APPENDIX H
BROOKHAVEN NATIONAL LABORATORY
2007 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

BROOKHAVEN NATIONAL LABORATORY 2007 ENVIRONMENTAL MONITORING REPORT CURRENT AND FORMER LANDFILL AREAS

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ACRONYMS

BNL	Brookhaven National Laboratory
BSA	Brookhaven Science Associates
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CLF	Current Landfill
DCG	Derived concentration guides
DOE	U.S. Department of Energy
DQOs	Data quality objectives
EIMS	Environmental Info. Mgmt. System
FLF	Former Landfill
HWMF	Former Hazardous Waste Management Facility
LEL	Lower explosive limit
MS/MSDs	Matrix spike/matrix spike duplicates
NPL	National Priorities List
NYSDEC	NY State Dept. of Environmental Conservation
NYSDOH	NY State Dept. of Health
O&M	Operations and Maintenance
OU	Operable Unit
PCBs	polychlorinated biphenyls
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
Sr-90	Strontium 90
TDS	Total dissolved solids
TKN	Total Kjeldahl nitrogen
TSS	Total suspended solids
TVOCs	Total volatile organic compounds
UEL	Upper explosive limit
VOCs	Volatile organic compounds

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BROOKHAVEN NATIONAL LABORATOR
2007 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

Executive Summary

This report documents the Operations and Maintenance activities undertaken during the calendar year 2007 for the Current Landfill and the Former Landfill Areas (Former Landfill, Interim Landfill, and Slit Trench). Brookhaven National Laboratory is responsible for performing this work to comply with the post-closure O&M requirements specified in 6 New York State Code of Rules and Regulations (NYCRR) Part 360, Solid Waste Management Facilities, effective December 31, 1988. The landfill caps are functioning as designed and the 2007 results are consistent with results from previous years.

GROUNDWATER QUALITY

The groundwater quality at both the Current and Former Landfill Areas remains relatively unchanged from 2006. Volatile Organic compounds (VOCs) and metals continue to be detected downgradient of the Current Landfill. The most prevalent VOCs detected above standards are chloroethane and benzene, at maximum concentrations of 36.1 μg/L and 2.52 μg/L, respectively. As with previous years, iron, manganese, and arsenic were detected downgradient from the Current Landfill at concentrations above applicable standards. Concentrations of these metals were similar to those detected in 2006. Maximum concentrations of iron, manganese, and arsenic in downgradient wells were 74,400 μg/L, 5,240 μg/L, and 25.9 μg/L, respectively.

Concentrations of parameters detected in wells downgradient of the Former Landfill do not indicate the presence of leachate. VOCs were not detected above standards in Former Landfill monitoring wells. Leachate indicator parameters and metals concentrations were generally the same when comparing downgradient monitoring wells to upgradient monitoring wells.

The groundwater monitoring programs for the Current and Former Landfill Areas are adequate. No changes are recommended at this time.

WOODED WETLANDS MONITORING

The results of the May 2007 sediment and surface water sampling program indicate no elevated risk to adult salamanders from sediments in the South or North Ponds. The average sediment sample concentrations for both ponds were lower than the maximum and/or background concentrations that would result in an elevated hazard quotient, as discussed in the *Final Focused Ecological Risk Assessment for OU I*. This is consistent with the results from 2006. No changes to the monitoring program are recommended.

SOIL-GAS MONITORING

Soil-gas monitoring at the Current Landfill indicates that decomposition is still occurring. However, as with prior years, there is no indication that the vapors are migrating beyond the monitoring well network. Therefore, there is no threat to the nearby National Weather Service building. Soil-gas monitoring at the Former Landfill indicates that there are only minimal detects of hydrogen sulfide, with no detectable levels of methane present. The soil gas monitoring programs are sufficient to monitor both landfill areas.

MAINTENANCE AND REPAIR

Monthly inspections and maintenance continued throughout 2007. To prevent ruts in the landfills caused by the weight of the lawn mowers and a significant amount of precipitation, the cutting of the grass was suspended until optimal soil conditions are evident. This pattern of vegetation control will continue.

1.0 INTRODUCTION

This report documents the Operation and Maintenance (O&M) activities undertaken during calendar year 2007 for the Current Landfill and the Former Landfill Areas (Former Landfill, Interim Landfill, and Slit Trench). 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 twelfth year of O&M for the Current Landfill, the eleventh year for the Former Landfill and Slit Trench, and the tenth 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

Area are located in OU I, near the south central portion of the BNL site (see Figure 1).

Current Landfill (CLF). The Current Landfill consists of one unlined waste-cell that was 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 to evaluate the potential for leachate migrating into this area, as originally performed under the *OU I 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.

Former Landfill (FLF.) 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 been 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.

1.2 Overview of the Monitoring Program

Groundwater Monitoring

Data quality objectives (DQOs) for each of BNL's groundwater monitoring programs are presented in the *BNL Environmental Monitoring Plan* (BNL, 2007). 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 monitoring program for the landfill areas consists of:

Soil-gas Monitoring. Measurements of methane, Lower Explosive Limit (LEL), and hydrogen sulfide are taken quarterly from numerous monitoring locations surrounding the landfills 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 annually 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 annually (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.

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 December 2007. 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	Mid Glacial
087-26	70–80	Mid 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	Mid 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. The direction of groundwater flow in the OU I area of the site is generally to the south-southeast. Figure 3 shows the December 2007 water table contours for the area. The screen zones for Former Landfill wells are summarized below.

Well ID	Screen Interval (ft BLS)	Screen Zone
086-42*	65–75	Mid 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	Mid Glacial
106-30	29–44	Shallow 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.

2.1.3 Sampling Frequency and Analytical Parameters

Monitoring wells at both landfills were sampled in 2007 during the following periods:

Sampling Event	Sampling Dates
Round 1	February 1
Round 2	June 4, 19
Round 3	August 28
Round 4	November 19, 26

R&C Formation, Ltd. of Bellmore, New York conducted the groundwater sampling, and Severn Trent Laboratories, Inc. 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 2007 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 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 during the first and third quarters when only the Current Landfill was sampled, and two duplicate samples were collected during the second and fourth quarters when both landfills were sampled. No errors were detected in the duplicate analyses. MS/MSD samples were collected at a frequency of one sample during the first and third quarters and two samples during the second and fourth quarters. This ensures that the matrix of the sample does not adversely impact the analysis. In January, the nitrite and ammonia matrix spike recoveries were above QC limits. Sample results associated with these analyses were qualified as estimated. In June, the field blank for iron had a detection of 30 μg/L. Several iron results were rejected due to this field blank result. In November, the VOC fraction for well 088-23 was analyzed 7 days beyond the holding time. Results for this fraction were qualified as estimated. The amount of rejected 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 in CY07. The historical trends in concentrations of key contaminants are assessed and shown graphically in Figures 5 through 12. Summary tables of all 2007 landfill groundwater data are presented in Tables 2 through 10. Detections that exceed groundwater standards are in bold text. The summary 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 Ambient Water Quality Standards and Guidance Values (June 1998, with addendums April 2000 and June 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 groundwater standards are highlighted in the data summary tables to facilitate review of the information.

The laboratory data qualifiers included in the summary tables vary for the different analyses. Explanations for the most commonly used laboratory data qualifiers are included in the notes in each summary table. Complete 2007 laboratory data reports, chain of custody forms, and well-sampling logs for both landfills are archived and available upon request. In addition, analytical results are stored in the BNL Environmental Information Management System (EIMS) database.

2.2.1 Current Landfill

2.2.1.1 Volatile Organic Compounds (VOCs)

Benzene, and/or chloroethane, were detected above their respective groundwater standards in four of the 10 downgradient monitoring wells during 2007 (Table 2). These VOCs have historically been the primary groundwater contaminants detected downgradient of the Current Landfill. No other VOCs were detected above groundwater standards during 2007.

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.

Benzene exceeded the 1 μg/L standard in well 087-11 and well 087-27. Chloroethane exceeded the 5 μg/L standard in wells 087-11, 087-23, and 088-109. The maximum chloroethane concentration was 36.1 μg/L in well 088-109; which is a decrease from the 2006 high of 53 μg /L. Benzene was detected at a maximum of 2.52 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. Background well 087-09 had a small amounts of methylene chloride and methyl chloride (<0.5 μg/L) during the June and November sampling rounds, respectively.

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 2007 (Table 1). The results are provided in Table 3. Elevated levels of these parameters can be indicative of the presence of landfill leachate. During 2007, ammonia was the only water chemistry parameter detected above standards.

Ammonia was detected above the standard of 2 mg/L, with exceedances in four downgradient wells (087-11, 087-27, 088-109 and 088-110) during four sampling events, as shown in Table 3. The highest concentration of 7.48 mg/L was reported for well 087-11 in June. The levels of ammonia detected seem to have stabilized from their pre-cap highs.

During 2007, all sulfate and chloride concentrations remained below the groundwater standard of 250 mg/L. The highest sulfate value reported for 2007 was detected in the June sample from monitoring well 087-24, at a concentration of 21.5 mg/L. Chloride concentrations ranged from 6.54 mg/L in well 087-11 during November, to a high of 78.2 mg/L in well 087-09 in November. Chloride concentrations historically have been significantly below the groundwater standard of 250 mg/L in all Current Landfill wells. Figure 6 plots these trends, showing the low and stable nature of chloride concentrations in the vicinity of the Current Landfill.

Alkalinity, in the form of bicarbonate, is the concentration of anions available to neutralize acid, and is often used as an indicator of leachate contamination. The alkalinity in background well 087-09 ranged from nondetect to 28 mg/L during 2007. The highest alkalinity concentration during 2007 was detected in downgradient, shallow Upper Glacial Aquifer well 087-11, at 198 mg/L in June. 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 99 mg/L to 236 mg/L, and 4.53 mg/L to 26.3 mg/L, respectively. The maximum concentrations observed in downgradient wells were 273 mg/L and 181 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 and manganese were detected consistently above groundwater standards in the majority of wells surrounding the landfill. While these metals indicate the presence of leachate, the groundwater standards for these compounds are considered secondary standards based on aesthetics and taste rather than risk to human health. Precipitated iron from the BNL Water Treatment Plant was disposed of at the Current Landfill during past operations. The highest concentrations generally are found in the shallow wells 87-11 and 87-27, located immediately south of the Current Landfill (see Figure 7). There have been no detections of metals, other than iron and manganese, exceeding groundwater standards in wells 087-24, 087-26, 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. Concentrations in upgradient well 87-09 still are lower than in the downgradient wells, suggesting continued leachate migration from the landfill.

During 2007, iron, manganese, sodium, arsenic, aluminum, and chromium continued to be detected above their respective groundwater standards (Table 4). Iron in the downgradient wells peaked at a maximum of 74,400 μg/L in well 087-23 during August, in contrast to background concentrations, in well 87-09, iron ranged from 1,690 μg/L to 10,500 μg/L. Concentrations of iron increased in well

088-21 from 98.6 μg/L in May 2006 to a high of 68,700 μg/L in August 2007. These high iron concentrations come after a high water table during 2006. The last time the water table was high for an extended period of time was during later half of 2003 and the beginning of 2004. During 2004, the iron concentrations also showed a significant increase from their typical levels.

Manganese ranged from 30.8 μg/L to 139 μg/L in background well 087-09, and up to 5,240 μg/L in the downgradient wells. Background sodium levels ranged from 27,800 to 34,800 μg/L; whereas downgradient levels ranged up to 40,500 μg/L. The proximity of well 087-09 to Brookhaven Avenue and the affects of road salting in the winter may be contributing to the higher values. Arsenic was reported above the standard of 10 μg/L in wells 087-23, 088-109, 088-110, 088-21, and 088-22 at concentrations up to 25.9 μg/L. Arsenic detections have historically been observed at similar levels in Current Landfill wells. Aluminum and chromium were detected in the background well, 087-09 above the standards of 200 μg/L and 50 μg/L, respectively. Concentrations of aluminum ranged up to 584 μg/L in background well 087-09 and concentrations of chromium were as high as 1,180 μg/L. Nickel and thallium were detected in background well 087-09 above the standards of 100 μg/L and 0.5 μg/L, respectively, in November. However, nickel and thallium were not detected above standards in any of the downgradient wells.

2.2.1.4 Radionuclides

No radionuclides were detected above groundwater standards during 2007 (Table 5). Strontium-90 (Sr-90) and tritium were the only radionuclides detected during 2007. The highest concentration of Sr-90 was detected in downgradient well 088-21. The concentrations detected, 2.91 pCi/L, was well below the 8 pCi/L groundwater standard. Overall, Sr-90 concentrations have shown stable trends, with concentrations at or near the detection limit (Figure 8). Detectable gross beta activity, which is a possible indicator of Sr-90 in groundwater, ranged from 0.789 pCi/L in well 088-22 to 7.07 pCi/L in well 088-109.

Tritium was detected significantly below the groundwater standard of 20,000 pCi/L with a maximum value of 673 pCi/L in MidGlacial downgradient well 087-26 (Figure 8). Tritium and Sr-90 concentrations have not exceeded groundwater standards in all wells since 1998.

2.2.2 Former Landfill

2.2.2.1 VOCs

During 2007 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 monitoring wells include 1,1,1-trichloroethane, 1,1-dichloroethane, and chloroform. Chloroform was reported in several wells during the year at concentrations ranging from 0.185 μg/L to 2.1 μg/L, well below the groundwater standard of 7 μg/L. Trichloroethene was also detected in well 106-30, at concentrations ranging from 0.644 μg/L to 1.21 μg/L. These concentrations are well below the standard of 5 μg/L. Figure 9 shows plots of the historical VOC detections for the Former Landfill monitoring wells. During 2007, VOCs were detected at the Former Landfill 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 2007, 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 2007. These trends indicate that the landfill cap is effective.

Sulfate concentrations ranged from 8.31 mg/L to 11.8 mg/L in the background wells, and from 8.34 mg/L to 20.1 mg/L in downgradient wells, significantly below the standard of 250 mg/L.

Nitrogen in the form of nitrate (NO_3), and chloride were consistently low with concentrations up to 0.932 mg/L on the background wells and concentrations up to 0.906 mg/L in the downgradient wells.

Chloride concentrations ranged up to 19.8 mg/L in the upgradient wells and 18.5 mg/L in downgradient monitoring wells, well below the groundwater standard of 250 mg/L. The trends plotted in Figure 10 indicate chloride concentrations are stable over time.

Detections of alkalinity ranged from nondetect to 35.6 mg/L in background wells and from nondetect to 26.9 mg/L in downgradient wells. The trends plotted in Figure 10 demonstrate that the alkalinity concentrations in 2007 are generally consistent with 2006 levels.

TDS concentrations ranged from 30 mg/L to 90 mg/L in the background wells, and from 30 mg/L to 97 mg/L in the downgradient wells. TSS concentrations were from nondetect to 0.805 mg/L in the background wells, and from nondetect to 0.9 mg/L in the downgradient wells.

TKN concentrations ranged from nondetect to 0.097 mg/L in the background wells. TKN concentrations in the downgradient wells ranged from nondetect to 0.048 mg/L.

Nitrite was not detected in the Former Landfill monitoring wells during 2007.

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 detection that exceeded the groundwater standards during 2007. Background well 087-22 and downgradient wells 097-277 and 106-30 had concentrations ranging from 4 μg/L to 6.1 μg/L. This is slightly above the standard of 4 μg/L.

2.2.2.4 Pesticides/PCBs

There were no detections of pesticides or polychlorinated biphenyls (PCBs) during 2007. The sampling results are summarized in Table 9.

2.2.2.5 Radionuclides

There were no detections of radionuclides during 2007. 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 analysis results.

Surface Water

Seven surface water samples from the Southern and Northern Ponds were collected. They had average iron concentrations of 1,042 μg/L and 1,767 μg/L, respectively (Appendix A, Table 6). Although the average concentrations were higher than the 1,000 μg/L critical toxicity concentration (Appendix A, Table 2B), they were lower than the BNL background concentration of 1,990 μg/L.

Aluminum had average concentrations of 240 μg/L and 538 μg/L in the South and North Ponds, respectively. The North Pond is slightly above the critical toxicity concentration of 525 μg/L, but both ponds are below the background concentration of 820 μg/L.

The average zinc concentrations in the South Pond and North Pond were 16.4 μg/L and 9.3 μg/L, respectively, which are below both the critical toxicity concentration of 23.8 μg/L and the background concentration of 62.0 μg/L.

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.

Based on the 2007 sampling results, annual sampling of the Wooded Wetlands should continue as part of the annual O&M landfills monitoring activities for at least another year. A complete copy of the *2007 Annual Wooded Wetlands Report* is included in Appendix A of this report.

Sediment

Seven sediment samples were collected from the Wooded Wetland Area in May 2007. The results for 2007 indicate that mercury concentrations in sediments in the South Pond are less than the maximum concentration benchmarks (Appendix A, Table 2A). The average mercury concentration in the North Pond was 0.15 mg/kg, which is below the maximum sediment concentration of 0.17 mg/kg and below the background concentration of 0.41 mg/kg. Historically, the highest average

value of mercury was detected in 2001 at 0.37 mg/kg in the North Pond. This analysis indicates that no significant change from historic values has occurred.

4.0 SOIL-GAS MONITORING

4.1 Soil-gas Monitoring Networks

Soil-gas readings were collected from wells surrounding the Current and Former Landfills in February, May, September, and December 2007. Methane, lower explosive limit (LEL), and hydrogen sulfide were measured using a Landtec GA-90 (Serial # 690). 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. 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.

Sampling Event	Current Landfill	Former Landfill
Round 1	February 2007	February 2007
Round 2	May 2007	May 2007
Round 3	September 2007	September 2007
Round 4	December 2007	December 2007

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 23soil-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 2007 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 equivalent to 20 times the methane concentrations in the landfill and 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. The highest levels were recorded in well cluster SGM-3 (ranging from 0 % of the LEL to 800% of the LEL) and in well cluster SGM-4 (ranging from 0 % of the LEL to 874 % of the LEL) located along the western boundary. 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 2007, indicating that the methane accumulation and migration does not extend to

this area. Should methane extend to 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 39 ppm. Well SGM-12A located near the landfills 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 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 2006. 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 areas. During 2007, the well clusters were monitored on a quarterly basis. The only existing operating facility within the immediate vicinity of the Former Landfill area is Building 670 located approximately 650 ft 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 four sampling events, there was no methane detected and only minimal hydrogen sulfide was detected (up to 2 ppm by volume). Table 13 details the 2007 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 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 indicate there were only minimal detections (2 ppm) during 2007. Appendix D includes the results of monitoring methane in the Former Landfill Area for 1996 through 2006.

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 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 approved O&M Manuals. A copy of the inspection reports is included in Appendix C. Maintenance and repair work completed or required by BNL is discussed below.

5.1 Landfill Cap and Gas Vents

The grass cover on the Former Landfill Area and the Current Landfill were maintained in accordance with the O&M Plan (CDM, 1996a and CDM 1996c). Small cracks in the asphalt road next to the Current Landfill were noted on the inspection logs. Repairs are scheduled for Spring 2008. In April 2007, animal burrows were noted on the west and northeast slopes up to 12” deep. They penetrated past the top soil and into the protective soil layer, but not near the liner. The burrows were repaired the day after the inspection.

In October 2006, ruts were observed on the top of the Former Landfill. These ruts were caused by lawn mowing equipment. The ruts were temporarily repaired in April 2007 by filling the ruts with sand. Repairs were completed in June, by covering the sand with topsoil. No gas vents at either landfill required repair. Due to the ruts in the landfills caused by the weight of the lawn mowers and a precipitation, the cutting of the grass was only conducted when optimal soil conditions are evident.

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. Grass and small brush were weeded from the drainage channels during the year.

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 wacking. Several handles on the soil-gas monitoring well caps were broken during 2007. These were replaced by the field sampling crew as they were discovered.

5.4 Related Structures

No other structures required maintenance during 2007.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Groundwater Monitoring

6.1.1 Conclusions for the Current Landfill

VOCs such as benzene, and/or chloroethane continue to be detected in downgradient wells 087-11, 087-23, 087-27, and 088-109 at concentrations above groundwater standards. The maximum chloroethane concentration was 36.1 μg/L in well 088-109; which is a decrease from the 2006 high of 53 μg /L. Benzene was detected at a maximum of 2.52 μg/L in well 087-11. TVOC concentrations

in these four wells have ranged between 3.97 μg/L to 57.41 μg/L over the past several years 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.

- Landfill water chemistry parameters and metals evaluated during the year suggest that leachate continues to emanate from the landfill.
- 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 those observed in 2006.
- Since 1998, there have been no detections of VOCs, metals, 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.
- The average values of the concentrations of the metals of concern in the Wooded Wetlands sediments in either pond in 2007 were not above benchmark or BNL background concentrations.
- The averages for the water samples collected from each pond in 2007 indicate that iron in both ponds was present above BNL critical water concentrations. However the average iron concentration in both ponds were below the BNL background levels. No significant changes have occurred compared to previous year's data. Since metals in water are the primary source of absorption by tiger salamanders, and there was no significant increase in dissolved metals in 2007, this indicates that the wooded wetland is not experiencing an increase in metals concentrations.

6.1.2 Recommendations for the Current Landfill

The groundwater monitoring program is adequate at this time. Since leachate is continuing to discharge from the Landfill, there are no recommended changes to the monitoring program.

6.1.3 Conclusions for the Former Landfill

- The Former Landfill is not a significant source of VOC contamination. No VOCs were detected above groundwater standards in 2007. 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 no longer appears to be a source of Sr-90 contamination. Sr-90 was not detected in any of the Former Landfill monitoring wells during 2007.
- 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

The groundwater monitoring program is adequate at this time.

6.2 Soil-Gas Monitoring

6.2.1 Conclusions for the Current Landfill

Methane and hydrogen sulfide levels in wells located along the northwest 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

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

The soil-gas monitoring program is adequate at this time since there have been little to no detections of methane during monitoring at the Former Landfill over the past nine years.

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 a significant amount of precipitation, the cutting of the grass will only be conducted when optimal soil conditions are evident. Access to the soil-gas monitoring wells will be 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 and a significant amount of precipitation, the cutting of the grass will be suspended until optimal soil conditions are evident. Access to the soil-gas monitoring wells will be cleared via mechanical weed whacking.

7.0 REFERENCES

Brookhaven National Laboratory, 1999, BNL *Groundwater Monitoring Program Quality Assurance/Quality Control Project Plan*, BNL, August 1999.

Brookhaven National Laboratory, 2001a, *Groundwater Monitoring Data Quality Objectives Project, BNL*, September 2001.

Brookhaven National Laboratory, 2001b, *Current Landfill Area Five-Year Evaluation Report.* BNL Environmental Services Division, October 29,2001.

Brookhaven National Laboratory. 2007. *Environmental Monitoring Plan CY 2007 Update.* Brookhaven National Laboratory, Upton, NY. January 2007.

CDM Federal, 1995a, Final Design Specifications for the Current Landfill, Brookhaven National Laboratory, CDM Federal Programs Corporation, February 1995.

CDM Federal, 1995b, Engineering Evaluation/Cost Analysis for Groundwater: Operable Unit I, Brookhaven National Laboratory, CDM Federal Programs Corporation, September 1995.

CDM Federal, 1995c, Final Closure/Design Report for the Former Landfill Area, Brookhaven National Laboratory, CDM Federal Programs Corporation, November 1995.

CDM Federal, 1996a, Final Operations and Maintenance Manual for the Current Landfill, Brookhaven National Laboratory, CDM Federal Programs Corporation, March 1996.

CDM Federal, 1996b, Final Construction Certification Report for Current Landfill Capping, Brookhaven National Laboratory, CDM Federal Programs Corporation, May 1996.

CDM Federal, 1996c, Final Operations and Maintenance Manual for the Former Landfill Area, Brookhaven National Laboratory, CDM Federal Programs Corporation, May 1996.

CDM Federal, 1997, Environmental Monitoring Report for Current Landfill, Brookhaven National Laboratory, CDM Federal Programs Corporation January 1997.

CDM Federal, 1999, Focused Ecological Risk Assessment, Appendix L., Final Feasibility Study Report OU I, CDM Federal Programs Corporation March 31, 1999.

EM-SOP-200, Collection and Frequency of Field Quality Control Samples, Brookhaven National Laboratory, Environmental Monitoring Standard Operating Procedure

EM-SOP-203, Chemical Data Verification, Brookhaven National Laboratory Environmental Monitoring, Standard Operating Procedure.

EM-SOP-204, Radiochemical Data Verification, Brookhaven National Laboratory Environmental Monitoring, Standard Operating Procedure

6NYCRR Part 360, Solid Waste Management Facilities, New York State Department of Environmental Conservation, Division of Solid & Hazardous Waste.

PW Grosser Consulting, 1997, *Construction Certification Report for the Interim Landfill Capping*, Brookhaven National Laboratory, October 1997

PW Grosser Consulting, 2001, *Current Landfill Area Five-Year Evaluation Report*, October 29, 2001.

PW Grosser Consulting, 2002, *Former Landfill Area Five-Year Evaluation Report*, March 8, 2002.

Roy F. Weston, 1997, *Final Construction Certification Report for Former Landfill Capping*, Brookhaven National Laboratory, March 1997.

OER, 1997, *Statement of Work For Hazardous Chemical and Radiochemical Data Validation*, Brookhaven National Laboratory, April, 1997.

United States Department of Energy Order 5400.5, Radiation Protection of the Public and the Environment. Washington D.C., February 8, 1990.

Table 1. Analytical Requirements for Groundwater Samples

Well ID	Project	Decision Subunit	EPA 524.2 VOCs	Pesticides Method 608	PCBs Method 608	TSS/TDS	Sufates/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	X[f]			X	X	X	X	X	X	X	X	X	X[a]	X[a]	X[a]	X[a]		4
087-11	CLF	Downgradient	X[f]			X	X	X	X	X	X	X	X	X	X[a]	X[a]	X[a]	X[a]		4
087-23	CLF	Downgradient	X[f]			X	X	X	X	X	X	X	X	X	X[a]	X[a]	X[a]	X[a]		4
087-24	CLF	Downgradient	X[a]			X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[a]	X[a]	X[a]	X[a]		2f
087-26	CLF	Downgradient	X[f]			X	X	X	X	X	X	X	X	X	X[a]	X[a]	X[a]	X[a]		4
087-27	CLF	Downgradient	X[f]			X	X	X	X	X	X	X	X	X	X[a]	X[a]	X[a]	X[a]		4
088-109	CLF	Downgradient	X			X	X	X	X	X	X	X	X	X	X[a]	X[a]	X[a]	X[a]	X	4
088-110	CLF	Downgradient	X[f]			X	X	X	X	X	X	X	X	X	X[a]	X[a]	X[a]	X[a]		4
088-21	CLF	Downgradient	X[f]			X	X	X	X	X	X	X	X	X	X[a]	X[a]	X[a]	X[a]		4
088-22	CLF	Downgradient	X[a]			X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[a]	X[a]	X[a]	X[a]		2f
088-23	CLF	Downgradient	X[a]			X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[a]	X[a]	X[a]	X[a]		2f
086-42	FLF	Background	X[a]	X[a]	X[a]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[a]	X[a]	X	X[a]		2f
086-72	FLF	Background	X[a]	X[a]	X[a]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[a]	X[a]	X[a]	X[a]		2f
087-22	FLF	Background	X[a]	X[a]	X[a]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[a]	X[a]	X[a]	X[a]		2f
097-17	FLF	Downgradient	X	X[a]	X[a]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[a]	X[a]	X[a]	X[a]		2f
097-277	FLF	Downgradient	X	X[a]	X[a]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[a]	X[a]	X[a]	X[a]		2f
097-64	FLF	Downgradient	X	X[a]	X[a]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[a]	X[a]	X[a]	X[a]		2f
106-02	FLF	Downgradient	X	X[a]	X[a]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[a]	X[a]	X[a]	X[a]		2f
106-30	FLF	Downgradient	X	X[a]	X[a]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[f]	X[a]	X[a]	X[a]	X[a]	X	2f

NOTES:
a: Collect in 4th Quarter only.
f: Collect in 2nd and 4th Quarters.

Table 2. Current Landfill - Summary of 2007 VOC Data

Analyte	*Groundwater Standards µg/L*	087-09 6/19/2007 (µg/L)		087-09 11/26/2007 (µg/L)		087-11 6/19/2007 (µg/L)		087-11 11/26/2007 (µg/L)	
1,1,1,2-Tetrachloroethane	*5*	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
1,1,2,2-Tetrachloroethane	*5*	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
1,1-Dichloroethane	*5*	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
1,1-Dichloropropene	*5*	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
1,2,3-Trichloropropane	*0.04*	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
1,2-Dichloroethane	*0.6*	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
1,3-Dichloropropane	*5*	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
Benzene	*1*	0.5	U	0.5	U	**2.52**		0.979	
Benzene, 1,2,4-trimethyl	*5*	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
Benzene, 1-methylethyl-	*--*	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
Bromodichloromethane	*50*	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
Carbon tetrachloride	*5*	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	*5*	0.5	U	0.5	U	0.594		0.451	J
Chlorobromomethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	*5*	0.5	U	0.5	U	**6.13**		3.68	
Chloroform	*7*	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,2-Dichloroethylene	*5*	0.5	U	0.5	U	0.194	J	0.5	U
cis-1,3-Dichloropropene	*0.4*	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
DBCP	*0.04*	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
Dibromomethane	*5*	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
EDB	*0.05*	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
Ethylbenzene	*5*	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
m-Dichlorobenzene	*3*	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
Methyl bromide	*5*	0.5	U	0.5	U	0.5	U	0.5	U
Methyl chloride	*5*	0.5	U	0.344	U	0.5	U	0.5	U
Methyl tert-butyl ether	*10*	0.5	U	0.5	U	0.5	U	0.5	U
Methylene chloride	*5*	0.349	J	0.912	U	0.427	J	0.716	U
n-Butylbenzene	*5*	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
Naphthalene	*10*	0.5	U	0.5	U	0.365	J	2.86	
o-Chlorotoluene	*5*	0.5	U	0.5	U	0.5	U	0.5	U
o-Dichlorobenzene	*3*	0.5	U	0.5	U	0.138	J	0.401	J
o-Xylene	*5*	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
p-Dichlorobenzene	*3*	0.5	U	0.5	U	0.516		0.245	J
sec-Butylbenzene	*5*	0.5	U	0.5	U	0.168	J	0.382	J
Styrene	*5*	0.5	U	0.5	U	0.5	U	0.5	U
tert-Butylbenzene	*5*	0.5	U	0.5	U	0.111	J	0.131	J
Tetrachloroethylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	*5*	0.5	U	0.5	U	0.0681	J	0.0712	J
trans-1,3-Dichloropropene	*0.4*	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
Trichlorofluoromethane	*5*	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
524.2 TVOC	*--*	0.349		0.344		11.3691		10.3172	

ug/L - Micrograms per liter.
U - Not detected.
J - Estimated value.
H - Holding time exceeded.
-- No standard applicable.

Table 2. Current Landfill - Summary of 2007 VOC Data

Analyte	*Groundwater Standards µg/L*	087-23 6/19/2007 (µg/L)		087-23 11/26/2007 (µg/L)		087-24 11/26/2007 (µg/L)		087-26 6/19/2007 (µg/L)		087-26 11/26/2007 (µg/L)		087-27 6/19/2007 (µg/L)	
1,1,1,2-Tetrachloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	*1*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	*5*	0.943		0.32	J	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloropropene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichloropropane	*0.04*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	*0.6*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	*1*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichloropropane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2,2-Dichloropropane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene	*1*	0.893		0.72		0.5	U	0.5	U	0.5	U	0.598	
Benzene, 1,2,4-trimethyl	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene, 1,3,5-trimethyl-	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene, 1-methylethyl-	*--*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromobenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromodichloromethane	*50*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	*50*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon tetrachloride	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	*5*	0.691		0.451	J	0.5	U	0.5	U	0.5	U	0.936	
Chlorobromomethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	*5*	**7.53**		4.62		0.5	U	0.5	U	0.5	U	1.16	
Chloroform	*7*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,2-Dichloroethylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,3-Dichloropropene	*0.4*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cymene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
DBCP	*0.04*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromochloromethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromomethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
EDB	*0.05*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethene, 1,2-dichloro-, (E)-	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorobutadiene	*0.5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
m-Dichlorobenzene	*3*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
m/p xylene	*5*	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
Methyl chloride	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl tert-butyl ether	*10*	0.0948	J	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene chloride	*5*	0.5	U	0.884	U	0.972	U	0.5	U	0.829	U	0.5	U
n-Butylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
n-Propylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Naphthalene	*10*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Chlorotoluene	*5*	0.225	J	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	0.136	J
o-Xylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Chlorotoluene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Dichlorobenzene	*3*	0.458	J	0.364	J	0.5	U	0.5	U	0.5	U	0.192	J
sec-Butylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.354	J
Styrene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
tert-Butylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	*0.4*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	*2*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
524.2 TVOC	--	10.8348		7.359		0.972		0		0.829		3.512	

ug/L - Micrograms per liter.
U - Not detected.
J - Estimated value.
H - Holding time exceeded.
-- No standard applicable.

Table 2. Current Landfill - Summary of 2007 VOC Data

Analyte	*Groundwater Standards µg/L*	087-27 11/26/2007 (µg/L)		088-109 2/1/2007 (µg/L)		088-109 6/19/2007 (µg/L)		088-109 8/28/2007 (µg/L)		088-109 11/26/2007 (µg/L)	
1,1,1,2-Tetrachloroethane	*5*	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
1,1,2,2-Tetrachloroethane	*5*	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
1,1-Dichloroethane	*5*	0.5	U	0.86		1.36		0.743		0.285	J
1,1-Dichloroethylene	*5*	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
1,2,3-Trichlorobenzene	*5*	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
1,2,4-Trichlorobenzene	*5*	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
1,2-Dichloropropane	*1*	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
2,2-Dichloropropane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene	*1*	**1.18**		0.5	U	0.365	J	0.835		0.592	
Benzene, 1,2,4-trimethyl	*5*	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
Benzene, 1-methylethyl-	*--*	0.5	U	0.5	U	0.5	U	0.168	J	0.5	U
Bromobenzene	*5*	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
Bromoform	*50*	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
Chlorobenzene	*5*	0.849		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
Chloroethane	*5*	3.93		**21**		**36.1**		**18.7**		**13.1**	
Chloroform	*7*	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
cis-1,3-Dichloropropene	*0.4*	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
DBCP	*0.04*	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
Dibromomethane	*5*	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
EDB	*0.05*	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
Ethylbenzene	*5*	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
m-Dichlorobenzene	*3*	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
Methyl bromide	*5*	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
Methyl tert-butyl ether	*10*	0.5	U	0.5	U	0.0663	J	0.146	J	0.5	U
Methylene chloride	*5*	0.816	U	0.5	U	0.5	U	0.583	U	1.08	U
n-Butylbenzene	*5*	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
Naphthalene	*10*	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
o-Dichlorobenzene	*3*	0.197	J	0.5	U	0.5	U	0.5	U	0.5	U
o-Xylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Chlorotoluene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Dichlorobenzene	*3*	0.323	J	0.5	U	0.5	U	0.119	J	0.5	U
sec-Butylbenzene	*5*	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
tert-Butylbenzene	*5*	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
Toluene	*5*	0.5	U	0.5	U	0.0842	J	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
Trichloroethylene	*5*	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
Vinyl chloride	*2*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
524.2 TVOC	--	7.492		21.86		37.9755		20.711		15.057	

ug/L - Micrograms per liter.
U - Not detected.
J - Estimated value.
H - Holding time exceeded.
-- No standard applicable.

Table 2. Current Landfill - Summary of 2007 VOC Data

Analyte	Groundwater Standards µg/L	088-110 6/19/2007 (µg/L)	088-110 11/26/2007 (µg/L)	088-21 6/19/2007 (µg/L)	088-21 11/26/2007 (µg/L)	088-22 11/26/2007 (µg/L)	088-23 11/26/2007 (µg/L)
1,1,1,2-Tetrachloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
1,1,1-Trichloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
1,1,2,2-Tetrachloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
1,1,2-Trichloroethane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
1,1-Dichloroethane	5	1.6	0.236 J	0.5 U	0.5 U	0.5 U	0.5 UHJ
1,1-Dichloroethylene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
1,1-Dichloropropene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
1,2,3-Trichlorobenzene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
1,2,3-Trichloropropane	0.04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
1,2,4-Trichlorobenzene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
1,2-Dichloroethane	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
1,2-Dichloropropane	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
1,3-Dichloropropane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
2,2-Dichloropropane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Benzene	1	0.842	0.509	0.5 U	0.5 U	0.5 U	0.5 UHJ
Benzene, 1,2,4-trimethyl	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Benzene, 1,3,5-trimethyl-	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Benzene, 1-methylethyl-	--	0.134 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Bromobenzene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Bromodichloromethane	50	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Bromoform	50	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Carbon tetrachloride	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Chlorobenzene	5	0.572	0.135 J	0.5 U	0.5 U	0.5 U	0.5 UHJ
Chlorobromomethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Chloroethane	5	4.5	1.13	0.5 U	0.5 U	0.5 U	0.5 UHJ
Chloroform	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
cis-1,2-Dichloroethylene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
cis-1,3-Dichloropropene	0.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Cymene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
DBCP	0.04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Dibromochloromethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Dibromomethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Dichlorodifluoromethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
EDB	0.05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Ethene, 1,2-dichloro-, (E)-	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Ethylbenzene	5	0.288 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Hexachlorobutadiene	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
m-Dichlorobenzene	3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
m/p xylene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Methyl bromide	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Methyl chloride	5	0.5 U	0.5 U	0.5 U	0.486 U	0.756 U	0.429 UHJ
Methyl tert-butyl ether	10	0.284 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Methylene chloride	5	0.5 U	0.899 U	0.5 U	0.969 U	1.15 U	0.725 UHJ
n-Butylbenzene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
n-Propylbenzene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Naphthalene	10	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
o-Chlorotoluene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
o-Dichlorobenzene	3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
o-Xylene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
p-Chlorotoluene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
p-Dichlorobenzene	3	0.456 J	0.219 J	0.5 U	0.5 U	0.5 U	0.5 UHJ
sec-Butylbenzene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Styrene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
tert-Butylbenzene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Tetrachloroethylene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Toluene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
trans-1,3-Dichloropropene	0.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Trichloroethylene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Trichlorofluoromethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
Vinyl chloride	2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UHJ
524.2 TVOC	--	8.676	3.128	0	1.455	1.906	0

ug/L - Micrograms per liter.
U - Not detected.
J - Estimated value.
H - Holding time exceeded.
-- No standard applicable.

Table 3. Current Landfill - Summary of 2007 Water Chemistry Data

Analyte	***Groundwater Standards*** *mg/L*	**087-09 2/1/2007** (mg/L)		**087-09 6/19/2007** (mg/L)		**087-09 8/28/2007** (mg/L)		**087-09 11/26/2007** (mg/L)	
Alkalinity (as CaCO3)	--	24		28		17.7		10.3	UJ
Ammonia (as N)	*2*	0.05	J	0.03	J	0.054	UJ	0.03	U
Chloride	*250*	58.2	J	37.8		33.2		78.2	
Cyanide	*0.2*	0.005	U	0.0015	U	0.0015	U	0.0015	U
Nitrate (as N)	*10*	0.37	JB	0.342		0.704		0.565	
Nitrite (as N)	*1*	0.2	J	0.033	U	0.033	U	0.033	U
Nitrite + Nitrate-N	*10*			0.225	U	0.695		0.565	
Nitrogen	--	0.37	J	0.225	J	0.878		0.664	
Sulfate	*250*	12.6	J	11.8		14.2		9.45	
TDS	--	236	J	128		99	J	191	J
Total Kjeldahl Nitrogen	--			0.029	UJ	0.183	UJ	0.099	J
TSS	--	10		6.29	J	4.53		26.3	

mg/L - Milligrams per Liter.
U - Not detected.
J - Estimated value.
-- No standard applicable
R - Unusable data.

