APPENDIX H
BROOKHAVEN NATIONAL LABORATORY
2004 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

BROOKHAVEN NATIONAL LABORATORY 2004 ENVIRONMENTAL MONITORING REPORT CURRENT AND FORMER LANDFILL AREAS

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TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Site Description and Project Background 1
1.2 Overview of the Monitoring Program 4
2.0 GROUNDWATER MONITORING 5
2.1 Monitoring Well Networks 5
2.1.1 Sampling Frequency and Analytical Parameters 6
2.1.2 Quality Assurance / Quality Control 7
2.2 Landfill Groundwater Monitoring Results 8
2.2.1 Current Landfill 9
2.2.1.1 Volatile Organic Compounds (VOCs) 9
2.2.1.2 Water Chemistry Parameters 9
2.2.1.3 Metals 11
2.2.1.4 Radionuclides 12
2.2.2 Former Landfill 12
2.2.2.1 VOCs 12
2.2.2.2 Water Chemistry Parameters 13
2.2.2.3 Metals 14
2.2.2.4 Radionuclides 14
3.0 Wooded Wetland Monitoring 14
4.0 SOIL GAS MONITORING 16
4.1 Soil Gas Monitoring Networks 16
4.1.1 Current Landfill 16
4.1.2 Former Landfill Area 16
4.1.3 Sampling Frequency 16
4.2 Results of Soil-Gas Monitoring 16
4.2.1 Current Landfill 17
4.2.1.1 Trend in Soil-Gas Data 18
4.2.2 Former Landfill Area 18
4.2.2.1 Trends in Soil-Gas Data 19
5.0 MAINTENANCE AND REPAIR 19
5.1 Landfill Cap and Gas Vents 19
5.2 Drainage Structures 20
5.3 Environmental Monitoring System 20
5.4 Related Structures 20
6.0 CONCLUSIONS AND RECOMMENDATIONS 20
6.1 Groundwater Monitoring 20
6.1.1 Conclusions for the Current Landfill 20
6.1.2 Recommendations for the Current Landfill 22
6.1.3 Conclusions for the Former Landfill 22
6.1.4 Recommendations for the Former Landfill 22
6.2 Soil Gas Monitoring 22
6.2.1 Conclusions for the Current Landfill 22
6.2.2 Recommendations for the Current Landfill 23
6.2.3 Conclusions for the Former Landfill 23
6.2.4 Recommendations for the Former Landfill 23
6.3 Maintenance and Repair 23

6.3.1 Current Landfill 23
6.3.2 Former Landfill Area 23
7.0 REFERENCES 23

LIST OF TABLES

1. Analytical Requirements For Groundwater Samples
2. Current Landfill – Summary of 2004 VOC Data
3. Current Landfill – Summary of 2004 Water Chemistry Data
4. Current Landfill – Summary of 2004 Metals Data
5. Current Landfill – Summary of 2004 Radionuclide Data
6. Former Landfill – Summary of 2004 VOC Data
7. Former Landfill – Summary of 2004 Water Chemistry Data
8. Former Landfill – Summary of 2004 Metals Data
9. Former Landfill – Summary of 2004 Pesticide/PCB Data
10. Former Landfill – Summary of 2004 Radionuclide Data
11. Soil Gas Monitoring Well Description
12. 2004 Current Landfill Soil Gas Monitoring Summary
13. 2004 Former Landfill Soil Gas Monitoring Summary

LIST OF FIGURES

1. Site Location Map
2. Current Landfill Monitoring Well Locations
3. Former Landfill Monitoring Well Locations
4. Water Table Contour Map
5. Current Landfill VOC Trend Plots
6. Current Landfill Alkalinity and Chloride Trend Plots
7. Current Landfill Iron Trend Plots
8. Current Landfill Tritium and Strontium-90 Trend Plots
9. Former Landfill VOC Trend Plots
10. Former Landfill Alkalinity and Chloride Trend Plots
11. Former Landfill Iron Trend Plots
12. Former Landfill Tritium and Strontium-90 Trend Plots
13. Current Landfill Soil Gas Monitor Location Map
14. Former Landfill Soil Gas Monitor Location Map

