.4	990	(1000)	(1000)	(1000)	1	3	2	16	SGMW-02A
SGMW-02B	55.1	57.1	60.3	50.2	(1102)	(1142)	(1120)	(1124)	4	20	6	11	SGMW-02B
SGMW-02C	59.0	40.3	50.0	50.0	(1120)	000	(1120)	(1120)	2	0	4	8	SGMW-02C
SGMW-03A	49.2	02.0	04.0	07.0	000	(1250)	(1200)	(1182)	1	0	0	3	SGMW-03A
SGMW-03B	67.0	07.0	00.2	07.1	(1140)	(1240)	(1200)	(1140)	1	4	0	2	SGMW-03B
SGMW-03C	57.3	01.2	02.0	00.7	(1140)	(1224)	(1240)	(1134)	1	4	0	4	SGMW-03C
SGMW-04A	30.7	51.0	3.0	51.0	014	(1000)	52	(1132)	1	4	1	1	SGMW-04A
SGMW-04B	40.0	62.0	40.0	60.0	070	(1000)	072	(1000)	2	0	0	2	SGMW-04B
SGMW-04C	43.0	52.1	43.0	45.2	000	(1042)	030	000	4	0	1	8	SGMW-04C
SGMW-05A	47.7	49.4	47.4	47.2	054	000	050	044	1	0	0	0	SGMW-05A
SGMW-05B	44.0	50.0	40.2	43.0	002	(1000)	004	070	1	0	5	0	SGMW-05B
SGMW-05C	30.7	43.7	40.7	30.7	000	074	014	730	2	1	0	0	SGMW-05C
SGMW-06A	33.0	41.7	10.0	44.0	000	034	370	000	0	4	0	2	SGMW-06A
SGMW-06B	43.0	45.6	40.0	40.0	000	010	000	020	1	2	2	3	SGMW-06B
SGMW-06C	44.3	46.3	33.7	45.0	000	000	074	010	0	1	1	0	SGMW-06C
SGMW-07A	0.0	5.0	0.0	0.0	0	10	0	0	0	0	1	1	SGMW-07A
SGMW-07B	0	0.0	0.0	0.0	0	12	0	0	0	0	1	2	SGMW-07B
SGMW-07C	2.6	3.0	1.0	0.6	52	60	30	10	0	0	2	3	SGMW-07C
SGMW-08A	0	0	0.0	0.0	0	0	0	0	1	0	0	3	SGMW-08A
SGMW-08B	0	0	0.0	0.0	0	0	0	0	1	0	0	3	SGMW-08B
SGMW-08C	0	0	0.0	0.0	0	0	0	0	1	0	0	3	SGMW-08C
SGMW-09A	0	0	0.0	0.0	0	0	0	0	1	0	1	3	SGMW-09A
SGMW-09B	0	0	0.0	0.0	0	0	0	0	1	0	0	3	SGMW-09B
SGMW-09C	0	0	0.0	0.0	0	0	0	0	1	0	0	3	SGMW-09C
SGMW-10A	0.3	20.1	23.7	17.0	100	522	474	340	1	3	2	3	SGMW-10A
SGMW-10B	13.6	21.7	20.1	16.6	270	424	322	310	1	0	2	2	SGMW-10B
SGMW-10C	10.6	19.6	22.2	12.0	212	300	444	200	1	0	2	3	SGMW-10C
SGMW-11A	10.1	27.1	64.0	13.0	207	342	(1000)	272	2	20	10	7	SGMW-11A
SGMW-11B	6.0	23.4	54.3	0.2	100	570	(1000)	104	2	21	2	0	SGMW-11B
SGMW-12A	43.9	60.0	64.4	40.0	070	(1200)	(1200)	000	2	03	2	7	SGMW-12A
SGMW-12B	42.0	40.0	40.1	47.0	050	000	002	040	1	0	0	6	SGMW-12B
SGMW-13A	23.4	57.0	03.0	40.0	000	(1152)	(1270)	000	1	0	2	2	SGMW-13A
SGMW-13B	45.1	0	0	40.2	002	0	0	004	1	0	0	07	SGMW-13B
SGMW-14A	2.7	20.2	16.0	12.1	54	404	310	242	1	0	0	7	SGMW-14A
SGMW-14B	0	0	0	23.3	0	0	0	440	1	0	0	31	SGMW-14B
SGMW-15A	2.0	0	1.0	0.0	40	0	32	0	2	0	2	4	SGMW-15A
SGMW-15B	0	0	0	0.0	0	0	0	0	2	0	0	5	SGMW-15B
SGMW-16A	0	0	0	0.0	0	0	0	0	1	0	0	3	SGMW-16A
SGMW-16B	0	0	0	0.0	0	0	0	0	1	0	0	2	SGMW-16B
SGMW-17A	0	0	0	0.0	0	0	0	0	1	0	0	1	SGMW-17A
SGMW-17B	0	0	0	0.0	0	0	0	0	1	0	0	3	SGMW-17B
SGMW-18A	0	0	0	0.0	0	0	0	0	0	0	0	2	SGMW-18A
SGMW-18B	0	0.1	0.3	0.0	0	2	0	0	0	0	0	4	SGMW-18B
SGMW-19A	12.0	20.0	34.0	14.2	250	770	000	204	4	2	10	13	SGMW-19A
SGMW-19B	10.7	34.0	32.0	10.0	334	002	000	200	4	0	0	4	SGMW-19B
GSGM-1A	0	0	0	0	0	0	0	0	0	0	0	1	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	1	GSGM-1C
GSGM-2A	0	0	0	0	0	0	0	0	0	0	0	1	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	4	GSGM-4A
GSGM-4B	0	0	0	0	0	0	0	0	0	0	0	3	GSGM-4B

↔ No Measurement was collected due to other work in the area.  
 Measurements in ( ) are calculated, not measured.