Table 3. Current Landfill - Summary of 2007 Water Chemistry Data

Analyte	***Groundwater Standards*** *mg/L*	**087-11 2/1/2007** (mg/L)		**087-11 6/19/2007** (mg/L)		**087-11 8/28/2007** (mg/L)		**087-11 11/26/2007** (mg/L)	
Alkalinity (as CaCO3)	--	151		198		116		166	J
Ammonia (as N)	*2*	**3.7**	J	**7.48**	J	**4.84**	J	**5.54**	
Chloride	*250*	25.3		20.6		9.31		6.54	
Cyanide	*0.2*	0.005	U	0.0015	U	0.00319	J	0.0015	U
Nitrate (as N)	*10*	0.02	JB	0.033	U	0.033	U	0.033	U
Nitrite (as N)	*1*	0.02	U	0.033	U	0.033	U	0.033	U
Nitrite + Nitrate-N	*10*			0.05	U	0.01	U	0.05	U
Nitrogen	--	2.5	J	6.4		5.25		5.58	
Sulfate	*250*	5.1	J	3.17	J	2.86	J	3.11	J
TDS	--	273	J	195		194	J	193	J
Total Kjeldahl Nitrogen	--			6.37	J	5.25	J	5.58	
TSS	--	40		87		20.7		13.8	

mg/L - Milligrams per Liter.
U - Not detected.
J - Estimated value.
-- No standard applicable
R - Unusable data.

Table 3. Current Landfill - Summary of 2007 Water Chemistry Data

Analyte	***Groundwater Standards*** *mg/L*	**087-23 2/1/2007** (mg/L)		**087-23 6/19/2007** (mg/L)		**087-23 8/28/2007** (mg/L)		**087-23 11/26/2007** (mg/L)	
Alkalinity (as CaCO3)	--	105		86		94.3		98.6	J
Ammonia (as N)	*2*	0.87	J	0.781	J	1.77	J	1.49	
Chloride	*250*	12.7		10.8		9.77		12.2	
Cyanide	*0.2*	0.005	U	0.00351	J	0.0015	U	0.0015	U
Nitrate (as N)	*10*	0.02	JB	0.033	U	0.033	U	0.09	J
Nitrite (as N)	*1*	0.02	U	0.033	U	0.033	U	0.033	U
Nitrite + Nitrate-N	*10*			0.05	U	0.01	U	0.05	U
Nitrogen	--	0.58	J	0.948		1.81		1.57	
Sulfate	*250*	7.8	J	7.93		4.31	J	9.95	
TDS	--	198	J	124		163	J	157	J
Total Kjeldahl Nitrogen	--			0.948	J	1.81	J	1.57	
TSS	--	11		49		14		9.4	

mg/L - Milligrams per Liter.
U - Not detected.
J - Estimated value.
-- No standard applicable
R - Unusable data.

Table 3. Current Landfill - Summary of 2007 Water Chemistry Data

Analyte	***Groundwater Standards*** *mg/L*	**087-24 6/19/2007** (mg/L)		**087-24 11/26/2007** (mg/L)		**087-26 2/1/2007** (mg/L)		**087-26 6/19/2007** (mg/L)		**087-26 8/28/2007** (mg/L)		**087-26 11/26/2007** (mg/L)	
Alkalinity (as CaCO3)	--	14		13.2	J	5	U	16.5		16.2		17.1	J
Ammonia (as N)	*2*	0.15	J	0.15	U	0.05	J	0.15	J	0.03	UJ	0.03	U
Chloride	*250*	19.7		19.1		14		16.6		16.9		17	
Cyanide	*0.2*	0.00243	J	0.0015	U	0.005	U	0.0015	U	0.0015	U	0.0015	U
Nitrate (as N)	*10*	0.64		0.572		0.39	JB	0.493		0.5		0.452	
Nitrite (as N)	*1*	0.033	U	0.033	U	0.02	U	0.033	U	0.033	U	0.033	U
Nitrite + Nitrate-N	*10*	0.67	U	0.605				0.425	U	0.465		0.535	
Nitrogen	--	0.67		0.605		0.39	J	0.425		0.56		0.535	
Sulfate	*250*	21.5		19.6		10.7	J	11.2		11.1		12	
TDS	--	83		66	J	106	UJ	136		64	J	73	J
Total Kjeldahl Nitrogen	--	0.029	UJ	0.029	U			0.029	UJ	0.095	UJ	0.029	U
TSS	--	0.727	J	0.671	U	1	U	0.941	J	0.711	J	0.626	U

mg/L - Milligrams per Liter.
U - Not detected.
J - Estimated value.
-- No standard applicable
R - Unusable data.

Table 3. Current Landfill - Summary of 2007 Water Chemistry Data

Analyte	***Groundwater Standards*** *mg/L*	**087-27 2/1/2007** (mg/L)		**087-27 6/19/2007** (mg/L)		**087-27 8/28/2007** (mg/L)		**087-27 11/26/2007** (mg/L)		**088-109 2/1/2007** (mg/L)		**088-109 6/19/2007** (mg/L)		**088-109 8/28/2007** (mg/L)		**088-109 11/26/2007** (mg/L)	
Alkalinity (as CaCO3)	--	37		70.5		71		145	J	95		143		167		125	J
Ammonia (as N)	*2*	1.1	J	0.681	J	2.59	J	**2.77**		1.8	J	**6.01**	J	**6.39**	J	**4.27**	
Chloride	*250*	27.4	J	21.8		18.2		20		12.6	J	15.2		20.3		25.2	
Cyanide	*0.2*	0.005	U	0.00218	J	0.0015	U	0.0015	U	0.005	U	0.00293	J	0.0015	U	0.0015	U
Nitrate (as N)	*10*	0.096	JB	0.033	U	0.033	U	0.033	U	0.02	JB	0.033	U	0.033	U	0.033	U
Nitrite (as N)	*1*	1.3	J	0.033	U	0.033	U	0.033	U	0.02	U	0.033	U	0.033	U	0.033	U
Nitrite + Nitrate-N	*10*			0.05	U	0.05	U	0.05	U			0.05	U	0.05	U	0.05	U
Nitrogen	--	2.7	J	0.784		2.71		2.52		1.3	J	4.97		5.49		4.68	
Sulfate	*250*	13.7	J	12		10.2		12.6		11.8	J	9.41		5.34		20.1	
TDS	--	145	J	122		154	J	218	J	147	J	187		247	J	216	J
Total Kjeldahl Nitrogen	--			0.739	J	2.71	J	2.52				4.93	J	5.45	J	4.68	
TSS	--	35		46.6		8.6		10.8		16		23.4		24.6		47.2	

mg/L - Milligrams per Liter.
U - Not detected.
J - Estimated value.
-- No standard applicable
R - Unusable data.

Table 3. Current Landfill - Summary of 2007 Water Chemistry Data

Analyte	***Groundwater Standards*** *mg/L*	**088-110 2/1/2007** (mg/L)		**088-110 6/19/2007** (mg/L)		**088-110 8/28/2007** (mg/L)		**088-110 11/26/2007** (mg/L)		**088-21 2/1/2007** (mg/L)		**088-21 6/19/2007** (mg/L)		**088-21 8/28/2007** (mg/L)		**088-21 11/26/2007** (mg/L)	
Alkalinity (as CaCO3)	--	49		102		60.3		103	J	21		28.5		25.9		16.6	J
Ammonia (as N)	*2*	0.77	J	1.67	J	**2.4**	J	1.81		0.05	J	0.03	J	0.05	UJ	0.03	U
Chloride	*250*	35.8	J	32.4		29.4		31.2	R	8.6	J	65.1		20	J	26.2	
Cyanide	*0.2*	0.005	U	0.0015	U	0.0015	U	0.0015	U	0.005	U	0.00483	J	0.00181	J	0.0015	U
Nitrate (as N)	*10*	0.02	JB	0.033	U	0.033	U	0.033	U	0.011	JB	0.033	U	0.033	U	0.154	
Nitrite (as N)	*1*	1.5	J	0.033	U	0.033	U	0.033	U	0.36	J	0.033	U	0.033	U	0.033	U
Nitrite + Nitrate-N	*10*			0.05	U	0.01	U	0.05	U			0.05	U	0.05	U	0.05	U
Nitrogen	--	2.1	J	1.76		2.42		1.9		0.59	J	0.624		0.568		0.591	
Sulfate	*250*	15.6	J	18.8		19.7		15.5		3.3	J	3.25	J	2.7	J	3.75	J
TDS	--	172	J	222		180	J	199	J	52	UJ	154		72	J	83	J
Total Kjeldahl Nitrogen	--			1.73	J	2.42	J	1.9				0.619	J	0.568	J	0.591	
TSS	--	128		57		28.8		15		8		16.7		84		181	

mg/L - Milligrams per Liter.
U - Not detected.
J - Estimated value.
-- No standard applicable
R - Unusable data.

Table 3. Current Landfill - Summary of 2007 Water Chemistry Data

Analyte	***Groundwater Standards*** *mg/L*	**088-22 6/19/2007** (mg/L)		**088-22 11/26/2007** (mg/L)		**088-23 6/19/2007** (mg/L)		**088-23 11/26/2007** (mg/L)	
Alkalinity (as CaCO3)	--	6.5	U	7.81	UJ	26		25.9	J
Ammonia (as N)	*2*	0.03	J	0.15	U	0.03	J	0.03	U
Chloride	*250*	16.4		18.7		16.5		15.6	
Cyanide	*0.2*	0.00215	J	0.0015	U	0.0015	U	0.0015	U
Nitrate (as N)	*10*	0.285		0.328		0.033	U	0.033	U
Nitrite (as N)	*1*	0.033	U	0.033	U	0.033	U	0.033	U
Nitrite + Nitrate-N	*10*	0.012	U	0.26		0.05	U	0.05	U
Nitrogen	--	0.145	U	0.26		0.145	U	0.05	U
Sulfate	*250*	12.1		10.8		12		10.9	
TDS	--	66		66	J	86		91	J
Total Kjeldahl Nitrogen	--	0.145	UJ	0.029	U	0.145	UJ	0.029	U
TSS	--	50		41.4		4.47		20.7	

mg/L - Milligrams per Liter.
U - Not detected.
J - Estimated value.
-- No standard applicable
R - Unusable data.

Table 4. Current Landfill - Summary of 2007 Metals Data

Analyte	Groundwater Standards µg/L	087-09 2/1/2007 (µg/L)		087-09 6/19/2007 (µg/L)		087-09 8/28/2007 (µg/L)		087-09 11/26/2007 (µg/L)		087-11 2/1/2007 (µg/L)		087-11 6/19/2007 (µg/L)		087-11 8/28/2007 (µg/L)		087-11 11/26/2007 (µg/L)	
Aluminum	*200*	**584**		195	B	**237**		**263**		114		180	B	108	B	72.8	B
Antimony	*3*	5	U	4	U	3	U	3	U	5	U	4	U	3	U	3	U
Arsenic	*10*	2.8	B	3	B	1.5	U	7		4.3	B	5	B	5.7		5.7	
Barium	*1000*	30.1		27.5	B	22.8	B	42.3	B	36.1		42.1	B	38.2	B	30.1	B
Beryllium	*3*	2	U	1	U	1	U	1	U	2	U	1	U	1	U	1	U
Cadmium	*5*	2	U	1	U	1	U	1	U	2	U	1	U	1	U	1	U
Calcium	--	8770	J	9080		5790		14100		19600	J	23300		19600		19400	
Chromium	*50*	**78.8**		**110**		**155**		**1180**		5	U	2.1	B	2.5	B	2	U
Cobalt	--	1.2	B	1	U	1	U	2.4	B	0.44	B	1	U	1	U	1	U
Copper	*200*	3.2	B	3.2	B	5.4	B	12	B	1.3	B	3	U	3	U	3	U
Iron	*300*	**3390**	J	**1840**	ENJ	**1690**	E	**10500**		**70400**	J	**50000**	ENJ	**62300**	E	**64900**	
Lead	*25*	0.67	B	0.5	U	0.5	U	1.9	B	3	U	0.5	U	0.5	U	0.5	U
Magnesium	*35000*	4470		4420	B	2600	B	6630		5180		6790		5050		4560	B
Manganese	*300*	63	J	30.8		38.7		139		**1590**	J	**1760**		**1810**		**1680**	
Mercury	*0.7*	0.2	U	0.06	U	0.03	U	0.03	U	0.2	U	0.06	U	0.03	U	0.03	U
Nickel	*100*	29.5		23.8	B	34.6	B	**209**		1.2	B	1.3	B	1	U	1	U
Potassium	--	1020	B	749	B	762	B	1260	B	4940		7380		5070		4070	B
Selenium	*10*	5	U	2.5	U	1	U	1	U	5	U	2.5	U	1	U	1	U
Silver	*50*	2	U	1	U	1	U	1	U	2	U	7.5	B	2.8	B	1	U
Sodium	*20000*	**34800**		**28500**		**27800**		**34400**		19200		18100		9570		7440	
Thallium	*0.5*	5	U	0.4	U	0.3	U	**0.69**	B	5	U	0.4	U	0.3	U	0.3	U
Vanadium	--	5	U	1.7	B	2.6	B	10.7	B	5	U	1	U	4	B	1	U
Zinc	*2000*	10	U	7.6	B	4.4	B	4.2	B	10	U	3.2	B	2	U	2	U

µg/L - Micrograms per Liter.
U - Not detected.
J - Estimated value.
R - Unusable data.
B - Result below reporting limit but above instrument detection limit.
E - ICP Serial Dilution above QA limit.
-- No standard applicable

Table 4. Current Landfill - Summary of 2007 Metals Data

Analyte	Groundwater Standards µg/L	087-23 2/1/2007 (µg/L)		087-23 6/19/2007 (µg/L)		087-23 8/28/2007 (µg/L)		087-23 11/26/2007 (µg/L)		087-24 6/19/2007 (µg/L)		087-24 11/26/2007 (µg/L)		087-26 2/1/2007 (µg/L)		087-26 6/19/2007 (µg/L)		087-26 8/28/2007 (µg/L)		087-26 11/26/2007 (µg/L)	
Aluminum	*200*	11.1	B	68	U	68	U	68	U	68	U	68	U	50	U	68	U	68	U	68	U
Antimony	*3*	5	U	4	U	3	U	3	U	4	U	3	U	5	U	4	U	3	U	3	U
Arsenic	*10*	8.4		8.4		**14.7**		**12.1**		1.5	U	1.5	U	5	U	1.5	U	1.5	U	1.5	U
Barium	*1000*	42.3		43.7	B	69.6	B	52.7	B	12.4	B	11.2	B	18.5	B	19.8	B	21.3	B	19.8	B
Beryllium	*3*	2	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U	1	U
Cadmium	*5*	2	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U	1	U
Calcium	--	5290	J	6090		8800		7360		6680		6070		4840	J	4840	B	4980	B	5070	
Chromium	*50*	5	U	1.3	B	1	U	2	U	1	U	2	U	5	U	1	U	1	U	2	U
Cobalt	--	4.4	B	5.3	B	5.3	B	5.7	B	1	U	1	U	2.2	B	1.8	B	2.1	B	2.2	B
Copper	*200*	0.38	B	3	U	3	U	3	U	3	U	3	U	3.2	B	3.2	B	5.8	B	4	B
Iron	*300*	**63000**	J	**24700**	ENJ	**74400**	E	**53700**		34.5	ENJ	25	U	251	J	209	R	259	E	81	B
Lead	*25*	3	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	3	U	0.5	U	0.5	U	0.5	U
Magnesium	*35000*	1980		2470	B	2750	B	2120	B	4250	B	3830	B	3330		3430	B	3380	B	3480	B
Manganese	*300*	**5050**	J	**5240**		**4870**		**3280**		2	U	2	U	1.4	J	2	U	2.5	B	2	U
Mercury	*0.7*	0.2	U	0.06	U	0.03	U	0.03	U	0.06	U	0.03	U	0.2	U	0.06	U	0.03	U	0.03	U
Nickel	*100*	1.6	B	1.3	B	1	U	1	U	1	U	1	U	0.9	B	1	U	1	U	1	U
Potassium	--	1330	B	1500	B	1900	B	1740	B	1270	B	1160	B	822	B	1010	B	930	B	949	B
Selenium	*10*	5	U	2.5	U	1	U	1	U	2.5	U	1	U	5	U	2.5	U	1	U	1	U
Silver	*50*	2	U	5.1	B	1	U	1	U	1	U	1	U	2	U	1	U	1	U	1	U
Sodium	*20000*	9430		9800		7920		7950		12500		12700		11700		11900		11300		11000	
Thallium	*0.5*	5	U	0.4	U	0.3	U	0.3	U	0.4	U	0.3	U	5	U	0.4	U	0.3	U	0.3	U
Vanadium	--	5	U	1	U	1	U	1	U	1	U	1	U	5	U	1	U	1	U	1	U
Zinc	*2000*	10	U	5.3	B	5.9	B	5.4	B	2	U	2	U	10	U	2.2	B	2	U	2	U

µg/L - Micrograms per Liter.
U - Not detected.
J - Estimated value.
R - Unusable data.
B - Result below reporting limit but above instrument detection limit.
E - ICP Serial Dilution above QA limit.
-- No standard applicable

Table 4. Current Landfill - Summary of 2007 Metals Data

Analyte	Groundwater Standards µg/L	087-27 2/1/2007 (µg/L)		087-27 6/19/2007 (µg/L)		087-27 8/28/2007 (µg/L)		087-27 11/26/2007 (µg/L)		088-109 2/1/2007 (µg/L)		088-109 6/19/2007 (µg/L)		088-109 8/28/2007 (µg/L)		088-109 11/26/2007 (µg/L)		088-110 2/1/2007 (µg/L)		088-110 6/19/2007 (µg/L)		088-110 8/28/2007 (µg/L)	
Aluminum	*200*	56.1		68	U	106	B	132	B	47.3	B	68	U	68	U	**358**		129		68	U	69.1	B
Antimony	*3*	5	U	4	U	3	U	3	U	5	U	**4.6**	B	3	U	3	U	5	U	4	U	3	U
Arsenic	*10*	3.6	B	2.9	B	4.5	B	8.3		5	U	1.8	B	**10.3**		**20.8**		**15.1**		**12.4**		**16.7**	
Barium	*1000*	26.4		19.6	B	42.4	B	48.6	B	38		57.3	B	96.4	B	68.6	B	31.7		28	B	41.8	B
Beryllium	*3*	2	U	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.14	B	1	U	1	U
Cadmium	*5*	2	U	1	U	1	U	1	U	0.061	B	1	U	1	U	1	U	2	U	1	U	1	U
Calcium	--	18800	J	16300		16700		21400		24800	J	33700		44300		29700		14600	J	20800		16800	
Chromium	*50*	5	U	1	U	1	U	2	U	5	U	1	U	2	B	2	U	5	U	1	U	1	U
Cobalt	--	4.3	B	3.9	B	5.5	B	10	B	19.5		16.9	B	1.7	B	3.2	B	1.9	B	5	B	2.4	B
Copper	*200*	0.41	B	3	U	3	U	3	U	0.45	B	3	U	3	U	3	U	0.37	B	3	U	3	U
Iron	*300*	**23900**	J	**6090**	ENJ	**31300**	E	**51700**		**14500**	J	**13500**	ENJ	**40800**	E	**47200**		**57900**	J	**2880**	ENJ	**39900**	E
Lead	*25*	3	U	0.5	U	0.5	U	0.5	U	3	U	0.5	U	0.5	U	0.5	U	3	U	0.5	U	0.5	U
Magnesium	*35000*	6170		5940		3800	B	5300		6780		7660		6860		4930	B	5820		7340		5050	
Manganese	*300*	**1450**	J	**1480**		**1300**		**2610**		**2050**	J	**1790**		**845**		**915**		**2290**	J	**2800**		**2040**	
Mercury	*0.7*	0.2	U	0.06	U	0.03	U	0.03	U	0.2	U	0.06	U	0.03	U	0.03	U	0.2	U	0.06	U	0.03	U
Nickel	*100*	1.3	B	1	U	1	U	1	U	1.6	B	1.8	B	1.2	B	2.2	B	1.1	B	1.4	B	1	U
Potassium	--	3000		2410	B	3730	B	4250	B	5040		8590		11100		8870		2030		3840	B	3980	B
Selenium	*10*	5	U	2.5	U	1	U	1	U	5	U	2.5	U	1	U	1	U	5	U	2.5	U	1	U
Silver	*50*	2	U	1	U	1	U	1	U	2	U	1	U	1.2	B	1	U	2	U	1	U	1	U
Sodium	*20000*	14700		15200		11800		14900		8860		11200		12900		15100		**20100**		**28000**		**20900**	
Thallium	*0.5*	5	U	0.4	U	0.3	U	0.3	U	5	U	0.4	U	0.3	U	0.3	U	5	U	0.4	U	0.3	U
Vanadium	--	5	U	1	U	1	U	1	U	5	U	1	U	2.7	B	1.2	B	5	U	1	U	1	U
Zinc	*2000*	10	U	2.3	B	3	B	2.3	B	10	U	3.3	B	2	U	2	U	10	U	2.9	B	2	U

µg/L - Micrograms per Liter.
U - Not detected.
J - Estimated value.
R - Unusable data.
B - Result below reporting limit but above instrument detection limit.
E - ICP Serial Dilution above QA limit.
-- No standard applicable

Table 4. Current Landfill - Summary of 2007 Metals Data

Analyte	***Groundwater Standards*** *µg/L*	**088-110 11/26/2007** (µg/L)	
Aluminum	*200*	68	U
Antimony	*3*	3	U
Arsenic	*10*	**11.6**	
Barium	*1000*	38.8	B
Beryllium	*3*	1	U
Cadmium	*5*	1	U
Calcium	--	17600	
Chromium	*50*	2	U
Cobalt	--	2.7	B
Copper	*200*	3	U
Iron	*300*	**39500**	
Lead	*25*	0.5	U
Magnesium	*35000*	4750	B
Manganese	*300*	**2040**	
Mercury	*0.7*	0.03	U
Nickel	*100*	1	U
Potassium	--	3530	B
Selenium	*10*	1	U
Silver	*50*	1	U
Sodium	*20000*	19700	
Thallium	*0.5*	0.3	U
Vanadium	--	1	U
Zinc	*2000*	2	U

µg/L - Micrograms per Liter.
U - Not detected.
J - Estimated value.
R - Unusable data.
B - Result below reporting limit but above instrument detection limit.
E - ICP Serial Dilution above QA limit.
-- No standard applicable

Table 4. Current Landfill - Summary of 2007 Metals Data

Analyte	*Groundwater Standards µg/L*	**088-21 2/1/2007** (µg/L)		**088-21 6/19/2007** (µg/L)		**088-21 8/28/2007** (µg/L)		**088-21 11/26/2007** (µg/L)		**088-22 6/19/2007** (µg/L)		**088-22 11/26/2007** (µg/L)		**088-23 6/19/2007** (µg/L)		**088-23 11/26/2007** (µg/L)	
Aluminum	*200*	**612**		**518**		**940**		**503**		68	U	68	U	68	U	68	U
Antimony	*3*	5	U	4	U	3	U	3	U	4	U	3	U	4	U	3	U
Arsenic	*10*	3.6	B	5		**14.2**		7.4		**25.9**		**20**		2.6	B	3.9	B
Barium	*1000*	4.6	B	9.7	B	10.1	B	12.1	B	26.3	B	26.8	B	3.7	B	4.3	B
Beryllium	*3*	0.15	B	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cadmium	*5*	2	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Calcium	--	4300	J	9920		5730		4790	B	2880	B	3220	B	7460		6810	
Chromium	*50*	2.9	B	1	U	3.8	B	2	U	1	U	2	U	1	U	2	U
Cobalt	--	5	U	1	U	1	U	2.1	B	3.9	B	4.6	B	1	U	1	U
Copper	*200*	1.8	B	3	U	3	U	3	U	3	U	3	U	3	U	3	U
Iron	*300*	**63900**	J	**53000**	ENJ	**68700**	E	**39400**		**21500**	ENJ	**20200**		**1620**	ENJ	**5540**	
Lead	*25*	1.1	B	1	B	1.9	B	0.89	B	0.5	U	0.5	U	0.5	U	0.5	U
Magnesium	*35000*	2180		4720	B	2770	B	2480	B	1290	B	1690	B	2080	B	1810	B
Manganese	*300*	50.2	J	131		195		298		**1590**		**1670**		**2660**		**2530**	
Mercury	*0.7*	0.2	U	0.06	U	0.03	U	0.03	U	0.06	U	0.03	U	0.06	U	0.03	U
Nickel	*100*	10	U	1	U	1	U	1	U	5.7	B	4.9	B	1	U	1	U
Potassium	--	759	B	1580	B	1650	B	1580	B	1260	B	1170	B	995	B	864	B
Selenium	*10*	5	U	2.5	U	1.3	B	1.1	B	2.5	U	1	U	2.5	U	1	U
Silver	*50*	2	U	10.2		1	U	1	U	4.5	B	1	U	1	U	1	U
Sodium	*20000*	9660		**40500**		13400		15300		11700		11000		14300		12300	
Thallium	*0.5*	5	U	0.4	U	0.3	U	0.3	U	0.4	U	0.3	U	0.4	U	0.3	U
Vanadium	--	26.2		15.1	B	42.1	B	46.2	B	1	U	1	U	1	U	1	U
Zinc	*2000*	10	U	2.9	B	3.6	B	2	U	4	B	2	U	2.5	B	2	U

µg/L - Micrograms per Liter.
U - Not detected.
J - Estimated value.
R - Unusable data.
B - Result below reporting limit but above instrument detection limit.
E - ICP Serial Dilution above QA limit.
-- No standard applicable

Table 5. Current Landfill - Summary of 2007 Radiolonuclide Data.

Analyte	**Groundwater Standards** ***pCi/L***	**087-09 11/26/2007** ***pCi/L***				**087-11 11/26/2007** ***pCi/L***				**087-23 11/26/2007** ***pCi/L***			
		Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error
Americium-241	*1.2*	4	U	7.29	4.72	3.33	J-UI	3.15	2.59	1.44	U	7.36	4.83
Beryllium-7	*40000*	0.593	U	15.8	9.38	-4.06	U	20.2	12.2	4.7	U	16.2	9.36
Cesium-134	*80*	0.0203	U	1.53	0.892	0.147	U	2.37	1.38	0.594	U	1.63	0.948
Cesium-137	*120*	-0.188	UJ-D	1.47	1.04	0.144	UJ-D	2.38	2.29	0.681	UJ-D	1.62	1.07
Co-60	*200*	0.765	U	1.56	0.885	-0.291	U	2.06	1.28	0.199	U	1.7	1.15
Cobalt-57	*4000*	0.669	U	1.36	0.793	0.067	U	1.25	0.737	0.269	U	1.32	0.776
Europium-152	*841*	0.428	U	4.34	3.31	-0.792	U	4.78	2.82	-0.00842	U	4.37	2.54
Europium-154	*573*	-0.577	U	4.06	2.48	-2.21	U	5.37	3.44	-0.87	U	4.13	2.5
Europium-155	*4000*	-0.459	U	5.48	3.26	2.72	U	5.13	5.32	0.672	U	5.51	3.24
Gross Alpha	*15*	0.163	U	0.937	0.536	1.07	U	1.14	0.748	0.433	U	1.71	0.997
Gross Beta	*1000*	3.23	J-D	0.736	0.562	5.04	J-D	0.974	0.73	2.01	J-D	0.985	0.64
Manganese-54	*2000*	-0.0309	U	1.47	0.997	-0.101	U	2.07	1.22	0.32	U	1.5	0.885
Sodium-22	*400*	-0.219	U	1.46	0.89	-0.487	U	1.94	1.21	-0.319	U	1.48	0.899
Strontium-90	*8*	1.03	J-D	0.46	0.37	0.636	J-D	0.537	0.356	0.0532	UJ-D	0.576	0.297
Tritium	*20000*	88	U	204	121	371		203	130	115	U	205	122
Zinc-65	*360*	1.34	U	3.28	2.15	-1.09	U	4.08	2.52	-0.254	U	3.26	1.92

pCi/L - Picocuries per Liter.
U - Not detected.
J - Estimated value.
-- No standard applicable
D - Duplicate precision not within QC limits.

Table 5. Current Landfill - Summary of 2007 Radiolonuclide Data.

Analyte	**Groundwater Standards** ***pCi/L***	**087-24 11/26/2007** ***pCi/L***				**087-26 11/26/2007** ***pCi/L***				**087-27 11/26/2007** ***pCi/L***			
		Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error
Americium-241	*1.2*	11.6	U	11.6	9.22	-2.67	U	13.4	9.11	0.624	U	11.1	7.19
Beryllium-7	*40000*	-1.99	U	21	12.8	7.11	U	18.4	10.4	-9.35	U	19.8	18.5
Cesium-134	*80*	-0.156	U	1.97	1.38	0.728	U	1.78	1.45	0.563	U	1.96	1.31
Cesium-137	*120*	0.564	UJ-D	1.97	1.13	-1.13	UJ-D	1.59	1.01	1.03	UJ-D	1.89	1.06
Co-60	*200*	0.244	U	1.82	1.05	-0.618	U	1.57	1	1.65	U	1.87	1.36
Cobalt-57	*4000*	0.434	U	1.9	1.1	-0.0877	U	1.62	0.999	0.177	U	1.65	1.11
Europium-152	*841*	-2.02	U	5.69	3.86	1.62	U	5.11	3.27	-0.178	U	5.31	3.16
Europium-154	*573*	-1.86	U	4.97	3.04	-0.782	U	4.22	2.6	0.0461	U	5.26	3.63
Europium-155	*4000*	-5.12	U	7.35	4.4	1.24	U	7.08	4.31	2.14	U	6.95	4.11
Gross Alpha	*15*	0.324	U	1.67	0.795	-0.0636	U	0.707	0.376	-0.0142	U	1.06	0.591
Gross Beta	*1000*	-0.0629	UJ-D	2.07	1.07	0.00817	UJ-D	0.831	0.478	4.03	J-D	0.861	0.643
Manganese-54	*2000*	-0.345	U	1.78	1.08	-0.584	U	1.57	0.996	0.475	U	1.8	1.05
Sodium-22	*400*	-0.684	U	1.79	1.09	-0.282	U	1.52	0.935	-0.00614	U	1.89	1.3
Strontium-90	*8*	0.254	UJ-D	0.524	0.31	-0.0635	UJ-D	0.647	0.319	-0.0235	UJ-D	0.53	0.266
Tritium	*20000*	227	J	200	124	673		202	140	231	J	203	125
Zinc-65	*360*	0.322	U	4.07	2.84	0.994	U	3.74	2.49	-2.67	U	3.72	2.35

pCi/L - Picocuries per Liter.
U - Not detected.
J - Estimated value.
-- No standard applicable
D - Duplicate precision not within QC limits.

Table 5. Current Landfill - Summary of 2007 Radiolonuclide Data.

Analyte	**Groundwater Standards** ***pCi/L***	**088-109 11/26/2007** ***pCi/L***				**088-110 11/26/2007** ***pCi/L***				**088-21 11/26/2007** ***pCi/L***			
		Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error
Americium-241	*1.2*	2.63	U	6.14	4.12	2.9	U	7.18	4.67	-1.62	U	7.35	4.93
Beryllium-7	*40000*	1.34	U	14.6	8.85	-3.74	U	16.2	9.77	9.51	U	17.4	9.89
Cesium-134	*80*	0.162	U	1.33	0.78	-0.386	U	1.58	0.942	0.302	U	1.65	0.978
Cesium-137	*120*	0.3	UJ-D	1.38	0.792	0.297	UJ-D	1.55	0.919	0.0729	UJ-D	1.51	0.894
Co-60	*200*	0.112	U	1.34	0.775	1.24	U	1.71	0.95	0.727	U	1.72	0.97
Cobalt-57	*4000*	0.242	U	1.28	0.735	-0.162	U	1.36	0.812	-0.759	U	1.32	0.804
Europium-152	*841*	-1.83	U	4.12	2.76	-0.0276	U	4.39	2.57	-2.06	U	4.28	2.81
Europium-154	*573*	-1.42	U	3.26	2.12	-0.589	U	4.07	2.91	-0.954	U	4.29	2.6
Europium-155	*4000*	-0.0463	U	5.15	2.97	1.48	U	5.61	3.29	3.78	U	5.33	3.87
Gross Alpha	*15*	1.88	J	1.1	0.791	-1.04	U	1.75	0.922	1.93	J	0.977	0.729
Gross Beta	*1000*	7.47	J-D	0.85	0.745	3.81	J-D	1.33	0.873	6.96	J-D	0.912	0.759
Manganese-54	*2000*	0.00489	U	1.36	0.807	0.019	U	1.46	0.853	0.628	U	1.59	0.926
Sodium-22	*400*	-0.511	U	1.17	0.76	-0.16	U	1.48	1.05	-0.344	U	1.54	0.934
Strontium-90	*8*	0.126	UJ-D	0.316	0.182	0.325	UJ-D	0.359	0.236	2.91	J-D	0.599	0.651
Tritium	*20000*	282	J	203	127	420		201	131	116	U	203	121
Zinc-65	*360*	0.163	U	2.9	1.92	0.141	U	3.45	2.05	1.68	U	3.18	3.1

pCi/L - Picocuries per Liter.
U - Not detected.
J - Estimated value.
-- No standard applicable
D - Duplicate precision not within QC limits.

Table 5. Current Landfill - Summary of 2007 Radiolonuclide Data.

Analyte	**Groundwater Standards** ***pCi/L***	**088-22 11/26/2007** ***pCi/L***				**088-23 11/26/2007** ***pCi/L***			
		Result	Qual	MDA	Error	Result	Qual	MDA	Error
Americium-241	*1.2*	2.56	U	10.5	6.61	1.85	U	3.15	2.27
Beryllium-7	*40000*	-6.24	U	17.2	10.7	3.32	U	21.2	12.5
Cesium-134	*80*	-0.68	U	1.67	1.15	1.94	U	2.33	1.85
Cesium-137	*120*	0.315	UJ-D	1.64	0.951	-1.41	UJ-D	2.17	2.14
Co-60	*200*	0.64	U	1.45	0.609	-0.0785	U	2.18	1.34
Cobalt-57	*4000*	-0.274	U	1.4	0.838	0.164	U	1.24	0.729
Europium-152	*841*	0.104	U	4.5	2.66	1.35	U	5.09	3.3
Europium-154	*573*	2.15	U	4.88	2.76	0.0862	U	6.07	3.68
Europium-155	*4000*	1.14	U	6.1	3.57	-2.15	U	4.98	4.39
Gross Alpha	*15*	0.524	U	1.26	0.739	0.398	U	0.842	0.497
Gross Beta	*1000*	0.789	J-D	0.734	0.46	0.394	UJ-D	0.893	0.531
Manganese-54	*2000*	0.266	U	1.68	0.993	0.463	U	2.21	1.27
Sodium-22	*400*	0.747	U	1.75	0.989	-0.1	U	2.19	1.34
Strontium-90	*8*	0.579	J-D	0.427	0.296	-0.135	UJ-D	0.248	0.136
Tritium	*20000*	653		204	140	560		205	138
Zinc-65	*360*	-0.926	U	3.25	1.97	-2.09	U	4.04	3.01

pCi/L - Picocuries per Liter.
U - Not detected.
J - Estimated value.
-- No standard applicable
D - Duplicate precision not within QC limits.

Table 6. Former Landfill - Summary of 2007 VOC Data

Analyte	Groundwater Standards µg/L	086-42 11/19/2007 (µg/L)		086-72 11/19/2007 (µg/L)		087-22 11/19/2007 (µg/L)		097-17 6/4/2007 (µg/L)		097-17 11/19/2007 (µg/L)	
1,1,1,2-Tetrachloroethane	*5*	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
1,1,2,2-Tetrachloroethane	*5*	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
1,1-Dichloroethane	*5*	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
1,1-Dichloropropene	*5*	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
1,2,3-Trichloropropane	*0.04*	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
1,2-Dichloroethane	*0.6*	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
1,3-Dichloropropane	*5*	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
Benzene	*1*	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
Benzene, 1,3,5-trimethyl-	*5*	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
Bromobenzene	*5*	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
Bromoform	*50*	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
Chlorobenzene	*5*	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
Chloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroform	*7*	0.5	U	2.1		0.493	J	0.593		0.534	
cis-1,2-Dichloroethylene	*5*	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
Cymene	*5*	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
Dibromochloromethane	*5*	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
Dichlorodifluoromethane	*5*	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
Ethene, 1,2-dichloro-, (E)-	*5*	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
Hexachlorobutadiene	*0.5*	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
m/p xylene	*5*	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
Methyl chloride	*5*	0.5	U	0.241	U	0.345	U	0.5	U	0.5	U
Methyl tert-butyl ether	*10*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene chloride	*5*	0.573	U	0.761	U	0.743	U	0.5	U	0.687	U
n-Butylbenzene	*5*	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
Naphthalene	*10*	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
o-Dichlorobenzene	*3*	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
p-Chlorotoluene	*5*	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
sec-Butylbenzene	*5*	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
tert-Butylbenzene	*5*	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
Toluene	*5*	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
Trichloroethylene	*5*	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
Vinyl chloride	*2*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
524.2 TVOC	--	0		2.1		0.493		0.593		0.534	

µg/L - Micrograms per liter.
U - Not detected.
J - Estimated value.
-- No standard applicable.

Table 6. Former Landfill - Summary of 2007 VOC Data

Analyte	Groundwater Standards µg/L	097-277 6/4/2007 (µg/L)		097-277 11/19/2007 (µg/L)		097-64 6/4/2007 (µg/L)		097-64 11/19/2007 (µg/L)		106-02 6/4/2007 (µg/L)		106-02 11/19/2007 (µg/L)	
1,1,1,2-Tetrachloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	*5*	0.5	U	0.5	U	0.5	U	0.148	J	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	*1*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	*5*	0.5	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
1,1-Dichloropropene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichloropropane	*0.04*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	*0.6*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	*1*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichloropropane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2,2-Dichloropropane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene	*1*	0.5	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
Benzene, 1,3,5-trimethyl-	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene, 1-methylethyl-	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromobenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromodichloromethane	*50*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	*50*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon tetrachloride	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobromomethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroform	*7*	1.21		1.39		0.5	U	0.236	J	0.35	J	0.447	J
cis-1,2-Dichloroethylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,3-Dichloropropene	*0.4*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cymene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
DBCP	*0.04*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromochloromethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromomethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
EDB	*0.05*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethene, 1,2-dichloro-, (E)-	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorobutadiene	*0.5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
m-Dichlorobenzene	*3*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
m/p xylene	*5*	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
Methyl chloride	*5*	0.5	U	0.506	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl tert-butyl ether	*10*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene chloride	*5*	0.5	U	0.632	U	0.5	U	0.588	U	0.5	U	0.6	U
n-Butylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
n-Propylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Naphthalene	*10*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Chlorotoluene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Dichlorobenzene	*3*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Xylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Chlorotoluene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Dichlorobenzene	*3*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
sec-Butylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
tert-Butylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	*0.4*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	*2*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
524.2 TVOC	--	1.21		1.39		0		0.384		0.35		0.447	

µg/L - Micrograms per liter.
U - Not detected.
J - Estimated value.
-- No standard applicable.