LIST OF APPENDICES

A. Operable Unit I Wooded Wetlands Supplemental Surface Water and Sediment Sampling and Analysis Report
B. Soil Gas Sampling Field Notes
C. Monthly Site Landfill Inspection Forms
D. Historical Soil Gas Monitoring Data

1.0 INTRODUCTION

This report documents the Operation and Maintenance (O&M) activities undertaken during calendar year 2004 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 6 New York State Code of Rules and Regulations (NYCRR) 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 ninth year of O&M for the Current Landfill, the eighth year for the Former Landfill and Slit Trench, and the seventh 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 (7) separate remediation work areas known as Operable Units. The Current Landfill and Former Landfill Area are located in Operable Unit I (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 the mid 1980s 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 first *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. Additional proposed sampling program modifications for CY04 are included as part of this annual report. Recommendations from the 2003 report were implemented in 2004.

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 1940's. 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 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 the Interim Landfill (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 5-year period following capping. Modifications to the sampling program are included annually as part of this report. Recommendations from the 2003 report were implemented in 2004.

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, 2002). 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 was "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. Proposed modifications to sampling frequencies and analytical parameters are summarized in Section 6 of this report.

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

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 2004. The depths of the screen intervals for the Current Landfill wells are listed below.

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

*Background well

BLS - Below Land Surface

Former Landfill

Since January 1997, groundwater quality at the Former landfill area has been monitored using eight shallow monitoring wells (3 upgradient and five downgradient). The locations of the eight

monitoring wells are presented in Figure 4. The direction of groundwater flow in the Operable Unit I area of the site is generally to the south-southeast. Figure 3 shows the December 2004 water table contours for the area. The screen zones for Former Landfill wells are summarized below.

Well ID	Screen Interval (feet BLS)
086-42*	65-75
086-72*	41.5-56.5
087-22*	43-53
097-17	29-39
097-64	29-44
097-277	40-55
106-02	55-65
106-30	29-44

*Background well

BLS - Below Land Surface

2.1.1 Sampling Frequency and Analytical Parameters

Monitoring wells at both landfills were sampled in 2004 during the following periods:

Sampling Event	Sampling Dates
Round 1	January 13 and March 9
Round 2	May 5 - 9
Round 3	August 3 - 4
Round 4	November 17 - 18

Dvirka and Bartilucci Consulting Engineers, Woodbury, New York conducted the groundwater sampling and General Engineering Labs, Inc. and Severn Trent Laboratories, Inc analyzed the samples. See Table 1 for a summary of analyses performed by well and sampling round.

2.1.2 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 2004 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 e.g.). 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 is 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 sample were collected during the second and fourth quarters when both landfills were

sampled. No errors were detected in the duplicate analyses. Matrix spike/matrix spike duplicates (MS/MSDs) samples were collected at a frequency of two MS/MSD samples per quarter. This ensures that the matrix of the sample does not adversely impact the analysis. In March, cyanide, total kjeldahl nitrogen (TKN) and iron reported recoveries below QC limits. In May, recoveries below QC limits were reported for ammonia, TKN, and thallium. In August, nitrite and iron reported recoveries below QC limits. In November, iron, lead, manganese, silver, thallium and TKN had recoveries reported below QC limits. Associated results for these analytes in the associated samples were qualified as estimated. Several VOCs had recoveries below QC limits in March, May, and November. These results were not significant and did not result in any qualification to the data.

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 calendar year 2004. The historical trends in concentrations of key contaminants are assessed and shown graphically in Figures 5 through 12. Summary tables of all 2004 landfill groundwater data are presented in Tables 2 through 9. Detections that exceed groundwater standards are highlighted. 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 200 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 USDOE 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 2004 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 ten-downgradient monitoring wells during 2004 (Table 2). Along with 1,1-dichloroethane, these VOCs have historically been the primary groundwater contaminants detected downgradient of the Current Landfill.

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 wells 087-11, 087-23, and 087-27. Chloroethane exceeded the 5 µg/L standard in wells 087-11, 087-23, 088-109, and 088-110. The maximum chloroethane concentration was 29 µg/L in well 088-109; which is a significant decrease from the previous years high value of 77 µg /L. Benzene was detected at a maximum of 6.6 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. No VOCs were detected in the background well.