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Soil Gas Monitoring Well	Moisture	Moisture	Moisture	LEL	LEL	LEL	Hydrogen Sulfide	Hydrogen Sulfide	Hydrogen Sulfide
	(% By Volume) March-01	(% By Volume) June-01	(% By Volume) September-01	(% By Volume) March-01	(% By Volume) June-01	(% By Volume) September-01	(ppm by volume) March-01	(ppm by volume) June-01	(ppm by volume) September-01
SGMW-01A	22.3	23.1	19.3	440	482	388	2	11	0
SGMW-01B	2.0	0.0	17.1	434	0	364	4	0	0
SGMW-01C	16.3	20.4	15.3	368	400	368	6	0	0
SGMW-02A	59.6	62.0	57.9	1200	1056	>1,000	140	57	49
SGMW-02B	50.0	0.0	55.0	1100	0	>1,000	101	1	0
SGMW-02C	0.0	0.0	53.2	0	0	>1,000	1	0	0
SGMW-03A	30.0	61.0	62.0	780	1160	>1,000	5	14	43
SGMW-03B	67.2	68.5	64.7	1344	1330	>1,000	20	21	0
SGMW-03C	0.2	0.0	63.5	4	0	>1,000	1	2	0
SGMW-04A	42.6	5.0	63.0	650	78	>1,000	2	4	32
SGMW-04B	50.6	63.0	62.0	1010	1072	>1,000	3	16	14
SGMW-04C	0.0	0.2	60.0	0	4	>1,000	1	2	0
SGMW-05A	46.6	46.2	57.5	912	604	>1,000	3	2	0
SGMW-05B	43.9	0.2	52.0	670	4	>1,000	4	3	0
SGMW-05C	0.0	0.1	48.3	0	2	300	2	3	0
SGMW-06A	18.4	6.3	64.4	300	100	>1,000	3	4	04
SGMW-06B	0.0	0.2	63.0	0	4	>1,000	2	4	6
SGMW-06C	0.0	0.1	62.0	0	2	>1,000	3	3	0
SGMW-07A	0.8	6.1	0.2	12	102	4	4	0	0
SGMW-07B	0	0.3	0.2	0	0	4	2	3	0
SGMW-07C	0.0	0.0	1.1	16	0	24	3	1	0
SGMW-08A	0	0	2	0	0	4	4	1	0
SGMW-08B	0	0	3	0	0	4	2	2	0
SGMW-08C	0	0	0	0	0	0	4	1	0
SGMW-09A	0	0	3	0	4	0	2	3	0
SGMW-09B	0	0	0	0	4	0	1	2	0
SGMW-09C	0	0	0	0	4	0	0	6	0
SGMW-10A	10.0	10.0	20.0	210	330	500	4	2	0
SGMW-10B	11.2	10.0	25.6	224	370	512	2	3	0
SGMW-10C	0.0	13.2	10.0	180	204	370	3	2	0
SGMW-11A	6.0	21.5	26.3	170	430	680	10	43	2
SGMW-11B	6.1	10.3	25.0	122	380	640	0	27	30
SGMW-12A	49.0	63.4	53.7	980	1088	1074	1	95	100
SGMW-12B	44.4	6.2	65.1	888	4	1082	3	0	101
SGMW-13A	19.3	66.1	66.7	320	1302	1114	0	6	0
SGMW-13B	0.0	2	0	10	4	160	0	2	0
SGMW-13C	0.0	0	7.4	348	124	160	0	4	0
SGMW-14A	17.4	6.2	0	0	0	0	0	3	0
SGMW-14B	0	0	0	0	0	0	2	4	0
SGMW-15A	0.0	3	0.0	0	0	0	2	0	0
SGMW-15B	0	0	0	0	0	0	1	0	0
SGMW-16A	0	0	0	0	0	0	0	4	0
SGMW-16B	0	0	0	0	0	0	0	1	0
SGMW-17A	0	0	0	0	0	0	0	0	0
SGMW-17B	0	0	0	0	0	0	0	1	0
SGMW-18A	0	0	0.0	2	0	0	0	0	0
SGMW-18B	0	0	0.0	0	0	0	0	0	0
SGMW-19A	21.0	38.2	20.0	330	784	672	3	200	0
SGMW-19B	20.3	38.0	28.1	400	730	624	6	83	0
QSGM-1A	0	0	0	0	0	0	0	0	0
QSGM-1B	0	0	0	0	0	0	0	0	0
QSGM-1C	0	0	0	0	0	0	1	0	0
QSGM-2A	0	0	0	0	0	0	0	0	0
QSGM-3B	0	0	0	0	0	0	1	0	0
QSGM-3C	0	0	0	0	0	0	0	0	0
QSGM-3A	0	0	0	0	0	0	0	0	0
QSGM-3B	0	0	0	0	0	0	1	0	0
QSGM-4A	0	0	0	0	0	0	0	0	0
QSGM-4B	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.