Table 6. Former Landfill - Summary of 2007 VOC Data

Analyte	*Groundwater Standards µg/L*	**106-30 6/4/2007** (µg/L)		**106-30 11/19/2007** (µg/L)	
1,1,1,2-Tetrachloroethane	*5*	0.5	U	0.5	U
1,1,1-Trichloroethane	*5*	1.35		0.85	
1,1,2,2-Tetrachloroethane	*5*	0.784		0.5	U
1,1,2-Trichloroethane	*1*	0.5	U	0.5	U
1,1-Dichloroethane	*5*	0.908		0.564	
1,1-Dichloroethylene	*5*	0.5	U	0.5	U
1,1-Dichloropropene	*5*	0.5	U	0.5	U
1,2,3-Trichlorobenzene	*5*	0.5	U	0.5	U
1,2,3-Trichloropropane	*0.04*	0.5	U	0.5	U
1,2,4-Trichlorobenzene	*5*	0.5	U	0.5	U
1,2-Dichloroethane	*0.6*	0.5	U	0.5	U
1,2-Dichloropropane	*1*	0.5	U	0.5	U
1,3-Dichloropropane	*5*	0.5	U	0.5	U
2,2-Dichloropropane	*5*	0.5	U	0.5	U
Benzene	*1*	0.5	U	0.5	U
Benzene, 1,2,4-trimethyl	*5*	0.5	U	0.5	U
Benzene, 1,3,5-trimethyl-	*5*	0.5	U	0.5	U
Benzene, 1-methylethyl-	*--*	0.5	U	0.5	U
Bromobenzene	*5*	0.5	U	0.5	U
Bromodichloromethane	*50*	0.5	U	0.5	U
Bromoform	*50*	0.5	U	0.5	U
Carbon tetrachloride	*5*	0.5	U	0.5	U
Chlorobenzene	*5*	0.5	U	0.5	U
Chlorobromomethane	*5*	0.5	U	0.5	U
Chloroethane	*5*	0.5	U	0.5	U
Chloroform	*7*	0.693		0.185	J
cis-1,2-Dichloroethylene	*5*	0.5	U	0.5	U
cis-1,3-Dichloropropene	*0.4*	0.5	U	0.5	U
Cymene	*5*	0.5	U	0.5	U
DBCP	*0.04*	0.5	U	0.5	U
Dibromochloromethane	*5*	0.5	U	0.5	U
Dibromomethane	*5*	0.5	U	0.5	U
Dichlorodifluoromethane	*5*	0.5	U	0.5	U
EDB	*0.05*	0.5	U	0.5	U
Ethene, 1,2-dichloro-, (E)-	*5*	0.5	U	0.5	U
Ethylbenzene	*5*	0.5	U	0.5	U
Hexachlorobutadiene	*0.5*	0.5	U	0.5	U
m-Dichlorobenzene	*3*	0.5	U	0.5	U
m/p xylene	*5*	0.5	U	0.5	U
Methyl bromide	*5*	0.5	U	0.5	U
Methyl chloride	*5*	0.5	U	0.5	U
Methyl tert-butyl ether	*10*	0.5	U	0.5	U
Methylene chloride	*5*	0.5	U	0.697	U
n-Butylbenzene	*5*	0.5	U	0.5	U
n-Propylbenzene	*5*	0.5	U	0.5	U
Naphthalene	*10*	0.5	U	0.5	U
o-Chlorotoluene	*5*	0.5	U	0.5	U
o-Dichlorobenzene	*3*	0.5	U	0.5	U
o-Xylene	*5*	0.5	U	0.5	U
p-Chlorotoluene	*5*	0.5	U	0.5	U
p-Dichlorobenzene	*3*	0.5	U	0.5	U
sec-Butylbenzene	*5*	0.5	U	0.5	U
Styrene	*5*	0.5	U	0.5	U
tert-Butylbenzene	*5*	0.5	U	0.5	U
Tetrachloroethylene	*5*	0.5	U	0.5	U
Toluene	*5*	0.5	U	0.5	U
trans-1,3-Dichloropropene	*0.4*	0.5	U	0.5	U
Trichloroethylene	*5*	1.21		0.644	
Trichlorofluoromethane	*5*	0.5	U	0.5	U
Vinyl chloride	*2*	0.5	U	0.5	U
524.2 TVOC	*--*	4.945		2.243	

µg/L - Micrograms per liter.
U - Not detected.
J - Estimated value.
-- No standard applicable.

Table 7. Former Landfill - Summary of 2007 Water Chemisrty Data

Analyte	***Groundwater Standards*** *mg/L*	**086-42 6/4/2007** (mg/L)		**086-42 11/19/2007** (mg/L)		**086-72 6/4/2007** (mg/L)		**086-72 11/19/2007** (mg/L)		**087-22 6/4/2007** (mg/L)		**087-22 11/19/2007** (mg/L)	
Alkalinity (as CaCO3)	--	17.3	U	35.6		5.6	U	5.86		5.09	U	5.86	
Ammonia (as N)	*2*	0.15		0.03	U	0.08		0.03	U	0.225		0.03	U
Chloride	*250*	16.6		19.8		5.9		4.91		4.55		4.26	
Cyanide	*0.2*	0.0015	U	0.0015	U	0.0015	U	0.0015	U	0.0015	U	0.0015	U
Nitrate (as N)	*10*	0.636	J	0.932		0.033	UJ	0.033	U	0.536	J	0.678	
Nitrite (as N)	*1*	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U
Nitrite + Nitrate-N	*10*	0.618		1.07		0.01	R	0.05	U	0.455		0.725	
Nitrogen	--	0.665		1.17		0.029	U	0.05	U	0.455		0.739	
Sulfate	*250*	11.8	J	9.65		9.17	J	8.78		9.66	J	8.34	
TDS	--	82	J	90	J	42	J	35	J	48	J	30	J
Total Kjeldahl Nitrogen	--	0.047	J	0.097	J	0.029	U	0.029	U	0.029	U	0.029	U
TSS	--	0.671	U	0.674	J	0.633	U	0.648	U	0.671	U	0.805	J

mg/L - Milligrams per Liter.
U - Not detected.
J - Estimated value.
-- No standard applicable
R - Unusable data.

Table 7. Former Landfill - Summary of 2007 Water Chemisrty Data

Analyte	***Groundwater Standards*** *mg/L*	**097-17 6/4/2007** (mg/L)		**097-17 11/19/2007** (mg/L)		**097-277 6/4/2007** (mg/L)		**097-277 11/19/2007** (mg/L)		**097-64 6/4/2007** (mg/L)		**097-64 11/19/2007** (mg/L)	
Alkalinity (as CaCO3)	--	7.13	U	7.32		7.13	U	7.81		19.4	U	25.9	
Ammonia (as N)	*2*	0.03	U	0.03	U	0.15	U	0.03	U	0.03	U	0.03	U
Chloride	*250*	5.92		4.21		18.5		7.01		5.17		5.24	
Cyanide	*0.2*	0.0015	U	0.0015	U	0.0015	U	0.0015	U	0.0015	U	0.0015	U
Nitrate (as N)	*10*	0.238	J	0.193		0.311	J	0.114		0.615	J	0.823	
Nitrite (as N)	*1*	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	0.033	U
Nitrite + Nitrate-N	*10*	0.148		0.095	J	0.225		0.05	U	0.577		0.915	
Nitrogen	--	0.148	J	0.101	J	0.225	J	0.05	U	0.625		0.915	
Sulfate	*250*	8.33	J	8.31		14.1	J	13		14.6	J	8.8	
TDS	--	45	J	30	J	94	J	50	J	79	J	60	J
Total Kjeldahl Nitrogen	--	0.145	U	0.029	U	0.145	U	0.029	U	0.048	J	0.029	U
TSS	--	0.633	U	0.633	U	0.713	U	0.64	U	0.889	J	0.778	J

mg/L - Milligrams per Liter.
U - Not detected.
J - Estimated value.
-- No standard applicable
R - Unusable data.

Table 7. Former Landfill - Summary of 2007 Water Chemisrty Data

Analyte	***Groundwater Standards*** *mg/L*	**106-02 6/4/2007** (mg/L)		**106-02 11/19/2007** (mg/L)		**106-30 6/4/2007** (mg/L)		**106-30 11/19/2007** (mg/L)	
Alkalinity (as CaCO3)	--	11.2	U	8.79		21.9	U	26.9	
Ammonia (as N)	*2*	0.3		0.03	U	0.15	U	0.15	U
Chloride	*250*	4.94		4.3		13.6		6.22	
Cyanide	*0.2*	0.0015	U	0.0015	U	0.00203	J	0.0015	U
Nitrate (as N)	*10*	0.774	J	0.355		0.851	J	0.906	
Nitrite (as N)	*1*	0.033	U	0.033	U	0.033	U	0.033	U
Nitrite + Nitrate-N	*10*	0.753		0.255		0.835		1.11	
Nitrogen	--	0.753		0.255		0.866		1.13	
Sulfate	*250*	9.79	J	8.84		20.1	J	18.2	
TDS	--	58	J	33	J	97	J	70	J
Total Kjeldahl Nitrogen	--	0.029	U	0.029	U	0.031	J	0.029	J
TSS	--	0.671	U	0.655	U	1.9	U	0.9	J

mg/L - Milligrams per Liter.
U - Not detected.
J - Estimated value.
-- No standard applicable
R - Unusable data.

Table 8. Former Landfill - Summary of 2007 Metals Data

Analyte	Groundwater Standards µg/L	086-42 6/4/2007 (µg/L)		086-42 11/19/2007 (µg/L)		086-72 6/4/2007 (µg/L)		086-72 11/19/2007 (µg/L)		087-22 6/4/2007 (µg/L)		087-22 11/19/2007 (µg/L)		097-17 6/4/2007 (µg/L)	
Aluminum	*200*	68	U	68	U	68	U	68	U	68	U	68	U	68	U
Antimony	*3*	4	U	3	B	4	U	3	B	4	U	**4**	B	4	U
Arsenic	*10*	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U
Barium	*1000*	7.4	B	11.3	B	11	B	9.1	B	13.4	B	7.4	B	11.5	B
Beryllium	*3*	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
Calcium	--	6800		10000		2100	B	1830	B	2350	B	3170	B	3110	B
Chromium	*50*	1	U	2	U	1	U	2	U	1	U	2	U	1	U
Cobalt	--	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
Iron	*300*	18	U	61.4	B	18	U	137	R	18	U	48.3	B	18	U
Lead	*25*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Magnesium	*35000*	2860	B	4410	B	1420	B	1410	B	1550	B	1060	B	984	B
Manganese	*300*	2	U	2	U	3.4	B	3.1	B	2.6	B	18		19	
Mercury	*0.7*	0.06	U	0.11	B	0.06	U	0.03	U	0.06	U	0.03	U	0.06	U
Nickel	*100*	1	U	1	U	1	U	2.3	B	1	U	1	U	1	U
Potassium	--	1080	B	1310	B	929	B	818	B	1140	B	764	B	826	B
Selenium	*10*	2.5	U	1	U	2.5	U	1	U	2.5	U	1	U	2.5	U
Silver	*50*	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Sodium	*20000*	10500		14300		5280		4710	B	4390	B	4180	B	5200	
Thallium	*0.5*	0.4	U	0.3	U	0.4	U	0.3	U	0.4	U	0.3	U	0.4	U
Vanadium	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Zinc	*2000*	2	U	2	U	2	U	2	U	2	U	2	U	2	U

µg/L - Micrograms per Liter.
U - Not detected.
J - Estimated value.
-- No standard applicable
B - Result below reporting limit but above instrument detection limit.

Table 8. Former Landfill - Summary of 2007 Metals Data

Analyte	Groundwater Standards µg/L	097-17 11/19/2007 (µg/L)		097-277 6/4/2007 (µg/L)		097-277 11/19/2007 (µg/L)		097-64 6/4/2007 (µg/L)		097-64 11/19/2007 (µg/L)		106-02 6/4/2007 (µg/L)		106-02 11/19/2007 (µg/L)	
Aluminum	*200*	68	U	68	U	68	U	68	U	68	U	68	U	68	U
Antimony	*3*	3	U	4	U	**4.4**	B	4	U	3	U	4	U	3	U
Arsenic	*10*	1.5	U	1.5	U	1.5	U	2.5	U	2.5	B	1.5	U	1.5	U
Barium	*1000*	7.4	B	12.8	B	17.4	B	20.1	B	6.3	B	8.6	B	13	B
Beryllium	*3*	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
Calcium	--	3830	B	5400		11400		9410		4640	B	6300		2520	B
Chromium	*50*	2	U	1	U	2	U	1	U	2	U	1	U	2	U
Cobalt	--	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
Iron	*300*	25	U	18	U	40.2	B	43.4	B	42.4	B	18	U	31.9	B
Lead	*25*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Magnesium	*35000*	1760	B	2590	B	1480	B	1410	B	967	B	1320	B	1680	B
Manganese	*300*	15.8		25.1		2	U	15		2.7	B	3.9	B	2	U
Mercury	*0.7*	0.03	U	0.06	U	0.03	U	0.06	U	0.03	U	0.06	U	0.03	U
Nickel	*100*	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Potassium	--	1190	B	1460	B	1880	B	1670	B	1130	B	1130	B	1180	B
Selenium	*10*	1	U	2.5	U	1	U	2.5	U	1	U	2.5	U	1	U
Silver	*50*	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Sodium	*20000*	6910		11900		5890		5200		4360	B	3870	B	4220	B
Thallium	*0.5*	0.3	U	0.4	U	0.3	U	0.4	U	0.3	U	0.4	U	0.3	U
Vanadium	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Zinc	*2000*	2	U	4.1	B	2	U	2	U	2	U	2.5	B	2	U

µg/L - Micrograms per Liter.
U - Not detected.
J - Estimated value.
-- No standard applicable
B - Result below reporting limit but above instrument detection limit.

Table 8. Former Landfill - Summary of 2007 Metals Data

Analyte	***Groundwater Standards*** *µg/L*	**106-30 6/4/2007** (µg/L)		**106-30 11/19/2007** (µg/L)	
Aluminum	*200*	165	B	68	U
Antimony	*3*	4	U	**6.1**	B
Arsenic	*10*	1.5	U	4.2	B
Barium	*1000*	25.9	B	14.8	B
Beryllium	*3*	1	U	1	U
Cadmium	*5*	1	U	1	U
Calcium	--	10600		11500	
Chromium	*50*	1	U	2	U
Cobalt	--	1	U	1	U
Copper	*200*	3	U	3	U
Iron	*300*	70.4	B	58.9	B
Lead	*25*	0.5	U	0.5	U
Magnesium	*35000*	3670	B	3160	B
Manganese	*300*	35.3		3.8	B
Mercury	*0.7*	0.06	U	0.03	U
Nickel	*100*	1	U	1	U
Potassium	--	2330	B	2310	B
Selenium	*10*	2.5	U	1	U
Silver	*50*	1	U	1	U
Sodium	*20000*	8080		7380	
Thallium	*0.5*	0.4	U	0.3	U
Vanadium	--	1	U	1	U
Zinc	*2000*	2	U	2	U

µg/L - Micrograms per Liter.
U - Not detected.
J - Estimated value.
-- No standard applicable
B - Result below reporting limit but above instrument detection limit.

Table 9. Former Landfill - Summary of 2007 Pesticide/PCB Data

Analyte	Groundwater Standards µg/L	086-42 11/19/2007 (µg/L)		086-72 11/19/2007 (µg/L)		087-22 11/19/2007 (µg/L)		097-17 11/19/2007 (µg/L)		097-277 11/19/2007 (µg/L)		097-64 11/19/2007 (µg/L)		106-02 11/19/2007 (µg/L)		106-30 11/19/2007 (µg/L)	
4,4''-DDD	*0.3*	0.04	U	0.0392	U	0.0392	U	0.0388	U	0.0388	U	0.04	U	0.0388	U	0.04	U
4,4''-DDE	*0.2*	0.04	U	0.0392	U	0.0392	U	0.0388	U	0.0388	U	0.04	U	0.0388	U	0.04	U
4,4''-DDT	*0.2*	0.04	U	0.0392	U	0.0392	U	0.0388	U	0.0388	U	0.04	U	0.0388	U	0.04	U
Aldrin	*0*	0.02	U	0.0196	U	0.0196	U	0.0194	U	0.0194	U	0.02	U	0.0194	U	0.02	U
alpha-BHC	*0.01*	0.02	U	0.0196	U	0.0196	U	0.0194	U	0.0194	U	0.02	U	0.0194	U	0.02	U
Aroclor 1016	*0.09*	0.5	U	0.49	U	0.49	U	0.485	U	0.485	U	0.5	U	0.485	U	0.5	U
Aroclor 1221	*0.09*	0.5	U	0.49	U	0.49	U	0.485	U	0.485	U	0.5	U	0.485	U	0.5	U
Aroclor 1232	*0.09*	0.5	U	0.49	U	0.49	U	0.485	U	0.485	U	0.5	U	0.485	U	0.5	U
Aroclor 1248	*0.09*	0.5	U	0.49	U	0.49	U	0.485	U	0.485	U	0.5	U	0.485	U	0.5	U
Aroclor 1254	*0.09*	0.5	U	0.49	U	0.49	U	0.485	U	0.485	U	0.5	U	0.485	U	0.5	U
Aroclor 1260	*0.09*	0.5	U	0.49	U	0.49	U	0.485	U	0.485	U	0.5	U	0.485	U	0.5	U
Aroclor-1242	*0.09*	0.5	U	0.49	U	0.49	U	0.485	U	0.485	U	0.5	U	0.485	U	0.5	U
beta-BHC	*0.01*	0.02	U	0.0196	U	0.0196	U	0.0194	U	0.0194	U	0.02	U	0.0194	U	0.02	U
Chlordane	*0.05*	0.25	U	0.245	U	0.245	U	0.243	U	0.243	U	0.25	U	0.243	U	0.25	U
delta-BHC	*0.04*	0.02	U	0.0196	U	0.0196	U	0.0194	U	0.0194	U	0.02	U	0.0194	U	0.02	U
Dieldrin	*0.004*	0.04	U	0.0392	U	0.0392	U	0.0388	U	0.0388	U	0.04	U	0.0388	U	0.04	U
Endosulfan I	*0.009*	0.02	U	0.0196	U	0.0196	U	0.0194	U	0.0194	U	0.02	U	0.0194	U	0.02	U
Endosulfan II	--	0.04	U	0.0392	U	0.0392	U	0.0388	U	0.0388	U	0.04	U	0.0388	U	0.04	U
Endosulfan sulfate	--	0.04	U	0.0392	U	0.0392	U	0.0388	U	0.0388	U	0.04	U	0.0388	U	0.04	U
Endrin	*0*	0.04	U	0.0392	U	0.0392	U	0.0388	U	0.0388	U	0.04	U	0.0388	U	0.04	U
Endrin aldehyde	*5*	0.04	U	0.0392	U	0.0392	U	0.0388	U	0.0388	U	0.04	U	0.0388	U	0.04	U
Heptachlor	*0.04*	0.02	U	0.0196	U	0.0196	U	0.0194	U	0.0194	U	0.02	U	0.0194	U	0.02	U
Heptachlor epoxide	*0.03*	0.02	U	0.0196	U	0.0196	U	0.0194	U	0.0194	U	0.02	U	0.0194	U	0.02	U
Lindane	*0.05*	0.02	U	0.0196	U	0.0196	U	0.0194	U	0.0194	U	0.02	U	0.0194	U	0.02	U
Toxaphene	*0.06*	0.5	U	0.49	U	0.49	U	0.485	U	0.485	U	0.5	U	0.485	U	0.5	U

µg/L - Micrograms per liter.
U - Not detected.
-- No standard applicable.

Table 10. Former Landfill - Summery of 2007 Radionuclide Data

Analyte	Groundwater Standards* pCi/L	086-42 6/4/2007 pCi/L				086-42 11/19/2007 pCi/L				086-72 11/19/2007 pCi/L				087-22 11/19/2007 pCi/L			
		Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error
Americium-241	*1.2*					0.99	U	5.32	3.11	13.4	J-UI	10.8	9.75	4.6	U	7.73	7.15
Beryllium-7	*40000*					-7.84	U	12.4	7.96	-3.4	U	13.7	9.12	-2.72	U	13.1	7.97
Cesium-134	*80*					0.254	U	1.55	0.909	-0.0328	U	1.73	1.01	-0.158	U	1.73	1.58
Cesium-137	*120*					-0.251	U	1.53	0.911	0.367	U	1.65	0.978	0.324	U	1.54	1.01
Co-60	*200*					-0.529	U	1.51	0.933	0.26	U	1.69	0.973	-0.00871	U	1.57	0.937
Cobalt-57	*4000*					0.0311	U	1.19	0.722	0.83	U	1.46	1.09	0.316	U	1.39	0.833
Europium-152	*841*					-1.73	U	4.22	2.67	-2.39	U	4.62	2.93	-0.00213	U	4.75	2.98
Europium-154	*573*					-0.095	U	3.88	2.48	-1.41	U	4.46	2.82	-1.81	U	4.47	3.04
Europium-155	*4000*					-1.34	U	5.08	3.09	0.979	U	6.39	3.67	-1.69	U	5.75	3.52
Gross Alpha	*15*					1.39	U	1.7	1.17	0.788	U	1.45	0.909	0.0953	U	1.54	0.722
Gross Beta	*1000*					1.22	U	1.44	0.908	0.489	U	1.48	0.849	1.17	U	1.38	0.893
Manganese-54	*2000*					-0.448	U	1.36	0.84	0.985	U	1.61	0.897	0.415	U	1.62	0.929
Sodium-22	*400*					-0.0278	U	1.39	0.888	-0.525	U	1.59	1.01	-0.645	U	1.6	1.08
Strontium-90	*8*					-0.353	U	0.755	0.382	0.0782	U	0.599	0.319	0.265	U	0.537	0.318
Tritium	*20000*	539		255	165	76.8	U	236	138	0	U	237	134	18.4	U	237	135
Zinc-65	*360*					-0.995	U	3.16	1.91	0.353	U	3.26	2.25	-3.28	U	3.18	2.09

pCi/L - Picocuries per Liter.
U - Not detected.
-- No standard applicable

Table 10. Former Landfill - Summery of 2007 Radionuclide Data

Analyte	Groundwater Standards* pCi/L	097-17 11/19/2007 pCi/L				097-277 11/19/2007 pCi/L				097-64 11/19/2007 pCi/L				106-02 11/19/2007 pCi/L				106-30 11/19/2007 pCi/L			
		Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error
Americium-241	*1.2*	5.83	U	7.37	3.83	4.73	U	6.39	4.23	1.1	U	13.4	8.97	1.67	U	11	7.08	-8.41	U	13	13.2
Beryllium-7	*40000*	-4.11	U	13.5	10.3	5.21	U	12.9	7.66	-4.66	U	14.8	8.86	1.35	U	16.3	9.84	-2.47	U	18.9	11.6
Cesium-134	*80*	-0.189	U	1.5	0.912	-0.168	U	1.4	0.839	-0.113	U	1.8	1.17	-0.666	U	1.8	1.12	-0.0537	U	2.23	1.43
Cesium-137	*120*	0.983	U	1.56	1.05	-0.724	U	1.31	0.808	0.947	U	1.8	1.03	1.31	U	1.82	0.934	-1.8	U	2.15	1.98
Co-60	*200*	-0.175	U	1.56	0.934	0.201	U	1.35	0.774	0.15	U	1.73	1.2	-1.54	U	1.72	1.72	-0.702	U	2.04	1.25
Cobalt-57	*4000*	-0.0476	U	1.3	0.774	0.179	U	1.25	0.717	0.579	U	1.64	1.39	0.308	U	1.62	0.968	-0.377	U	1.97	1.16
Europium-152	*841*	0.624	U	4.52	2.85	-1.26	U	4.14	2.53	-3.37	U	4.87	3.09	1.46	U	5.57	3.27	-0.634	U	6.56	4.08
Europium-154	*573*	-0.371	U	4.17	2.49	-0.726	U	3.52	2.21	0.986	U	4.96	2.9	0.615	U	5.13	3.23	-0.0741	U	5.53	3.24
Europium-155	*4000*	-0.219	U	5.4	3.19	0.669	U	5.22	2.99	-3.44	U	7.1	5.94	0.997	U	6.94	4.13	-0.793	U	8.24	4.81
Gross Alpha	*15*	0.63	U	1.47	0.871	0.312	U	1.76	0.934	0.865	U	1.74	1.04	0.803	U	1.67	1	0.859	U	1.92	1.14
Gross Beta	*1000*	1.38	U	1.57	1.01	2.72	UJ	1.57	1.15	4.43	U	1.99	1.35	1.36	U	1.5	0.976	2.74	UJ	1.58	1.06
Manganese-54	*2000*	-0.353	U	1.43	0.881	-0.0344	U	1.31	0.777	0.228	U	1.55	0.926	0.0178	U	1.74	1.21	-0.501	U	1.94	1.18
Sodium-22	*400*	-0.145	U	1.49	0.888	-0.248	U	1.26	0.789	0.418	U	1.79	1.04	0.182	U	1.83	1.15	-0.0346	U	1.98	1.16
Strontium-90	*8*	-0.0581	U	0.538	0.257	0.0135	U	0.654	0.338	1.09	U	0.463	0.367	0.998	U	0.452	0.365	0.375	U	0.667	0.401
Tritium	*20000*	-42.3	U	237	132	87.5	U	240	141	132	U	242	144	-62.4	U	237	130	202	U	239	146
Zinc-65	*360*	-0.345	U	3.05	2.1	-1.52	U	2.61	3.06	-1.01	U	3.48	2.13	0.464	U	3.6	2.41	-0.766	U	3.87	2.81

pCi/L - Picocuries per Liter.
U - Not detected.
-- No standard applicable

Table 11
Soil Gas Monitoring Well Description

Current Landfill			
Soil Gas Monitoring Well	Screen Location	Top of Screen (Feet BLS)	Bottom Screen (Feet BLS)
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

Current Landfill			
SGM-18 PROBE A	Shallow	2.5	7.5
SGM-18 PROBE B	Intermediate	10.5	13.5
SGM-19 PROBE A	Shallow	2.5	7.5
SGM-19 PROBE B	Intermediate	10.5	17

BLS – Below Land Surface

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

BLS – Below Land Surface

Table 12

2007 Current Landfill Soil Gas Monitoring Summary Table

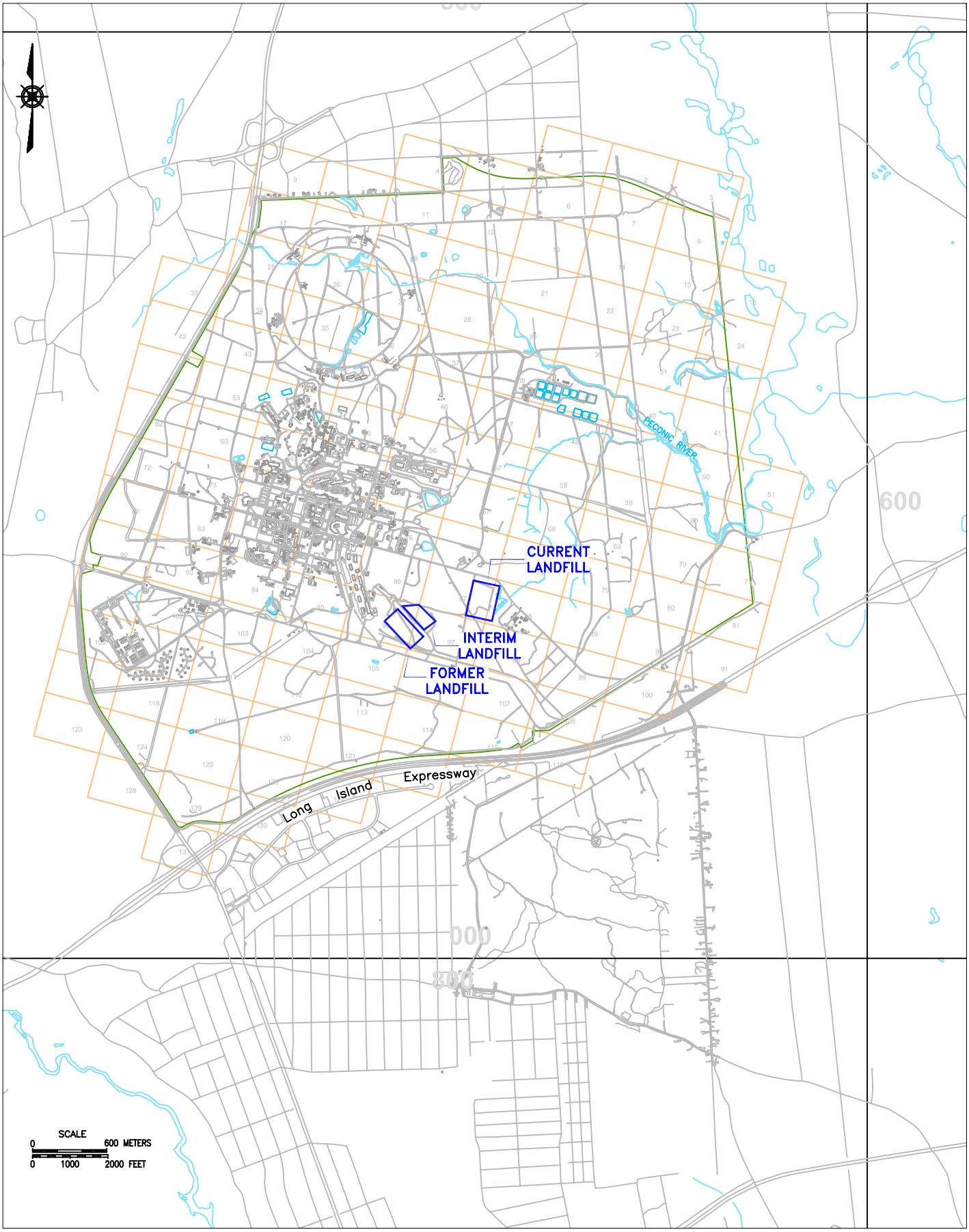
Soil Gas Monitoring Well	Methane (% By Volume) 2/24/07	Methane (% By Volume) 5/17/07	Methane (% By Volume) 9/20/07	Methane (% By Volume) 12/20/07	LEL (% By Volume) 2/24/07	LEL (% By Volume) 5/17/07	LEL (% By Volume) 9/20/07	LEL (% By Volume) 12/20/07	Hydrogen Sulfide (ppm by volume) 2/24/07	Hydrogen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

Measurements in ( ) are calculated, not measured.

Table 13

2007 Former 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) 9/22/07	Methane (% By Volume) 12/20/07	LEL (% By Volume) 2/24/07	LEL (% By Volume) 5/17/07	LEL (% By Volume) 9/22/07	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) 9/22/07	Hydrogen Sulfide (ppm by volume) 12/20/07	Soil Gas Monitoring Well
SGMW-01A	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-01A
SGMW-01B	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-01B
SGMW-02A	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-02A
SGMW-02B	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-02B
SGMW-03A	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-03A
SGMW-03B	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-03B
SGMW-04A	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-04A
SGMW-04B	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-04B
SGMW-05A	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-05A
SGMW-05B	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-05B
SGMW-06A	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-06A
SGMW-06B	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-06B
SGMW-07A	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-07A
SGMW-07B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	SGMW-07B
SGMW-08A	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-08A
SGMW-08B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	SGMW-08B
SGMW-09A	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-09A
SGMW-09B	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-09B
SGMW-10A	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-10A
SGMW-10B	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-10B
SGMW-11A	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-11A
SGMW-11B	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-11B
SGMW-12A	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-12A
SGMW-12B	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-12B



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BROOKHAVEN NATIONAL LABORATORY

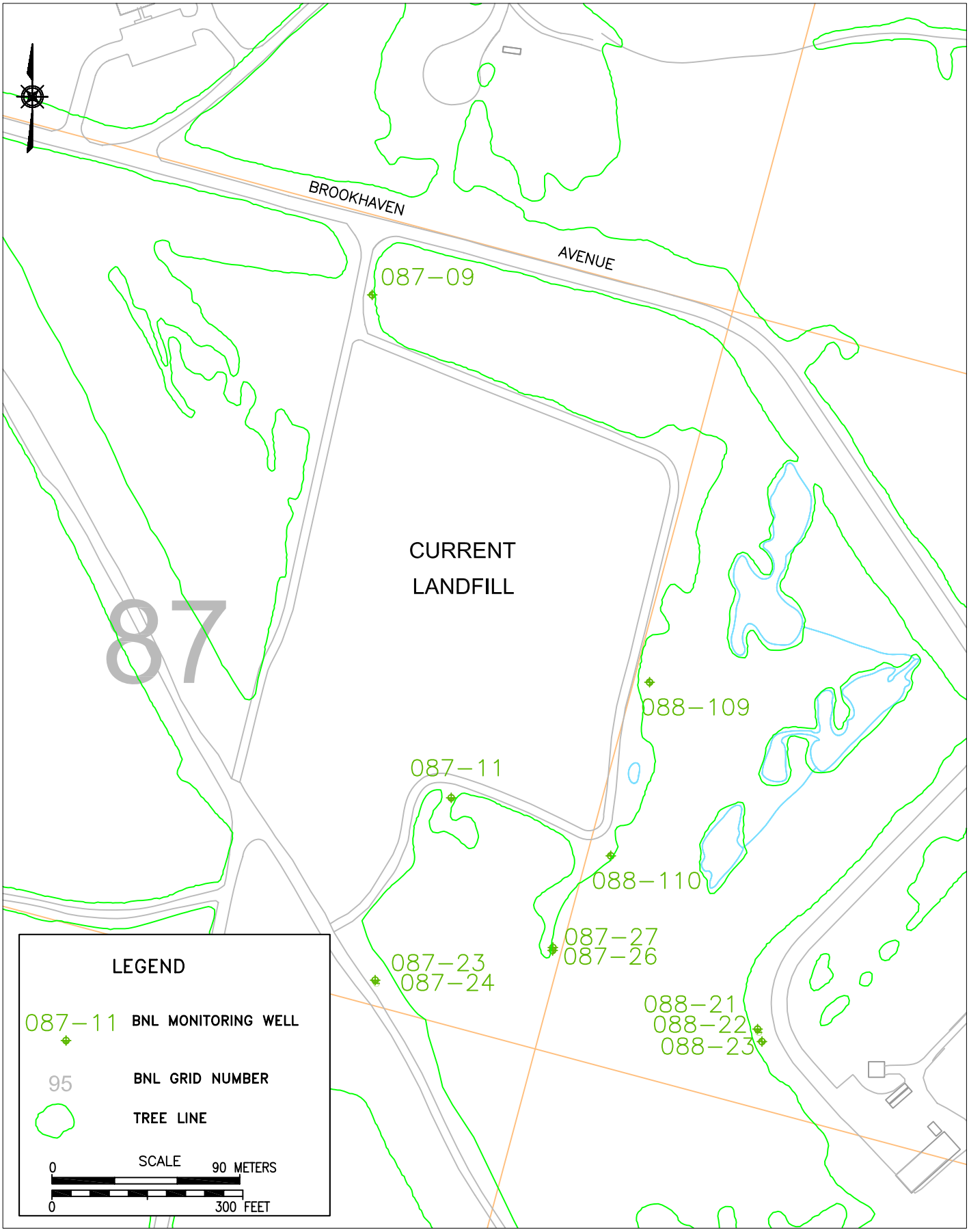
EWMS Division

TITLE:

SITE LOCATION MAP
2007 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
KCK	–	02/18/04	07928
CHKD:	APPD:	REV.:	NOTES:
WRD	WRD	–	–

FIGURE NO.: 1



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BROOKHAVEN NATIONAL LABORATORY

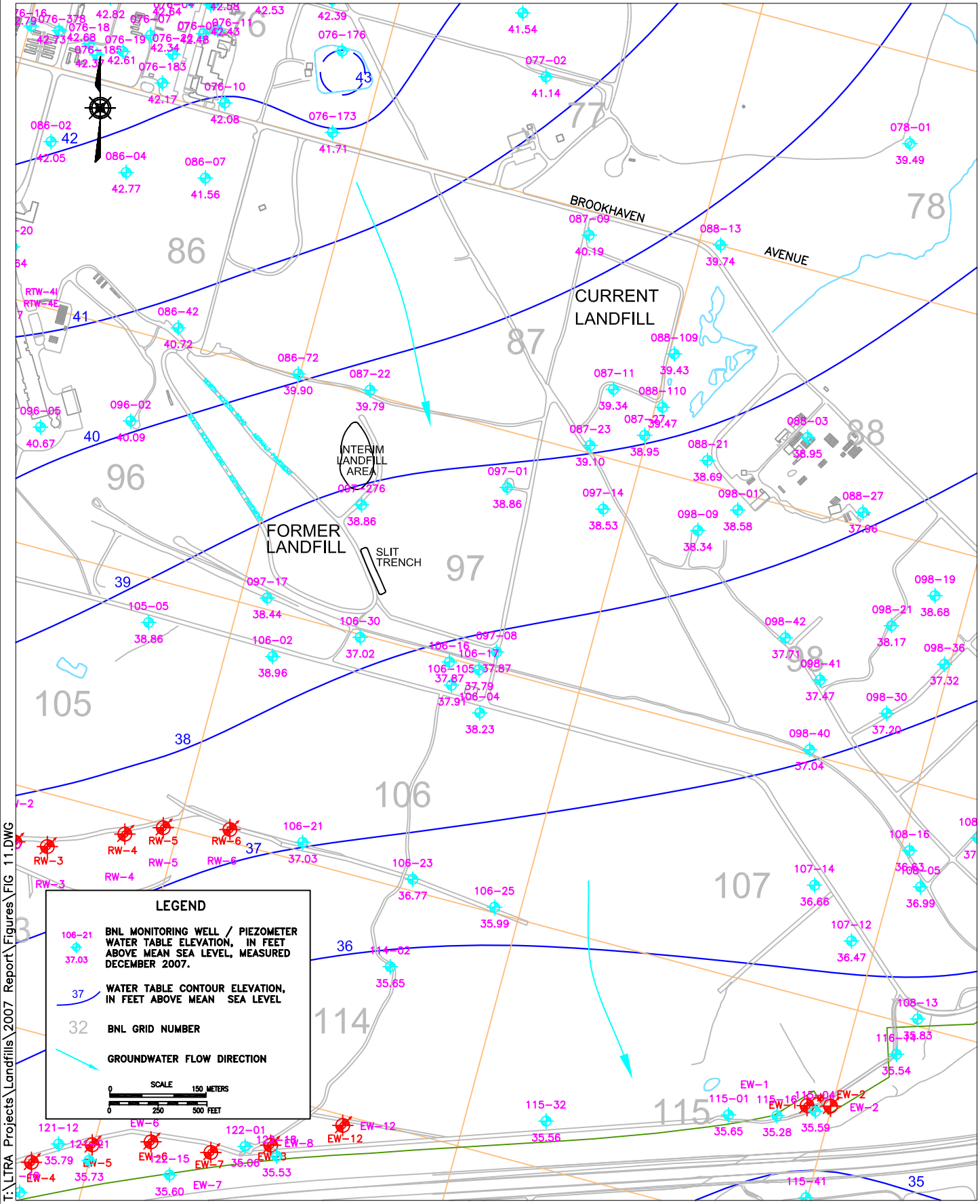
EWMS Division

TITLE:

CURRENT LANDFILL
MONITORING WELL LOCATIONS
2007 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

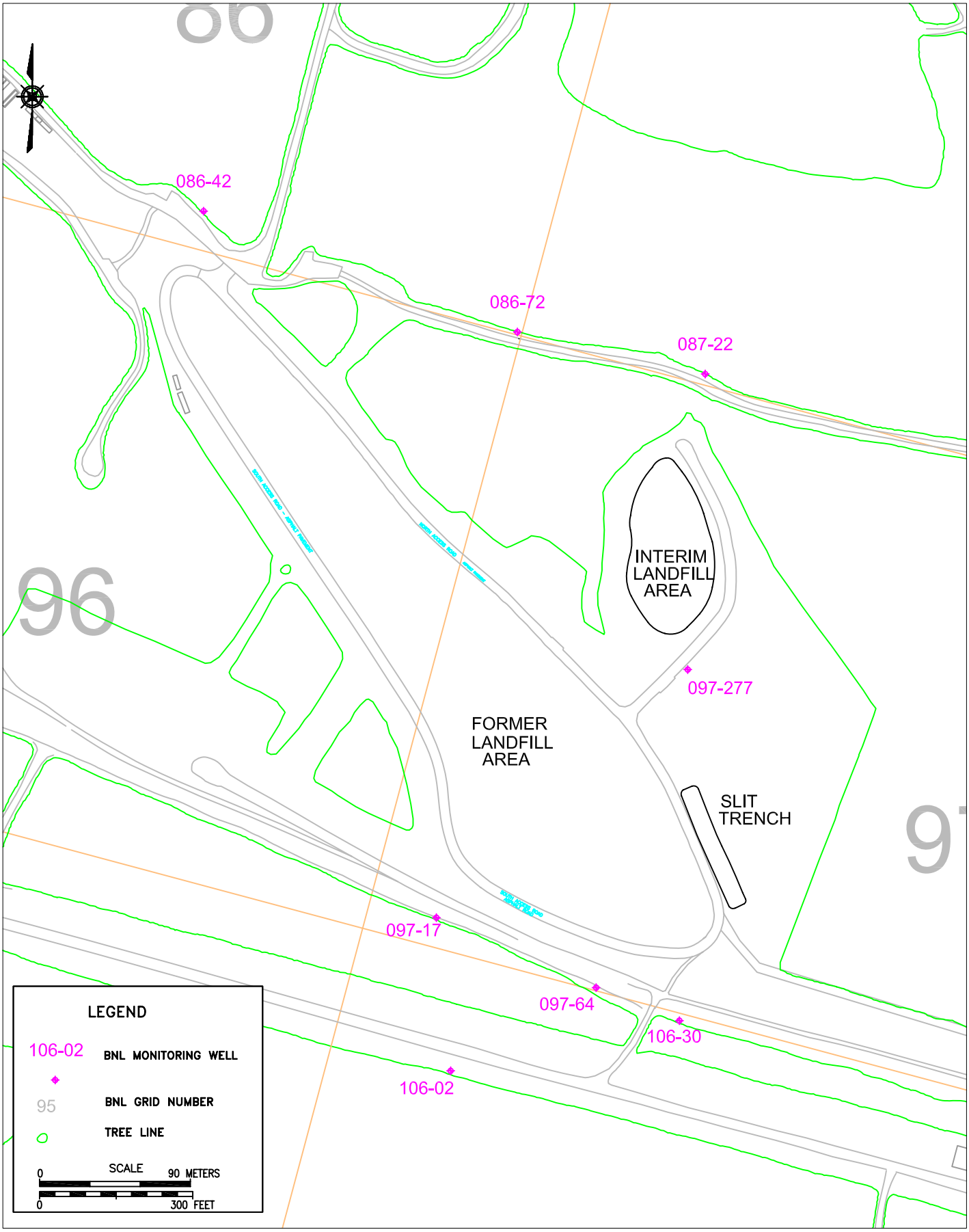
DWN:	VT:HZ.:	DATE:	PROJECT NO.:
KCK	–	02/24/04	07928
CHKD:	APPD:	REV.:	NOTES:
WRD	WRD	–	–

FIGURE NO.: 2



T:\LTRA Projects\Landfills\2007 Report\Figures\FIG 11.DWG

BROOKHAVEN NATIONAL LABORATORY EWMS DIVISION	TITLE: WATER TABLE CONTOUR MAP 2007 ENVIRONMENTAL MONITORING REPORT CURRENT AND FORMER LANDFILL AREAS	DWN: YS	VT:HZ.: –	DATE: 02/28/08	PROJECT NO.: –
		CHKD: JEB	APPD: WRD	REV.: –	NOTES: –
		FIGURE NO.: 3			



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BROOKHAVEN NATIONAL LABORATORY

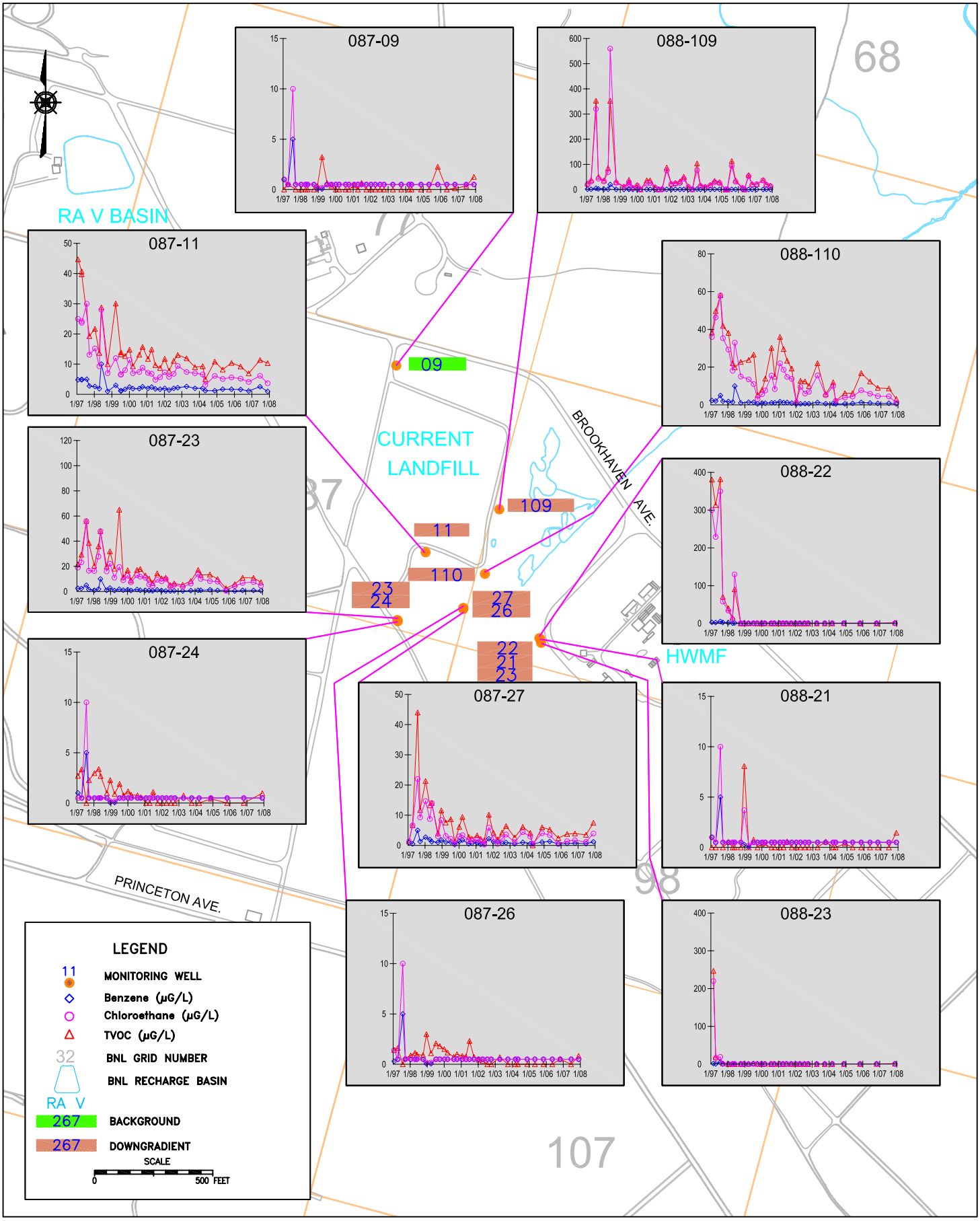
EWMS DIVISION

TITLE:

FORMER LANDFILL
MONITORING WELL LOCATIONS
2007 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

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

FIGURE NO.: 4



T:\LTRA Projects\Landfills\2007 Report\Figures\FIG 5.DWG

BROOKHAVEN NATIONAL LABORATORY

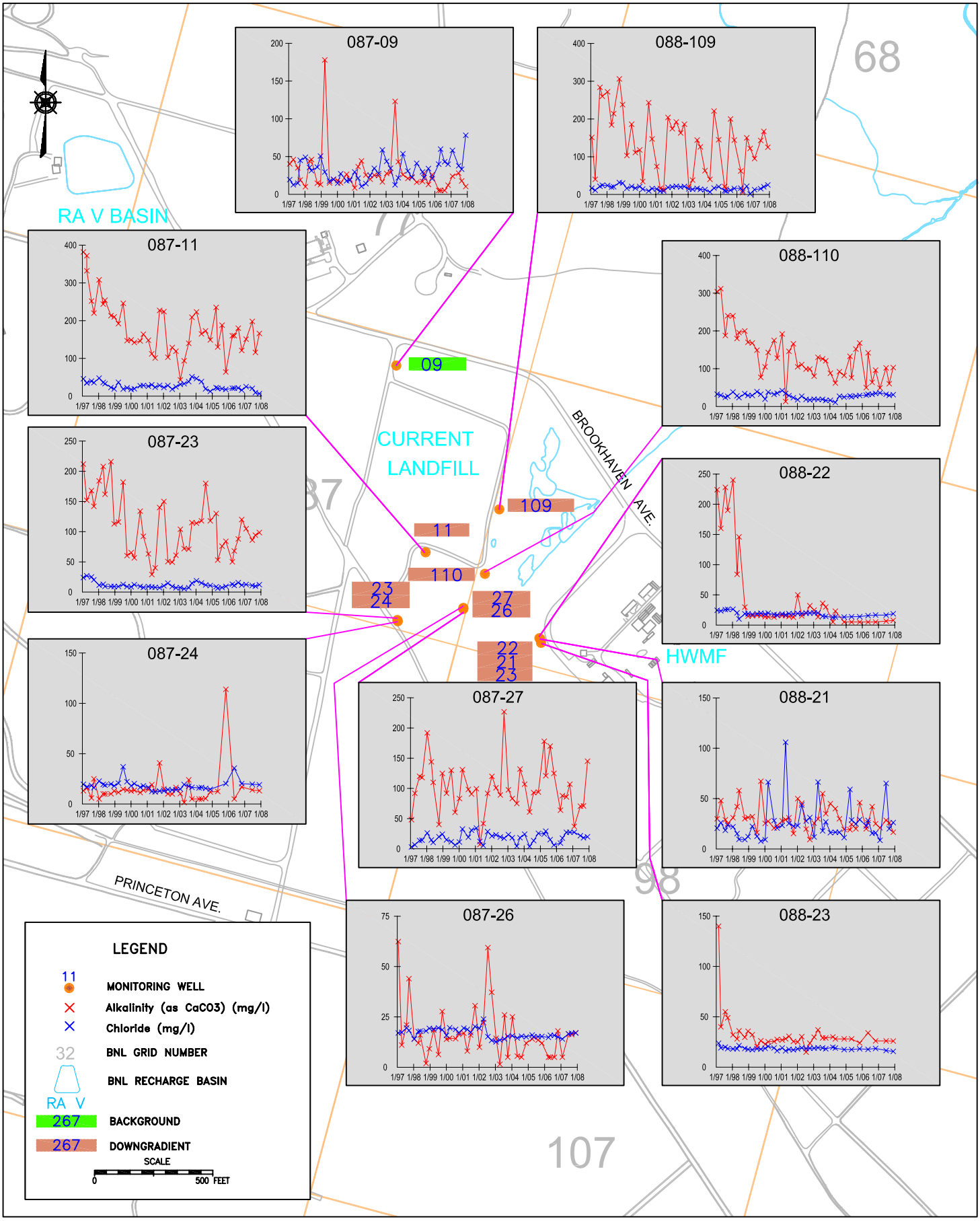
EWMS DIVISION

TITLE:

CURRENT LANDFILL
VOC TREND PLOTS
2007 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
YS	–	02/25/07	–
CHKD:	APPD:	REV.:	NOTES:
JEB	WRD	–	–

FIGURE NO.: 5



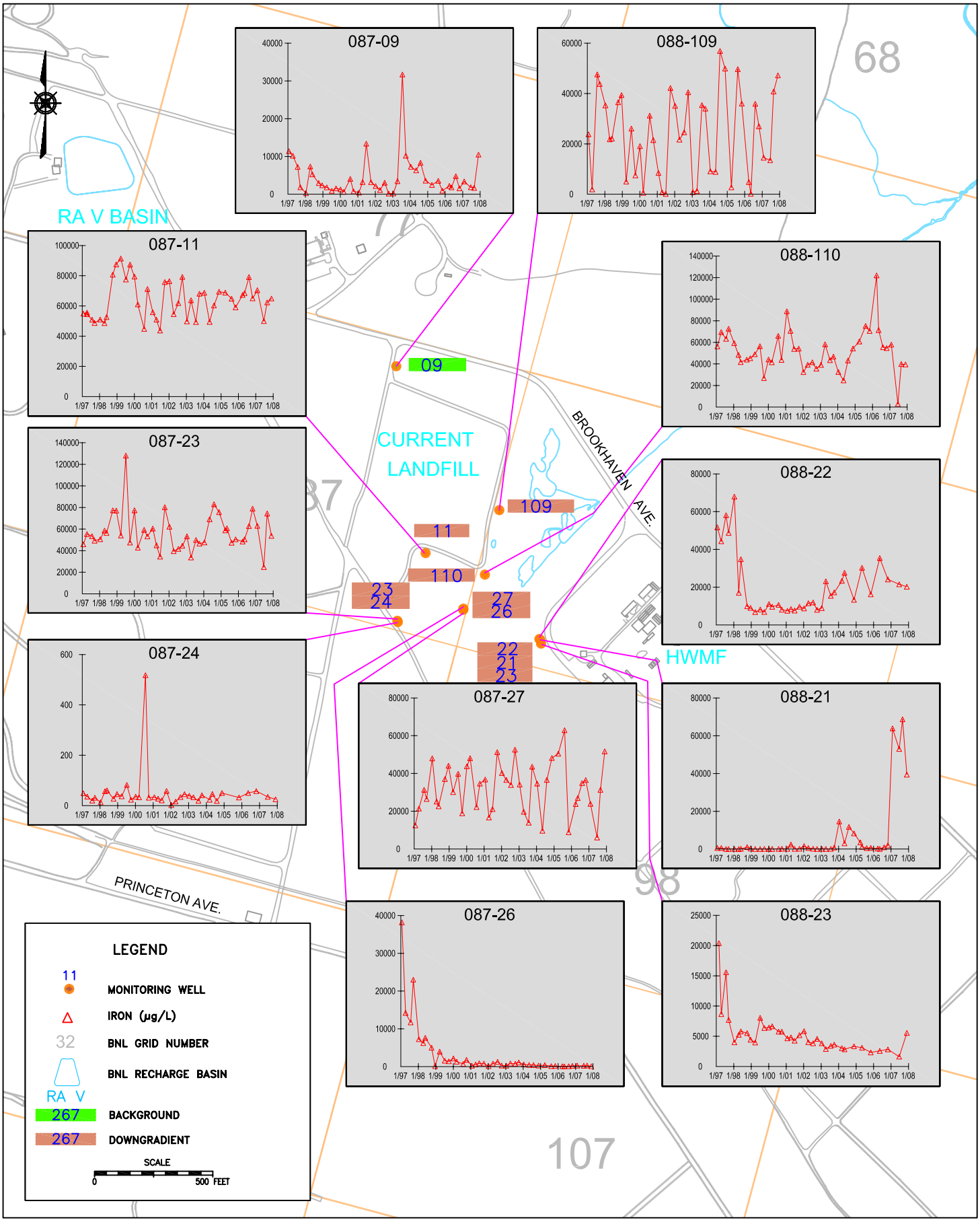
T:\LTRA Projects\Landfills\2007 Report\Figures\FIG 6.DWG

BROOKHAVEN NATIONAL LABORATORY
EWMS DIVISION

TITLE:
CURRENT LANDFILL
ALKALINITY AND CHLORIDE TREND PLOTS
2007 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
YS	–	02/20/08	–
CHKD:	APPD:	REV.:	NOTES:
JEB	WRD	–	–

FIGURE NO.: 6

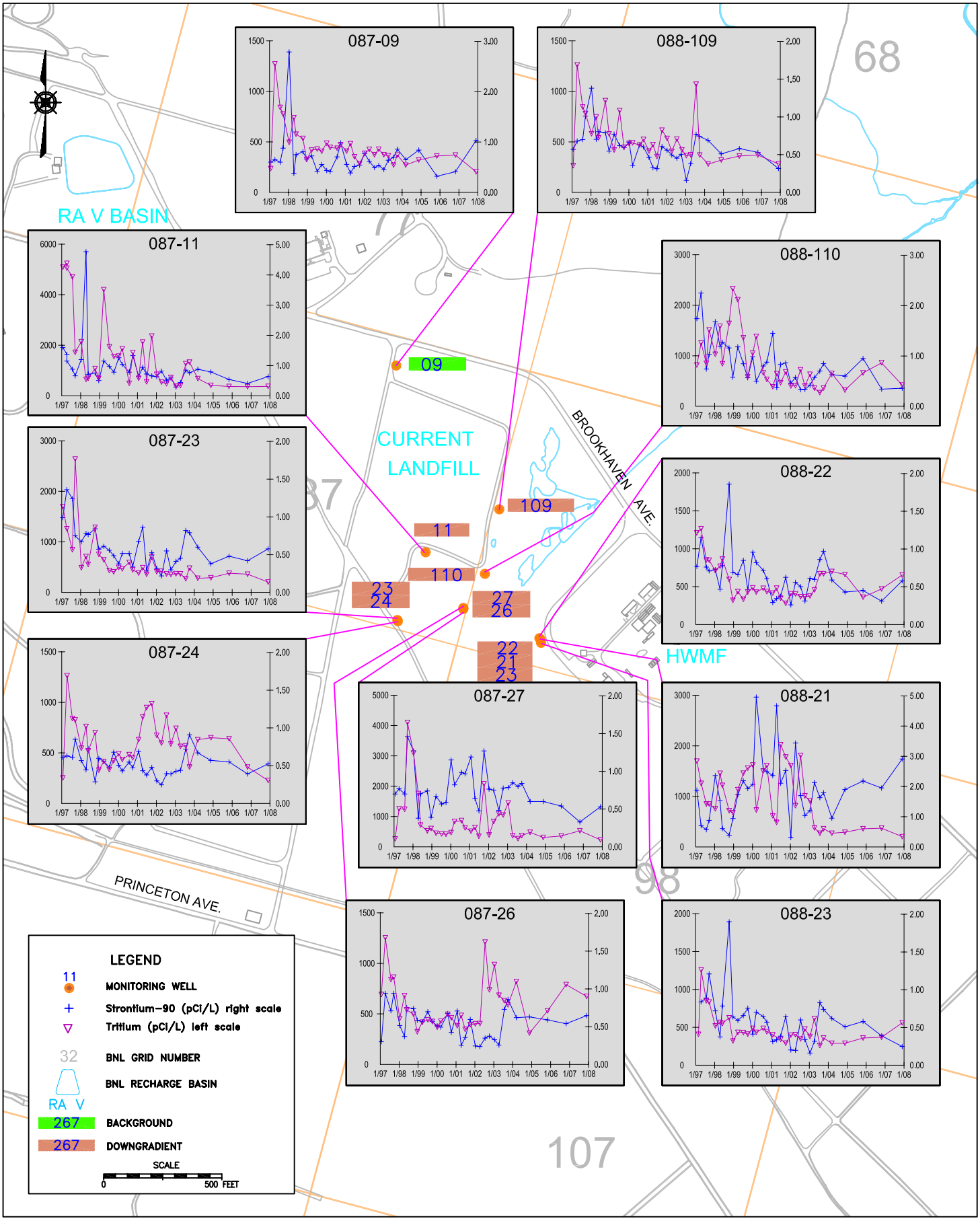


BROOKHAVEN NATIONAL LABORATORY
EWMS DIVISION

TITLE:
CURRENT LANDFILL
IRON TREND PLOTS
2007 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
YS	–	02/21/08	–
CHKD:	APPD:	REV.:	NOTES:
JEB	WRD	–	–

FIGURE NO.: 7



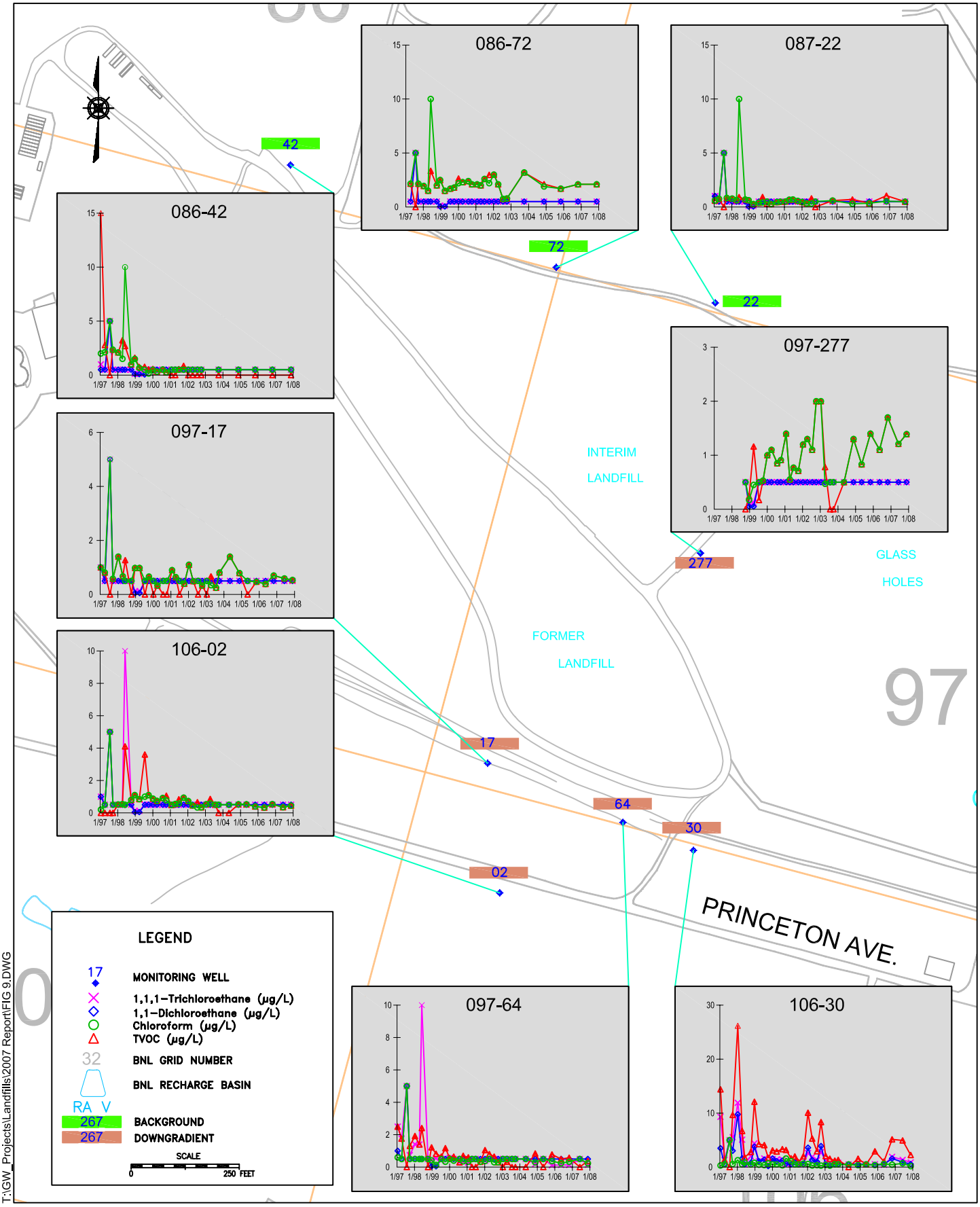
R:\GW_Projects\Landfills\2007 Report\FIG 8.DWG

BROOKHAVEN NATIONAL LABORATORY
EWMS DIVISION

TITLE:
CURRENT LANDFILL
TRITIUM AND SR-90 TREND PLOTS
2007 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
YS	–	02/21/08	–
CHKD:	APPD:	REV.:	NOTES:
JEB	WRD	–	–

FIGURE NO.: 8



T:\GW_Projects\Landfills\2007 Report\FIG 9.DWG

BROOKHAVEN NATIONAL LABORATORY

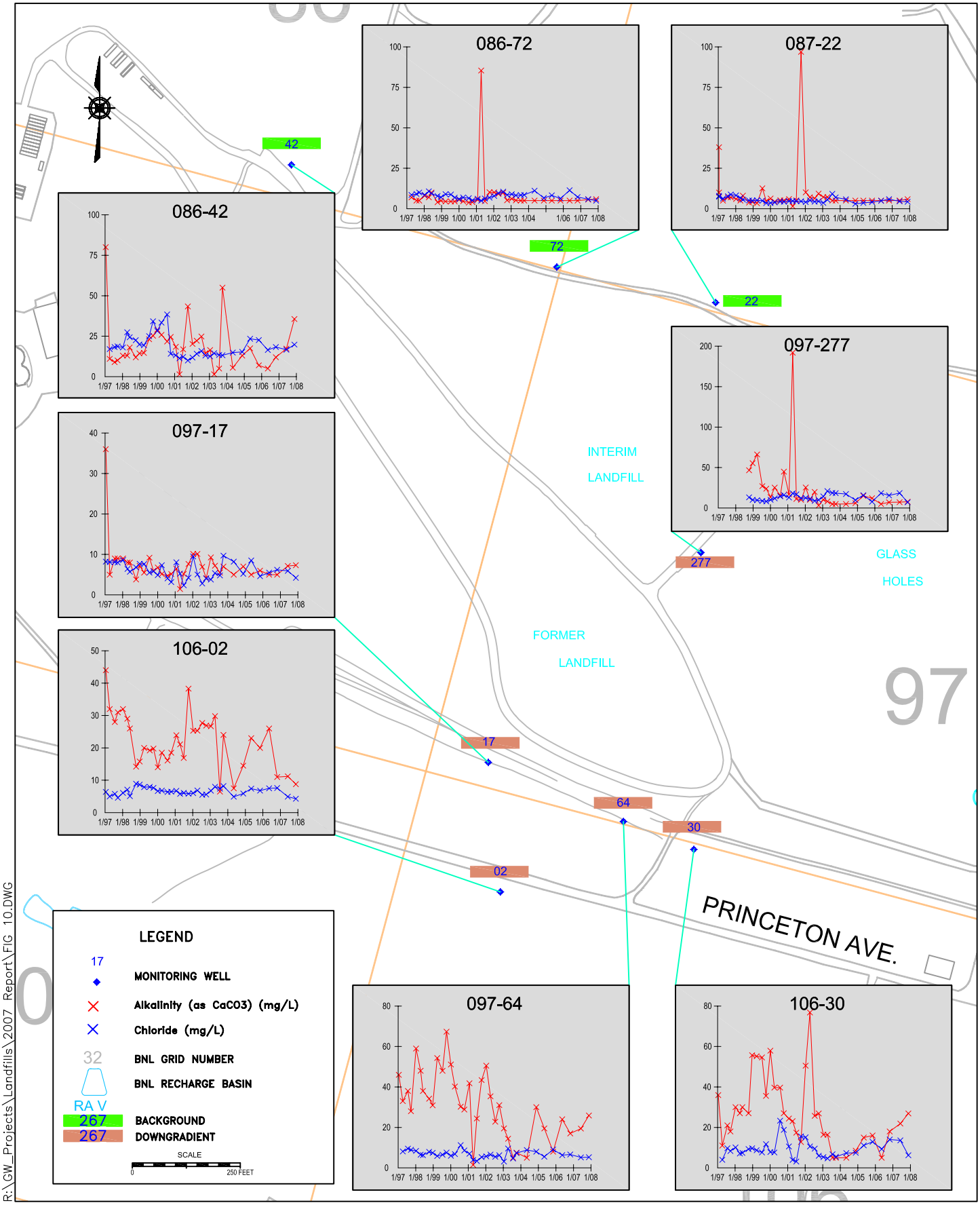
EWMS DIVISION

TITLE:

FORMER LANDFILL
VOC TREND PLOTS
2007 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
YS	–	02/21/08	–
CHKD:	APPD:	REV.:	NOTES:
JEB	WRD	–	–

FIGURE NO.: 9



R:\GW_Projects\Landfills\2007 Report\FIG 10.DWG

BROOKHAVEN NATIONAL LABORATORY

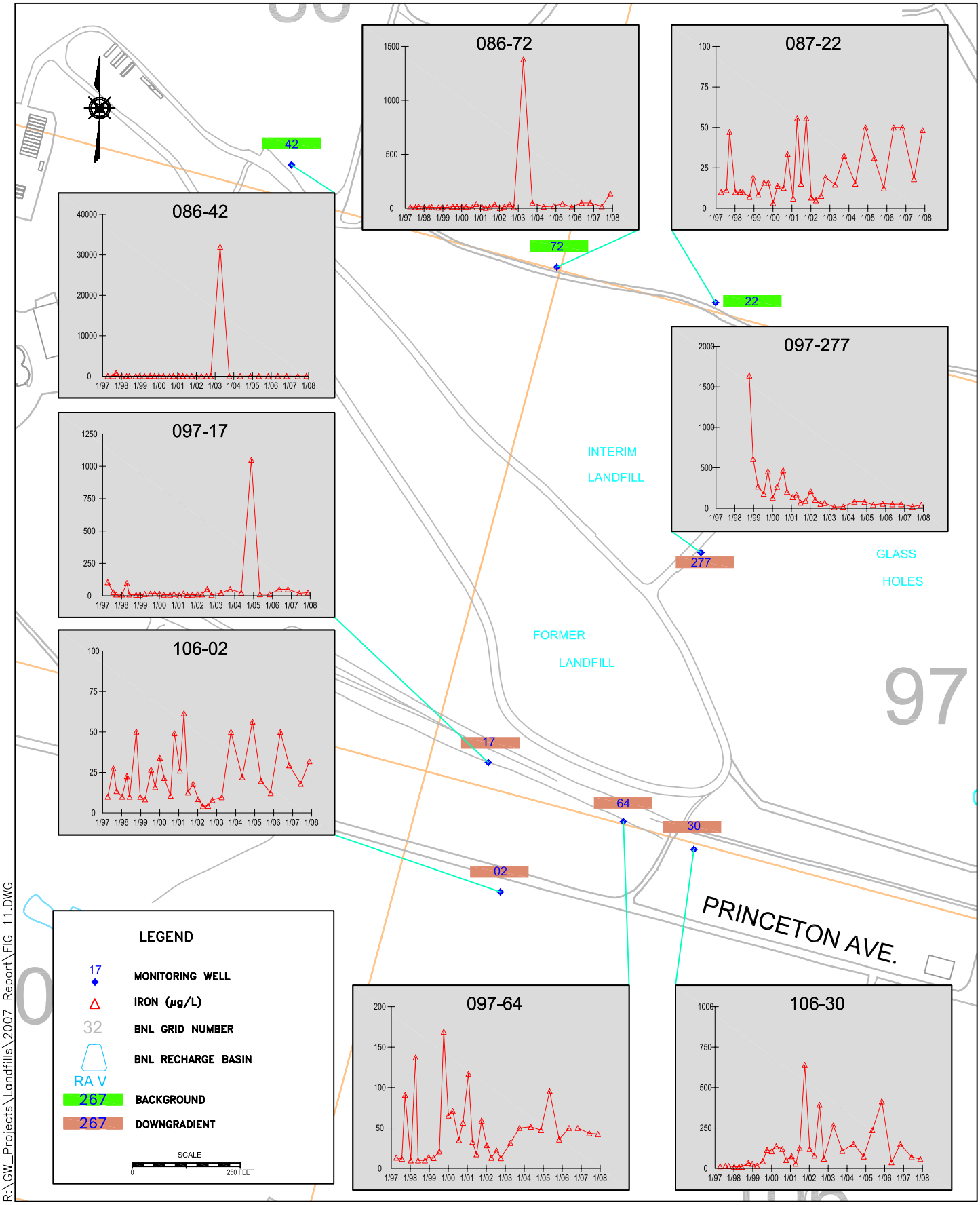
EWMS DIVISION

TITLE:

FORMER LANDFILL
ALKALINITY AND CHLORIDE TREND PLOTS
2007 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
YS	–	02/21/08	–
CHKD:	APPD:	REV.:	NOTES:
JEB	WRD	–	–

FIGURE NO.: 10



R:\GW_Projects\Landfills\2007 Report\FIG 11.DWG

BROOKHAVEN NATIONAL LABORATORY

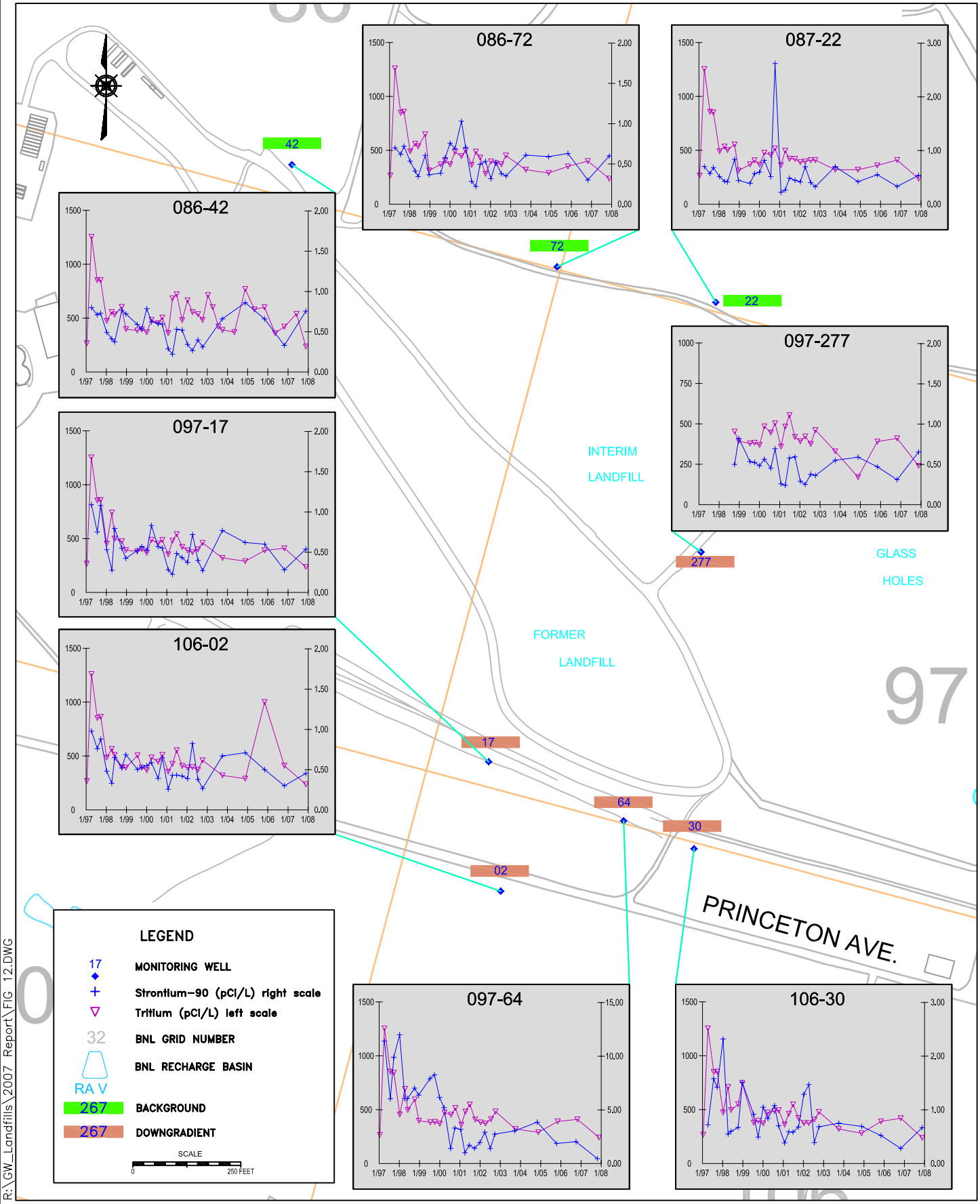
EWMS DIVISION

TITLE:

FORMER LANDFILL
IRON TREND PLOTS
2007 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
YS	–	02/21/08	–
CHKD:	APPD:	REV.:	NOTES:
JEB	WRD	–	–