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 2004 (Table 1). The results are provided in Table 3. Elevated levels of these parameters can be indicative of the presence of landfill leachate.

Ammonia was the only compound detected above the standard of 2 mg/L, with exceedances in three downgradient wells (087-11, 087-27, and 088-110) during four sampling events as shown in Table 3. The highest concentration of 8.5 mg/L was reported for well 087-11 in January. The highest level observed during 2004 in background well 87-09 was 0.51 mg/L. With the exception of the January result from well 087-11, the levels of ammonia detected seem to have stabilized from their pre-cap highs.

During 2004, all sulfate and chloride concentrations remained below the groundwater standard of 250 mg/L. The highest sulfate value reported for 2004 was detected in the November sample from monitoring well 088-110, at a concentration of 29.3 mg/L.

Chloride concentrations ranged from 3.8 mg/L in well 087-27 during May, to a high of 53.7 mg/L in well 087-09 in January. 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 16 mg/L to 26 mg/L during 2004. The highest alkalinity concentration during 2004 was detected in downgradient, shallow Upper Glacial Aquifer well 087-11, at 223 mg/L in January. 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.

TDS and TSS results were similar to those from previous years, and indicate some continuing movement of leachate from the Current Landfill as evidenced by comparing data from downgradient

and background wells. TDS and TSS concentrations in background well 087-09 ranged from 97 mg/L to 416 mg/L, and 4 mg/L to 16 mg/L, respectively. The maximum concentrations observed in downgradient wells were 10,200 mg/L and 144 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. Given the relatively short time that the landfill has been capped, the anticipated transport time of groundwater from the north end of the landfill to the downgradient monitoring network, and the disposal of sludge containing metals during the landfill's operation, the continued presence of iron, magnesium and sodium in these wells is not unexpected.

During 2004, iron, manganese, and sodium continued to be detected above their respective groundwater standards (Table 4). Iron in the downgradient wells peaked at a maximum of 83,000

µg/L in well 087-23 during August. In contrast to background concentrations, in well 87-09, iron ranged from 3,600 µg/L to 8,320 µg/L. Manganese ranged from 34.5 µg/L to 867 µg/L in background well 087-09, and up to 9,380 µg/L in the downgradient wells. Background sodium levels ranged from 17,100 to 36,100 µg/L; whereas downgradient levels ranged up to 29,000 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, and 088-22 at concentrations up to 35.4 µg/L . Arsenic detections have historically been observed at similar levels in Current Landfill wells. [d1]

2.2.1.4 Radionuclides

No radionuclides were detected above groundwater standards during 2004 (Table 5). Strontium-90 and tritium were the only radionuclides detected during 2003. Low levels of strontium-90 were detected in upgradient well 87-09 and in downgradient wells 087-11, 087-27, 088-109, 088-110, and 088-21. Concentrations were well below the 8 pCi/L groundwater standard, and ranged from 0.51 pCi/L in well 088-109 to 1.9 pCi/L in well 088-21. Overall, strontium-90 concentrations have shown either decreasing or stable trends, with concentrations at or near the detection limit (Figure 8). Gross beta activity, which is a possible indicator of strontium-90 in groundwater, ranged from 1.03 pCi/L in well 087-11 to 8.1 pCi/L in well 087-11.

Tritium was detected significantly below the groundwater standard of 20,000 pCi/L with a maximum value of 820 pCi/L in shallow downgradient well 087-26 (Figure 8). Tritium and Sr-90 concentrations have not exceeded groundwater standards in 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.

2.2.2 Former Landfill

2.2.2.1 VOCs

During 2004 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 0.29 µg/L to 1.9 µg/L, well below the groundwater standard of 7 µg/L. 1,2,4-Trichlorobenzene was also detected in one well, 086-72 at an estimated concentration of 0.22 µg/L .

Figure 9 shows plots of the historical VOC detections for the Former Landfill monitoring wells. During 2004, 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 2004, none of the of water chemistry parameters exceeded applicable groundwater standards (Table 7). In general, all of the landfill leachate indicator parameters were relatively low concentrations in comparison to background, and displayed either decreasing or stable trends in 2004. These trends indicate that the landfill cap is effective.