2002 Current Landfill Soil Gas Monitoring Summary

Soil Gas Monitoring Well	Methane (% By Volume)				LEL (% By Volume) March-02	LEL (% By Volume) June-02	LEL (% By Volume) Sept-02, Oct-02	LEL (% By Volume) December-02	Hydrogen Sulfide (ppm by volume)		Hydrogen Sulfide (ppm by volume)		Soil Gas Monitoring Well
	March-02	June-02	Sept-02, Oct-02	December-02					March-02	June-02	Sept-02, Oct-02	December-02	
SGMW-01A	13.6	14.1	0.0	10.0	270	202	182	354	0	7	10	3	SGMW-01A
SGMW-01B	13.7	11.5	0.2	10.0	274	230	184	334	0	1	2	4	SGMW-01B
SGMW-01C	10.8	8.6	5.6	11.0	210	172	110	234	0	1	1	4	SGMW-01C
SGMW-02A	48.0	48.0	48.2	50.6	020	092	064	(1138)	64	132	141	40	SGMW-02A
SGMW-02B	17.1	20.5	34.8	43.2	342	670	092	694	0	2	8	77	SGMW-02B
SGMW-02C	37.5	43.8	62.0	61.7	760	078	(1048)	(1004)	0	24	68	16	SGMW-02C
SGMW-03A	36.5	53.6	64.1	41.4	730	(1072)	(1002)	(1218)	0	148	0	12	SGMW-03A
SGMW-03B	57.0	62.4	69.8	60.0	(1140)	(1248)	(1192)	(1318)	13	18	34	0	SGMW-03B
SGMW-03C	54.1	68.6	68.8	60.0	(1082)	(1172)	(1178)	(1200)	0	0	20	3	SGMW-03C
SGMW-04A	40.6	46.0	50.8	48.1	018	030	(1010)	000	0	1	76	37	SGMW-04A
SGMW-04B	44.6	48.0	51.3	46.2	808	400	000	002	2	11	12	38	SGMW-04B
SGMW-04C	36.6	43.5	44.4	42.5	730	070	044	050	0	44	2	34	SGMW-04C
SGMW-05A	36.1	38.8	38.8	42.5	702	772	776	850	0	13	63	20	SGMW-05A
SGMW-05B	37.4	38.4	42.0	41.2	738	708	640	684	0	10	13	12	SGMW-05B
SGMW-05C	20.0	31.0	31.6	34.2	670	020	032	084	2	3	37	2	SGMW-05C
SGMW-06A	30.7	33.5	40.0	41.5	010	072	800	832	11	22	62	32	SGMW-06A
SGMW-06B	36.1	35.8	40.4	43.1	712	718	812	864	11	16	24	12	SGMW-06B
SGMW-06C	28.3	35.2	30.1	42.0	722	704	782	840	8	0	2	2	SGMW-06C
SGMW-07A	0.2	0.4	0.0	0.0	4	0	0	0	0	1	0	2	SGMW-07A
SGMW-07B	0.2	0.0	0.0	0.0	4	0	0	0	0	1	0	0	SGMW-07B
SGMW-07C	0.2	1.2	0.0	0.0	4	24	0	0	0	3	0	0	SGMW-07C
SGMW-08A	0.2	0	0	0.0	4	0	0	0	1	4	0	0	SGMW-08A
SGMW-08B	0.2	6	0	0.0	4	0	0	0	0	3	0	0	SGMW-08B
SGMW-08C	0.2	6	0	0.0	4	0	0	0	0	2	2	2	SGMW-08C
SGMW-09A	0.2	0	0	0.0	2	0	0	0	0	0	1	1	SGMW-09A
SGMW-09B	0.1	0	0	0.0	4	0	0	0	1	2	0	2	SGMW-09B
SGMW-09C	0.2	0	0	0.0	4	0	0	0	1	0	0	0	SGMW-09C
SGMW-10A	0.2	0	0	0.0	4	0	0	0	4	13	1	0	SGMW-10A
SGMW-10B	10.0	15.0	25.5	10.0	212	300	610	320	0	0	5	2	SGMW-10B
SGMW-10C	10.7	14.2	20.0	14.8	214	284	400	262	0	0	0	0	SGMW-10C
SGMW-11A	8.0	12.2	17.1	12.2	160	244	342	248	0	3	1	0	SGMW-11A
SGMW-11B	8.2	14.8	20.7	17.0	184	208	334	338	0	68	125	20	SGMW-11B
SGMW-12A	0.1	14.5	24.7	16.4	122	280	464	208	1	40	162	10	SGMW-12A
SGMW-12B	37.0	43.0	60.4	40.0	752	800	1008	970	15	0	0	34	SGMW-12B
SGMW-12C	35.8	36.0	40.0	45.0	718	780	820	884	4	13	32	16	SGMW-12C
SGMW-13A	35.6	43.5	47.3	47.0	710	870	040	050	83	158	70	3	SGMW-13A
SGMW-13B	33.7	42.3	45.2	47.1	674	840	824	842	2	4	23	5	SGMW-13B
SGMW-14A	1.0	4.8	2.8	10.6	20	00	66	212	2	2	0	7	SGMW-14A
SGMW-14B	5.6	11.0	10.4	14.8	112	220	288	208	0	3	0	1	SGMW-14B
SGMW-15A	0.1	0	4.0	0.3	2	0	0	378	0	4	4	36	SGMW-15A
SGMW-15B	0.1	0	10.1	0.0	2	0	2	0	0	3	0	1	SGMW-15B
SGMW-16A	0	0	0.1	0.0	0	0	7	0	0	4	4	1	SGMW-16A
SGMW-16B	0.1	0	0.1	0.0	2	0	0	0	0	3	3	2	SGMW-16B
SGMW-17A	0.1	0	0.2	0.0	2	0	4	0	0	2	2	4	SGMW-17A
SGMW-17B	0.1	0	0.2	0.0	2	0	4	0	0	4	4	4	SGMW-17B
SGMW-18A	0.2	0	0.1	0.0	4	0	2	0	0	3	3	4	SGMW-18A
SGMW-18B	0.2	0	0.2	0.0	8	0	4	0	0	2	3	4	SGMW-18B
SGMW-19A	0.4	0	0.2	0.0	8	0	4	0	2	(21)	18	(32)	SGMW-19A
SGMW-19B	5.8	15.0	28.6	0.0	118	318	570	0	4	32	36	6	SGMW-19B
SGMW-19C	6.5	18.6	31.2	0.0	168	382	624	0	4	4	1	4	GSGM-1A
GSGM-1A	0	0	0	0	0	0	0	0	0	3	2	3	GSGM-1B
GSGM-1B	0	0	0	0	0	0	0	0	4	2	2	3	GSGM-1C
GSGM-1C	0	0	0	0	0	0	0	0	3	3	2	2	GSGM-2A
GSGM-2A	0	0	0	0	0	0	0	0	3	3	3	2	GSGM-2B
GSGM-2B	0	0	0	0	0	0	0	0	4	3	1	3	GSGM-2C
GSGM-2C	0	0	0	0	0	0	0	0	3	2	2	3	GSGM-3A
GSGM-3A	0	0	0	0	0	0	0	0	3	3	1	3	GSGM-3B
GSGM-3B	0	0	0	0	0	0	0	0	2	2	0	2	GSGM-4A
GSGM-4A	0	0	0	0	0	0	0	0	4	3	1	3	GSGM-4B
GSGM-4B	0	0	0	0	0	0	0	0	2	2	2	2	GSGM-4C

(Measurements in ( ) are calculated, not measured)