FIGURE NO.: 11



R:\GW_Landfills\2007 Report\FIG 12.DWG

BROOKHAVEN NATIONAL LABORATORY

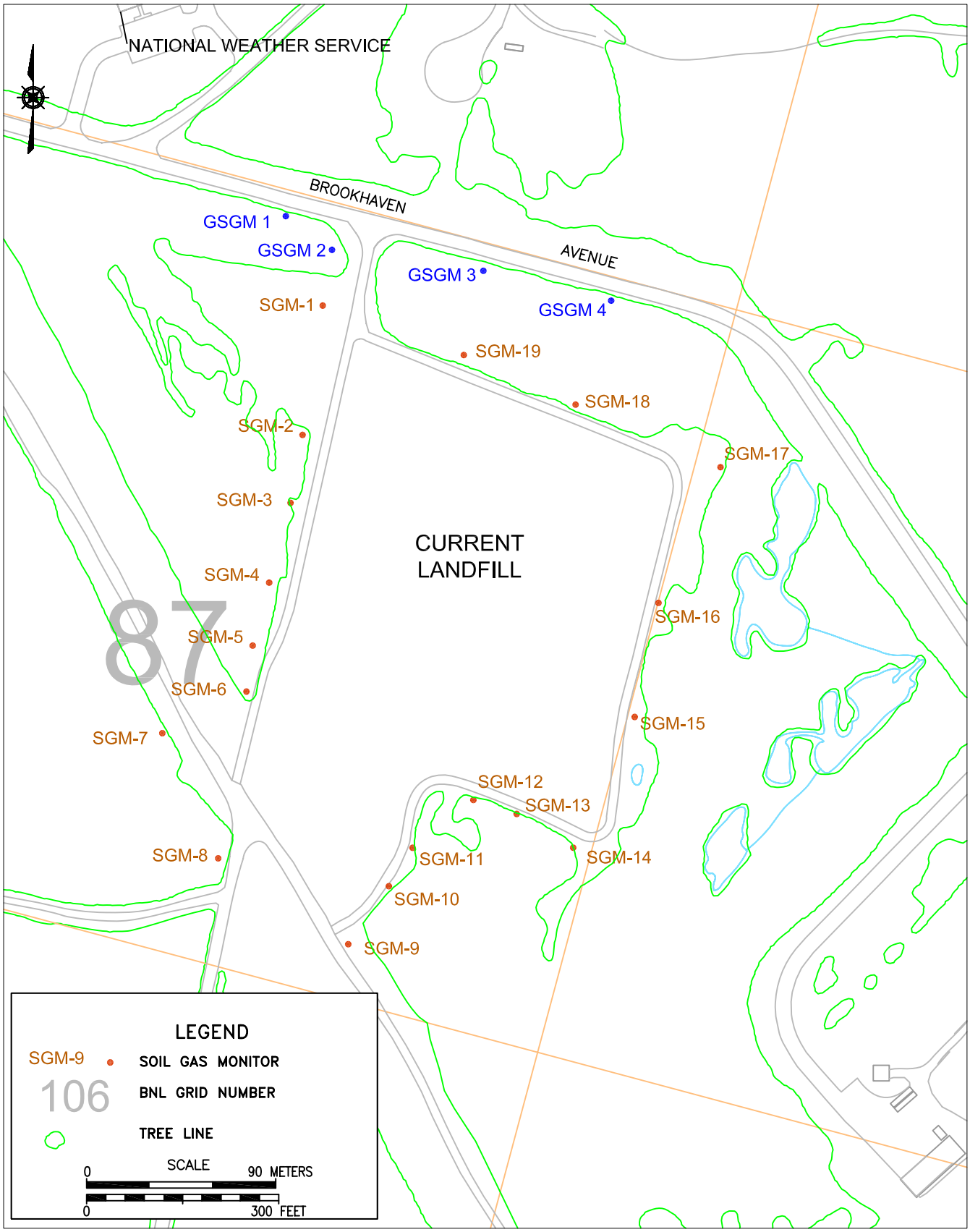
EWMS DIVISION

TITLE:

FORMER LANDFILL
TRITIUM AND SR-90 TREND PLOTS
2007 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
YS	–	02/21/08	–
CHKD:	APPD:	REV.:	NOTES:
JEB	WRD	–	–

FIGURE NO.: 12



R\Gw_projects\Landfills\2007 Report\Fig13.dwg

BROOKHAVEN NATIONAL LABORATORY

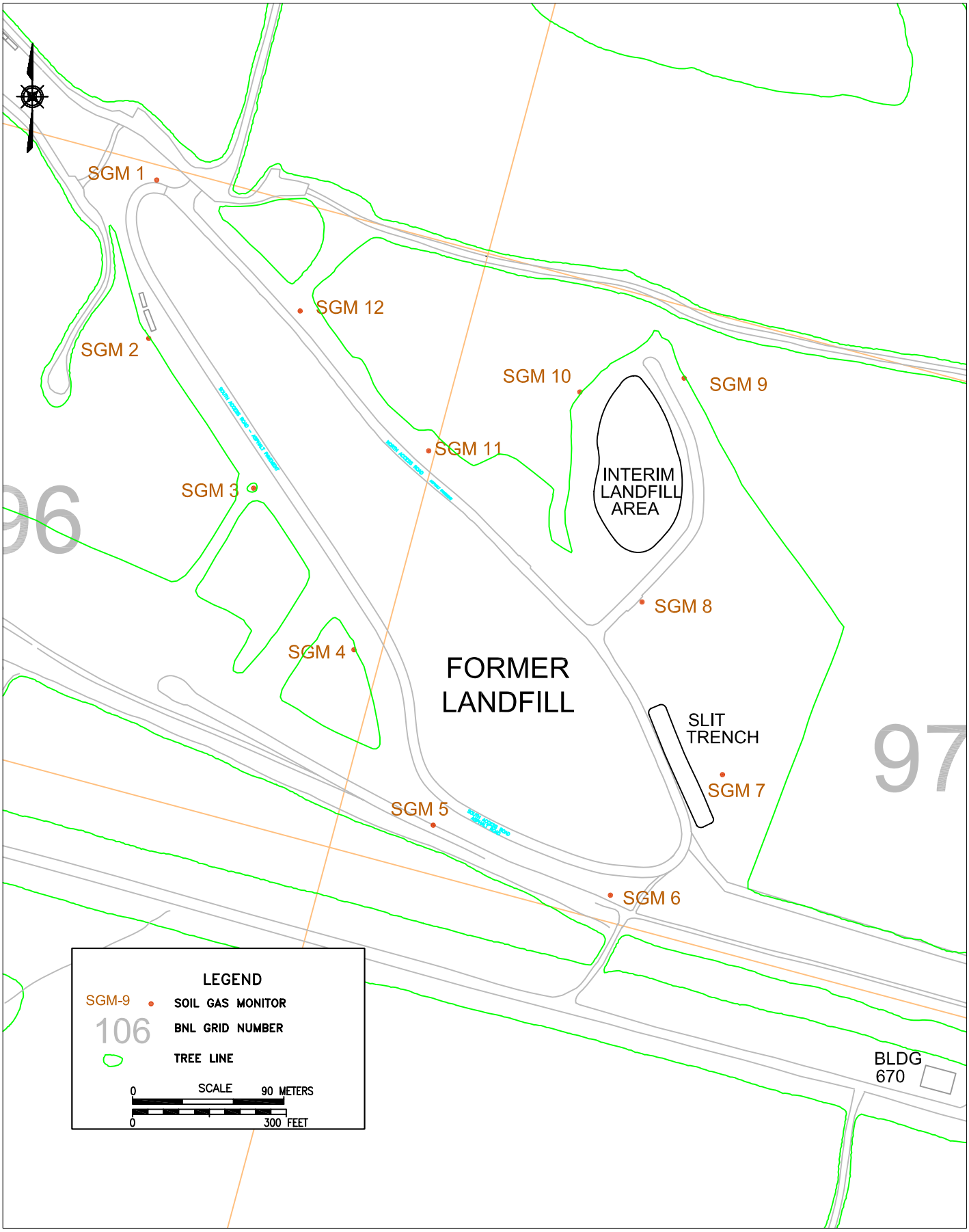
EWMS DIVISION

TITLE:

CURRENT LANDFILL
SOIL GAS MONITOR LOCATION MAP
2007 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

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

FIGURE NO.: 13



R\Gw_projects\Landfills\2007 Report\Fig14.dwg

BROOKHAVEN NATIONAL LABORATORY

EWMS DIVISION

TITLE:

FORMER LANDFILL
SOIL GAS MONITOR LOCATION MAP
2007 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

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

FIGURE NO.: 14

Appendix A

Operable Unit 1
Wooded Wetlands Supplemental Surface Water
and
Sediment Sampling and Analysis Report

ANNUAL WOODED WETLAND REPORT
2007

1.0 INTRODUCTION

This report summarizes and evaluates the annual sediment and surface water sampling performed for Operable Unit I (OU I), 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 annual 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 *OU I 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 annual 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 2007 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 *OU I/VI Preliminary Ecological Risk Screening Report* (CDM, 1996b). As part of the Feasibility Study for OU I, 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 OU I 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 values for sediment and water are presented in Tables 2A and 2B. From 2001 through 2006, seven annual 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 2007 sampling season.

2.0 GENERAL PROCEDURES

2.1 Environmental Sampling Procedures

Sampling was conducted by BNL on May 16, 2007, in accordance with the procedures and sampling locations outlined in the *OU I 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.

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 2007 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 lists 2007 samples with cross-references of the sampling locations to 1994, 1997, 1999, and 2000 through 2007. 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 2006. 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 2007 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 the concentrations of the metals of concern at these locations are below the maximum contaminant and background concentrations, with the exception of location SD-12. At this location, the concentrations of metals were above the maximum sediment concentration but below the background concentration for all metals except manganese. The manganese result of 134 mg/kg was below the maximum sediment concentration of 541 mg/kg but above the background concentration of 84.3 mg/kg.

This analysis indicates that no significant change has occurred since 1994.

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 2007. 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 1B. 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 2007 show that concentrations of iron exceeded the critical concentration value at three of four locations (SW-5S, SW16, and SW17). Comparison of average values for 2007 indicated that iron was the only metal of concern that was above the critical concentration value.

The North Pond samples from 2007 indicate concentrations of iron above the critical concentration values at all three locations. The average iron concentration was below the BNL background (see Table 2B) . The average 2007 concentrations are similar to those in previous years.

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.

4.0 CONCLUSIONS & RECOMMENDATIONS

The results of the May 2007 sediment and surface water sampling program indicate no elevated risk to adult salamanders from sediments in the South or the North Ponds when compared to the maximum benchmark concentrations (Table 2A). The average sediment sample concentrations for both ponds were lower than the maximum and/or background concentrations that would result in an elevated hazard quotient as discussed in the *Final Focused Ecological Risk Assessment for OU I* (CDM, 1999b). 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 indicates that the wooded wetland is not experiencing an increase in metals concentration.

Surface water samples indicate an average iron concentration of 1,042 μg/l in the South Pond, and 1,767 μg/L in the North Pond, which is higher than the 1,000 μg/l critical concentration. Although the iron concentrations exceeded the background concentration (see Table 2B) in two of the seven samples in both ponds, the average iron concentration in each pond did not.

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.

Overall, the results obtained from the May 2007 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 number of sediment and water samples collected from the South Pond in 2007 was the same as those collected in 2006, 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 water.

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.

Based on the results of the 2007 sampling event, annual sampling of the Wooded Wetlands during the spring should continue, in order to document and confirm the trends monitored as part of the O&M Landfill Report.

5.0 REFERENCES

CDM, 1996a. *Brookhaven National Laboratory Final Remedial Investigation/Risk Assessment Report Operable Unit I.* CDM Federal Programs Corp., June 14, 1996.

CDM, 1996b. *Preliminary Ecological Risk Screening, Volume 2D, BNL Final Remedial Investigation/Risk Assessment Report OU I/VI.* CDM Federal Programs Corp., June 14, 1996.

CDM, 1999a. *Brookhaven National Laboratory Final Feasibility Study Report Operable Unit I and Radiologically Contaminated Soils.* CDM Federal Programs Corp., March 31, 1999.

CDM, 1999b. Appendix L, *Final Focused Ecological Risk Assessment for OU I/VI. BNL Final Feasibility Study Report Operable Unit I and Radiologically Contaminated Soils.* CDM Federal Programs Corp., March 31, 1999.

BNL, 1999. "OU I Wooded Wetland Supplemental Surface-water and Sediment Sampling and Analysis Plan." Memorandum, A. Bou to J. Brower, May 3, 1999.

BNL, 2000. "OU I Wooded Wetland Supplemental Surface-water and Sediment Sampling 2000." Memorandum, P. Riche' to J. Brower, July 19, 2000.

P. W. Grosser (2002). *BNL 2001 Environmental Monitoring Report – Current and Former Landfill Areas.* P. W. Grosser Consulting Engineers. February, 2002.

SAIC, 1993. *Sampling and Analysis Plan for the Remedial Investigation/Feasibility Study for Operable Unit I/VI.* SAIC Inc., October 8, 1993.

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	**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-B	SD-5	NS
South	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	NS	NS	SD-16
South	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	NS	NS	SD-11
North	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	SD-13	SD-E	NS	SD-13
North	SD-2001	SD-2001	SD-2001	SD-2001	SD-2001	SD-2001	SD-2001	NS	NS	NS	NS

Surface-Water Sample Locations											
Pond Sampled	**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	SW-B	SW-5	SW-5
South	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	NS	NS	NS	NS
South	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	NS	NS	SW-4
North	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	SW-E	NS	NS
North	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*

Contaminants of Concern	BNL** Background Concentration (mg/kg)	Maximum Sediment Concentration (mg/kg)	Maximum Dose (mg/kg/day)	Benchmark Dose (mg/kg/day)	Hazard Quotient***
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*

Contaminants of Concern	BNL Background Concentration (ug/l) **	Maximum Concentration* (ug/l)	Critical Concentration (ug/l) ***
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 Investigatigation Report, IT Corp., 1996 and OU I/VI Remedial Investigatigation 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	SAMPLES COLLECTED										
	Units : mg/Kg	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
SD-5	Aluminum	NS	4,470	11,600	11,000	8,490	10,200	11,300 *	9,200 *	NS	12,600	8450 *N
(SD-B)	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
	Arsenic	NS	1.1 B	1.4	1.81	1.39 B	1.66	1.8	1.79	NS	2 B	2.2 B
	Barium	NS	18.4 B	19.4	24.4	25.1 B	26.6	28	26.9	NS	31	19.3 *
	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
	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
	Calcium	NS	915 B	343 B	432 B	554 B	727 *	394 *N	1110 N	NS	459	294
	Chromium	NS	6.1	9.9	13.9	11.7	11.6	14	10.6 *	NS	16	10.3 *
	Cobalt	NS	1.3 B	1.7 B	3.15 B	3.36 B	1.97	3.53	1.91	NS	3	2
	Copper	NS	4.8 B	8.1	9.59	9.03	9.65	11.7	10.5	NS	10 *	7.2 *
	Iron	NS	2,560	7,490	7,590	8,670	6,130	8,820 *N	5,700	NS	6,070 EN	5680 N
	Lead	NS	28	19.4	13.4	13.0	21.1 N	12.7	30.1 *	NS	16 *	22.2 *
	Magnesium	NS	487 B	1150	1890	2,240	1,420	2,080 *N	1,310 *	NS	2,110 *	1320
	Manganese	NS	41.5	45.1	82.4	123	78.7 *	88.3 *N	109 *	NS	89 *	54.4
	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
	Nickel	NS	4.1 B	5.7	8.02	9.25	6.74	8.17	7.31 *	NS	8 *	5.9
	Potassium	NS	238 B	397 B	653 B	891	602	889 N	734 E*N	NS	956	409 *
	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
	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
	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
	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
	Vanadium	NS	15.6 B	17.4	24.1	20.4	21.8	22.5	22.3 *	NS	29 *	18.7 *
	Zinc	NS	22.3	25.1	31.4	29.8	31.9	29.5	26.3 *	NS	34 *	23.1 *
	Cyanide	NS	NA	0.489	NA	NA	NA	NA	NA	NS	NS	NS

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LOCATION	CONTAMINANT	SAMPLES COLLECTED										
	Units : mg/Kg	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
SD-6	Aluminum	NS	4,920	9,780	1,670	10,500	1,900	1,390 *	2,000 *	NS	2830	1630 *N
(SD-C)	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
	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
	Barium	NS	15.2 B	21.5	3.57	26.2	4.74	3.27	5	NS	7.1	2.8 *
	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
	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
	Calcium	NS	487 B	774 B	88.3 B	279 B	136 *	51.5 *N	133 N	NS	150	51
	Chromium	NS	6.1	6.5	1.87	13	2.31	1.47	2.33 *	NS	3.6	1.7 *
	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
	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*
	Iron	NS	2,620	5,710	1,040	8,050	1,060	816 *N	1,280	NS	2080 EN	885 N
	Lead	NS	19.8	63.5	4.62 B	5.28	9.74 N	1.6	10.3 *	NS	5 *	4.5 *
	Magnesium	NS	596 B	568 B	250	2,750	245	214 *N	300 *	NS	503 *	192
	Manganese	NS	29.3	39.3	10.4	144	13.4 *	9,87 *N	15 *	NS	24 *	8
	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
	Nickel	NS	4.1 B	5.3	1.28	9.9	1.51	1.05	1.84 *	NS	2.1 *	1.1
	Potassium	NS	273 B	268	103 B	1,240	94	100 N	137 E*N	NS	243	61 *
	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
	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
	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
	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
	Vanadium	NS	11.5 B	20.2 U	3.35 B	16 B	4.85	2.35	4.96 *	NS	5.6 *	2.8 *
	Zinc	NS	19.7	26 B	5.86	27.6	6.45	3.98	6.67 *	NS	9.5 *	4.6 *
	Cyanide	NS	NA	1.27	NA	NA	NA	NA	NA	NS	NS	NS

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LOCATION	CONTAMINANT	SAMPLES COLLECTED										
	Units : mg/Kg	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
SD-16	Aluminum	5,110 *	NS	NS	1,780	1,240	2,660	716 *	6,120 *	NS	2310	6620 *N
	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
	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
	Barium	7.1 B	NS	NS	5.25	3.6 B	9.13	1.89	28.5	NS	7.7	17.6 *
	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
	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
	Calcium	125 B	NS	NS	216 B	137 B	451 *	62 *N	2160 N	NS	144	619
	Chromium	5.5	NS	NS	2.41	1.63	3.21	1.44	5.7 *	NS	3.6	6.9 *
	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
	Copper	1 B	NS	NS	1.48	0.904 B	3.78	0.389 B	8.14	NS	2.2 *	9.5 *
	Iron	1,730 *	NS	NS	1,120	817	1320	569 *N	2960	NS	1520 EN	3810 N
	Lead	4.4 NJ	NS	NS	9.99	3.19	16.1 N	1.7	39.5 *	NS	8.8 *	15 *
	Magnesium	259 B	NS	NS	239 B	185 B	293	109 *N	580 *	NS	357 *	837
	Manganese	11.5 *	NS	NS	12.4	9.68	17.7 *	8.07 *N	45 *	NS	16.7 *	41.5
	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
	Nickel	7.5 U	NS	NS	1.43	1.2 B	2.01	0.78	4.74 *	NS	1.6 *	4.5
	Potassium	138 U	NS	NS	113 B	114 B	133	54.5 N	414 E*N	NS	225	240 *
	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
	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
	Sodium	39 B	NS	NS	14.4 B	17 B	22.9	11.5	17 B	NS	26.5	16.7 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
	Vanadium	5.1 B	NS	NS	5.26 B	2.39 B	6.58	1.6	15.1 *	NS	6.2 *	15.8 *
	Zinc	4.7 B	NS	NS	7.34	6.48	12.9	2.58	29.1 *	NS	7.3 *	29.9 *
	Cyanide	3.1 U	NS	NS	NA	NA	NA	NA	NA	NS	NS	NS

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LOCATION	CONTAMINANT	SAMPLES COLLECTED										
	Units : mg/Kg	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
SD-17	Aluminum	3,550	NS	3,500	2,840	1,440	1,870	2,870 *	1,080 *	NS	11100	4390 *N
(SD-A)	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
	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
	Barium	8.8 B	NS	21.6	6.32	5.34 B	4.96	5.63	2.96	NS	29.4	15.9 *
	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
	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
	Calcium	80.4 B	NS	785	240 B	136 B	183 *	137 *N	107 N	NS	636	878
	Chromium	4.4	NS	7.4	2.54	1.98	1.99	2.68	1.21 *	NS	13	4.3 *
	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
	Copper	2.9 B	NS	8.2	1.64	1.41 B	1.42	12.6	1.39	NS	7.1 *	8.9 *
	Iron	1,590	NS	1,750	757	740	742	1210 *N	614	NS	3580 EN	2260 N
	Lead	4.1 NJ	NS	21.3	6.98	6.15	5.29 N	4.71	2.49 *	NS	16.1 *	26 *
	Magnesium	389 B	NS	665 B	157 B	162 B	169	280 *N	128 *	NS	1190 *	379
	Manganese	14.8	NS	40.1	10.9	12.3	9.72 *	16 *N	9.49 *	NS	54.6 *	31.3
	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
	Nickel	7.6 U	NS	4.3	1.13	1.25 B	1	3.34	0.792 *	NS	5.8 *	3.3
	Potassium	140 U	NS	216 B	88.7 B	91.6 B	83.2	117 N	69.4 E*N	NS	566	146 *
	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
	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
	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
	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
	Vanadium	4.4 B	NS	12.6	4.52 B	2.99 B	3.19	4.09	1.62 *	NS	19.7 *	11.1 *
	Zinc	8.8	NS	27.5	7.37	4.6	6.37	6.24	3.4 *	NS	33.7 *	32 *
	Cyanide	3.2 U	NS	0.243	NA	NA	NA	NA	NA	NS	NS	NS

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LOCATION	CONTAMINANT	SAMPLES COLLECTED										
	Units : mg/Kg	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
SD-11	Aluminum	4,030 *	NS	NS	5,070	12,800	11,400	6,920 *	7,570 *	NS	18500	2710 *N
	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
	Arsenic	0.31 U,	NS	NS	1.07	0.859 B	2.35	1.81	1.27	NS	3.8 B	1.78 U
	Barium	9.3 NB	NS	NS	27.1	53.4	61.1	35.4	34.6	NS	72.9	15 *
	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
	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
	Calcium	125 B	NS	NS	225 B	389	1750 *	551 *N	467 N	NS	2220	502
	Chromium	4.5	NS	NS	4.99	11.6	10.5	6.48	7.1 *	NS	18.5	1.8 *
	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
	Copper	R	NS	NS	5.25	7.06	21.3	7.52	7.55	NS	35.8 *	4.9 *
	Iron	763 *	NS	NS	938	1,260 B	4,920	1,570 *N	1,660	NS	5190 EN	1100 N
	Lead	6.3 N	NS	NS	8.41	13.2	85.7 N	17.8	16.9 *	NS	122 *	16.6 *
	Magnesium	168 B	NS	NS	118 B	295 B	819	262 *N	293 *	NS	1270 *	112
	Manganese	6.6 *	NS	NS	3.74	9.41	33.9 *	10.5 *N	11.4 *	NS	43.1 *	5.3
	Mercury	0.03 B	NS	NS	0.074	0.12	0.198	0.056	0.044	0.0729	0.29 N	0.095 B
	Nickel	9.3 U	NS	NS	2	2.77 B	7.51	3.13	3.3 *	NS	12.1 *	1.7
	Potassium	171 U	NS	NS	131 B	308 B	488	285 N	355 E*N	NS	917	90.2 *
	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
	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
	Sodium	40.9 B	NS	NS	32.2 B	58.4 B	87.2	44.3	21 B	NS	115	19.5 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
	Vanadium	4.2 B	NS	NS	4.27 B	8.33 B	35.8	9.46	10.3 *	NS	53.3 *	5.9 *
	Zinc	R	NS	NS	15.4	16.5	61.7	22.3	20.4 *	NS	83 *	13.3 *
	Cyanide	3.9 U	NS	NS	NA	NA	NA	NA	NA	NS	NS	NS

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LOCATION	CONTAMINANT	SAMPLES COLLECTED										
	Units : mg/Kg	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
SD-12	Aluminum	7,220 *	NS	30,300	4,420	27,900	20,600	13,600 *	10,500 *	NS	9750	31900 *N
(SD-D)	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
	Arsenic	0.76 B,	NS	5	0.981	6.58 B	4.46	4.17	2.17	NS	1.9 B	7.8
	Barium	17.4 B	NS	85.9	32	77.5	68.2	49.5	46.5	NS	49.8	85.9 *
	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
	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
	Calcium	379 B	NS	1,820	964	2,780	2,020 *	2,260 *N	1,870 N	NS	1500	2310
	Chromium	7.8	NS	22.1	4.7	27.8	20.3	13.3	10.9 *	NS	10.7	30.3 *
	Cobalt	2.5 B	NS	5.3 B	0.428 B	6.59 B	3.82	3.09	1.65	NS	1.3	7
	Copper	R	NS	44.6	7.41	36.6	26.4	20.2	13.6	NS	11.5 *	38.1 *
	Iron	5,150	NS	22,000	1,840	18,700	11,700	8,940 *N	5,960	NS	5370 EN	21800 N
	Lead	10.4 NJ	NS	86.3	6.11	71.1	59.8 N	42.3	25.5 *	NS	21.8 *	93.6 *
	Magnesium	943 B	NS	2220	207 B	3,020	1,610	885 *N	672 *	NS	630 *	3530
	Manganese	56 *	NS	125	4.12	147	73.3 *	48.4 *N	33.4 *	NS	23 *	134
	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
	Nickel	7.5 U	NS	16.5	2.04	19.6	11.6	7.9	5.5 *	NS	5.1 *	20.2
	Potassium	292 B	NS	766 B	130 B	1,300 B	774	611 N	570 E*N	NS	551	1000 *
	Selenium	0.25 U	NS	2.2	1.22	2.01	1.74	1.44	1.23	NS	1.21 U	8.08 U
	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
	Sodium	29.8 B	NS	106 B	31.4 B	133 B	81.1	69.4	26.5	NS	57.7	81.4
	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
	Vanadium	10.8 B	NS	54.5	3.49 B	59.9	45.7	31.1	18.7 *	NS	17.2 *	64.7 *
	Zinc	R	NS	123	5.91	137	70.3	38.4	22.3 *	NS	23.4 *	127 *
	Cyanide	3.1 U	NS	0.708	NA	NA	NA	NA	NA	NS	NS	NS

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

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LOCATION	CONTAMINANT	SAMPLES COLLECTED										
	Units : mg/Kg	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
SD-2001	Aluminum	NS	NS	NS	1,780	46,900	15,800	14,900 *	11,600 *	NS	7030	16300 *N
	Antimony	NS	NS	NS	0.226 U	0.821 U	1.32 UN	1.44 B	0.953 BN	NS	0.87 U	4
	Arsenic	NS	NS	NS	0.566 B	9.03	4.21	4.4	2.23	NS	1.5 B	5.3
	Barium	NS	NS	NS	5.25	118	52.9	52.1	45.4	NS	56.9	59.1 *
	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
	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
	Calcium	NS	NS	NS	216 B	2,310 B	1,900 *	1,720 *N	1,430 N	NS	1370	1910
	Chromium	NS	NS	NS	2.41	45.5	15.7	15.1	11.4 *	NS	7.8	15.3 *
	Cobalt	NS	NS	NS	0.347 B	8.87 B	2.98	3.16	1.7	NS	0.93 B	2.9
	Copper	NS	NS	NS	1.48	52.9	23.3	21.2	11.6	NS	8.5 *	22.4 *
	Iron	NS	NS	NS	1,120	25,600	8,720	7,180 *N	5,690	NS	2540 EN	9510 N
	Lead	NS	NS	NS	9.99	145	57 N	60.8	29.7 *	NS	9 *	59.3 *
	Magnesium	NS	NS	NS	239 B	3,940	1,210	853 *N	675 *	NS	315 *	1180
	Manganese	NS	NS	NS	12.4	158	69.3 *	41.2 *N	40.4 *	NS	21.3 *	57.9
	Mercury	NS	NS	NS	0.064	0.727	0.192	0.18	0.098	0.116	0.13 BN	0.14 B
	Nickel	NS	NS	NS	1.43	28	10.1	9.12	5.73 *	NS	3.6 *	9.5
	Potassium	NS	NS	NS	113 B	1,780	603	599 N	570 E*N	NS	354	457 *
	Selenium	NS	NS	NS	0.365 B	2.42	1.4	1.31	0.623 B	NS	1.31 U	1.45 U
	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
	Sodium	NS	NS	NS	14.4 B	149 B	74.7	74.9	21.8	NS	51.1	37.5
	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
	Vanadium	NS	NS	NS	5.26 B	107	40	41.5	22.6 *	NS	7.9 *	34.7 *
	Zinc	NS	NS	NS	7.34	186	76.6	42.1	24.2 *	NS	17.7 *	57 *
	Cyanide	NS	NS	NS	NA	NA	NA	NA	NA	NS	NS	NS

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

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

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	SAMPLES COLLECTED										
	UNITS ug/L	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
SW-5S	Aluminum	38,600	304	1,240	253	385	445 E	429	434	210	301	305
(SWB)	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
	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
	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
	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
	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
	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
	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
	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
	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
	Iron	44,000	347	3,740	1,120	1,100	890	779	1,210	832	757	1220
	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
	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
	Manganese	1,410	96.1	383	181	339	227	153	176	21	171	215
	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
	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
	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
	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
	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
	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
	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
	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
	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

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

Location	Contaminant	SAMPLES COLLECTED										
	UNITS ug/L	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
SW- 6	Aluminum	NS	762	110,000	503	523	541 E	413	346	539	405	284
(SW-C)	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
	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
	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
	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
	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
	Calcium	NS	7,000	28,400	2,660 B	2150 B	2450 B	1540 B	1450 B	2520	1700	1280
	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
	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
	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
	Iron	NS	692	77,500	2,140	1,250	725	522	595	1,470	890	928
	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
	Magnesium	NS	2,690 B	13200	860 B	810 B	982 B	642 B	624 B	883	717	626 E
	Manganese	NS	256	1,280	107	106	133	78.1	71.6	124	89.3	62.4
	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
	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
	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
	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
	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
	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
	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
	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
	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

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

Location	Contaminant	SAMPLES COLLECTED										
	UNITS ug/L	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
SW- 16	Aluminum	NS	NS	NS	NS	928	521 E	446	543	618	1110	208
	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
	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
	Barium	NS	NS	NS	NS	27.3 B	11.2 B	8.81 B	11.7 B	9.8	11.6	5.4
	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
	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
	Calcium	NS	NS	NS	NS	5,480	6,040	4,200 B	3,150 B	3,790	3,880	2250
	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
	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
	Copper	NS	NS	NS	NS	3.3 B	2.21 B	3.09 B	1.39 U	3 U	3.7	0.94 B
	Iron	NS	NS	NS	NS	2,320	1,330	1,430	1,480	1,820	2,200	1010
	Lead	NS	NS	NS	NS	3.86	1.39 B	2.4 U	1.72 U	2.5 U	3.7	0.52 B
	Magnesium	NS	NS	NS	NS	1,420 B	1,580 B	1,120 B	922 B	1,000	1,180	790 E
	Manganese	NS	NS	NS	NS	156	158	116	83.6	120	136	69
	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
	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
	Potassium	NS	NS	NS	NS	2,730 B	2,270 B	1,730 B	1,590 B	1,830	1,990	1620
	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
	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
	Sodium	NS	NS	NS	NS	2,520 B	2,680 B	2,170 BE	2,400 B	2,700	2,620	3040
	Thallium	NS	NS	NS	NS	3.88 U	4.99 U	3.64 U	10 U	5 U	0.4 U	0.4 U
	Vanadium	NS	NS	NS	NS	4.61 B	2.96 B	5.02 B	3.44 B	4 B	3 B	2 U
	Zinc	NS	NS	NS	NS	15.5 B	14.6 B	34	14.8 B	17.1	28	20.3

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

Location	Contaminant	SAMPLES COLLECTED										
	UNITS ug/L	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
SW-17	Aluminum	NS	NS	1,260	NS	612	441 E	490	485	357	310	163
(SW-A)	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
	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
	Barium	NS	NS	21.6	NS	36 B	14.6 B	10.3 B	13 B	8.3	6.6	8
	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
	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
	Calcium	NS	NS	8,570	NS	9,120	7,900	6,930	3,920 B	4,820	3,420	3030
	Chromium	NS	NS	3 B	NS	1.73 B	1.16 B	1.69 U	0.984 B	10	1 U	1 U
	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
	Copper	NS	NS	5	NS	4.2 B	2.21 B	3.26 B	1.39 U	17.6	1.5	0.7 B
	Iron	NS	NS	5,410	NS	5430	1650	1120	1170	2320	1130	1010
	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
	Magnesium	NS	NS	1,950 B	NS	1,950 B	1,780 B	1,530 B	1,050 B	1,130	964	980 E
	Manganese	NS	NS	240	NS	469	150	157	102	136	110	71.3
	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
	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
	Potassium	NS	NS	2,480 B	NS	3,310 B	2,400 B	1,960 B	1,550 B	1,910	1,810	1600
	Selenium	NS	NS	2.1 B	NS	3 U	3 U	3 U	3 U	6 U	3 U	2.5 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
	Sodium	NS	NS	3,610 B	NS	2,560 B	2,470 B	2,050 BE	2,220 B	2,580	2,260	2880
	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
	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
	Zinc	NS	NS	31.5	NS	24	14.2 B	30.1	16.6 B	14	17.5	7 B

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

Location	Contaminant	SAMPLES COLLECTED										
	UNITS ug/L	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
SW- 4	Aluminum	829	NS	NS	179 B	1,500	1,320 E	326	258	356	461	198
	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
	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
	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
	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
	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
	Calcium	8,150	NS	NS	16,400	7,230	5,350	3,630 B	4,300 B	4,290	4,000	5180
	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
	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
	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
	Iron	3930	NS	NS	2,600	3,670	1,760	499	996	1,640	702	1190
	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
	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
	Manganese	146	NS	NS	135	312	69.5	39.6	112	47.2	23.1	36.6
	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
	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
	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
	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
	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
	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
	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
	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
	Zinc	33.3	NS	NS	2.19 U	28	22	55.8	12.2 B	10.7	183	9.9 B

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

Location	Contaminant	SAMPLES COLLECTED										
	UNITS ug/L	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
SW- 5N	Aluminum	NS	NS	945	179 B	575	238 E	1180	133 B	449	394	186
(SW-D)	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
	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
	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
	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
	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
	Calcium	NS	NS	7,990	16,400	15,700	11,000	10,500	9,730	11,300	7,220	11100
	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
	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
	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
	Iron	NS	NS	6,900	2,600	1,290	598	1,070	564	2,000	776	2030
	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
	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
	Manganese	NS	NS	146	135	103	33.2	35.2	18	60	33.8	145
	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
	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
	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
	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
	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
	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
	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
	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
	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

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

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

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

Location	Contaminant	SAMPLES COLLECTED										
	UNITS ug/L	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
SW- 2001	Aluminum	NS	NS	NS	NS	466	427 E	4090	119 B	412	1720	1230
	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
	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
	Barium	NS	NS	NS	NS	42.9 B	11.2 B	20.9 B	6.54 B	8.3	16.2	12.4
	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
	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
	Calcium	NS	NS	NS	NS	15,300	11,700	10,400	9,780	10,300	11,000	11200
	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
	Cobalt	NS	NS	NS	NS	0.518 B	0.581 U	2.86 B	0.541 U	1 U	1.4	0.7 B
	Copper	NS	NS	NS	NS	1.94 B	2.74 B	7.14 B	1.39 U	3 U	6.4	3
	Iron	NS	NS	NS	NS	1,190	753	3,420	558	1,850	1,990	2080
	Lead	NS	NS	NS	NS	1.66 B	1.24 U	8.68	1.72 U	2.5 U	3.2	4
	Magnesium	NS	NS	NS	NS	2,760 B	2,180 B	2,320 B	2,020 B	1,940	2,030	2460 E
	Manganese	NS	NS	NS	NS	130	103	105	18.9	60.4	328	98.8
	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
	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
	Potassium	NS	NS	NS	NS	3,050 B	2,130 B	1,960 B	1,360 B	811	1,580	1660
	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
	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
	Sodium	NS	NS	NS	NS	2,270 B	2,230 B	1,800 BE	1,830 B	2,010	1,430	2380
	Thallium	NS	NS	NS	NS	3.88 U	4.99 U	3.64 U	10 U	5 U	0.4 U	0.4 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
	Zinc	NS	NS	NS	NS	4.25 B	5.91 B	72.6	7.05 B	7.7 B	72.5	11.4

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	SD-5 (SD-B)											SD-6 (SD-C)										
units mg/Kg	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
Copper	NS	4.8 B	8.1	9.59	9.03	9.65	11.7	10.5	NS	10 *	7.2 *	NS	4.8 B	7.8	0.72 B	7.27	1.85	0.55 B	1.37	NS	1.7 *	0.73 B*
Lead	NS	28	19.4	13.4	13	21.1 N	12.7	30.1 *	NS	16 *	22.2 *	NS	19.8	63.5	4.62	5.28	9.74 N	1.6	10.3 *	NS	5 *	4.5 *
Manganese	NS	41.5	45.1	82.4	123	78.7	88.3 *N	109 *	NS	89 *	54.4	NS	29.3	39.3	10.4	144	13.4	9.87 *N	15 *	NS	24 *	8
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	NS	0.1 U	0.18	0.049	0.004	0.011 B	0.01 U	0.019	0.012	0.014 BN	0.026 B
Zinc	NS	22.3	25.1	31.4	29.8	31.9	29.5	26.3 *	NS	34 *	23.1 *	NS	19.7	26	5.86	27.6	6.45	3.98	6.67 *	NS	9.5 *	4.6 *

	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	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
Copper	1 B	NS	NS	1.48	0.904	3.78	0.389 B	8.14	NS	2.2 *	9.5 *	2.9 B	NS	8.2	1.64	1.41	1.42	12.6	1.39	NS	7.1 *	8.9 *
Lead	4.4 NJ	NS	NS	9.99	3.19	16.1 N	1.7	39.5 *	NS	8.8 *	15 *	4.1 NJ	NS	21.3	6.98	6.15	5.29 N	4.71	2.49 *	NS	16.1 *	26 *
Manganese	11.5	NS	NS	12.4	9.68	17.7	8.07 *N	45 *	NS	16.7 *	41.5	14.8	NS	40.1	10.9	12.3	9.72	16 *N	9.49 *	NS	54.6 *	31.3
Mercury	0.001 B	NS	NS	0.064	0.003	0.033	0.005 U	0.028	0.0336	0.027 *	0.038 B	0.02 B	NS	0.03 U	0.038	0.003	0.014	0.01 B	0.012 B	0.06	0.037 BN	0.064 B
Zinc	4.7 B	NS	NS	7.34	6.48	12.9	2.58	29.1 *	NS	7.3 *	29.9 *	8.8	NS	27.5	7.37	4.6	6.37	6.24	3.4 *	NS	33.7 *	32 *

South Pond Averages

Contaminant										Maximum Sediment	Bkg. Sediment
units mg/Kg	1999	2000	2001	2002	2003	2004	2005	2006	2007	Conc.[1]	Conc.
Copper	8.03	3.36	4.7	4.2	6.3	5.4	NS	5.3	6.6	29	52.5
Lead	34.73	8.75	6.9	13.1	5.2	20.6	NS	11.5	16.9	82.9	97.6
Manganese	41.50	29.03	72.2	29.9	30.6	44.6	NS	46.1	33.8	541	84.3
Mercury	0.09	0.06	0.02	0.03	0.01	0.03	0.04	0.03	0.04	0.17	0.41
Zinc	26.20	12.99	17.1	14.4	10.6	16.4	NS	21.1	22.4	122	158

North Pond

Contaminant	SD-11											SD-12 (SD-D)										
units mg/Kg	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
Copper	NA	NS	NS	5.25	7.06	21.3	7.52	7.55	NS	35.8 *	4.9 *	NA	NS	45	7.41	37	26.4	20.2	13.6	NS	11.5 *	38.1 *
Lead	6.3 N	NS	NS	8.41	13.2	85.7 N	17.8	16.9 *	NS	122 *	16.6 *	10.4 NJ	NS	86	6.11	71.1	59.8 N	42.3	25.5 *	NS	21.8 *	93.6 *
Manganese	6.6	NS	NS	3.74	9.41	33.9	10.5 *N	11.4 *	NS	43.1 *	5.3	56	NS	125	4.12	147	73.3	48.4 *N	33.4 *	NS	23 *	134
Mercury	0.030 B	NS	NS	0.074	0.120	0.198	0.056	0.044	0.0729	0.29 N	0.095 B	0.03 B	NS	0.370	0.074	0.272	0.215	0.21	0.079	0.203	0.3 N	0.2 B
Zinc	NA	NS	NS	15.4	16.5	61.7	22.3	20.4 *	NS	83 *	13.3	NA	NS	123	5.91	137	70.3	38.4	22.3 *	NS	23.4 *	127 *