Sulfate concentrations ranged from 10.1 mg/L to 12.6 mg/L in the background wells, and from 8.9 mg/L to 20.5 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 levels in the downgradient wells nearly indistinguishable from those in the background wells. Chloride concentrations ranged from 3.0 mg/L to 17.3 mg/L, 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 5.5 mg/L to 13 mg/L in background wells and from 6 mg/L to 30 mg/L in downgradient wells. The trends plotted in Figure 10**,** demonstrate the alkalinity concentrations in 2004 are generally consistent with 2003 levels. The concentrations are approaching background, and suggest a gradual decline in the release of landfill leachate since the landfill was capped.

TDS concentrations ranged from 35 mg/L to 53 mg/L in the background wells and from 31 mg/L to 70 mg/L in the downgradient wells. TSS concentrations were from 2 mg/L to 6 mg/L in the background wells, and from 1 mg/L to 5 mg/L in the downgradient wells.

Nitrite, ammonia, and TKN were not detected in the Former Landfill monitoring wells during 2004.

2.2.2.3 Metals

Only two wells had detections of metals that exceeded the groundwater standards during 2004 (Table 8). Well 097-17 had metal concentrations exceeding groundwater standards for aluminum, iron, and thallium (708 µg/L , 1,050 µg/L , and 0.69 µg/L , respectively). Well106-02 had a thallium detection of 0.54 µg/L which is above the groundwater standard of 0.5 µg/L . These results are consistent with historic detections.

2.2.2.4 Pesticides/PCBs

There were no detections of pesticides or polychlorinated biphenyls (PCBs) during 2004. The sampling results are summarized in Table 9.

2.2.2.4 Radionuclides

There were no detections of radionuclides above the groundwater standards during 2004. The sampling results are summarized in Table 10, and concentration trend plots are shown on Figure 12.

Strontium-90 was detected in downgradient well 097-64, at an estimated concentration of 3.85 pCi/L, which is well below the standard of 8 pCi/L. Tritium was detected in upgradient well 86-42 at very low levels in each of the two sampling rounds with a maximum concentration of 770 pCi/L. Tritium was not detected in any other Former Landfill monitoring wells.

Radionuclide detections in 2004 continued to be stable and significantly reduced from historical high levels.

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.

Sediment

Sediment samples were collected from the Wooded Wetland Area in May 2004. The concentrations were compared to the maximum sediment concentrations reported in the ecological risk assessment (Appendix A, Table 5). The results suggest there is no elevated risk to adult salamanders from sediments in the Southern or the Northern Ponds. The results for 2004 indicate that metals concentrations in sediments are less than the maximum concentration benchmarks for copper, lead, manganese, mercury and zinc (See Appendix A, Tables 2A and 2B). The maximum doses from exposure to these sediments result in a hazard quotient that is less than 1.0. In addition, because concentrations of metals were not detected above BNL background in all but one location (sediment sample location SD-5 had a manganese concentration of 109 mg/kg, exceeding the background concentration of 84.3 mg/kg), the metals are not considered a potential risk.

Surface Water

Surface water samples from the Southern and Northern Ponds had average iron concentrations of 1,114 µg/L and 706 µg/L , respectively. Although the average concentration from the Southern Pond was higher than the 1,000-µg/L critical toxicity concentration (Appendix A, Table 2B), it was lower than the BNL background concentration of 1,990 µg/L .

In 2003, the average surface water concentration of aluminum (1,865 µg/L) was above the critical water concentration (525 µg/L) in the Northern Pond. During the 2004 sampling event, the average aluminum concentration fell to 170 µg/L . With the exception of iron in the Southern Pond, all average metals results were below the critical water concentration during 2004.

Based on the 2004 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 2004 Annual Wooded Wetlands Report is included in Appendix A of this report.

4.0 SOIL GAS MONITORING

4.1 Soil Gas Monitoring Networks

Soil gas readings were collected from wells surrounding the Current and Former Landfills in March - June, October, and November 2004. 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. 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 six 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 on the following dates.