2003 Current Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane				LEL				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
	(% By Volume) April-03	(% By Volume) July-03	(% By Volume) October-03	(% By Volume) December-03	(% By Volume) April-03	(% By Volume) July-03	(% By Volume) October-03	(% By Volume) December-03					
SGMW-01A	17.8	22.1	21.1	21.5	352	444	432	438	2	-	0	-	SGMW-01A
SGMW-01B	18.6	18.7	10.7	18.8	378	374	301	308	3	-	01	-	SGMW-01B
SGMW-01C	18.0	13.9	20.0	17.3	360	207	400	348	3	-	80	-	SGMW-01C
SGMW-02A	38.2	41.2	5.0	22.2	(1104)	374	160	142	14	-	68	-	SGMW-02A
SGMW-02B	55.7	0.0	0.1	0.0	(1140)	0	0	0	17	-	13	-	SGMW-02B
SGMW-02C	59.1	0.0	0	42.7	600	0	0	250	0	-	0	-	SGMW-02C
SGMW-03A	28.6	57.0	55.0	0.0	(1102)	(1150)	(1102)	0	10	-	0	-	SGMW-03A
SGMW-03B	69.1	0.0	64.2	11.7	(1078)	0	(1084)	234	23	-	0	-	SGMW-03B
SGMW-03C	63.9	0.0	0.7	41.0	(1052)	0	4	820	3	-	0	-	SGMW-03C
SGMW-04A	54.1	0.0	0.5	0.4	600	0	10	108	7	-	27	-	SGMW-04A
SGMW-04B	53.0	0.0	0.2	47.0	620	0	7	832	15	-	0	-	SGMW-04B
SGMW-04C	57.0	0.0	0.1	41.5	682	0	7	480	7	-	183	-	SGMW-04C
SGMW-05A	48.3	48.0	54.0	23.4	660	660	(1090)	480	12	-	0	-	SGMW-05A
SGMW-05B	46.9	43.8	53.8	38.8	638	876	(1070)	778	3	-	0	-	SGMW-05B
SGMW-05C	43.1	0.0	41.8	32.3	682	0	630	048	3	-	0	-	SGMW-05C
SGMW-06A	25.3	5.0	15.5	0.0	608	118	310	420	1	-	0	-	SGMW-06A
SGMW-06B	42.9	0.0	0.0	70.7	658	0	0	898	3	-	0	-	SGMW-06B
SGMW-06C	43.6	7.0	0.1	41.5	672	0	7	900	2	-	0	-	SGMW-06C
SGMW-07A	0.4	0.0	3.0	45.1	18	0	0	0	2	-	0	-	SGMW-07A
SGMW-07B	0.9	0.0	0.1	6.0	19	0	2	0	2	-	0	-	SGMW-07B
SGMW-07C	4.0	0.0	0.1	0.0	60	0	7	0	0	-	27	-	SGMW-07C
SGMW-08A	6.0	0	0.1	0.0	0	0	0	0	0	-	0	-	SGMW-08A
SGMW-08B	9.0	0	0	0.0	0	0	0	0	0	-	0	-	SGMW-08B
SGMW-08C	0.6	0	0	0.0	0	0	2	0	0	-	13	-	SGMW-08C
SGMW-08A	0	0	0.1	0.0	0	8	0	0	0	-	0	-	SGMW-08A
SGMW-08B	0	0	0	0.0	0	7	0	0	0	-	0	-	SGMW-08B
SGMW-08C	0.1	0	0.1	0.0	360	440	558	112	1	-	0	-	SGMW-08C
SGMW-10A	18.0	22.0	27.0	5.8	318	440	440	0	1	-	0	-	SGMW-10A
SGMW-10B	15.0	17.7	22.0	0.0	280	332	384	0	2	-	0	-	SGMW-10B
SGMW-10C	14.0	10.8	18.2	0.0	312	580	8	358	1	-	0	-	SGMW-10C
SGMW-11A	15.6	20.3	0.4	17.7	274	520	2	0	13	-	0	-	SGMW-11A
SGMW-11B	13.7	26.0	0.1	0.0	(1209)	622	(1294)	0	0	-	0	-	SGMW-11B
SGMW-12A	60.0	47.8	64.7	0.0	(1010)	0	16	38	1	-	0	-	SGMW-12A
SGMW-12B	20.0	0.3	0.5	1.8	0	0	(1344)	1320	1	-	163	-	SGMW-12B
SGMW-13A	20.5	0.0	07.2	60.4	010	18	7	0	1	-	8	-	SGMW-13A
SGMW-13B	0.0	0.0	0.1	0.0	580	192	7	2	10	-	8	-	SGMW-13B
SGMW-14A	29.4	0.0	0.3	0.0	0	0	7	0	1	-	0	-	SGMW-14A
SGMW-14B	0.2	0	0.1	0.1	4	0	2	0	1	-	54	-	SGMW-14B
SGMW-15A	0.1	0	0.1	0.0	2	0	2	0	0	-	6	-	SGMW-15A
SGMW-15B	0	0	0.1	0.0	0	0	7	0	0	-	0	-	SGMW-15B
SGMW-16A	0.1	0	0	0.0	2	0	0	0	3	-	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	2	-	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	0	-	0	-	SGMW-18A
SGMW-18B	0	0.1	0.2	0.0	0	2	0	0	0	-	0	-	SGMW-18B
SGMW-19A	11.0	20.1	40.3	27.0	828	582	860	540	0	-	0	-	SGMW-19A
SGMW-19B	44.0	0.7	33.7	20.5	880	14	664	582	20	-	171	-	SGMW-19B
CGSM-1A	0.1	0	0	0	7	0	0	0	0	-	0	-	CGSM-1A
CGSM-1B	0	0	0	0	0	0	0	0	0	-	0	-	CGSM-1B
CGSM-1C	0	0	0	0	0	0	0	0	0	-	0	-	CGSM-1C
CGSM-2A	0	0	0	0	0	0	0	0	0	-	0	-	CGSM-2A
CGSM-2B	0	0	0	0	0	0	0	0	0	-	0	-	CGSM-2B
CGSM-2C	0	0	0	0	0	0	0	0	0	-	0	-	CGSM-2C
CGSM-3A	0	0	0	0	0	0	0	0	0	-	0	-	CGSM-3A
CGSM-3B	0	0	0	0	0	0	0	0	0	-	0	-	CGSM-3B
CGSM-4A	0	0	0	0	0	0	0	0	0	-	0	-	CGSM-4A
CGSM-4B	0	0	0	0	0	0	0	0	0	-	0	-	CGSM-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) 6/7/04	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	15.6	14.4	0.0	5.0	332	266	136	136	150	2	3	1	SGMW-01A
SGMW-01B	15.6	8.0	6.0	2.5	312	172	170	20	23	0	0	0	SGMW-01B
SGMW-01C	14.0	6.7	4.7	0.3	780	4	84	176	34	0	0	0	SGMW-01C
SGMW-02A	34.2	0.6	39.7	7.1	697	172	754	42	191	0	11	0	SGMW-02A
SGMW-02B	27.7	0.6	17.7	0.0	454	17	254	0	177	0	0	0	SGMW-02B
SGMW-02C	44.4	0.0	7	4.6	889	0	4	32	0	0	0	0	SGMW-02C
SGMW-03A	75.4	15.7	4.1	0.0	506	304	0	0	0	0	0	0	SGMW-03A
SGMW-03B	47.1	26.0	14.0	0.1	(10*2)	560	260	0	0	0	0	0	SGMW-03B
SGMW-03C	51.3	7.3	1.3	0.0	(10*2)	140	30	0	0	0	0	0	SGMW-03C
SGMW-04A	37.5	46.1	3.5	1.3	748	987	70	36	0	0	0	0	SGMW-04A
SGMW-04B	43.0	50.7	23.2	14.4	860	(10*1)	454	260	0	0	0	0	SGMW-04B
SGMW-04C	35.0	40.9	71.2	14.5	774	216	424	290	0	0	0	0	SGMW-04C
SGMW-05A	39.1	40.0	13.6	3.7	777	800	272	74	150	0	0	0	SGMW-05A
SGMW-05B	36.0	41.4	25.2	13.6	736	628	504	272	0	0	0	0	SGMW-05B
SGMW-05C	29.0	24.0	13.6	13.6	590	480	372	772	0	0	0	0	SGMW-05C
SGMW-06A	31.0	5.7	3.9	1.0	636	164	76	36	0	0	0	0	SGMW-06A
SGMW-06B	40.4	77.4	70.6	0.2	806	548	412	0	0	0	0	0	SGMW-06B
SGMW-06C	42.1	29.8	4.7	13.7	647	596	94	764	0	0	0	0	SGMW-06C
SGMW-07A	0.7	0.1	0.0	0.0	4	2	0	0	0	0	0	0	SGMW-07A
SGMW-07B	0.5	0.1	0.0	0.0	10	7	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	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-09C
SGMW-10A	0.7	0	0	0.0	4	0	0	0	0	0	0	0	SGMW-10A
SGMW-10B	1.9	16.4	2.0	0.0	36	326	40	3	1	0	0	0	SGMW-10B
SGMW-10C	7.4	16.1	17.0	3.9	48	322	240	76	0	7	0	0	SGMW-10C
SGMW-11A	0.0	14.2	10.0	7.4	0	290	200	0	0	0	0	0	SGMW-11A
SGMW-11B	0.0	10.0	5.3	0.0	0	320	110	0	0	2	0	0	SGMW-11B
SGMW-11C	0.0	14.7	10.1	0.3	0	294	207	0	160	0	0	0	SGMW-11C
SGMW-12A	22.5	46.5	9.9	0.0	450	970	196	0	122	21	0	0	SGMW-12A
SGMW-12B	0.0	0.7	7.2	0.0	0	7	144	0	0	0	0	0	SGMW-12B
SGMW-12C	0.0	0.6	1.0	0.0	0	17	26	0	0	0	0	0	SGMW-12C
SGMW-13A	0.0	0.1	0	1.1	0	2	0	27	191	0	0	0	SGMW-13A
SGMW-13B	0.0	0.1	0.0	0.0	0	2	0	0	130	0	0	0	SGMW-13B
SGMW-13C	0.0	0.1	0.0	0.0	0	2	0	0	172	0	0	0	SGMW-13C
SGMW-14A	0	0.1	0.0	0.0	0	2	0	0	0	0	0	0	SGMW-14A
SGMW-14B	0	0.1	0.0	0.0	0	2	0	0	0	0	0	0	SGMW-14B
SGMW-14C	0.0	0.1	0	0.0	0	0	0	116	0	0	0	0	SGMW-14C
SGMW-15A	0	0	0	0.0	0	2	0	0	0	0	0	0	SGMW-15A
SGMW-15B	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-15B
SGMW-15C	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-15C
SGMW-16A	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	SGMW-16B
SGMW-16C	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-16C
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-17C	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-17C
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	SGMW-18B
SGMW-18C	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-18C
SGMW-19A	6.0	25.7	25.9	13.0	120	534	516	260	0	0	0	0	SGMW-19A
SGMW-19B	5.4	30.0	27.7	9.7	116	600	554	184	0	0	0	0	SGMW-19B
CGSM-1A	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-1A
CGSM-1B	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-1B
CGSM-1C	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-1C
CGSM-2A	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-2A
CGSM-2B	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-2B
CGSM-2C	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-2C
CGSM-3A	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-3A
CGSM-3B	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-3B
CGSM-4A	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-4A
CGSM-4B	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-4B