	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	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
Copper	8.1	NS	9.5	1.42	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	53	23.3	21.2	11.6	NS	8.5 *	22.4 *
Lead	15.8 NJ	NS	39.9	5.14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	145	57 N	60.8	29.7 *	NS	9 *	59.3 *
Manganese	85	NS	16.0	4.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	158	69.3	41.2 *N	40.4 *	NS	21.3 *	57.9
Mercury	0.08 B	NS	0.13	0.054	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.727	0.192	0.18	0.098	0.116	0.13 BN	0.14 B
Zinc	27.9	NS	17.3	4.35	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	186	76.6	42.1	24.2 *	NS	17.7 *	57 *

North Pond Averages

Contaminant										Maximum Sediment	Bkg. Sediment
units mg/Kg	1999	2000	2001	2002	2003	2004	2005	2006	2007	Conc.[1]	Conc.
Copper	27.1	4.7	32.2	23.7	16.3	10.9	NS	18.6	21.8	29	52.5
Lead	63.1	6.6	76.4	67.5	40.3	24.0	NS	50.9	56.5	82.9	97.6
Manganese	70.5	3.9	104.8	58.8	33.4	28.4	NS	29.1	65.7	541	84.3
Mercury	0.25	0.07	0.37	0.20	0.15	0.07	0.13	0.24	0.15	0.17	0.41
Zinc	70.2	8.6	113.2	69.5	34.3	22.3	NS	41.4	65.8	122	158

NOTES:

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

Table 6
Wooded Wetlands-Surface Water Results and Critical Water Concentrations
Brookhaven National Laboratory, Upton, New York

South Pond

Contaminant	SW-5S (SW-B)											SW-6 (SW-C)										
units ug/L	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May -04	May-05	May-06	May-07
Aluminum	NS	304	1,240	253	385	445 E	429	434	210	301	305	NS	762	110,000	503	523	541 E	413	346	539	405	284
Cadmium	NS	0.2 B	0.44 B	0.69 U	0.274 B	0.210 U	0.660 U	0.313 U	1.000 U	0.1 U	0.1 U	NS	NA	7.4 B	0.69 U	0.272 U	0.210 U	0.660 U	0.313 U	1.000 U	0.100 U	0.1 U
Cobalt	NS	1.3 U	1.1 B	0.91 U	0.679 B	0.581 U	1.710 B	0.918 B	1.000 U	0.46 B	0.53 B	NS	1.4 B	22.7 B	0.91 U	0.419 U	0.581 U	1.330 B	0.738 B	1.000 U	0.580 B	0.46 B
Copper	NS	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	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
Iron	NS	347	3,740	1,120	1,100	890	779	1,210	832	757	1220	NS	692	77,500	2,140	1,250	725	522	595	1,470	890	928
Lead	NS	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	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
Mercury	NS	0.1 B	0.13 B	0.05 B	0.057 U	0.04 U	0.10 U	0.05 U	0.05 U	0.06 U	0.06 U	NS	NA	1	0.085 B	0.057 U	0.04 U	0.10 U	0.05 B	0.05 U	0.06 U	0.06 U
Nickel	NS	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	NS	NA	121	1.93 B	2.07 B	2.07 B	1.64 U	1.07 B	2.5 B	2.3	1.6 B
Silver	NS	0.8 U	0.89 U	0.94 U	0.871 U	1.15 U	1.70 U	0.84 U	1.00 U	0.2 U	0.2 U	NS	NA	2.3 B	0.94 U	0.871 U	1.15 U	1.70 U	0.84 U	1.00 U	0.20 U	0.2 U
Zinc	NS	47.5	65.8	8.12 B	12.4 B	13.7 B	34.4	15.4 B	12.2	15.1	28.6	NS	53.2	699	16.8 B	14.1 B	14.4 B	29.9	11.5 B	20.4	14	9.8 B

	SW-16											SW-17 (SW-A)										
	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
Aluminum	NS	NS	NS	NS	928	521 E	446	543	618	1110	208	NS	NS	1,260	NS	612	441 E	490	485	357	310	163
Cadmium	NS	NS	NS	NS	0.272 U	0.210 U	0.660 U	0.313 U	1 U	0.11 B	0.1 U	NS	NS	0.34 U	NS	0.272 U	0.210 U	0.660 U	0.313 U	1 U	0.100 U	0.1 U
Cobalt	NS	NS	NS	NS	0.627 B	0.581 U	1.690 B	0.812 B	1 U	0.88 B	0.41 B	NS	NS	1.1 B	NS	1.49 B	0.759 B	1.820 B	0.754 B	1 U	0.540 B	0.39 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	NS	NS	5	NS	4.2 B	2.21 B	3.26 B	1.39 U	17.6	1.5	0.7 B
Iron	NS	NS	NS	NS	2,320	1,330	1,430	1480	1820	2200	1010	NS	NS	5,410	NS	5,430	1,650	1,120	1170	2320	1,130	1010
Lead	NS	NS	NS	NS	3.86	1.39 B	2.4 U	1.72 U	2.5 U	3.7	0.52 B	NS	NS	5.7	NS	3.31	2.04 B	2.4 U	1.72 U	2.5 U	1.1 B	0.5 U
Mercury	NS	NS	NS	NS	0.057 U	0.04 U	0.10 U	0.047 U	0.05 U	0.06 U	0.06 U	NS	NS	0.12 U	NS	0.057 U	0.04 U	0.10 U	0.047 U	0.05 U	0.06 U	0.06 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	NS	NS	5.5	NS	3.28 B	2.27 B	1.64 U	1.04 B	6.7	1.8 B	1.5 B
Silver	NS	NS	NS	NS	0.871 U	1.15 U	1.70 U	0.835 U	1 U	0.2 U	0.2 U	NS	NS	0.89 U	NS	0.871 U	1.15 U	1.70 U	0.835 U	1 U	0.20 U	0.2 U
Zinc	NS	NS	NS	NS	15.5 B	14.6 B	34	14.8 B	17.1	28	20.3	NS	NS	32	NS	24	14.2 B	30.1	16.6 B	14	17.5	7 B

South Pond Averages

Contaminant	**Bench-mark[1]**										**Critical**
units ug/L	1994/97	1999	2000	2001	2002	2003	2004	2005	2006	2007	**Conc.[1]**
Aluminum	**762**	**37,500**	378	**612**	487	445	452	431	532	240	525
Cadmium	0.3	2.73	0.69	0.27	0.21	0.66	0.31	1.00	0.10	0.10	12.8
Cobalt	8.1	8.30	0.91	0.80	0.63	1.64	0.81	1.00	0.62	0.45	15
Copper	18.7	**61.13**	1.78	3.06	1.87	2.71	1.39	6.65	2.20	1.36	50
Iron	**4,400**	**28,883**	**1,630**	**2,525**	1148.75	963	1,114	1,611	1,244	1,042	1,000
Lead	4.4	**299**	1.38	2.53	1.71	2.40	1.72	2.50	1.70	0.61	14.6
Mercury	0.24	0.42	0.07	0.06	0.04	0.10	0.05	0.05	0.06	0.06	27
Nickel	3.5	44.70	1.61	2.52	2.17	1.64	1.08	3.78	2.28	1.65	420
Silver	ND	1.36	0.94	0.87	1.15	1.70	0.84	1.00	0.20	0.20	2.4
Zinc	**64.9**	**265.4**	12.5	16.5	14.23	32.10	14.6	15.9	18.7	16.4	23.8

Table 6
Wooded Wetlands-Surface Water Results and Critical Water Concentrations
Brookhaven National Laboratory, Upton, New York

North Pond

Contaminant	SW-4											SW-5N (SW-D)										
units ug/L	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
Aluminum	829	NS	NS	193 B	1,500	1320 E	326	258	356	461	198	38,600	NS	945	179 B	575	238 E	1180	133 B	449	394	186
Cadmium	5 U	NS	NS	0.69 U	0.272 U	0.210 U	0.66 U	0.313 U	1 U	0.1 U	0.1 U	NA	NS	0.34 U	0.69 U	0.272 U	0.210 U	0.66 U	0.313 U	1 U	0.1 U	0.1 U
Cobalt	5 U	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	18.7 B	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
Copper	8.5 B	NS	NS	1.63 U	5.79 B	3.79 B	2.59 B	1.39 U	3 U	3.5	2.7	56.2	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
Iron	3,930	NS	NS	2,790	3,670	1,760	499	996	1640	702	1190	4,400	NS	6,900	2,600	1,290	598	1070	564	2000	776	2030
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	NA	NS	3.6 B	1.38 U	2.27	1.24 U	2.4 U	1.72 U	2.5 U	0.72 B	0.88 B
Mercury	0.2 B	NS	NS	0.106 B	0.057 U	0.04 U	0.095 U	0.047 U	0.05 U	0.06 U	0.06 U	0.24 B	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
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	3.5 B	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
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	NA	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
Zinc	33	NS	NS	2.19 U	28	22	55.8	12.2 B	10.7	183	9.9 B	252	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

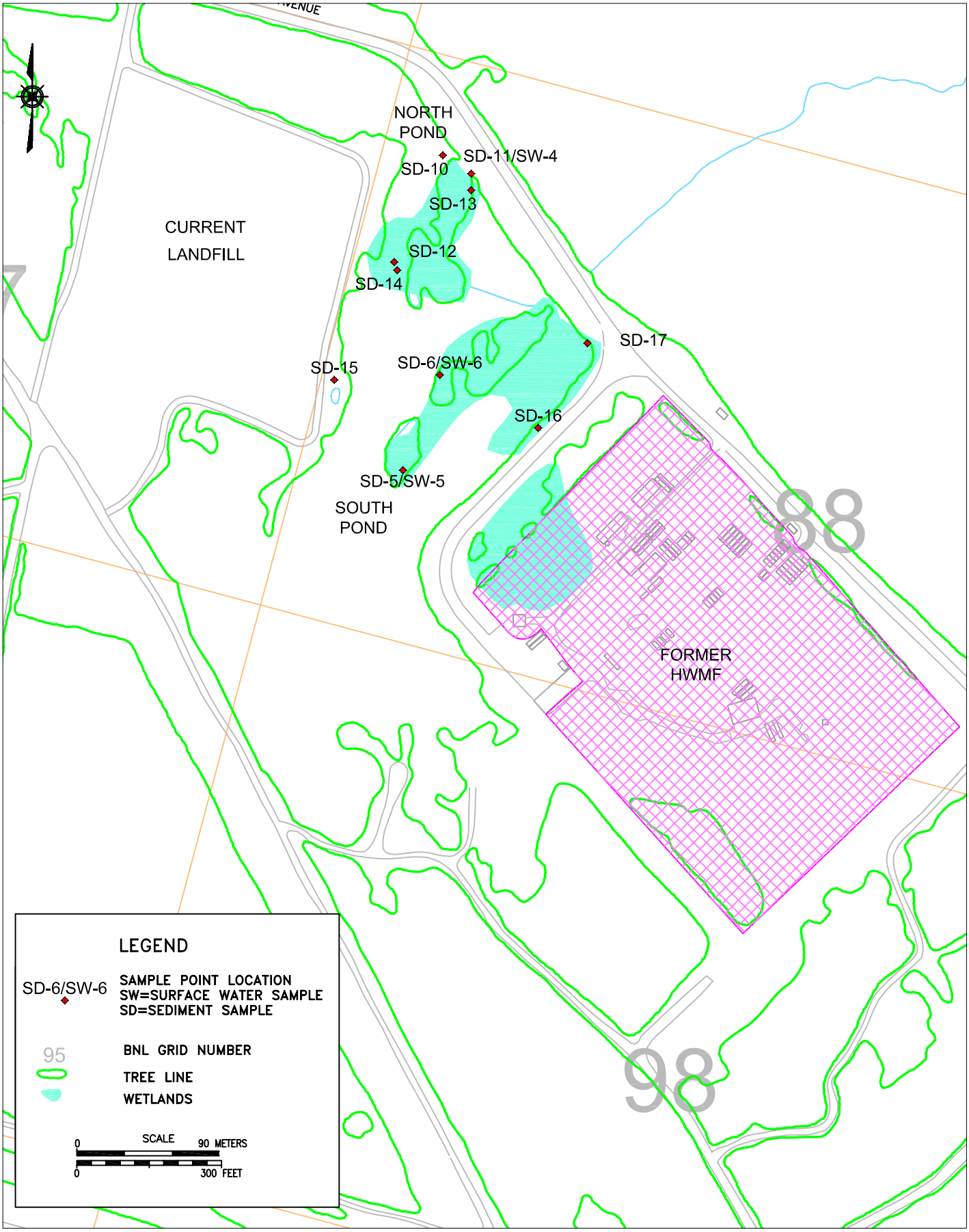
	SW-E											SW-2001										
	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	May-05	May-06	May-07
Aluminum	NS	NS	1,170	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	466	427 E	4090	119 B	412	1720	1230
Cadmium	NS	NS	0.34 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.272 U	0.210 U	0.66 U	0.313 U	1 U	0.1 U	0.1 U
Cobalt	NS	NS	2.3 B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.518 B	0.581 U	2.86 B	0.541 U	1 U	1.4	0.7 B
Copper	NS	NS	6.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1.94 B	2.74 B	7.14 B	1.39 U	3 U	6.4	3
Iron	NS	NS	6,970	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1,190	753	3420	558	1850	1990	2080
Lead	NS	NS	4.5 B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1.66 B	1.24 U	8.68	1.72 U	2.5 U	3.2	4
Mercury	NS	NS	0.12 U	NS	NS	NS	NS	NS	NS	NS	NS	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
Nickel	NS	NS	6.7	NS	NS	NS	NS	NS	NS	NS	NS	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
Silver	NS	NS	0.89 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.871 U	1.15 U	1.7 U	0.835 U	1 U	0.2 U	0.2 U
Zinc	NS	NS	38.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	4.25 B	5.91 B	72.6	7.05 B	7.7 B	72.5	11.4

North Pond Averages

Contaminant	**Bench-mark[1]**										**Critical**
units ug/L	1994/97	1999	2000	2001	2002	2003	2004	2005	2006	2007	**Conc.[1]**
Aluminum	**762**	**945**	186	**847**	**662**	**1,865**	170	406	858	538	525
Cadmium	0.3	0.34	0.69	0.27	0.21	0.66	0.31	1.00	0.10	0.10	12.8
Cobalt	8.1	1.10	0.91	0.96	0.58	2.11	0.66	1.00	0.73	0.63	15
Copper	18.7	3.20	1.63	3.34	2.61	4.61	1.39	3	4.3	2.5	50
Iron	**4,400**	**6,900**	**2,695**	**2,050**	**1,037**	**1,663**	706	1,830	1,156	1,767	1,000
Lead	4.4	3.60	1.38	3.18	2.00	4.49	1.72	3.3	1.81	1.89	14.6
Mercury	0.24	0.12	0.11	0.06	0.04	0.10	0.05	0.05	0.06	0.06	27
Nickel	3.5	5.00	1.29	1.80	1.35	1.64	0.69	1.7	1.4	1.73	420
Silver	ND	0.89	0.94	0.87	1.15	1.83	0.84	1.03	0.20	0.20	2.4
Zinc	**64.9**	21.9	2.2	12.40	10.82	**51.27**	8.76	8.10	87.97	9.30	23.8

NOTES:
[1] Final Focused Ecological Risk Assessment (FERA) for Operable Unit I/VI (CDM 8/98)
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 lim

FIGURES



R\Gw_projects\Landfills\2007 Report\wooded wetlands Fig1.dwg

BROOKHAVEN NATIONAL LABORATORY

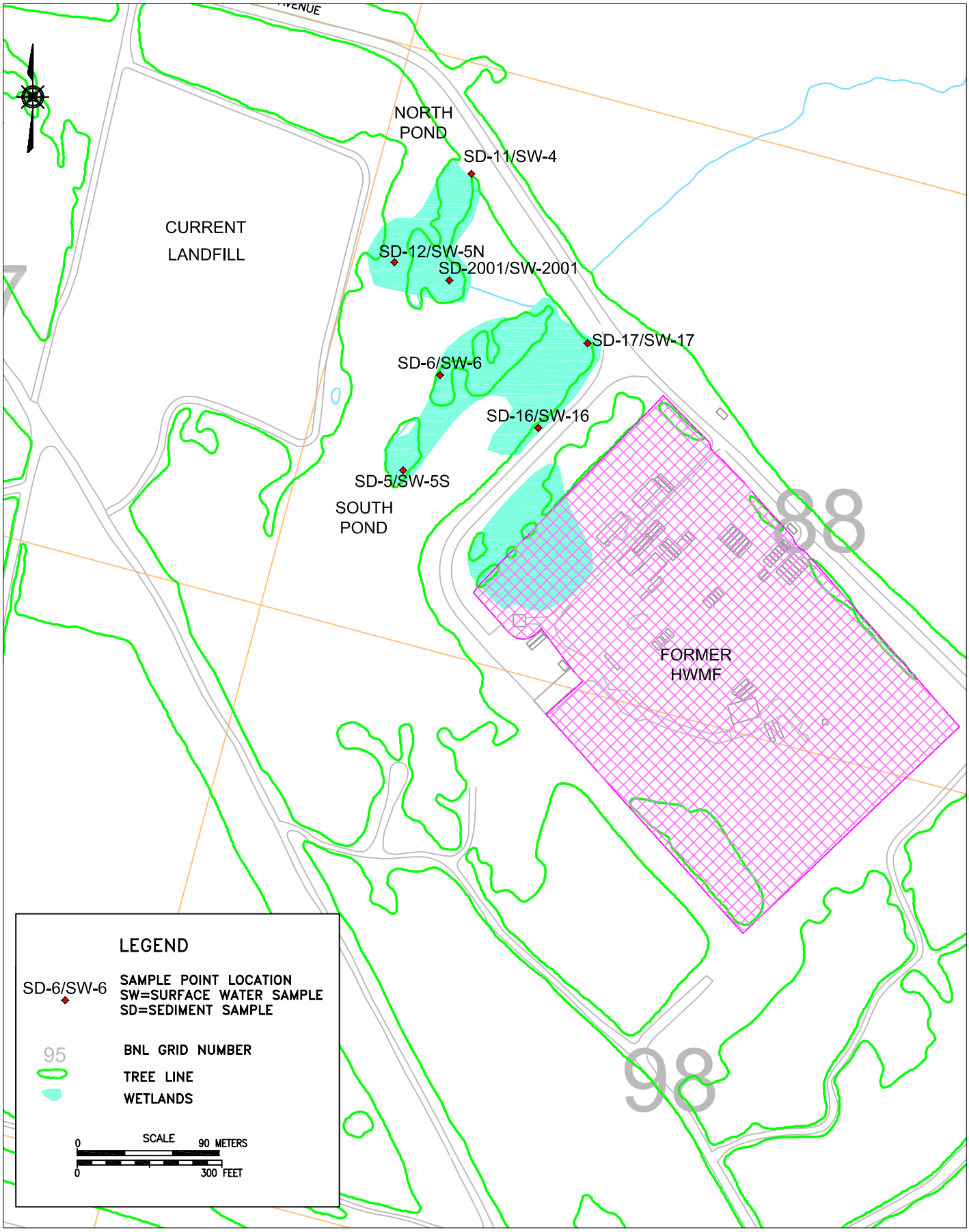
EWMS DIVISION

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

2007 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

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

FIGURE NO.: 1



R:\Gw_projects\Landfills\2007 Report\wooded wetlands Fig2.dwg

BROOKHAVEN NATIONAL LABORATORY

EWMS DIVISION

TITLE:

WOODED WETLANDS
SEDIMENT AND SURFACE WATER
SAMPLING LOCATIONS
2007 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

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

FIGURE NO.: 2

Appendix B

Soil-gas Sampling Field Notes

78 Osgood
12/26/06
Former Land fill

Location	CH_4 %	LEL %	H_2S ppm	Comments
SGM 9A	0	0	0	
9B	0	0	0	
SGM 10A	0	0	0	
10B	0	0	0	
SGM 11A	0	0	0	
11B	0	0	0	
SGM 12A	0	0	0	
12B	0	0	0	

12/26/06

79 Osgood
2/24/07
Sun 30°
Former Land fill

Calibration Check of Landtec GA-90 performed prior to use SN 690.

Location	CH_4 %	LEL %	H_2S ppm	Comments
SGM 1A	0	0	0	
1B	0	0	0	
GSM 2A	0	0	0	
2B	0	0	0	
SGM 3A	0	0	0	
3B	0	0	0	
SGM 4A	0	0	0	
4B	0	0	0	
SGM 5A	0	0	0	
5B	0	0	0	
SGM 6A	0	0	0	
6B	0	0	0	
SGM 7A	0	0	0	
7B	0	0	0	
SGM 8A	0	0	0	
8B	0	0	0	
SGM 9A	0	0	0	
9B	0	0	0	

80 CDgK

2/24/07

S in 30 Former Landfill

Location	CH_4 %	LEL %	H_2S ppm
SGM 10A	0	0	0
10B	0	0	0
SGM 11A	0	0	0
11B	0	0	0
SGM 12A	0	0	0
12B	0	0	0

CD 2/24/07

81 CDgK

5/17/07

Sun 60 Former Landfill

Calibration check of Landtec GA-90 SN 690 performed prior to use.

Location	CH_4 %	LEL %	H_2S ppm Comment
SGM 1A	0	0	0
1B	0	0	0
SGM 2A	0	0	0
2B	0	0	0
SGM 3A	0	0	0
3B	0	0	0
SGM 4A	0	0	0
4B	0	0	0
SGM 5A	0	0	0
5B	0	0	0
SGM 6A	0	0	0
6B	0	0	0
SGM 7A	0	0	0
7B	0	0	0
SGM 8A	0	0	0
8B	0	0	0

82

5/17/07

Cogeta

Former Landfill

Location	CH_4 %	LEL %	H_2S ppm
SGM 9A	0	0	0
9B	0	0	0
SGM 10 A	0	0	0
10 B	0	0	0
SGM 11A	0	0	0
11B	0	0	0
SGM 12 A	0	0	0
12B	0	0	0

5/17/07

9/22/08

(1) R Metz

9/22/07

~~Cloudy 68°F~~ RM 9/22/07 Former Landfill

Fog! 0845 → 1200

Cloudy 68°F Calibration Check of Landtec GA90 performed prior to use. S# 690.

Location	CH4%	LEL%	H2S ppm	comment
SGM 1A	0.0	0.0	001	
2B	0.0	0.0	1.0	
SGM 2A	0.0	0.0	0.0	
2B	0.0	0.0	0.0	
SGM 3A	0.0	0.0	2.0	
3B	0.0	0.0	2.0	
SGM 4A	0.0	0.0	1.0	
SGM 4B	0.0	0.0	1.0	
SGM 5A	0.0	0.0	0.0	
5B	0.0	0.0	0.0	
SGM 6A	0.0	0.0	0.0	
6B	0.0	0.0	0.0	
SGM 7A	0.0	0.0	1.0	
7B	0.0	0.0	0.0	
SGM 8A	0.0	0.0	0.0	
8B	0.0	0.0	0.0	
SGM 9A	0.0	0.0	0.0	
9B	0.0	0.0	1.0	

(2) R Metz

9/22/07

~~Cloudy 70°F~~ RM 9/22/07 Former Landfill

Cloudy 68°F fog 0845 → 1200

Location	CH4%	LEL%	H2S ppm	Comment
SGM 10A	0.0	0.0	1.0	
SGM 10B	0.0	0.0	0.0	
SGM 11A	0.0	0.0	0.0	
11B	0.0	0.0	0.0	
SGM 12A	0.0	0.0	1.0	
12B	0.0	0.0	0.0	

RM 9/22/07

(3)

12/20/07
40°F
Clear

R Metz J. Milligan

On Time 10:50
Former Landfill

Cal Check of Landtec 690 w/ H2S probe.

Location	CH4%	LEL%	H2S ppm	Comment
SGM 1A	0.0	0.0	000	
1B	0.0	0.0	000	
SGM2A	0.0	0.0	000	
2B	0.0	0.0	0.0	
SGM3A	0.0	0.0	0.0	
SGM3B	0.0	0.0	0.0	
SGM4A	0.0	0.0	0.0	
4B	0.0	0.0	0.0	
SGM5A	0.0	0.0	0.0	
5B	0.0	0.0	0.0	
SGM6A	0.0	0.0	0.0	
SGM6B	0.0	0.0	0.0	
SGM7A	0.0	0.0	0.0	
SGM7B	0.0	0.0	0.0	
SGM8A	0.0	0.0	0.0	
SGM8B	0.0	0.0	0.0	
SGM9A	0.0	0.0	0.0	
SGM9B	0.0	0.0	0.0	

(4)

12/20/07
40%
Clear

R Metz J. Milligan

Former Landfill

offsite Time 11:55

Location	CH4%	LEL%	H2S ppm	Comments
SGM 10A	0.0	0.0	0.0	
10B	0.0	0.0	0.0	
SGM 11A	0.0	0.0	0.0	
11B	0.0	0.0	0.0	
SGM 12A	0.0	0.0	0.0	
12B	0.0	0.0	0.0	

RM 12/20/07

150 COgak
2/24/07
SunWIND Current Landfill
30° Sun

Calibration check of Landtec GA-90 SN 690 performed prior to use.
Time onsite 0945hrs (w/ H_2S)

Location	CH4%	LEL%	H_2S ppm	Comments
SGM 1A	10	200	0	
1B	6.4	128	0	
1C	5.9	118	0	
SGM 2A	0.2	4	0	
2B	0	0	0	
2C	0	0	0	
SGM 3A	0	0	0	
3B	0.9	18	0	
3C	0.2	4	0	
SGM 4A	8.4	168	0	
4B	17.0	340	0	
4C	12.0	240	0	
SGM 5A	10.5	210	0	
5B	17.0	340	0	
5C	13.5	270	0	

151 COgak
2/24/07
SunWind Current Landfill

Location	CH4%	LEL%	H_2S ppm	Comment
SGM 6A	11.5	230	0	
6B	14.3	286	0	
6C	12.9	258	0	
SGM 7A	0	0	0	
7B	0	0	0	
7C	0	0	0	
SGM 8A	0	0	0	
8B	0	0	0	
8C	0	0	0	
SGM 9A	0	0	0	
9B	0	0	0	
9C	0	0	0	
SGM 10A	0.4	8	0	
10B	0	0	0	
10C	0	0	0	
SGM 11A	0	0	0	
11B	0	0	0	
SGM 12A	0	0	0	
12B	0	0	0	
SGM 13A	0	0	0	
13B	0	0	0	

152
2/24/07

CO_2 gas

Current Landfill

Location	CH4%	CO2%	H2S ppm	Comment
SGM14A	0	0	0	
14B	0	0	0	
SGM15A	0	0	0	
15B	0	0	0	
SGM16A	0	0	0	
16B	0	0	0	
SGM17A	0	0	0	
17B	0	0	0	
SGM18A	0	0	0	
18B	0	0	0	
SGM19A	2.5	50	0	
19B	0	0	0	
GSGM1A	0	0	0	
1B	0	0	0	
1C	0	0	0	
GSGM2A	0	0	0	
2B	0	0	0	
2C	0	0	0	
GSGM3A	0	0	0	
3B	0	0	0	
GSGM4A	0	0	0	
4B				

5/17/07

CONTENTS

PAGE	REFERENCE	DATE
	N	
	N	
	Brookhaven Ave	
	1 SA 2 SA 3 SA 4 SA	
	SGM1 2 3 4	

Closure

4/17/07
overcast
55°

Current Landfill

Calibration check of Landtec GA-90 SN 6790 w/ H_2S pod performed prior to use.
Time onsite: 1030
Time offsite: 1520

Location	CH_4%	LEL%	H_2S ppm	Comments
SGM 1A	12.7	244	1	
1B	4.5	90	1	
1C	0.3	6	0	
SGM 2A	0.1	8	1	
2B	17.6	352	1	
2C	0.4	8	1	
SGM 3A	25.1	502	1	
3B	0.7	14	2	
3C	0.6	12	2	
SGM 4A	0.7	14	0	
4B	0.7	14	0	
4C	0.7	14	0	

2 Cook

5/17/07
Clearing

Current Landfill

Location	CH_4 %	LEL %	H_2S ppm	Comment
SGM 5A	0.6	12	1	
5B	0.7	14	2	
5C	0.7	14	2	
SGM 6A	0.8	16	1	
6B	0.6	12	1	
6C	0	0	0	
SGM 7A	0	0	0	
7B	0	0	0	
7C	0	0	0	
SGM 8A	0	0	0	
8B	0	0	0	
8C	0	0	0	
SGM 9A	0	0	0	
9B	0	0	0	
9C	0	0	0	
SGM 10A	0	0	0	
10B	0	0	0	
10C	0	0	0	
SGM 11A	0	0	0	
11B	0	0	0	

3 Cook

5/17/07
clearing

Current Landfill

Location	CH_4 %	LEL %	H_2S ppm	Comment
SGM 12A	0	0	0	
12B	0	0	0	
SGM 13A	0.3	6	0	
13B	0	0	0	
SGM 14A	0	0	0	
14B	0	0	0	
SGM 15A	0	0	0	
15B	0	0	0	
SGM 16A	0	0	0	
16B	0	0	0	
SGM 17A	0	0	0	
17B	0	0	0	
SGM 18A	0	0	0	
18B	0	0	0	
SGM 19A	4	80	1	
19B	0	0	0	

5/17/07

4

Closure

Location	CH4%	LEL%	H2S ppm	Comment
GSGM1A	0	0	0	
1B	0	0	0	
1C	0	0	0	
GSGM2A	0	0	0	
2B	0	0	0	
2C	0	0	0	
GSGM3A	0	0	0	
3B	0	0	0	
GSGM4A	0	0	0	
4B	0	0	0	

5/17/07

5

Smith

1/26/07
Clear 70°F

Current LandFill

On time 1050 → 1140
Calibration Check of
Landtec GA-90 S#690
w/ H2S pod performed
Prior to use
Time onsite 1050

Location	CH4%	LEL%	H2S ppm	Comment
SGM1A	5.7	116.0	0.0	
SGM1B	6.0	118.0	1.0	
SGM1C	5.5	110.0	1.0	CH4% 5.5 LEL% 110
SGM2A	37.5	750.0	1.0	
2B	30.8	616.0	1.0	
2C	27.0	540.0	1.0	
SGM3A	22.4	448.0	0.0	
3B	40.0	800.0	0.0	
3C	39.7	794.0	0.0	
SGM4A	43.7	874.0	3.0	
4B	38.5	770.0	1.0	
4C	31.5	630.0	1.0	
SGM5A	32.6	652	0.0	
5B	29.4	588.0	1.0	
5C	22.4	444.0	1.0	

6 R Mertz

9/20/07
Clear 70°F

Current Landfill

1140 → 1500

Location	CH4%	LEL%	H2S ppm	Comment
SGM 6A	20.7	614	1.0	
6B	29.9	598	1.0	
6C	26.4	528	1.0	
SGM 7A	0.1	2.0	2.0	
7B	0.1	2.0	2.0	
7C	0.0	0.0	2.0	
SGM 8A	0.0	0.0	1.0	
8B	0.0	0.0	2.0	
8C	0.0	0.0	1.0	
SGM 9A	0.0	0.0	2.0	
9B	0.0	0.0	2.0	
9C	0.0	0.0	1.0	
SGM 10A	8.7	174.0	2.0	
SGM 10B	10.5	210.0	1.0	
10C	9.0	180.0	3.0	
SGM 11A	8.5	170.0	2.0	
11B	8.7	174.0	22.0	
SGM 12A	8.1	162	2.0	
12B	6.1	122.0	3.0	

7 R Mertz J. Sokra R. Legatto

9/20/07
Clear 70°F

Current Landfill

~~1500~~ → 9/20/07 1700 - 1930

Location	CH4%	LEL%	H2S ppm	Comment
SGM 13A	6.0	120.0	1.0	
SGM 13B	4.0	80	1.0	
SGM 14A	0.0	0.0	0.0	
SGM 14B	0.0	0.0	0.0	
SGM 15A	0.0	0.0	0.0	
SGM 15B	0.0	0.0	0.0	
SGM 16A	0.0	0.0	0.0	
16B	0.0	0.0	0.0	
SGM 17A	0.0	0.0	0.0	
SGM 17B	0.0	0.0	0.0	
SGM 18A	0.0	0.0	0.0	
SGM 18B	0.0	0.0	0.0	
SGM 19A	27.0	540	29.0	
SGM 19B	19.2	384	17.0	
G SGM 1A	0.0	0.0	0.0	
1B	0.0	0.0	0.0	
1C	0.0	0.0	0.0	
G SGM 2A	0.0	0.0	0.0	
2B	0.0	0.0	0.0	
2C	0.0	0.0	0.0	

3 Remote

9/20/07
Clear 70F

Current Landfill

1700 - 1730

Location	CH4%	LEL%	H2S ppm	Comment
GSGM3A	0.0	0.0	0.0	
3B	0.0	0.0	0.0	
GSGM4A	0.0	0.0	0.0	
4B	0.0	0.0	0.0	

9/20/07

9 Remote J. Millington

10/03/07 est time 1400 → est 1555
Clear
70F

Current Landfill

Calibration Check on Landtec 690 prior to Use

Location	Well ID	CH4%	LEL%	H2S ppm	Comment
SGM 1A	087-62	3.1	62%	3.0	
1B	087-78	1.6	32%	0.0	
1C	087-79	2.0	40%	0.0	
SGM 2A	087-63	17.4	348%	0.0	
2B	087-80	10.5	210%	0.0	
2C	087-81	1.1	22%	0.0	
SGM 3A	087-64	0.0	0%	0.0	
3B	087-82	0.0	0%	0.0	
3C	087-83	0.0	0.0	2.0	
SGM 4A	087-65	1.0	20.0	0.0	
4B	087-84	3.0	60.0	0.0	
4C	087-85	0.0	0.0	0.0	
SGM 5A	087-66	0.0	0.0	0.0	
5B	087-86	1.2	24.0	0.0	
5C	087-87	0.0	0.0	0.0	
SGM 6A	087-67	0.0	0.0	0.0	
6B	087-88	0.0	0.0	0.0	
6C	087-89	0.0	0.0	0.0	
SGM 7A	087-68	0.1	2.0	0.0	
7B	087-90	0.1	2.0	0.0	
7C	087-91	0.0	0.0	0.0	

10
Clear
35°F
12/21/07

R meter

On time 0940
Current Landfill

Location	well ID	CH4%	LEL%	H2S ppm	Comment
SGM 8A	087-69	0.0	0.0	0.0	
8B	087-92	0.0	0.0	0.0	
8C	087-93	0.0	0.0	0.0	
SGM 9A	087-70	0.0	0.0	0.0	
9B	087-94	0.0	0.0	0.0	
9C	087-95	0.0	0.0	0.0	
SGM 10A	087-71	0.0	0.0	0.0	
SGM 10B	087-96	0.0	0.0	0.0	
10C	087-97	0.0	0.0	0.0	
SGM 11A	087-72	0.0	0.0	0.0	
11B	087-98	0.0	0.0	0.0	
SGM 12A	087-73	27.5	550.0	39.0	
12B	087-99	27.5	550.0	0.0	
SGM 13A	087-74	0.0	0.0	0.0	
13B	087-100	0.0	0.0	0.0	
SGM 14A	087-75	0.0	0.0	0.0	
14B	087-101	0.0	0.0	0.0	
SGM 15A	088-111	0.0	0.0	0.0	
15B	088-114	0.0	0.0	0.0	

11
Clear
35°F
12/21/07

R meter
On time 0940
Current Landfill

Location	well ID	CH4%	LEL%	H2S ppm	Comment
SGM 16A	088-112	0.0	0.0	0.0	
16B	088-115	0.0	0.0	0.0	
SGM 17A	088-113	0.0	0.0	0.0	
17B	088-116	0.0	0.0	0.0	water in screen
SGM 18A	087-76	0.0	0.0	0.0	
18B	087-102	0.0	0.0	0.0	water in screen
SGM 19A	087-77	0.0	0.0	0.0	
19B	087-103	0.0	0.0	0.0	
GSGM 1A	No ID.	0.0	0.0	0.0	
1B	No ID.	0.0	0.0	0.0	
1C	No ID.	0.0	0.0	0.0	
GSGM 2A	No ID.	0.0	0.0	0.0	
2B	No ID.	0.0	0.0	0.0	
2C	No ID.	0.0	0.0	0.0	
GSGM 3A	No ID	0.0	0.0	0.0	
3B	NO I.D.	0.0	0.0	0.0	
GSGM 4A	No I.D.	0.0	0.0	0.0	
4B	NO I.D.	0.0	0.0	0.0	

[illegible] 9/2/07

Appendix C

Monthly Landfill Site Inspection Forms

BROOKHAVEN NATIONAL LABORATORY
CURRENT LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): ERIC KRAMER

Date of Inspection: 1-17-07

Purpose of Inspection: X Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site: ___ ___

Time off Site: ___ ___

Weather Conditions: ___

A. Inspection Checklist

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

B. Description of Further Action Requirements:

1. Location: ___

Observed Conditions: ___

Recommendations: ___

BROOKHAVEN NATIONAL LABORATORY
CURRENT LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Eric Kramer

Date of Inspection: 2-20-07

Purpose of Inspection: ✓ Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site: _____ _____

Time off Site: _____ _____

Weather Conditions: _____

A. Inspection Checklist

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

B. Description of Further Action Requirements:

1. Location: _____

Observed Conditions: _____

Recommendations: _____

BROOKHAVEN NATIONAL LABORATORY
CURRENT LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Eric Kramer

Date of Inspection: 3-27-97

Purpose of Inspection: X Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site: ___ ___

Time off Site: ___ ___

Weather Conditions: ___

A. Inspection Checklist

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

B. Description of Further Action Requirements:

1. Location: Drainage Channels; Asphalt

Observed Conditions: ___

Recommendations: Need Weed Wacking / Asphalt Repair

BROOKHAVEN NATIONAL LABORATORY
CURRENT LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Eric Kramer

Date of Inspection: 4-18-07

Purpose of Inspection: X Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site: ___ ___

Time off Site: ___ ___

Weather Conditions: ___

A. Inspection Checklist

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

B. Description of Further Action Requirements:

Location: Drainage - Need Weed Wacking

Observed Conditions: Asphalt Needs Repair

Recommendations:

BROOKHAVEN NATIONAL LABORATORY
CURRENT LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Eric Kramer

Date of Inspection: 5-14-07

Purpose of Inspection: X Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site: ___ ___

Time off Site: ___ ___

Weather Conditions: ___

A. Inspection Checklist

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

B. Description of Further Action Requirements:

1. Location: Drainage Ditches - Need weed wacking

Observed Conditions: Needs weed wacking / Asphalt Repair

Recommendations: Will put work order in

BROOKHAVEN NATIONAL LABORATORY
CURRENT LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Erin Kramer

Date of Inspection: 6-30-02

Purpose of Inspection: X Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site: ___ ___

Time off Site: ___ ___

Weather Conditions: ___

A. Inspection Checklist

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

B. Description of Further Action Requirements:

1. Location: Asphalt

Observed Conditions: Need Repair From Wender

Recommendations:

BROOKHAVEN NATIONAL LABORATORY
CURRENT LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Eric Kramer

Date of Inspection: 7-26-07

Purpose of Inspection: X Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site: ___ ___

Time off Site: ___ ___

Weather Conditions: ___

A. Inspection Checklist

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

B. Description of Further Action Requirements:

1. Location: Asphalt Road

Observed Conditions: Needs Repair

Recommendations:

BROOKHAVEN NATIONAL LABORATORY
CURRENT LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): E. Kraner

Date of Inspection: 8-15-07

Purpose of Inspection: X Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site: ___ ___

Time off Site: ___ ___

Weather Conditions: ___

A. Inspection Checklist

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

B. Description of Further Action Requirements:

1. Location: Asphalt

Observed Conditions: Needs Repair

Recommendations:

BROOKHAVEN NATIONAL LABORATORY
CURRENT LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Eric Kramer

Date of Inspection: 9-19-07

Purpose of Inspection: X Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site: ___ ___

Time off Site: ___ ___

Weather Conditions: ___

A. Inspection Checklist

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

B. Description of Further Action Requirements:

Location: Asphalt

Observed Conditions: Needs Repair

Recommendations:

BROOKHAVEN NATIONAL LABORATORY
CURRENT LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Eric Kraus

Date of Inspection: 10-25-07

Purpose of Inspection: X Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site: ___ ___

Time off Site: ___ ___

Weather Conditions: ___

A. Inspection Checklist

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

B. Description of Further Action Requirements:

Location: Asphalt Needs Repair in Places

Observed Conditions: ___

Recommendations: Will Contract out Asphalt Repair in Spring

BROOKHAVEN NATIONAL LABORATORY
CURRENT LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Eric Kramer

Date of Inspection: 11-18-07

Purpose of Inspection: ✓ Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site: ___ ___

Time off Site: ___ ___

Weather Conditions: ___

A. Inspection Checklist

	Component	Observed Condition: Excellent	Fair	Poor	Further Action Required: 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: See Last Month For Comments

Observed Conditions: ___

Recommendations: ___

BROOKHAVEN NATIONAL LABORATORY
CURRENT LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Eric Kramer

Date of Inspection: 12-14-07
Purpose of Inspection: ✓ Routine ___ Heavy Rainfall ___ Reported Incident
Time on Site: ___ ___
Time off Site: ___ ___
Weather Conditions: ___

A. Inspection Checklist

	Component	Observed Condition: Excellent	Fair	Poor	Further Action Required: 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: ___

Observed Conditions: See October Inspection

Recommendations: ___

BROOKHAVEN NATIONAL LABORATORY
LTRA SITE INSPECTION FORM

Location (AOC): Current Landfill and Wooded Wetland
Date of Inspection: 4/5/07
Name of Inspector(s): R. Howe, W. Dorsch, K. Conkling, E. Kramer, V. Racaniello
Purpose of Inspection: ☒ Routine (Scheduled Frequency of 2x/yr) ☐ Heavy Rainfall ☐ Reported Incident

A. Inspection Checklist

Component	Observed Condition				Further Action Req'd	
	Excell.	Fair	Poor	Not Applic.	Yes (describe)	No
1. Landfill Cap/Soil Covers/Wetlands:						
Vegetation (e.g. grass)	X					X
Soil (Cap/Cover/Fill)		X			Repair burrow areas	
Other:						
2. Drainage Structures:						
Standing Water	X				Signif. water in wetlands	X
Toe Drain	X					X
Drainage Channels	X				Remove small trees	
French Drains/Outfalls				X		X
Subsurface Drainage Pipes/Outfalls	X					X
Manholes				X		X
Berms				X		X
Roof Drains				X		X
Recharge Areas	X				No water in rech. basin	X
Other:						
3. Monitoring System:						
Soil Gas Wells	X					X
Groundwater Wells	X					X
Gas Vents	X					X
Other:						
4. Site Access:						
Asphalt Access Road		X			Seal cracks in roads	
Crushed-concrete Access Road	X					X
Fence	X					X
Gates/locks	X					X
Radiological Postings				X		X
Other: X					POC signs hung	X

5. Evidence of unauthorized work activities and/or unauthorized access has occurred? ☐ Yes ☒ No
If yes, describe evidence: _____

B. Description of Other Observations

Observed Conditions/Recommendations: Animal burrows were identified on the west and northeast slopes up to 12" deep. They penetrated past the top soil and into the protective soil layer, but not near the liner. Tractor/mower ruts also identified on slopes. Some netting disrupted by mower. PE to repair burrows/ruts under existing Work Order (Update: On 4/6/07 the animal burrows were repaired, see photos). Suspend grass cutting on slopes until further notice and monitor vegetation growth. A Work Order for removing the weeds in the asphalt road and drainage channels and sealing the cracks in the asphalt road is awaiting action by PE. Wooded wetlands look fine. No changes needed to LUIC factsheet.