Measurements in ( ) are calculated, not measured.  
 \*75 rod suspected of not operating correctly March

2025 Current Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane				LEL				Hydrogen Sulfide				Soil Gas Monitoring Well
	(% By Volume) 3/30/05	(% By Volume) 7/2/05	(% By Volume) 10/2/05	(% By Volume) 12/28/05	(% By Volume) 3/30/05	(% By Volume) 7/2/05	(% By Volume) 10/2/05	(% By Volume) 12/28/05	(ppm by volume) 3/30/05	(ppm by volume) 7/2/05	(ppm by volume) 10/2/05	(ppm by volume) 12/28/05	
SGMW-01A	0.8	5.4	5	6.7	176	168	100	134	1	3	2	2	SGMW-01A
SGMW-01B	1.0	7.0	3	3.0	60	58	60	76	0	0	0	0	SGMW-01B
SGMW-01C	7.5	5.0	5.5	6.1	150	112	110	122	1	0	0	0	SGMW-01C
SGMW-02A	0.3	1.7	1.7	3.3	5	274	34	60	0	0	0	1	SGMW-02A
SGMW-02B	0.7	0.7	27.2	12.4	4	14	544	248	1	0	0	3	SGMW-02B
SGMW-02C	0.3	0.1	74.7	0.0	6	7	494	0	1	0	0	0	SGMW-02C
SGMW-03A	0.7	36.8	0.7	0.0	14	736	14	0	0	0	7	1	SGMW-03A
SGMW-03B	0.6	2.6	47.8	11.0	10	50	957	720	0	0	1	0	SGMW-03B
SGMW-03C	0.1	0.2	39.0	0.0	7	4	730	0	0	1	0	0	SGMW-03C
SGMW-04A	0.7	10.7	46.7	6.3	4	214	974	186	0	1	1	1	SGMW-04A
SGMW-04B	6.2	25.1	47.4	18.0	130	507	840	260	0	0	0	7	SGMW-04B
SGMW-04C	6.3	0.7	30.7	14.1	170	4	764	782	0	0	1	1	SGMW-04C
SGMW-05A	6.7	14.3	30.6	10.7	14	206	737	704	1	1	0	0	SGMW-05A
SGMW-05B	13.4	21.1	34.8	22.8	260	427	692	456	0	1	0	0	SGMW-05B
SGMW-05C	9.7	18.8	27.3	18.3	184	370	546	386	0	1	0	0	SGMW-05C
SGMW-06A	0.1	2.4	29.7	0.1	4	48	594	192	1	1	0	0	SGMW-06A
SGMW-06B	7.7	24.4	29.7	10.0	154	480	594	336	1	1	1	0	SGMW-06B
SGMW-06C	6.6	24.7	27.2	14.9	172	494	544	798	1	1	0	0	SGMW-06C
SGMW-07A	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	1	1	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	0	0	SGMW-08A
SGMW-08B	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	1	1	0	SGMW-08C
SGMW-09A	0.0	0.0	0.0	0.0	0	0	0	0	1	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	0.7	7.1	12.3	0.0	4	54	246	0.0	1	1	0	0	SGMW-10A
SGMW-10B	0.7	15.0	16.7	1.6	4	240	324	32	1	2	1	1	SGMW-10B
SGMW-10C	0.1	1.6	14.3	1.2	2	32	206	74	1	1	20	0	SGMW-10C
SGMW-11A	0.7	6.0	17.7	0.0	4	120	344	0	0	1	4	0	SGMW-11A
SGMW-11B	0.7	13.7	19.6	0.0	4	204	302	0	1	1	4	0	SGMW-11B
SGMW-12A	0.7	3.0	40.1	4.0	4	76	602	80	0	0	51	3	SGMW-12A
SGMW-12B	0.1	0.8	25.7	0.0	2	18	514	0	0	0	0	0	SGMW-12B
SGMW-12C	0.1	0.2	0.1	0.0	2	124	2	0	0	1	1	0	SGMW-12C
SGMW-13A	0.7	4	2	0.0	4	0	4	0	0	2	1	0	SGMW-13A
SGMW-13B	0.7	0.1	5.0	0.1	6	2	112	2	0	2	2	0	SGMW-13B
SGMW-14A	0.3	0.7	0	0.0	0	4	4	0	0	1	1	0	SGMW-14A
SGMW-14B	0	0.7	0.1	0.0	0	4	2	0	0	0	1	0	SGMW-14B
SGMW-15A	0.0	1	1	0.0	0	2	2	0	0	0	0	0	SGMW-15A
SGMW-15B	0	0.7	0	0.0	0	4	0	0	0	1	0	0	SGMW-15B
SGMW-16A	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	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	1	0	SGMW-17B
SGMW-18A	0	0	0	0.0	0	0	0	0	0	0	0	1	SGMW-18A
SGMW-18B	0	0	0	0.0	0	0	0	0	0	0	0	2	SGMW-18B
SGMW-19A	5.8	6.3	25.7	15.7	112	126	584	314	0	1	20	0	SGMW-19A
SGMW-19B	0.0	0.0	31.0	0.1	0	0	633	182	0	0	46	0	SGMW-19B
CGSM-1A	0	0	0	0	0	0	0	0	0	0	0	1	CGSM-1A
CGSM-1B	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-1B
CGSM-1C	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-1C
CGSM-2A	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-2A
CGSM-2B	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-2B
CGSM-2C	0	0	0	0	0	0	0	0	0	1	0	0	CGSM-2C
CGSM-3A	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-3A
CGSM-3B	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-3B
CGSM-4A	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-4A
CGSM-4B	0	0	0	0	0	0	0	0	0	0	0	0	CGSM-4B

Measurements in ( ) are calculated, not measured.

2005 Current Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume) 2/24/05	Methane (% By Volume) 5/23/05	Methane (% By Volume) 9/23/05	Methane (% By Volume) 12/27/05	LEL (% By Volume) 2/24/05	LEL (% By Volume) 5/23/05	LEL (% By Volume) 9/23/05	LEL (% By Volume) 12/27/05	Hydrogen Sulfide (ppm by volume) 2/24/05	Hydrogen Sulfide (ppm by volume) 5/23/05	Hydrogen Sulfide (ppm by volume) 9/23/05	Hydrogen Sulfide (ppm by volume) 12/27/05	Soil Gas Monitoring Well
SGMW-01A	8.0	11.9	12.5	11.1	174.0	738	250	228	0	0	0	0	SGMW-01A
SGMW-01B	0.0	0.0	11.0	3.1	0	0	270	82	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	13.0	19.1	40.9	1.4	282.0	362	938	211	0	0	9	0	SGMW-02A
SGMW-02B	5.8	12.8	33.4	0.2	142.0	256	668	4	0	0	27	0	SGMW-02B
SGMW-02C	0.0	0.0	30.5	0.3	0	10	510	6	0	0	0	0	SGMW-02C
SGMW-03A	15.3	26.9	27.0	0.2	380.0	538	540	4	0	0	8	0	SGMW-03A
SGMW-03B	0.0	11.0	40.5	0.1	0	238	870	2	0	0	12	0	SGMW-03B
SGMW-03C	0.0	1.5	45.0	0.3	0	30	960	6	0	0	7	0	SGMW-03C
SGMW-04A	0.0	16.4	52.1	0.2	0	329	1040	4	0	0	1	0	SGMW-04A
SGMW-04B	10.0	31.6	48.8	0.0	200.0	632	978	0	0	0	2	0	SGMW-04B
SGMW-04C	0.0	22.2	42.1	0.0	0	444	642	0	0	0	0	0	SGMW-04C
SGMW-05A	0.9	10.3	44.8	0.0	20.0	320	980	0	0	0	0	0	SGMW-05A
SGMW-05B	1.4	26.3	41.3	0.0	88.0	526	826	0	0	0	3	0	SGMW-05B
SGMW-05C	0.0	30.7	33.8	0.0	0	414	876	0	0	0	1	0	SGMW-05C
SGMW-06A	0.0	11.5	41.5	0.0	0	290	830	0	0	0	1	0	SGMW-06A
SGMW-06B	0.0	21.3	40.3	0.0	0	428	808	0	0	0	2	0	SGMW-06B
SGMW-06C	0.0	21.7	37.3	0.0	0	434	748	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	8	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	0	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	0	0	0	0	0	2	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	186	308	0	0	0	0	0	SGMW-10A
SGMW-10B	0.0	12.0	18.0	0.0	0	240	380	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	7.0	15.3	0.0	0	152	308	0	0	0	2	0	SGMW-11A
SGMW-11B	0.0	9.8	14.9	0.0	0	186	298	0	0	0	2	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	8.0	0.0	22	40	8	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	16.5	21.8	340	348	332	478	0	0	2	0	SGMW-19A
SGMW-19B	1.7	8.4	10.0	0.0	32	188	380	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	115.0	62	0.0	1.0	0.0	3.0	SGMW-01A
SGMW-01B	6.4	4.5	6.0	1.6	120	00	115.0	32	0.0	1.0	1.0	0.0	SGMW-01B
SGMW-01C	5.9	0.3	5.5	2.0	110	0	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	340	0.0	1.0	1.0	0.0	SGMW-02A
SGMW-02B	0.0	17.6	30.6	10.5	0.0	352	0.0	210	0.0	1.0	1.0	0.0	SGMW-02B
SGMW-02C	0.0	0.4	27.0	1.1	0.0	6	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	16	14	000.0	0.0	0.0	2.0	0.0	0.0	SGMW-03B
SGMW-03C	0.2	0.6	39.7	0.0	4	12	784.0	0.0	0.0	2.0	0.0	0.0	SGMW-03C
SGMW-04A	8.4	0.7	43.7	1.0	100	14	074.0	20	0.0	0.0	3.0	0.0	SGMW-04A
SGMW-04B	17.0	0.7	38.5	3.0	340.0	14	780.0	0.0	0.0	0.0	1.0	0.0	SGMW-04B
SGMW-04C	12.0	0.7	31.3	0.0	240	14	000.0	0.0	0.0	0.0	1.0	0.0	SGMW-04C
SGMW-05A	10.5	0.8	32.6	0.0	210.0	12	052	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	090.0	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	0.6	30.7	0.0	230	16	014	0.0	0.0	1.0	1.0	0.0	SGMW-06A
SGMW-06B	14.3	0.6	29.9	0.0	280	12	508	0.0	0.0	1.0	1.0	0.0	SGMW-06B
SGMW-06C	12.9	0.0	26.4	0.0	250	0.0	526	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	0.7	0.0	0	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	160	0.0	0.0	0.0	0.0	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	2.0	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	8.1	27.5	0.0	0.0	172	550	0.0	0.0	2.0	0.0	SGMW-12B
SGMW-13A	0.0	0.0	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	90	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	20.0	0.0	SGMW-19A
SGMW-19B	11.0	0.0	19.2	0.0	0.0	0.0	204	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	Methane	Methane	Methane	LEL	LEL	LEL	LEL	Hydrogen Sulfide	Hydrogen Sulfide	Hydrogen Sulfide	Hydrogen Sulfide	Soil Gas Monitoring Well
	(% By Volume) 7/24/2008	(% By Volume) 7/29/2008	(% By Volume) 9/30/2008	(% By Volume) 12/9/2008	(% By Volume) 3/26/2009	(% By Volume) 7/29/2009	(% By Volume) 9/30/2009	(% By Volume) 12/9/2009	(ppm by volume) 3/26/2009	(ppm by volume) 7/29/2009	(ppm by volume) 9/30/2009	(ppm by volume) 12/9/2009	
SGMW-01A	10.8	3	8.6	11.7	220	96	176	224	3	7	2	0	SGMW-01A
SGMW-01B	0.9	2.5	6.5	11.7	198	58	130	234	0	0	0	0	SGMW-01B
SGMW-01C	5.4	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	660	780	850	746	13	16	0	0	SGMW-02A
SGMW-02B	3.1	4.7	4.5	6.1	67	944	900	886	1	17	20	19	SGMW-02B
SGMW-02C	3.7	49.9	52.5	53.3	64	998	1050	1065	1	1	1	3	SGMW-02C
SGMW-03A	13.7	49.1	44	30	264	950	860	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	46.3	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	5	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	45.9	36.1	654	756	916	722	2	0	1	3	SGMW-04C
SGMW-05A	30	36.5	43.7	38.6	600	728	874	776	4	12	5	4	SGMW-05A
SGMW-05B	30.7	35.6	39.7	36.1	614	706	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	806	0	0	7	0	SGMW-06A
SGMW-06B	10.9	36.4	39.9	40.2	618	724	798	804	1	2	5	7	SGMW-06B
SGMW-06C	28.9	33.7	37.7	37.3	560	624	754	746	3	0	1	3	SGMW-06C
SGMW-07A	0	0.7	0	0	0	4	0	0	0	0	0	0	SGMW-07A
SGMW-07B	0	0.7	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	0.7	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	0	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	17.2	22.5	6.4	0	244	490	168	0	9	19	1	SGMW-10A
SGMW-10B	0	9.9	19.1	10.3	0	200	382	206	0	0	5	2	SGMW-10B
SGMW-10C	0	5.4	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	338	5	33	2	4	SGMW-11A
SGMW-11B	2.1	13.7	21.6	6.9	46	274	430	138	0	3	70	0	SGMW-11B
SGMW-12A	32.1	43.4	52.5	47.1	602	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	11	0	0	0	0	0	SGMW-14B
SGMW-15A	0	0.7	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	0.3	0	0	0	4	0	0	0	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	6	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	6.2	26	0	230	154	560	0	8	7	0	0	SGMW-19B
GGSM-1A	0	0	0	0	0	0	0	0	0	0	0	0	GGSM-1A
GGSM-1B	0	0	0	0	0	0	0	0	0	0	0	0	GGSM-1B
GGSM-1C	0	0	0	0	0	0	0	0	0	0	0	0	GGSM-1C
GGSM-2A	0	0	0	0	0	0	0	0	0	0	0	0	GGSM-2A
GGSM-2B	0	0	0	0	0	0	0	0	0	0	0	0	GGSM-2B
GGSM-2C	0	0	0	0	0	0	0	0	0	0	0	0	GGSM-2C
GGSM-3A	0	0	0	0	0	0	0	0	0	0	0	0	GGSM-3A
GGSM-3B	0	0	0	0	0	0	0	0	0	0	0	0	GGSM-3B
GGSM-4A	0	0	0	0	0	0	0	0	0	0	0	0	GGSM-4A
GGSM-4B	0	0	0	0	0	0	0	0	0	0	0	0	GGSM-4B