BROOKHAVEN NATIONAL LABORATORY
LTRA SITE INSPECTION FORM

Location (AOC): Current Landfill and Wooded Wetland
Date of Inspection: 6/6/07
Name of Inspector(s): R. Howe
Purpose of Inspection: ☐ Routine (Sched. Frequency of 2x/yr) ☒ Heavy Rainfall (2.2") ☐ Reported Incident

A. Inspection Checklist

Component	Observed Condition				Further Action Req'd	
	Excell.	Fair	Poor	Not Applic.	Yes (describe)	No
1. Landfill Cap/Soil Covers/Wetlands:						
Vegetation (e.g. grass)		X			Need to weed whack	
Soil (Cap/Cover/Fill)		X				
Other:						
2. Drainage Structures:						
Standing Water	X				Signif. water in wetlands	X
Toe Drain	X					X
Drainage Channels	X				Remove small trees	
French Drains/Outfalls				X		X
Subsurface Drainage Pipes/Outfalls	X					X
Manholes				X		X
Berms				X		X
Roof Drains				X		X
Recharge Areas	X					X
Other:						
3. Monitoring System:						
Soil Gas Wells	X					X
Groundwater Wells	X					X
Gas Vents	X					X
Other:						
4. Site Access:						
Asphalt Access Road		X			Seal cracks in roads	
Crushed-concrete Access Road	X					X
Fence	X					X
Gates/locks	X					X
Radiological Postings				X		X
Other: X					POC signs hung	X

5. Evidence of unauthorized work activities and/or unauthorized access has occurred? ☐ Yes ☒ No
If yes, describe evidence: _____

B. Description of Other Observations

Observed Conditions/Recommendations: No impacts from rain event.

BROOKHAVEN NATIONAL LABORATORY
LTRA SITE INSPECTION FORM

Location (AOC): Current Landfill and Wooded Wetland
Date of Inspection: 11/16/07
Name of Inspector(s): R. Howe, W. Dorsch, K. Conkling, E. Kramer, M. Davis, T. Green
Purpose of Inspection: ☒ Routine (Scheduled Frequency of 2x/yr) ☐ Heavy Rainfall ☐ Reported Incident

A. Inspection Checklist

Component	Observed Condition				Further Action Req'd	
	Excell.	Fair	Poor	Not Applic.	Yes (describe)	No
1. Landfill Cap/Soil Covers/Wetlands:						
Vegetation (e.g. grass)	X					X
Soil (Cap/Cover/Fill)		X			Repair burrow areas	
Other:						
2. Drainage Structures:						
Standing Water	X				No water in wetland area	X
Toe Drain	X					X
Drainage Channels	X				Remove small trees	
French Drains/Outfalls				X		X
Subsurface Drainage Pipes/Outfalls	X					X
Manholes				X		X
Berms				X		X
Roof Drains				X		X
Recharge Areas	X				No water in rech. basin	X
Other:						
3. Monitoring System:						
Soil Gas Wells	X					X
Groundwater Wells	X					X
Gas Vents	X					X
Other:						
4. Site Access:						
Asphalt Access Road		X			Seal cracks in roads	
Crushed-concrete Access Road	X					X
Fence	X					X
Gates/locks	X					X
Radiological Postings				X		X
Other:						X

5. Evidence of unauthorized work activities and/or unauthorized access has occurred? ☐ Yes ☒ No
If yes, describe evidence: _____

B. Description of Other Observations

Observed Conditions/Recommendations: Several narrow animal burrows were identified on the south, east and north slopes, some up to 12" deep. They penetrated past the top soil and into the 24" protective soil layer, but not near the liner. Grass cutting on slopes should continue to be suspended until further notice. Monitor vegetation growth. PE to remove weeds and seal the cracks in the asphalt road, remove small trees in the toe drain and drainage channels, and repair animal burrows. Wooded wetlands look fine. No changes needed to LUIC factsheet. See photos.

BROOKHAVEN NATIONAL LABORATORY
FORMER LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Eric Kramer

Date of Inspection: 1-17-07

Purpose of Inspection: X 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
1.0	**Landfill Cap:**					
	Vegetation		X		X	
	Cap		X		X	
	Gas Vents	X				X
2.0	**Drainage Structures:**					
	Toe Drain	X				X
	Drainage Channels	X				X
	French Drains/Outfalls	X				X
	Subsurface Drainage Pipes/Outfalls	X				X
	Manholes	X				X
	Recharge Areas	X				X
3.0	**Monitoring System:**					
	Soil Gas Wells	X				X
	Groundwater Wells	X				X
4.0	**Site Access:**					
	Asphalt Access Road	X				X
	Crushed-Concrete Access Road	X				X

B. Description of Further Action Requirements:

1. Location: Top of Landfill

Observed Conditions: Rote on Landfill

Recommendations: Work order sent

BROOKHAVEN NATIONAL LABORATORY
FORMER LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Eric Kramer

Date of Inspection: 2-20-07

Purpose of Inspection: X Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site:

Time off Site:

Weather Conditions:

A. Inspection Checklist

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

B. Description of Further Action Requirements:

1. Location: Top of Landfill

Observed Conditions: Ruts from Tires

Recommendations: Work Order Id

BROOKHAVEN NATIONAL LABORATORY
FORMER LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Eric Kramer

Date of Inspection: 3-27-07

Purpose of Inspection: ___ Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site:

Time off Site:

Weather Conditions:

A. Inspection Checklist

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

B. Description of Further Action Requirements:

1. Location: Top of Landfill

Observed Conditions: Ruts from Tires

Recommendations: Work order In

BROOKHAVEN NATIONAL LABORATORY
FORMER LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Eric Kramer

Date of Inspection: 4-13-07

Purpose of Inspection: ___ Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site:

Time off Site:

Weather Conditions:

A. Inspection Checklist

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

B. Description of Further Action Requirements:

1. Location: Top of Landfill

Observed Conditions: Ruts filled in with Sand. Need to be replaced by Topsoil. Some weed whacking needed in Drains

Recommendations:

BROOKHAVEN NATIONAL LABORATORY
FORMER LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Eric Kramer

Date of Inspection: 5-14-07

Purpose of Inspection: X Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site: _____

Time off Site: _____

Weather Conditions: _____

A. Inspection Checklist

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

B. Description of Further Action Requirements:

1. Location: Drains - Some weed whacking Needed

Observed Conditions: _____

Recommendations: _____

BROOKHAVEN NATIONAL LABORATORY
FORMER LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Eric Kramer

Date of Inspection: 6-30-07

Purpose of Inspection: X Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site:

Time off Site:

Weather Conditions:

A. Inspection Checklist

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

B. Description of Further Action Requirements:

1. Location:

Observed Conditions: Weed whacking and mowing has been completed

Recommendations:

BROOKHAVEN NATIONAL LABORATORY
FORMER LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Eric Kramer

Date of Inspection: 7-26-07

Purpose of Inspection: X Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site: _____

Time off Site: _____

Weather Conditions: _____

A. Inspection Checklist

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

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: 8-15-07

Purpose of Inspection: X Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site: _____

Time off Site: _____

Weather Conditions: _____

A. Inspection Checklist

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

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: 9-19-07

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	X				X
	Cap	X				X
	Gas Vents	X				X
2.0	**Drainage Structures:**					
	Toe Drain	X				X
	Drainage Channels	X				X
	French Drains/Outfalls					
	Subsurface Drainage Pipes/Outfalls	X				X
	Manholes	X				X
	Recharge Areas	X				X
3.0	**Monitoring System:**					
	Soil Gas Wells	X				X
	Groundwater Wells	X				X
4.0	**Site Access:**					
	Asphalt Access Road	X				X
	Crushed-Concrete Access Road	X				X

B. Description of Further Action Requirements:

1. Location: _____

Observed Conditions: _____

Recommendations: _____

BROOKHAVEN NATIONAL LABORATORY
FORMER LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): E. Kane

Date of Inspection: 10-25-07

Purpose of Inspection: ✓ Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site:

Time off Site:

Weather Conditions:

A. Inspection Checklist

	Component	Observed Condition: Excellent	Fair	Poor	Further Action Required: 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: 11-18-07

Purpose of Inspection: ✓ Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site: _____

Time off Site: _____

Weather Conditions: _____

A. Inspection Checklist

	Component	Observed Condition: Excellent	Fair	Poor	Further Action Required: 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: 12-14-07

Purpose of Inspection: ___ Routine ___ Heavy Rainfall ___ Reported Incident

Time on Site:

Time off Site:

Weather Conditions: Cold, Sunny

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
LTRA SITE INSPECTION FORM

Location (AOC): Former Landfill Area (includes the former and interim landfills, and slit trench)
Date of Inspection: 4/18/07
Name of Inspector(s): R. Howe, W. Dorsch, K. Klaus
Purpose of Inspection: ☒ Routine (Scheduled Frequency of 2x/yr) ☐ Heavy Rainfall ☐ Reported Incident

A. Inspection Checklist

Component	Observed Condition				Further Action Req'd	
	Excell.	Fair	Poor	Not Applic.	Yes (describe)	No
1. Landfill Cap/Soil Covers/Wetlands:						
Vegetation (e.g. grass)	X					X
Soil (Cap/Cover/Fill)		X			Add topsoil-seed to ruts	
Other:						
2. Drainage Structures:						
Standing Water	X				Little water in ruts	X
Toe Drain	X					X
Drainage Channels	X				Remove vegetation	
French Drains/Outfalls	X					X
Subsurface Drainage Pipes/Outfalls	X					X
Manholes				X		X
Berms				X		X
Roof Drains				X		X
Recharge Areas	X					X
Other:						
3. Monitoring System:						
Soil Gas Wells	X					X
Groundwater Wells	X					X
Gas Vents	X					X
Other:						
4. Site Access:						
Asphalt Access Road	X					X
Crushed-concrete Access Road	X					X
Fence				X		X
Gates/locks	X					X
Radiological Postings				X		X
Other:						

5. Evidence of unauthorized work activities and/or unauthorized access has occurred? ☐ Yes ☒ No
If yes, describe evidence: _____

B. Description of Other Observations

Observed Conditions/Recommendations: Have PE remove some sand, add top soil, and seed the tractor ruts on the NE portion of the landfill soil cover. Have PE remove weeds and small trees from drainage channels. Work Orders are in place. (see photos)

BROOKHAVEN NATIONAL LABORATORY
LTRA SITE INSPECTION FORM

Location (AOC): Former Landfill Area (includes the former and interim landfills, and slit trench)
Date of Inspection: 6/6/07
Name of Inspector(s): R. Howe
Purpose of Inspection: ☐ Routine (Sched. Frequency of 2x/yr) ☐ Heavy Rainfall (2.2") ☐ Reported Incident

A. Inspection Checklist

Component	Observed Condition				Further Action Req'd	
	Excell.	Fair	Poor	Not Applic.	Yes (describe)	No
1. Landfill Cap/Soil Covers/Wetlands:						
Vegetation (e.g. grass)	X				Need to weed whack	
Soil (Cap/Cover/Fill)		X			Add topsoil-seed to ruts	
Other:						
2. Drainage Structures:						
Standing Water	X				No standing water	X
Toe Drain	X					X
Drainage Channels	X				Remove vegetation	
French Drains/Outfalls	X					X
Subsurface Drainage Pipes/Outfalls	X					X
Manholes				X		X
Berms				X		X
Roof Drains				X		X
Recharge Areas	X					X
Other:						
3. Monitoring System:						
Soil Gas Wells	X					X
Groundwater Wells	X					X
Gas Vents	X					X
Other:						
4. Site Access:						
Asphalt Access Road	X					X
Crushed-concrete Access Road	X					X
Fence				X		X
Gates/locks	X					X
Radiological Postings				X		X
Other:						

5. Evidence of unauthorized work activities and/or unauthorized access has occurred? ☐ Yes ☒ No
If yes, describe evidence: _____

B. Description of Other Observations

Observed Conditions/Recommendations: No impacts from rain event.

BROOKHAVEN NATIONAL LABORATORY
LTRA SITE INSPECTION FORM

Location (AOC): Former Landfill Area (includes the former and interim landfills, and slit trench)
Date of Inspection: 11/9/07
Name of Inspector(s): R. Howe, M. Davis, R. Lee
Purpose of Inspection: ☒ Routine (Scheduled Frequency of 2x/yr) ☐ Heavy Rainfall ☐ Reported Incident

A. Inspection Checklist

Component	Observed Condition				Further Action Req'd	
	Excell.	Fair	Poor	Not Applic.	Yes (describe)	No
1. Landfill Cap/Soil Covers/Wetlands:						
Vegetation (e.g. grass)		X			Remove small trees	
Soil (Cap/Cover/Fill)		X			Add topsoil-seed to ruts	
Other:						
2. Drainage Structures:						
Standing Water	X				No standing water	X
Toe Drain	X					X
Drainage Channels		X			Remove vegetation	
French Drains/Outfalls	X					X
Subsurface Drainage Pipes/Outfalls	X					X
Manholes				X		X
Berms				X		X
Roof Drains				X		X
Recharge Areas	X					X
Other:						
3. Monitoring System:						
Soil Gas Wells	X					X
Groundwater Wells	X					X
Gas Vents	X					X
Other:						
4. Site Access:						
Asphalt Access Road	X					X
Crushed-concrete Access Road	X					X
Fence				X		X
Gates/locks	X					X
Radiological Postings				X		X
Other:						

5. Evidence of unauthorized work activities and/or unauthorized access has occurred? ☐ Yes ☒ No
If yes, describe evidence: _____

B. Description of Other Observations

Observed Conditions/Recommendations: Have PE add top soil and seed the tractor ruts on the NE portion of the Former Landfill soil cover. Have PE remove small trees from drainage channels and small trees on borders of Interim Landfill and Slit Trench. (see photos)

BROOKHAVEN NATIONAL LABORATORY

LTRA SITE INSPECTION FOLLOWUP ACTION SUMMARY

Maintenance for Location (AOC): Current Landfill

Date of Repair: 4/6/07

Condition to be repaired: Repair animal burrow areas on slope.

Description of Work Performed and by Who:

- PE fixed the animal burrow areas by adding soil. Check grass regrowth in spring/summer 2007.

BROOKHAVEN NATIONAL LABORATORY

LTRA SITE INSPECTION FOLLOWUP ACTION SUMMARY

Maintenance for Location (AOC): Former Landfill Area

Date of Repair: 2/8/07

Condition to be repaired: _Filled in tire ruts at FLF

Description of Work Performed and by Who: Via WO EP178105?, Filled in ruts with sand as a temporary measure until spring (couldn't use top soil since it was frozen). In spring, remove some sand and add topsoil and seed (see attached pictures).

BROOKHAVEN NATIONAL LABORATORY

LTRA SITE INSPECTION FOLLOWUP ACTION SUMMARY

Maintenance for Location (AOC): Current and Former Landfill Area

Date of Repair: 3/07 – 5/07

Condition to be repaired: Broken or missing handles on the soil gas well covers.

Description of Work Performed and by Who: BNL Sampling Team installed new soil gas well cover handles on those that were broken.

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	53	49.5	64.8
SGMW-02B	55.5	52.7	51.4	59
SGMW-02C	55.6	56.4	43.8	58
SGMW-03A	66	61.2	54	62.8
SGMW-03B	62	59.5	45	61.6
SGMW-03C	57.8	58.1	54	57.9
SGMW-04A	49.7	0	48.9	52.4
SGMW-04B	53	0	49.4	54.3
SGMW-04C	52.8	0	48.6	55.9
SGMW-05A	50.1	49.4	46.5	52
SGMW-05B	50.9	47.5	42	53.7
SGMW-05C	48.7	46.9	30.4	51.6
SGMW-06A	40.1	44.2	0.8	0
SGMW-06B	44	46	41.9	0
SGMW-06C	45.2	46.7	42	0
SGMW-07A	8.6	10.4	14.5	6.2
SGMW-07B	76	11.6	0.2	0.8
SGMW-07C	8.4	11.7	3.2	8.7
SGMW-08A	0	0	0.7	0
SGMW-08B	0	0	0	0
SGMW-08C	0	0	0	0
SGMW-09A	0.3	0	0	2.8
SGMW-09B	1.2	0	0	6.7
SGMW-09C	2.5	0.3	0	5.8
SGMW-10A	16.7	22.8	23	22.7
SGMW-10B	16.6	14.3	15.8	32.5
SGMW-10C	14	18.2	11.4	29.2
SGMW-11A	16.4	26.8	23.5	39.3
SGMW-11B	15.7	25.6	25	29.6
SGMW-12A	57.5	0	36.9	57.2
SGMW-12B	51.3	0	32.3	55.7
SGMW-13A	46.3	0	18.7	0
SGMW-13B	47.5	0	26	0
SGMW-14A	34.9	0	18.2	38.6
SGMW-14B	41.4	44.2	16	0
SGMW-15A	0	0.6	3.6	3.4
SGMW-15B	12.7	0	0	0
SGMW-16A	0	0	0	0
SGMW-16B	0	0	0.7	0
SGMW-17A	0	0	0	0
SGMW-17B	0	0	0	0
SGMW-18A	8.6	0	0	7.1
SGMW-18B	0.6	0	0	0
SGMW-19A	40.8	29	16	52.5
SGMW-19B	36.7	30.1	6.9	46.5
GSGM-1A	NA	◇	0	◇
GSGM-1B	NA	◇	0	◇
GSGM-1C	NA	◇	0	◇
GSGM-2A	NA	0	0	◇
GSGM-2B	NA	0	0	◇
GSGM-2C	NA	0	0	◇
GSGM-3A	NA	0	◇	◇
GSGM-3B	NA	0	0	◇
GSGM-4A	NA	0	0	◇
GSGM-4B	NA	0	0	◇

◇ No measurement was recorded.

NA Well was not yet installed.

1997 CURRENT LANDFILL SOIL GAS MONITORING SUMMARY TABLE

1998 Environmental Monitoring Report

Current and Former Landfills - Brookhaven National Laboratory

Soil Gas Monitoring Well	Methane (% By Volume)			Hydrogen sulfide (ppm By Volume)		
	March-97	August-97	November-97	March-97	August-97	November-97
SGMW-01A	33.4	17.1	16.4	5	5	8
SGMW-01B	32.5	17.2	15.8	1	4	7
SGMW-01C	34.2	15.9	14.5	1	0	1
SGMW-02A	62.4	47.7	53.2	40	39	137
SGMW-02B	64.7	57	56.7	9	17	43
SGMW-02C	62.6	56.6	55.6	2	0	0
SGMW-03A	65.2	55.7	52.2	3	24	15
SGMW-03B	67.5	55.8	57	7	5	9
SGMW-03C	62.5	55.8	57	3	6	7
SGMW-04A	57.6	53.9	52.5	6	52	6
SGMW-04B	58.2	52.5	55.8	7	29	25
SGMW-04C	58.2	52.5	54.5	6	14	15
SGMW-05A	55.2	47.5	50.5	6	44	29
SGMW-05B	54.4	43.3	45.5	10	21	20
SGMW-05C	53.6	37.5	38.7	3	1	2
SGMW-06A	42.6	44	42.9	7	33	3
SGMW-06B	45	43.5	44.4	10	16	17
SGMW-06C	46	42	43.1	7	13	15
SGMW-07A	10.1	2.3	0	3	0	0
SGMW-07B	8.8	0	0	5	0	6
SGMW-07C	9.9	4.1	0.2	3	0	9
SGMW-08A	0	0	0	1	0	5
SGMW-08B	0	0	0	0	0	9
SGMW-08C	0	0	0	0	0	10
SGMW-09A	0.3	0	0	0	0	15
SGMW-09B	3.4	0	0	0	0	14
SGMW-09C	4.6	0.8	1	0	0	12
SGMW-10A	20.5	28	19	1	19	13
SGMW-10B	19.8	24.5	24	1	0	5
SGMW-10C	0	21.7	20.6	0	0	18
SGMW-11A	24.3	27.6	25.2	20	60	56
SGMW-11B	0	27.8	20.5	0	74	32
SGMW-12A	55.9	48	42	21	89	98
SGMW-12B	0	46.5	44.3	0	0	25
SGMW-13A	28.7	45.2	0.7	2	16	19
SGMW-13B	0	0.4	38.9	0	0	27
SGMW-14A	39.1	20.1	5.2	6	10	24
SGMW-14B	0	0	13.5	0	0	13
SGMW-15A	1.8	0.2	2.5	0	0	14
SGMW-15B	0	0	2.6	0	0	14
SGMW-16A	0	31.7	1.1	0	0	9
SGMW-16B	0	◇	0	0	◇	0
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.

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1998 Current Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume) February-98	Methane (% By Volume) May-98	Methane (% By Volume) August-98	Methane (% By Volume) December-98	Hydrogen sulfide (ppm By Volume) February-98	Hydrogen sulfide (ppm By Volume) May-98	Hydrogen sulfide (ppm By Volume) August-98	Hydrogen sulfide (ppm By Volume) December-98	Soil Gas Monitoring Well
SGMW-01A	26.3	28.1	24.2	20.4	5	0	0	0	SGMW-01A
SGMW-01B	25.1	30.1	28	19.7	4	0	0	4	SGMW-01B
SGMW-01C	24	29	25	17.7	1	2	1	2	SGMW-01C
SGMW-02A	67.6	65.3	70.4	51.1	92	3	4	8	SGMW-02A
SGMW-02B	64.1	66	66	54.9	93	5	5	4	SGMW-02B
SGMW-02C	61.5	64.7	65	53.1	11	0	0	0	SGMW-02C
SGMW-03A	20.4	80	78.6	2.5	10	3	2	1	SGMW-03A
SGMW-03B	78.6	74	74	51.1	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	58.9	55.8	58	36.1	6	4	3	0	SGMW-04B
SGMW-04C	60.5	67.5	57.5	0	17	5	2	0	SGMW-04C
SGMW-05A	48.1	52.4	50	48.9	3	5	5	2	SGMW-05A
SGMW-05B	54	52.1	55.4	47.7	3	4	3	3	SGMW-05B
SGMW-05C	49	50.3	48	41.5	0	3	2	0	SGMW-05C
SGMW-06A	27.3	44.1	38.3	17.5	2	7	8	0	SGMW-06A
SGMW-06B	44.8	46.5	7.8	47.2	15	0	0	1	SGMW-06B
SGMW-06C	46.3	48	6.4	0	0	0	3	0	SGMW-06C
SGMW-07A	2.2	8.9	7.2	0	0	3	4	0	SGMW-07A
SGMW-07B	0	6.5	7	0	0	4	3	0	SGMW-07B
SGMW-07C	4.9	6.5	8.5	0.1	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	5	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	17.8	18	0	0	0	SGMW-11A
SGMW-11B	19.8	29	25.3	26.4	9	0	0	0	SGMW-11B
SGMW-12A	53.7	57.2	50.4	33.9	37	2	1	3	SGMW-12A
SGMW-12B	50.3	0.2	3	39.2	11	3	4	0	SGMW-12B
SGMW-13A	7	61.5	59	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	8.7	60	0	0	1	SGMW-19A
SGMW-19B	36.7	4	4	12	5	1	1	4	SGMW-19B

Soil Gas Monitoring Well	Methane (% By Volume) February-98	Methane (% By Volume) May-98	Methane (% By Volume) August-98	Methane (% By Volume) December-98
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-98	Hydrogen sulfide (ppm By Volume) August-98	Hydrogen sulfide (ppm By Volume) December-98	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	19.5	17.9	19.8	390	360	394	0	<>	2	SGMW-01A
SGMW-01B	18.6	18.1	18.8	370	362	372	0	<>	3	SGMW-01B
SGMW-01C	17.2	14.2	16.7	344	288	334	0	<>	1	SGMW-01C
SGMW-02A	52.4	52.6	55.8	1048	1052	1116	13	<>	25	SGMW-02A
SGMW-02B	54.4	55	58.7	1088	1100	1134	3	<>	11	SGMW-02B
SGMW-02C	55.3	55.2	57.5	1106	1104	1150	0	<>	3	SGMW-02C
SGMW-03A	59.6	41.5	2.3	1192	830	60	3	<>	1	SGMW-03A
SGMW-03B	61.4	58.3	61.3	1228	1168	1226	0	<>	4	SGMW-03B
SGMW-03C	59.9	53.3	59.5	1198	1066	1190	0	<>	3	SGMW-03C
SGMW-04A	53.8	0	39.1	1076	0	782	0	<>	2	SGMW-04A
SGMW-04B	53.5	53.5	52.8	1070	1070	1056	0	<>	7	SGMW-04B
SGMW-04C	52.4	55.2	48.7	1048	1104	974	2	<>	9	SGMW-04C
SGMW-05A	47.0	51.1	47.4	940	1022	944	0	<>	6	SGMW-05A
SGMW-05B	45	51.5	48	900	1030	964	0	<>	4	SGMW-05B
SGMW-05C	39.7	35	38.3	794	702	768	0	<>	4	SGMW-05C
SGMW-06A	41.1	0.1	39.2	826	2	784	0	<>	2	SGMW-06A
SGMW-06B	43.2	43.2	46.8	862	862	934	0	<>	7	SGMW-06B
SGMW-06C	43.1	0	46.8	862	0	928	0	<>	5	SGMW-06C
SGMW-07A	3.3	0.1	0	66	2	0	0	<>	2	SGMW-07A
SGMW-07B	0.9	0	0	18	0	0	0	<>	2	SGMW-07B
SGMW-07C	4.4	0.17	1.3	88	34	26	0	<>	2	SGMW-07C
SGMW-08A	0	0	0	0	0	0	0	<>	2	SGMW-08A
SGMW-08B	0	0	0	0	0	0	0	<>	2	SGMW-08B
SGMW-08C	0	0	0	0	0	0	0	<>	3	SGMW-08C
SGMW-09A	0	0	0	0	0	0	0	<>	3	SGMW-09A
SGMW-09B	0	0	0	0	0	0	0	<>	3	SGMW-09B
SGMW-09C	0	0	0.1	0	0	2	<>	<>	3	SGMW-09C
SGMW-10A	21.4	15.7	20	428	314	400	1	<>	2	SGMW-10A
SGMW-10B	19.8	26.7	21.1	396	532	420	0	<>	3	SGMW-10B
SGMW-10C	17.0	22.6	16.1	350	454	324	0	<>	3	SGMW-10C
SGMW-11A	19.3	31.2	19.9	386	624	398	9	<>	3	SGMW-11A
SGMW-11B	19.2	25.6	14.6	384	512	294	10	<>	3	SGMW-11B
SGMW-12A	46.8	45.1	47.1	936	902	942	30	<>	9	SGMW-12A
SGMW-12B	44.2	46.5	47.6	884	930	954	5	<>	3	SGMW-12B
SGMW-13A	53.1	0.1	0	1062	2	0	12	<>	0	SGMW-13A
SGMW-13B	0.2	0.2	24.5	4	4	492	0	<>	2	SGMW-13B
SGMW-14A	7.6	5.9	7.1	152	118	142	0	<>	5	SGMW-14A
SGMW-14B	0	22.6	3.4	0	452	68	0	<>	2	SGMW-14B
SGMW-15A	0	1.6	2.9	0	32	58	0	<>	3	SGMW-15A
SGMW-15B	0	0.1	0	0	2	0	0	<>	2	SGMW-15B
SGMW-16A	0	0.1	0	0	2	0	0	<>	2	SGMW-16A
SGMW-16B	0	0.1	0	0	2	0	0	<>	2	SGMW-16B
SGMW-17A	screen in water table	0.1	0	<>	2	0	<>	<>	2	SGMW-17A
SGMW-17B	screen in water table	0.1	0	<>	2	0	<>	<>	2	SGMW-17B
SGMW-18A	0	0.1	0	0	2	0	0	<>	2	SGMW-18A
SGMW-18B	0	1	0.4	0	20	8	0	<>	1	SGMW-18B
SGMW-19A	25.1	23	20.3	502	460	406	16	<>	15	SGMW-19A
SGMW-19B	30.1	27.3	20.5	602	544	410	8	<>	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	GSGM-1A
GSGM-1B	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	<>	2	GSGM-2A
GSGM-2B	0	0	0	0	0	0	0	<>	1	GSGM-2B
GSGM-2C	0	0	0	0	0	0	0	<>	1	GSGM-2C
GSGM-3A	0	0	0	0	0	0	0	<>	0	GSGM-3A
GSGM-3B	0	0	0	0	0	0	0	<>	0	GSGM-3B
GSGM-4A	0	0	0	0	0	0	0	<>	0	GSGM-4A
GSGM-4B	0	0	0	0	0	0	0	<>	0	GSGM-4B