Measurements in [ ] are calculated, not measured



# 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	2
SGMW-12A	0	0	0.3	0	◇	9	-5	0
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	Methane (% By Volume) February-98	Methane (% By Volume) May-98	Methane (% By Volume) August-98	Methane (% By Volume) December-98
SGMW-01A	0	0	0	0
SGMW-01B	0.1	0	0	0
SGMW-02A	0	0	0	0
SGMW-02B	0.1	0	0	0
SGMW-03A	0	0	0	0
SGMW-03B	0	0	0	0
SGMW-04A	0	0.1	0	0.1
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	<>	<>	<>	<>
SGMW-07B	<>	<>	<>	<>
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

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
1	0	1	0	SGMW-01A
1	0	0	0	SGMW-01B
6	0	0	0	SGMW-02A
6	1	0	0	SGMW-02B
0	0	1	1	SGMW-03A
3	0	2	0	SGMW-03B
0	2	0	1	SGMW-04A
1	0	0	0	SGMW-04B
0	0	3	0	SGMW-05A
0	0	1	0	SGMW-05B
2	0	0	1	SGMW-06A
0	0	0	0	SGMW-06B
<>	<>	<>	<>	SGMW-07A
<>	<>	<>	<>	SGMW-07B
1	0	0	0	SGMW-08A
0	0	4	0	SGMW-08B
1	0	1	1	SGMW-09A
0	0	3	0	SGMW-09B
0	0	4	0	SGMW-10A
0	0	3	0	SGMW-10B
0	0	0	2	SGMW-11A
1	0	1	0	SGMW-11B
0	0	2	1	SGMW-12A
0	0	1	0	SGMW-12B

<> Well SGM07 was not accessible

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

Soil Gas Monitoring Well	Methane (% By Volume) June-98	Methane (% By Volume) October-98	Methane (% By Volume) December-98	LEL (% By Volume) June-98	LEL (% By Volume) October-98	LEL (% By Volume) December-98	Hydrogen sulfide (ppm By Volume) June-98	Hydrogen sulfide (ppm By Volume) October-98	Hydrogen sulfide (ppm By Volume) December-98	Soil Gas Monitoring Well
SGMW-01A	0	0	0	0	0	0	0	0	1	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	2	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	3	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	1	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	1	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	1	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

0 = No measurement was recorded.