<> 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	20.5	21.0	10.0	402	410	422	300	0	0	4	0	SGMW-01A
SGMW-01B	19.3	20.3	11.2	14.3	386	406	222	290	1	0	1	0	SGMW-01B
SGMW-01C	17.5	13.7	11.6	13.0	350	276	230	260	0	0	1	0	SGMW-01C
SGMW-02A	49.5	54.0	50	54.4	990	(1080)	(1000)	(1088)	1	3	2	16	SGMW-02A
SGMW-02B	55.1	57.1	56.3	58.2	(1102)	(1142)	(1120)	(1124)	4	20	9	11	SGMW-02B
SGMW-02C	58.0	48.3	56.9	58.0	(1120)	966	(1120)	(1120)	2	0	4	5	SGMW-02C
SGMW-03A	49.3	62.8	64.0	57.8	986	(1250)	(1280)	(1152)	1	8	0	3	SGMW-03A
SGMW-03B	57.0	67.0	60.2	57.4	(1140)	(1340)	(1200)	(1148)	1	4	0	2	SGMW-03B
SGMW-03C	57.3	61.2	62.0	58.7	(1146)	(1224)	(1240)	(1134)	1	4	0	4	SGMW-03C
SGMW-04A	30.7	61.9	2.8	51.6	614	(1030)	62	(1132)	1	4	1	1	SGMW-04A
SGMW-04B	46.9	52.8	48.0	50.0	978	(1050)	922	(1000)	2	2	0	2	SGMW-04B
SGMW-04C	43.0	62.1	43.0	45.2	860	(1042)	856	908	4	0	1	8	SGMW-04C
SGMW-05A	47.7	49.4	47.5	47.2	954	988	950	944	1	0	8	8	SGMW-05A
SGMW-05B	44.8	50.0	48.2	43.9	892	(1000)	964	878	1	0	5	6	SGMW-05B
SGMW-05C	36.7	43.7	40.7	38.7	734	874	814	738	2	1	0	6	SGMW-05C
SGMW-06A	33.0	41.7	16.0	44.0	660	834	320	880	0	4	0	2	SGMW-06A
SGMW-06B	43.0	45.5	40.0	46.0	860	910	800	920	1	2	2	3	SGMW-06B
SGMW-06C	44.3	45.3	33.7	45.8	886	908	674	916	0	1	1	6	SGMW-06C
SGMW-07A	0.3	5.9	0.9	0.0	6	118	18	0	0	0	1	1	SGMW-07A
SGMW-07B	0	0.8	0.0	0.0	0	12	0	0	0	0	1	2	SGMW-07B
SGMW-07C	2.6	3.0	1.8	0.5	52	60	36	10	0	0	2	2	SGMW-07C
SGMW-08A	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	1	0	0	3	SGMW-08B
SGMW-08C	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	1	0	1	3	SGMW-09A
SGMW-09B	0	0	0	0.0	0	0	0	0	1	0	1	3	SGMW-09B
SGMW-09C	0	0	0	0.0	0	0	0	0	1	0	0	3	SGMW-09C
SGMW-10A	9.3	26.1	23.7	17.0	186	522	474	340	1	3	2	3	SGMW-10A
SGMW-10B	13.5	21.2	26.1	15.5	270	424	522	310	1	0	2	2	SGMW-10B
SGMW-10C	10.6	19.5	22.2	12.8	212	390	444	256	1	0	2	3	SGMW-10C
SGMW-11A	10.1	27.1	54.8	13.6	202	342	(1080)	272	2	20	10	7	SGMW-11A
SGMW-11B	6.8	26.4	54.3	9.2	136	528	(1088)	184	2	21	2	8	SGMW-11B
SGMW-12A	43.9	60.0	64.4	46.5	878	(1200)	(1288)	930	2	63	2	7	SGMW-12A
SGMW-12B	42.6	49.6	46.1	47.0	852	998	962	940	1	0	0	5	SGMW-12B
SGMW-13A	23.4	57.6	63.6	40.8	468	(1152)	(1278)	998	1	0	2	2	SGMW-13A
SGMW-13A	45.1	0	0	40.2	902	0	0	884	1	0	0	67	SGMW-13A
SGMW-14A	2.7	20.2	16.8	12.1	54	404	316	242	1	0	8	7	SGMW-14A
SGMW-14B	0	0	0	22.3	0	0	0	446	1	0	0	31	SGMW-14B
SGMW-15A	2.0	0	1.6	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	0	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	6	0	0	0	0	4	SGMW-18B
SGMW-19A	12.9	38.9	34.9	14.2	258	778	698	284	4	2	18	13	SGMW-19A
SGMW-19B	16.7	34.6	32.8	10.0	334	692	656	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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2001 Landfills Environmental Monitoring Report
2001 Current 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	22.2	23.1	18.3	440	462	368	2	11	0
SGMW-01B	2.0	0.0	17.1	434	0	354	4	0	0
SGMW-01C	15.3	20.4	15.3	308	408	808	0	0	0
SGMW-02A	59.9	52.9	67.9	1208	1058	>1,000	140	57	49
SGMW-02B	58.0	0.0	55.3	1108	0	>1,000	101	1	0
SGMW-02C	0.0	0.0	53.2	0	0	>1,000	1	0	0
SGMW-03A	39.0	51.0	52.0	780	1158	>1,000	5	14	43
SGMW-03B	67.2	66.5	64.7	1344	1330	>1,000	28	21	0
SGMW-03C	0.2	0.0	63.5	4	0	>1,000	1	2	0
SGMW-04A	42.0	3.0	62.0	858	78	>1,000	2	4	32
SGMW-04B	50.0	53.0	62.0	1016	1072	>1,000	3	15	14
SGMW-04C	0.0	0.2	60.0	0	4	>1,000	1	2	0
SGMW-05A	45.0	40.2	57.5	912	804	>1,000	3	2	0
SGMW-05B	43.9	0.2	52.0	878	4	>1,000	2	3	0
SGMW-05C	0.0	0.1	45.3	0	2	908	2	3	0
SGMW-06A	10.4	0.3	54.4	388	168	>1,000	3	4	84
SGMW-06B	0.0	0.2	53.0	0	4	>1,000	2	4	5
SGMW-06C	0.0	0.1	52.0	0	2	>1,000	2	3	0
SGMW-07A	0.8	5.1	0.2	12	102	4	4	0	0
SGMW-07B	0	0.3	0.2	0	6	4	2	3	0
SGMW-07C	0.0	0.0	1.1	10	0	24	3	1	0
SGMW-08A	0	0	.2	0	0	4	4	1	0
SGMW-08B	0	0	.2	0	0	4	2	2	0
SGMW-08C	0	0	.3	0	0	6	2	1	0
SGMW-09A	0	.2	0	0	4	0	1	3	0
SGMW-09B	0	.2	0	0	4	0	1	2	0
SGMW-09C	0	.2	0	0	4	0	0	6	0
SGMW-10A	10.0	18.0	20.0	218	338	590	4	2	0
SGMW-10B	11.2	18.0	25.5	224	378	612	2	3	0
SGMW-10C	8.0	13.2	18.0	160	284	378	2	2	0
SGMW-11A	8.9	21.5	20.3	178	430	568	18	43	2
SGMW-11B	6.1	19.3	28.0	122	388	540	0	27	38
SGMW-12A	49.5	53.4	53.7	990	1069	1074	1	95	168
SGMW-12B	44.4	0.2	50.1	668	4	1002	3	0	101
SGMW-13A	10.3	55.1	55.7	328	1302	1114	0	5	0
SGMW-13A	8.9	.2	0	18	4	0	0	2	0
SGMW-14A	17.4	6.2	7.4	348	124	150	0	4	0
SGMW-14B	0	0	0	0	0	0	0	3	0
SGMW-15A	0.0	.3	0.0	0	0	0	2	4	0
SGMW-15B	0	0	0	0	0	0	2	0	0
SGMW-16A	0	0	0	0	0	0	1	0	0
SGMW-16B	0	0	0	0	0	0	0	4	0
SGMW-17A	0	0	0	0	0	0	0	1	0
SGMW-17B	0	0	0	0	0	0	0	0	0
SGMW-18A	0	0	0	0	0	0	0	1	0
SGMW-18B	0	0	0.0	2	0	0	0	0	0
SGMW-19A	21.0	38.2	20.0	238	764	572	3	200	0
SGMW-19B	20.3	38.0	28.1	406	736	524	5	63	0
GSGM-1A	0	0	0	0	0	0	0	0	0
GSGM-1B	0	0	0	0	0	0	0	0	0
GSGM-1C	0	0	0	0	0	0	0	0	0
GSGM-2A	0	0	0	0	0	0	1	0	0
GSGM-2B	0	0	0	0	0	0	0	0	0
GSGM-2C	0	0	0	0	0	0	1	0	0
GSGM-3A	0	0	0	0	0	0	0	0	0
GSGM-3B	0	0	0	0	0	0	0	0	0
GSGM-4A	0	0	0	0	0	0	1	0	0
GSGM-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) March-02	Methane (% By Volume) June-02	Methane (% By Volume) Sept-02, Oct-02	Methane (% By Volume) December-02	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) March-02	Hydrogen Sulfide (ppm by volume) June-02	Hydrogen Sulfide (ppm by volume) Sept-02, Oct-02	Hydrogen Sulfide (ppm by volume) December-02	Soil Gas Monitoring Well
SGMW-01A	13.8	14.1	9.8	18.0	270	282	192	354	0	7	10	3	SGMW-01A
SGMW-01B	13.7	11.5	8.2	16.9	274	230	164	334	0	1	2	14	SGMW-01B
SGMW-01C	10.8	8.6	5.6	11.6	216	172	110	234	0	1	1	4	SGMW-01C
SGMW-02A	46.0	49.8	46.2	56.6	920	992	964	(1130)	64	132	141	0	SGMW-02A
SGMW-02B	17.1	28.5	34.6	43.2	342	570	692	864	0	2	8	40	SGMW-02B
SGMW-02C	37.6	43.8	62.0	61.7	750	876	(1040)	(1034)	0	24	58	77	SGMW-02C
SGMW-03A	36.5	53.6	54.1	41.4	730	(1072)	(1082)	828	8	148	0	15	SGMW-03A
SGMW-03B	57.0	62.4	69.8	65.9	(1140)	(1248)	(1102)	(1318)	13	18	34	12	SGMW-03B
SGMW-03C	54.1	58.6	68.9	60.0	(1082)	(1172)	(1178)	(1200)	0	6	26	6	SGMW-03C
SGMW-04A	40.8	46.9	50.8	48.1	816	936	(1016)	960	0	1	20	3	SGMW-04A
SGMW-04B	44.9	49.0	51.3	19.2	898	480	(1026)	982	2	11	76	37	SGMW-04B
SGMW-04C	35.5	43.5	44.4	42.5	730	870	888	844	26	36	32	38	SGMW-04C
SGMW-05A	39.1	38.6	36.8	42.6	782	772	776	850	8	44	2	34	SGMW-05A
SGMW-05B	37.4	38.4	42.0	41.2	738	768	840	838	1	13	53	20	SGMW-05B
SGMW-05C	29.0	31.0	31.8	34.2	570	620	632	684	8	10	13	12	SGMW-05C
SGMW-06A	30.7	33.6	40.0	41.5	618	672	800	832	2	3	37	2	SGMW-06A
SGMW-06B	36.1	35.8	40.8	43.1	712	716	812	864	11	22	62	22	SGMW-06B
SGMW-06C	36.3	35.2	38.1	42.0	722	704	762	846	8	10	21	12	SGMW-06C
SGMW-07A	0.2	0.4	0.0	0.0	4	8	0	0	0	1	2	2	SGMW-07A
SGMW-07B	0.2	0.0	0.0	0.0	4	0	0	0	0	1	0	1	SGMW-07B
SGMW-07C	0.2	1.2	0.0	0.0	4	24	0	0	0	1	0	2	SGMW-07C
SGMW-08A	0.2	0	0	0.0	4	0	0	0	1	3	0	0	SGMW-08A
SGMW-08B	0.2	0	0	0.0	4	0	0	0	1	4	0	0	SGMW-08B
SGMW-08C	0.2	0	0	0.0	4	0	0	0	0	3	0	0	SGMW-08C
SGMW-09A	0.1	0	0	0.0	2	0	0	0	0	2	2	2	SGMW-09A
SGMW-09B	0.2	0	0	0.0	4	0	0	0	1	0	1	1	SGMW-09B
SGMW-09C	0.2	0	0	0.0	4	0	0	0	1	2	0	2	SGMW-09C
SGMW-10A	10.6	15.0	25.6	16.6	212	300	510	338	4	13	1	6	SGMW-10A
SGMW-10B	10.7	14.2	20.0	14.8	214	284	400	292	0	0	5	2	SGMW-10B
SGMW-10C	8.0	12.2	17.1	12.2	160	244	342	246	0	3	1	0	SGMW-10C
SGMW-11A	9.2	14.6	26.7	17.0	184	298	334	338	0	68	125	29	SGMW-11A
SGMW-11B	6.1	14.5	24.7	10.4	122	290	494	208	1	48	152	16	SGMW-11B
SGMW-12A	37.6	43.0	50.4	49.0	752	860	1008	976	15	0	0	34	SGMW-12A
SGMW-12B	35.9	39.0	46.0	45.0	718	780	920	894	4	13	32	15	SGMW-12B
SGMW-13A	35.5	43.5	47.3	47.9	710	870	946	958	63	156	76	3	SGMW-13A
SGMW-13A	33.7	42.3	46.2	47.1	674	846	924	942	2	4	22	5	SGMW-13A
SGMW-14A	1.0	4.9	2.8	10.6	20	98	56	212	2	2	0	7	SGMW-14A
SGMW-14B	5.6	11.0	10.4	14.8	112	220	208	298	1	3	0	1	SGMW-14B
SGMW-15A	0.1	0	4.0	8.3	2	0	80	166	0	3	4	4	SGMW-15A
SGMW-15B	0.1	0	44.5	19.1	2	0	890	376	0	4	8	36	SGMW-15B
SGMW-16A	0	0	0.1	0.0	0	0	2	0	0	3	0	1	SGMW-16A
SGMW-16B	0.1	0	0.1	0.0	2	0	2	0	0	4	4	1	SGMW-16B
SGMW-17A	0.1	0	0.2	0.0	2	0	4	0	0	3	3	2	SGMW-17A
SGMW-17B	0.1	0	0.2	0.0	2	0	4	0	0	2	2	4	SGMW-17B
SGMW-18A	0.2	0	0.1	0.0	4	0	2	0	0	4	4	2	SGMW-18A
SGMW-18B	0.4	0	0.2	0.0	8	0	4	0	0	3	3	4	SGMW-18B
SGMW-19A	5.8	15.9	26.5	0.0	116	318	570	0	2	121	19	132	SGMW-19A
SGMW-19B	8.5	19.6	31.2	0.0	168	392	624	0	4	32	38	0	SGMW-19B
GSGM-1A	0	0	0	0	0	0	0	0	6	3	1	4	GSGM-1A
GSGM-1B	0	0	0	0	0	0	0	0	4	2	2	3	GSGM-1B
GSGM-1C	0	0	0	0	0	0	0	0	3	3	2	3	GSGM-1C
GSGM-2A	0	0	0	0	0	0	0	0	3	1	3	2	GSGM-2A
GSGM-2B	0	0	0	0	0	0	0	0	3	3	1	2	GSGM-2B
GSGM-2C	0	0	0	0	0	0	0	0	4	3	2	3	GSGM-2C
GSGM-3A	0	0	0	0	0	0	0	0	3	3	1	3	GSGM-3A
GSGM-3B	0	0	0	0	0	0	0	0	2	2	0	2	GSGM-3B
GSGM-4A	0	0	0	0	0	0	0	0	4	3	1	3	GSGM-4A
GSGM-4B	0	0	0	0	0	0	0	0	2	2	2	2	GSGM-4B

Measurements in ( ) are calculated, not measured

2003 Current Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume) April-03	Methane (% By Volume) July-03	Methane (% By Volume) October-03	Methane (% By Volume) December-03	LEL (% By Volume) April-03	LEL (% By Volume) July-03	LEL (% By Volume) October-03	LEL (% By Volume) December-03	Hydrogen Sulfide (ppm by volume) April-03	Hydrogen Sulfide (ppm by volume) July-03	Hydrogen Sulfide (ppm by volume) October-03	Hydrogen Sulfide (ppm by volume) December-03	Soil Gas Monitoring Well
SGMW-01A	17.6	22.1	21.1	21.5	352	444	422	438	2	-	0	-	SGMW-01A
SGMW-01B	18.6	18.2	19.7	19.8	372	324	394	396	3	-	81	-	SGMW-01B
SGMW-01C	18.0	13.9	20.0	17.3	360	282	400	348	3	-	80	-	SGMW-01C
SGMW-02A	58.2	41.2	5.0	22.2	(1164)	324	100	442	14	-	68	-	SGMW-02A
SGMW-02B	55.7	0.0	0.1	0.0	(1140)	0	2	0	32	-	13	-	SGMW-02B
SGMW-02C	59.1	0.0	0	42.7	536	0	0	858	9	-	0	-	SGMW-02C
SGMW-03A	26.8	57.8	55.0	0.0	(1182)	(1156)	(1100)	0	10	-	0	-	SGMW-03A
SGMW-03B	69.1	0.0	54.2	11.7	(1078)	0	(1084)	234	23	-	95	-	SGMW-03B
SGMW-03C	63.9	0.0	0.2	41.0	(1052)	0	4	820	3	-	0	-	SGMW-03C
SGMW-04A	54.1	0.0	0.5	0.4	966	0	10	186	3	-	109	-	SGMW-04A
SGMW-04B	53.0	0.0	0.2	47.0	936	0	4	840	7	-	27	-	SGMW-04B
SGMW-04C	52.6	0.0	0.1	41.5	882	0	2	832	15	-	0	-	SGMW-04C
SGMW-05A	48.3	46.0	54.9	23.4	968	980	(1098)	468	2	-	183	-	SGMW-05A
SGMW-05B	46.9	43.8	53.8	38.6	938	876	(1070)	778	3	-	0	-	SGMW-05B
SGMW-05C	43.1	0.0	41.6	32.3	862	0	838	648	3	-	0	-	SGMW-05C
SGMW-06A	40.3	5.6	15.5		806	116	310	420	1	-	0	-	SGMW-06A
SGMW-06B	42.9	0.0	0.0	20.7	858	0	0	898	3	-	0	-	SGMW-06B
SGMW-06C	43.6	0.0	0.1	44.8	872	0	2	900	2	-	0	-	SGMW-06C
SGMW-07A	0.8	0.0	0.0	45.1	16	0	0	0	1	-	0	-	SGMW-07A
SGMW-07B	0.9	0.0	0.1	0.0	18	0	2	0	2	-	0	-	SGMW-07B
SGMW-07C	4.0	0.0	0.1	0.0	80	0	2	0	0	-	0	-	SGMW-07C
SGMW-08A	0.0	0	0.1	0.0	0	0	2	0	0	-	27	-	SGMW-08A
SGMW-08B	0.0	0	0	0.0	0	0	0	0	0	-	0	-	SGMW-08B
SGMW-08C	0.0	0	0	0.0	0	0	0	0	0	-	0	-	SGMW-08C
SGMW-09A	0	0	0.1	0.0	0	0	2	0	0	-	13	-	SGMW-09A
SGMW-09B	0	0	0	0.0	0	0	0	0	0	-	0	-	SGMW-09B
SGMW-09C	0.1	0	0.1	0.0	2	0	2	0	0	-	0	-	SGMW-09C
SGMW-10A	18.0	22.0	27.9	5.8	360	440	558	112	1	-	0	-	SGMW-10A
SGMW-10B	15.8	17.7	22.0	0.0	316	354	440	0	1	-	0	-	SGMW-10B
SGMW-10C	14.0	16.6	18.2	0.0	280	332	364	0	2	-	0	-	SGMW-10C
SGMW-11A	15.6	29.3	0.4	17.7	312	586	8	356	1	-	0	-	SGMW-11A
SGMW-11B	13.7	26.0	0.1	0.0	274	520	2	0	13	-	0	-	SGMW-11B
SGMW-12A	60.0	47.6	64.7	0.0	(1200)	952	(1294)	0	0	-	0	-	SGMW-12A
SGMW-12B	50.9	0.3	0.5	1.8	(1018)	6	10	36	1	-	0	-	SGMW-12B
SGMW-13A	30.5	0.0	67.2	66.4	610	0	(1344)	1328	1	-	163	-	SGMW-13A
SGMW-13B	0.0	0.8	0.1	0.0	0	16	2	0	1	-	0	-	SGMW-13A
SGMW-14A	29.4	0.8	0.3	0.0	588	196	2	0	10	-	0	-	SGMW-14A
SGMW-14B	0.2	0	0.1	0.1	4	0	2	2	1	-	0	-	SGMW-14B
SGMW-15A	0.1	0	0.1	0.0	2	0	2	0	1	-	54	-	SGMW-15A
SGMW-15B	0	0	0.1	0.0	0	0	2	0	0	-	0	-	SGMW-15B
SGMW-16A	0.1	0	0	0.0	2	0	0	0	1	-	0	-	SGMW-16A
SGMW-16B	0	0	0	0.0	0	0	0	0	3	-	0	-	SGMW-16B
SGMW-17A	0	0	0	0.0	0	0	0	0	3	-	0	-	SGMW-17A
SGMW-17B	0	0	0	0.0	0	0	0	0	2	-	0	-	SGMW-17B
SGMW-18A	0.1	0	0	0.0	2	0	0	0	2	-	0	-	SGMW-18A
SGMW-18B	0	0.1	0.0	0.0	0	2	0	0	0	-	0	-	SGMW-18B
SGMW-19A	41.8	29.1	40.0	27.0	838	582	800	540	0	-	0	-	SGMW-19A
SGMW-19B	44.0	0.7	33.2	29.5	880	14	664	592	39	-	191	-	SGMW-19B
GSGM-1A	0.1	0	0	0	2	0	0	0	0	-	0	-	GSGM-1A
GSGM-1B	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-1B
GSGM-1C	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-1C
GSGM-2A	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-2A
GSGM-2B	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-2B
GSGM-2C	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-2C
GSGM-3A	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-3A
GSGM-3B	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-3B
GSGM-4A	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-4A
GSGM-4B	0	0	0	0	0	0	0	0	0	-	0	-	GSGM-4B

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

2004 Current Landfill Soil Gas Monitoring Summary

Soil Gas Monitoring Well	Methane (% By Volume) 3/10/04	Methane (% By Volume) 6/25/04	Methane (% By Volume) 10/7/04	Methane (% By Volume) 11/30/04	LEL (% By Volume) 3/10/04	LEL (% By Volume) 6/25/04	LEL (% By Volume) 10/7/04	LEL (% By Volume) 11/30/04	Hydrogen Sulfide (ppm by volume) 3/10/04	Hydrogen Sulfide (ppm by volume) 6/25/04	Hydrogen Sulfide (ppm by volume) 10/7/04	Hydrogen Sulfide (ppm by volume) 11/30/04	Soil Gas Monitoring Well
SGMW-01A	16.6	14.4	6.8	6.8	332	288	136	136	150	2	3	1	SGMW-01A
SGMW-01B	15.6	8.6	6.0	2.5	312	172	120	50	23	0	0	0	SGMW-01B
SGMW-01C	14.0	0.2	4.2	6.3	280	4	84	126	34	0	0	0	SGMW-01C
SGMW-02A	34.5	8.6	39.7	2.1	692	172	794	42	191	0	11	0	SGMW-02A
SGMW-02B	22.7	0.6	12.7	0.0	454	12	254	0	177	0	0	0	SGMW-02B
SGMW-02C	44.4	0.0	2	4.6	888	0	4	92	0	0	0	0	SGMW-02C
SGMW-03A	25.4	15.2	4.1	0.0	508	304	82	0	0	0	0	0	SGMW-03A
SGMW-03B	52.1	28.0	14.0	0.1	(1042)	560	280	2	0	0	0	0	SGMW-03B
SGMW-03C	51.3	7.3	1.8	0.0	(1026)	146	36	0	0	0	0	0	SGMW-03C
SGMW-04A	37.5	49.1	3.5	1.8	748	982	70	36	0	0	0	0	SGMW-04A
SGMW-04B	43.0	50.7	23.2	14.4	860	(1014)	454	288	0	0	0	0	SGMW-04B
SGMW-04C	36.2	40.9	21.2	14.5	724	818	424	290	0	0	0	0	SGMW-04C
SGMW-05A	36.1	40.0	13.6	3.7	722	800	272	74	150	0	0	0	SGMW-05A
SGMW-05B	36.8	41.4	25.2	13.6	736	828	504	272	0	0	0	0	SGMW-05B
SGMW-05C	29.0	24.0	18.6	13.6	590	480	372	272	0	0	0	0	SGMW-05C
SGMW-06A	31.8	9.7	3.9	1.8	636	194	78	36	0	0	0	0	SGMW-06A
SGMW-06B	40.4	27.4	20.6	0.3	808	548	412	6	0	0	0	0	SGMW-06B
SGMW-06C	42.1	29.8	4.7	13.2	842	596	94	264	0	0	0	0	SGMW-06C
SGMW-07A	0.2	0.1	0.0	0.0	4	2	0	0	0	0	0	0	SGMW-07A
SGMW-07B	0.5	0.1	0.0	0.0	10	2	0	0	0	0	0	0	SGMW-07B
SGMW-07C	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-07C
SGMW-08A	0.0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-08A
SGMW-08B	0.0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-08B
SGMW-08C	0.0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-08C
SGMW-09A	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-09A
SGMW-09B	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-09B
SGMW-09C	0.2	0	0	0.0	4	0	0	0	0	0	0	0	SGMW-09C
SGMW-10A	1.9	16.4	2.0	0.0	38	328	40	0	0	1	0	0	SGMW-10A
SGMW-10B	2.4	16.1	12.0	3.9	48	322	240	78	0	2	0	0	SGMW-10B
SGMW-10C	0.0	14.5	10.0	2.4	0	290	200	48	0	0	0	0	SGMW-10C
SGMW-11A	0.0	16.0	5.5	0.0	0	320	110	0	0	2	0	0	SGMW-11A
SGMW-11B	0.0	14.7	10.1	0.3	0	294	202	6	109	0	0	0	SGMW-11B
SGMW-12A	22.5	48.5	9.9	0.0	450	970	196	0	122	21	0	0	SGMW-12A
SGMW-12B	0.0	0.2	7.2	0.0	0	4	144	0	136	0	0	0	SGMW-12B
SGMW-13A	0.0	0.6	1.0	0.0	0	12	20	0	0	0	0	0	SGMW-13A
SGMW-13B	0.0	0.1	0	1.1	0	2	0	22	191	0	0	0	SGMW-13A
SGMW-14A	0.0	0.1	0.0	0.0	0	2	0	0	130	0	0	0	SGMW-14A
SGMW-14B	0	0.1	0	2.3	0	2	0	46	122	0	0	0	SGMW-14B
SGMW-15A	0.0	0.1	0.0	0.0	0	2	0	0	0	0	0	0	SGMW-15A
SGMW-15B	0	0	0	5.8	0	0	0	116	0	0	0	0	SGMW-15B
SGMW-16A	0	0.1	0	0.0	0	2	0	0	0	0	0	0	SGMW-16A
SGMW-16B	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-16B
SGMW-17A	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-17A
SGMW-17B	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-17B
SGMW-18A	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-18A
SGMW-18B	0	0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-18B
SGMW-19A	6.0	26.7	25.9	13.0	120	534	518	260	0	0	0	4	SGMW-19A
SGMW-19B	5.8	30.0	27.7	9.2	116	600	554	184	0	0	0	0	SGMW-19B
GSGM-1A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-1A
GSGM-1B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-1B
GSGM-1C	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-1C
GSGM-2A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-2A
GSGM-2B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-2B
GSGM-2C	0	0	0	0	0	0	0	0	0	1	0	0	GSGM-2C
GSGM-3A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-3A
GSGM-3B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-3B
GSGM-4A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-4A
GSGM-4B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-4B

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

2005 Current Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume) 3/30/05	Methane (% By Volume) 7/21/05	Methane (% By Volume) 10/21/05	Methane (% By Volume) 12/28/05	LEL (% By Volume) 3/30/05	LEL (% By Volume) 7/21/05	LEL (% By Volume) 10/21/05	LEL (% By Volume) 12/28/05	Hydrogen Sulfide (ppm by volume) 3/30/05	Hydrogen Sulfide (ppm by volume) 7/21/05	Hydrogen Sulfide (ppm by volume) 10/21/05	Hydrogen Sulfide (ppm by volume) 12/28/05	Soil Gas Monitoring Well
SGMW-01A	8.6	5.4	5	6.7	176	108	100	134	1	3	2	2	SGMW-01A
SGMW-01B	3.0	2.9	3	3.8	60	58	60	76	0	0	0	0	SGMW-01B
SGMW-01C	7.5	5.6	5.5	6.1	150	112	110	122	1	0	0	0	SGMW-01C
SGMW-02A	0.3	13.7	1.7	3.0	6	274	34	60	0	0	0	1	SGMW-02A
SGMW-02B	0.2	0.7	27.2	12.4	4	14	544	248	1	0	6	3	SGMW-02B
SGMW-02C	0.3	0.1	247	0.0	6	2	494	0	1	0	0	0	SGMW-02C
SGMW-03A	0.7	36.8	0.7	0.0	14	736	14	0	0	0	0	0	SGMW-03A
SGMW-03B	0.5	2.5	47.6	11.0	10	50	952	220	1	0	2	1	SGMW-03B
SGMW-03C	0.1	0.2	39.9	0.0	2	4	798	0	0	0	1	0	SGMW-03C
SGMW-04A	0.2	10.7	46.2	9.3	4	214	924	186	0	1	0	0	SGMW-04A
SGMW-04B	6.5	25.1	42.4	16.0	130	502	848	360	0	0	1	1	SGMW-04B
SGMW-04C	6.3	0.2	38.2	14.1	126	4	764	282	0	0	0	2	SGMW-04C
SGMW-05A	0.7	14.3	36.6	10.2	14	286	732	204	1	1	1	1	SGMW-05A
SGMW-05B	13.4	21.1	34.6	22.8	268	422	692	456	0	1	0	0	SGMW-05B
SGMW-05C	9.2	18.6	27.3	18.3	184	376	546	366	0	1	0	0	SGMW-05C
SGMW-06A	0.2	2.4	29.7	8.1	4	48	594	162	1	1	0	0	SGMW-06A
SGMW-06B	7.7	24.4	29.7	16.6	154	488	594	336	1	1	0	0	SGMW-06B
SGMW-06C	8.6	24.7	27.2	14.9	172	494	544	298	1	1	1	0	SGMW-06C
SGMW-07A	0.0	0.0	0.0	0.0	0	0	0	0.0	0	0	0	0	SGMW-07A
SGMW-07B	0	0.0	0.0	0.0	0	0	0	0.0	0	0	0	0	SGMW-07B
SGMW-07C	0.0	0.0	0.0	0.0	0	0	0	0.0	1	1	0	0	SGMW-07C
SGMW-08A	0.0	0	0	0.0	0	0	0	0.0	0	0	0	0	SGMW-08A
SGMW-08B	0.0	0	0	0.0	0	0	0	0.0	0	0	0	0	SGMW-08B
SGMW-08C	0.0	0	0	0.0	0	0	0	0.0	0	0	0	0	SGMW-08C
SGMW-09A	0	.2	0	0.0	0	4	0	0.0	0	1	1	0	SGMW-09A
SGMW-09B	0	.2	0	0.0	0	4	0	0.0	1	0	0	0	SGMW-09B
SGMW-09C	0	.2	0	0.0	0	4	0	0.0	0	0	0	0	SGMW-09C
SGMW-10A	0.2	2.7	12.3	0.0	4	54	246	0.0	1	0	1	0	SGMW-10A
SGMW-10B	0.2	12.0	16.7	1.6	4	240	334	32	1	2	0	0	SGMW-10B
SGMW-10C	0.1	1.6	14.3	1.2	2	32	286	24	1	0	1	1	SGMW-10C
SGMW-11A	0.2	6.0	17.2	0.0	4	120	344	0	0	1	20	0	SGMW-11A
SGMW-11B	0.2	13.2	19.6	0.0	4	264	392	0	1	1	4	0	SGMW-11B
SGMW-12A	0.2	3.9	40.1	4.0	4	78	802	80	0	0	51	3	SGMW-12A
SGMW-12B	0.1	0.8	25.7	0.0	2	16	514	0	0	0	0	0	SGMW-12B
SGMW-13A	0.1	6.2	0.1	0.0	2	124	2	0	0	1	1	0	SGMW-13A
SGMW-13B	0.2	.4	.2	0.0	4	6	4	0	0	2	1	0	SGMW-13A
SGMW-14A	0.3	0.1	5.6	0.1	6	2	112	2	0	1	2	0	SGMW-14A
SGMW-14B	0	.2	.2	0.0	0	4	4	0	0	1	1	0	SGMW-14B
SGMW-15A	0.0	.2	0.1	0.0	0	4	2	0	0	0	1	0	SGMW-15A
SGMW-15B	0	1	1	0.0	0	2	2	0	0	0	0	0	SGMW-15B
SGMW-16A	0	.2	0	0.0	0	4	0	0	0	1	0	0	SGMW-16A
SGMW-16B	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-16B
SGMW-17A	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-17A
SGMW-17B	0	0	0	0.0	0	0	0	0	0	0	0	0	SGMW-17B
SGMW-18A	0	0	0	0.0	0	0	0	0	0	0	1	0	SGMW-18A
SGMW-18B	0	0	0.0	0.0	0	0	0	0	0	0	0	1	SGMW-18B
SGMW-19A	5.6	6.3	29.2	15.7	112	126	584	314	0	1	20	2	SGMW-19A
SGMW-19B	0.0	0.0	31.8	8.1	0	0	636	162	0	0	46	0	SGMW-19B
GSGM-1A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-1A
GSGM-1B	0	0	0	0	0	0	0	0	0	0	0	1	GSGM-1B
GSGM-1C	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-1C
GSGM-2A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-2A
GSGM-2B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-2B
GSGM-2C	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-2C
GSGM-3A	0	0	0	0	0	0	0	0	0	1	0	0	GSGM-3A
GSGM-3B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-3B
GSGM-4A	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-4A
GSGM-4B	0	0	0	0	0	0	0	0	0	0	0	0	GSGM-4B

Measurements in ( ) are calculated, not measured.

Table 12

2006 Current Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume) 2/24/06	Methane (% By Volume) 6/23/06	Methane (% By Volume) 9/28/06	Methane (% By Volume) 12/27/06	LEL (% By Volume) 2/24/06	LEL (% By Volume) 6/23/06	LEL (% By Volume) 9/28/06	LEL (% By Volume) 12/27/06	Hydrogen Sulfide (ppm by volume) 2/24/06	Hydrogen Sulfide (ppm by volume) 6/23/06	Hydrogen Sulfide (ppm by volume) 9/28/06	Hydrogen Sulfide (ppm by volume) 12/27/06	Soil Gas Monitoring Well
SGMW-01A	8.6	11.9	12.5	11.3	174.0	238	250	225	0	0	6	0	SGMW-01A
SGMW-01B	0.0	0.0	11.0	3.1	0	0	220	62	0	0	1	0	SGMW-01B
SGMW-01C	0.0	0.0	10.5	0.2	0	0	210	4	0	0	5	0	SGMW-01C
SGMW-02A	13.9	18.1	46.9	1.4	282.0	362	938	28	0	0	9	0	SGMW-02A
SGMW-02B	6.8	12.8	33.4	0.2	142.0	256	668	4	0	0	27	0	SGMW-02B
SGMW-02C	0.0	0.8	30.5	0.3	0	16	610	6	0	0	0	0	SGMW-02C
SGMW-03A	19.3	26.8	27.0	0.2	386.0	536	540	4	0	0	8	0	SGMW-03A
SGMW-03B	0.0	11.9	48.5	0.1	0	238	970	2	0	0	12	0	SGMW-03B
SGMW-03C	0.0	1.5	45.0	0.3	0	30	900	6	0	0	7	0	SGMW-03C
SGMW-04A	0.0	16.4	52.1	0.2	0	328	1040	4	0	0	1	0	SGMW-04A
SGMW-04B	10.0	31.6	48.8	0.0	200.0	632	976	0	0	0	2	0	SGMW-04B
SGMW-04C	0.0	22.2	42.1	0.0	0	444	842	0	0	0	0	0	SGMW-04C
SGMW-05A	0.9	16.3	44.8	0.0	20.0	326	896	0	0	0	0	0	SGMW-05A
SGMW-05B	1.4	26.3	41.3	0.0	89.0	526	826	0	0	0	3	3	SGMW-05B
SGMW-05C	0.0	20.7	33.8	0.0	0	414	676	0	0	0	1	0	SGMW-05C
SGMW-06A	0.0	11.5	41.5	0.0	0	230	830	0	0	0	1	0	SGMW-06A
SGMW-06B	0.0	21.3	40.3	0.0	0	426	806	0	0	0	2	0	SGMW-06B
SGMW-06C	0.0	21.7	37.3	0.0	0	434	746	0	0	0	0	0	SGMW-06C
SGMW-07A	0.0	0.0	0.3	0.0	0	0	6	0	0	0	0	0	SGMW-07A
SGMW-07B	0.0	0.0	0.3	0.0	0	0	6	0	0	0	0	0	SGMW-07B
SGMW-07C	0.0	0.0	0.3	0.0	0	0	6	0	0	0	0	0	SGMW-07C
SGMW-08A	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-08A
SGMW-08B	0.0	0.0	0.0	0.0	0	0	0	0	0	0	2	0	SGMW-08B
SGMW-08C	0.0	0.0	0.0	0.0	0	0	0	0	0	0	2	0	SGMW-08C
SGMW-09A	0.0	0.1	0.0	0.0	0	2	0	0	0	0	0	0	SGMW-09A
SGMW-09B	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-09B
SGMW-09C	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-09C
SGMW-10A	0.0	9.8	15.4	0.0	0	196	308	0	0	0	0	0	SGMW-10A
SGMW-10B	0.0	12.0	18.0	0.0	0	240	360	0	0	0	2	0	SGMW-10B
SGMW-10C	0.0	10.6	16.2	0.0	0	212	324	0	0	0	2	0	SGMW-10C
SGMW-11A	0.0	7.6	15.3	0.0	0	152	306	0	0	0	2	0	SGMW-11A
SGMW-11B	0.0	9.8	14.9	0.0	0	196	298	0	0	0	25	0	SGMW-11B
SGMW-12A	0.0	16.7	41.3	0.0	0	336	826	0	0	0	18	0	SGMW-12A
SGMW-12B	1.1	2.0	0.0	0.0	22	40	0	0	0	0	0	0	SGMW-12B
SGMW-13A	0.0	0.0	0.2	0.0	0	0	4	0	0	0	0	0	SGMW-13A
SGMW-13B	0.0	0.0	0.2	0.0	0	0	4	0	0	0	0	0	SGMW-13A
SGMW-14A	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-14A
SGMW-14B	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-14B
SGMW-15A	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-15A
SGMW-15B	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-15B
SGMW-16A	0.0	0.0	0.0	0.0	0	0	0	0	0	0	1	0	SGMW-16A
SGMW-16B	0.0	0.0	0.0	0.0	0	0	0	0	0	0	1	0	SGMW-16B
SGMW-17A	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-17A
SGMW-17B	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-17B
SGMW-18A	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-18A
SGMW-18B	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	SGMW-18B
SGMW-19A	16.7	17.3	16.6	23.9	340	348	332	478	0	0	2	5	SGMW-19A
SGMW-19B	1.7	9.4	18.0	0.0	32	186	360	0	0	0	1	0	SGMW-19B
GSGM-1A	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-1A
GSGM-1B	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-1B
GSGM-1C	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-1C
GSGM-2A	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-2A
GSGM-2B	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-2B
GSGM-2C	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-2C
GSGM-3A	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-3A
GSGM-3B	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-3B
GSGM-4A	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-4A
GSGM-4B	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	GSGM-4B

Measurements in ( ) are calculated, not measured.

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	4	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	4	0	SGMW-12B

<> Well SGM07 was not accessible

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

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	0	0	0	0	0	0	0	<>	1	SGMW-01A
SGMW-01B	0	0	0	0	0	0	0	<>	0	SGMW-01B
SGMW-02A	0	0	0	0	0	0	0	<>	0	SGMW-02A
SGMW-02B	0	0	0	0	0	0	0	<>	0	SGMW-02B
SGMW-03A	0	0	0	0	0	0	0	<>	0	SGMW-03A
SGMW-03B	0.1	0	0	2	0	0	0	<>	0	SGMW-03B
SGMW-04A	0	0	0	0	0	0	0	<>	0	SGMW-04A
SGMW-04B	0	0	0	0	0	0	0	<>	0	SGMW-04B
SGMW-05A	0	0	0	0	0	0	0	<>	3	SGMW-05A
SGMW-05B	0	0	0	0	0	0	0	<>	0	SGMW-05B
SGMW-06A	0	0	0	0	0	0	0	<>	1	SGMW-06A
SGMW-06B	0	0	0	0	0	0	0	<>	0	SGMW-06B
SGMW-07A	<>	<>	<>	<>	<>	<>	<>	<>	<>	SGMW-07A
SGMW-07B	<>	<>	<>	<>	<>	<>	<>	<>	<>	SGMW-07B
SGMW-08A	0	0	0	0	0	0	0	<>	0	SGMW-08A
SGMW-08B	0	0	0	0	0	0	0	<>	0	SGMW-08B
SGMW-09A	0	0	0	0	0	0	0	<>	0	SGMW-09A
SGMW-09B	0	0	0	0	0	0	0	<>	0	SGMW-09B
SGMW-10A	0	0	0	0	0	0	1	<>	0	SGMW-10A
SGMW-10B	0	0	0	0	0	0	0	<>	0	SGMW-10B
SGMW-11A	0	0	0	0	0	0	1	<>	0	SGMW-11A
SGMW-11B	0	0	0	0	0	0	0	<>	0	SGMW-11B
SGMW-12A	0	0	0	0	0	0	0	<>	0	SGMW-12A
SGMW-12B	0	0	0	0	0	0	0	<>	0	SGMW-12B

<> No measurement was recorded.

Brookhaven National Laboratory
2000 Landfills 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	2	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	4	SGMW-06A
SGMW-06B	0	<>	0	0	0	<>	0	0	0	<>	1	4	SGMW-06B
SGMW-07A	0	<>	0	0	0	<>	0	0	0	<>	1	8	SGMW-07A
SGMW-07B	0	<>	0	0	0	<>	0	0	0	<>	0	8	SGMW-07B
SGMW-08A	0	<>	0	0	0	<>	0	0	0	<>	0	3	SGMW-08A
SGMW-08B	0	<>	0	0	0	<>	0	0	0	<>	0	4	SGMW-08B
SGMW-09A	0	0	0	0	0	0	0	0	0	2	1	8	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	6	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 Landfills 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	5	N/A	0
SGMW-07B	0	0	0	0	<>	0	6	N/A	0
SGMW-08A	0	0	0	0	<>	0	7	N/A	0
SGMW-08B	0	0	0	0	<>	0	6	N/A	0
SGMW-09A	0	0	0	0	0	0	3	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

> No Measurement was collected due to other work in the area.

2002 Former Landfill Soil Gas Monitoring Summary

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

2003 Former Landfill Soil Gas Monitoring Summary

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

July measurements taken with a Landtec GEM 500
- H2S pod not operational.

2004 Former Landfill Soil Gas Monitoring Summary

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

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

2005 Former Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume) 3/30/05	Methane (% By Volume) 7/21/05	Methane (% By Volume) 10/26/05	Methane (% By Volume) 12/28/05	LEL (% By Volume) 3/30/05	LEL (% By Volume) 7/21/05	LEL (% By Volume) 10/26/05	LEL (% By Volume) 12/28/05	Hydrogen Sulfide (ppm by volume) 3/30/05	Hydrogen Sulfide (ppm by volume) 7/21/05	Hydrogen Sulfide (ppm by volume) 10/26/05	Hydrogen Sulfide (ppm by volume) 12/28/05	Soil Gas Monitoring Well
SGMW-01A	0	0	0	0.1	0	0	0	2	0	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	0	0	0	0	SGMW-03A
SGMW-03B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-03B
SGMW-04A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-04A
SGMW-04B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-04B
SGMW-05A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-05A
SGMW-05B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-05B
SGMW-06A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-06A
SGMW-06B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-06B
SGMW-07A	0	0	0	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	SGMW-07B
SGMW-08A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-08A
SGMW-08B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-08B
SGMW-09A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-09A
SGMW-09B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-09B
SGMW-10A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-10A
SGMW-10B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-10B
SGMW-11A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-11A
SGMW-11B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-11B
SGMW-12A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-12A
SGMW-12B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-12B

Table 13

2006 Former Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume) 2/20/06	Methane (% By Volume) 6/23/06	Methane (% By Volume) 9/28/06	Methane (% By Volume) 12/26/06	LEL (% By Volume) 2/20/06	LEL (% By Volume) 6/23/06	LEL (% By Volume) 9/28/06	LEL (% By Volume) 12/26/06	Hydrogen Sulfide (ppm by volume) 2/20/06	Hydrogen Sulfide (ppm by volume) 6/23/06	Hydrogen Sulfide (ppm by volume) 9/28/06	Hydrogen Sulfide (ppm by volume) 12/26/06	Soil Gas Monitoring Well
SGMW-01A	0	0	0	0	0	0	0	0	0	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	0	0	1	0	SGMW-03A
SGMW-03B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-03B
SGMW-04A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-04A
SGMW-04B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-04B
SGMW-05A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-05A
SGMW-05B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-05B
SGMW-06A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-06A
SGMW-06B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-06B
SGMW-07A	0	0	0	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	SGMW-07B
SGMW-08A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-08A
SGMW-08B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-08B
SGMW-09A	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-09A
SGMW-09B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-09B
SGMW-10A	0	0	0	0	0	0	0	0	0	0	1	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	1	0	SGMW-12A
SGMW-12B	0	0	0	0	0	0	0	0	0	0	0	0	SGMW-12B