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

Soil Gas Monitoring Well	Methane (% By Volume) February-00	Methane (% By Volume) June-00	Methane (% By Volume) September-00	Methane (% By Volume) December-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
SGMW-01A	0	0	0	0	0	0	0	0	2	5	1	1	SGMW-01A
SGMW-01B	0	0	0	0	0	0	0	0	0	0	2	2	SGMW-01B
SGMW-02A	0	0	0	0	0	0	0	0	2	0	2	3	SGMW-02A
SGMW-02B	0	0	0	0	0	0	0	0	0	0	0	1	SGMW-02B
SGMW-03A	0	0	0	0	0	0	0	0	0	1	2	2	SGMW-03A
SGMW-03B	0	0	0	0	0	0	0	0	0	0	1	2	SGMW-03B
SGMW-04A	0	0	0	0	0	0	0	0	0	0	1	3	SGMW-04A
SGMW-04B	0	0	0	0	0	0	0	0	0	0	1	4	SGMW-04B
SGMW-05A	0	0	0	0	0	0	0	0	1	1	1	4	SGMW-05A
SGMW-05B	0	0	0	0	0	0	0	0	0	0	2	3	SGMW-05B
SGMW-06A	0	0	0	0	0	0	0	0	0	0	0	4	SGMW-06A
SGMW-06B	0	0	0	0	0	0	0	0	0	0	1	4	SGMW-06B
SGMW-07A	0	0	0	0	0	0	0	0	0	0	1	6	SGMW-07A
SGMW-07B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-07B
SGMW-08A	0	0	0	0	0	0	0	0	0	0	0	3	SGMW-08A
SGMW-08B	0	0	0	0	0	0	0	0	0	0	0	4	SGMW-08B
SGMW-09A	0	0	0	0	0	0	0	0	0	2	1	6	SGMW-09A
SGMW-09B	0	0	0	0	0	0	0	0	0	1	2	4	SGMW-09B
SGMW-10A	0	0	0	0	0	0	0	0	0	0	1	0	SGMW-10A
SGMW-10B	0	0	0	0	0	0	0	0	0	0	0	5	SGMW-10B
SGMW-11A	0	0	0	0	0	0	0	0	0	1	0	5	SGMW-11A
SGMW-11B	0	0	0	0	0	0	0	0	0	0	1	4	SGMW-11B
SGMW-12A	0	0	0	0	0	0	0	0	2	1	1	3	SGMW-12A
SGMW-12B	0	0	0	0	0	0	0	0	2	0	1	2	SGMW-12B

No Measurement 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) March-01	Methane (% By Volume) June-01	Methane (% By Volume) September-01	LEL (% By Volume) March-01	LEL (% By Volume) June-01	LEL (% By Volume) September-01	Hydrogen Sulfide (ppm by volume) March-01	Hydrogen Sulfide (ppm by volume) June-01	Hydrogen Sulfide (ppm by volume) September-01
SGMW-01A	0	0	0	0	0	0	3	N/A	1
SGMW-01B	0	0	0	0	0	0	3	N/A	1
SGMW-02A	0	0	0.1	0	0	0.2	4	N/A	2
SGMW-02B	0	0	0	0	0	0	5	N/A	2
SGMW-03A	0	0	0.1	0	0	0.2	4	N/A	3
SGMW-03B	0	0	0.1	0	0	0.2	4	N/A	2
SGMW-04A	0	0	0	0	0	0	5	N/A	0
SGMW-04B	0	0	0	0	0	0	5	N/A	0
SGMW-05A	0	0	0	0	0	0	6	N/A	0
SGMW-05B	0	0	0	0	0	0	5	N/A	0
SGMW-06A	0	0	0	0	↕	0	6	N/A	0
SGMW-06B	0	0	0	0	↕	0	5	N/A	0
SGMW-07A	0	0	0	0	↕	0	6	N/A	0
SGMW-07B	0	0	0	0	↕	0	7	N/A	0
SGMW-08A	0	0	0	0	↕	0	6	N/A	0
SGMW-08B	0	0	0	0	0	0	3	N/A	0
SGMW-09A	0	0	0	0	0	0	6	N/A	0
SGMW-09B	0	0	0	0	0	0	6	N/A	0
SGMW-10A	0	0	0	0	0	0	6	N/A	0
SGMW-10B	0	0	0	0	0	0	7	N/A	0
SGMW-11A	0	0	0	0	0	0	4	N/A	0
SGMW-11B	0	0	0	0	0	0	6	N/A	0
SGMW-12A	0	0	0	0	0	0	7	N/A	0
SGMW-12B	0	0	0	0	0	0	6	N/A	0

↕ Measurement was collected due to other work in the area.

2007 Former Landfill Soil Gas Monitoring Summary

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



2003 Fanner Landfill Soil Gas Monitoring Summary

Soil Gas Monitoring Well	Methane	Methane	Methane	Methane	LEL	LEL	LEL	LEL	Hydrogen Sulfide	Hydrogen Sulfide	Hydrogen Sulfide	Hydrogen Sulfide	Soil Gas Monitoring Well
	(% By Volume) March-03	(% By Volume) July-03	(% By Volume) October-03	(% By Volume) December-03	(% By Volume) March-03	(% By Volume) July-03	(% By Volume) October-03	(% By Volume) December-03	(ppm by volume) March-03	(ppm by volume) July-03	(ppm by volume) October-03	(ppm by volume) December-03	
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	2	-	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	7	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	7	0	5	-	0	-	SGMW-07B
SGMW-08A	0.1	0	0.1	0	2	0	2	0	1	-	0	-	SGMW-08A
SGMW-08B	0.1	0	0.1	0	4	0	7	0	2	-	0	-	SGMW-08B
SGMW-09A	0.2	0	0.1	0	2	0	0	0	2	-	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	1	-	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  
 - #73 was not operational

2004 Former Landfill Soil Gas Monitoring Summary

Soil Gas Monitoring Well	Methane (% By Volume) 3/11/04	Methane (% By Volume) 5/25/04	Methane (% By Volume) 10/20/04	Methane (% By Volume) 11/30/04	LEL (% By Volume) 3/11/04	LEL (% By Volume) 5/25/04	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) 5/25/04	Hydrogen Sulfide (ppm by volume) 10/20/04	Hydrogen Sulfide (ppm by volume) 11/30/04	Soil Gas Monitoring Well
SGMW-01A	0	0	0	0	2	0	0	2	150	0	0	0	SGMW-01A
SGMW-01B	0	0	0	0	0	0	0	0	0	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	105	0	0	0	SGMW-03A
SGMW-03B	0	0	0	0	0	2	0	0	0	2	0	0	SGMW-03B
SGMW-04A	0	0	0	0	2	2	0	2	0	2	0	0	SGMW-04A
SGMW-04B	0	0	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-05A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-05A
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	NR	0	0	0	NR	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-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  
 W75 was suspected of not operating correctly in March