Sampling Event	Current Landfill	Former Landfill
Round 1	March 2004	March 2004
Round 2	June 2004	June 2004
Round 3	October 2004	October 2004
Round 4	November 2004	November 2004

4.2 Results of Soil-Gas Monitoring

Action levels for soil gas are specified in 6 NYCRR Part 360-2.17(f) in terms of percent LEL, which is primarily related to the amount of methane present. This discussion focuses primarily on the methane levels detected during quarterly monitoring. Hydrogen sulfide is monitored, but has no

regulatory action level. 6 NYCRR Part 360-2.17(f) specifies that active measures to control decomposition gases are required when the concentration of methane or other explosive gases exceeds 25 percent of the LEL (or 1.3% methane) in facility structures, or 100 percent (%) of the LEL (or 5.3% methane) at the site boundary.

4.2.1 Current Landfill

A total of 23-soil gas monitoring well clusters are positioned around the Current Landfill (Figure 13). Potential receptors, or areas where methane can accumulate in the vicinity of the Current Landfill, include the National Weather Service building located 480 feet 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. 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 migration of landfill gas.

The results of the soil gas monitoring for 2004 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 northwest corner and the south boundary of the Current Landfill. The highest levels were recorded in well cluster SGM-3 (ranging from 0 % of the LEL to 1,042 % of the LEL) and in well cluster SGM-4 (ranging from 36 % of the LEL to 1,014 % 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 2004, 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.

Field notes indicate that the sampler believed that the hydrogen sulfide detector was not functioning properly during the March sampling event. Since three subsequent rounds of hydrogen sulfide were collected during 2004 and the parameter has no action level, the loss of one round of data does not adversely impact the overall monitoring program. While the results for March are presented in Table 12, they are not discussed further in this report. Hydrogen sulfide measurements collected from the soil gas monitoring wells ranged from 0 ppm to 21 ppm. Well SGM-12A located near the landfills southern section, 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 feet 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 2004. 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 2004, the well clusters were monitored on a quarterly basis. The only existing operating facilities and offices within the immediate vicinity of the Former Landfill area are located approximately 620 feet to the west. However, because these facilities do not have basements, there is minimal potential for hazardous levels of landfill gases to accumulate in these structures.

Based upon the four sampling events, little to no methane or hydrogen sulfide was detected. Table 13 details the 2004 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 2% methane were recorded. Hydrogen-sulfide gas also was measured during this survey. Field notes indicate that the sampler believed that the hydrogen sulfide detector was not functioning properly during the March sampling event. Since three subsequent rounds of hydrogen sulfide were collected during 2004 and the parameter has no action level, the loss of one round of data does not adversely impact the overall monitoring program. While the March results are presented in Table 12, they are not discussed further in this report. The remaining hydrogen sulfide results showed concentrations ranging from 0 ppm to 2 ppm. Appendix D includes the results of monitoring methane in the Former Landfill Area for 1996 through 2004.

Presently, there is no measured pathway for methane-gas migration, nor do the concentrations represent an explosive hazard as shown by the non-detect 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, and environmental monitoring system (groundwater wells, soil gas wells) in general 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). No gas vents at either landfill

required repair. Lawn mowing was undertaken at both the Former and Current Landfills and the levels in some areas was allowed to grow higher to improve vegetation that is intended to protect the liner material.

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 several times during the year. Weeds and bush were treated with herbicides in areas of the channel that are difficult to weed. Other than routine grass trimming, no additional maintenance or repair work was required.

5.3 Environmental Monitoring System

The monitoring wells and soil gas monitoring wells associated with the landfills required no significant maintenance.

5.4 Related Structures

There are no structures, other than those mentioned in Sections 5.1 through 5.3 related to the landfills.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Groundwater Monitoring

6.1.1 Conclusions for the Current Landfill

- VOCs such as benzene, and chloroethane continue to be detected in downgradient wells 087-11, 087-23, 087-27, 088-109, and 088-110 at concentrations above groundwater standards. The maximum VOC concentration (chloroethane) in 2004 was 29 µg/L in well 088-109. TVOC concentrations in these five wells have ranged between non-detect and 80 µg/L over the past several years indicating that low level VOCs continue to emanate from the landfill. The continued presence of leachate indicators is expected and normal, in view of the short time that the landfill has been capped, and the time needed for the transport of solutes from the upgradient end of the landfill to the downgradient monitoring network.

- Landfill water chemistry parameters and metals evaluated during the year suggest that leachate continues to emanate from the landfill. The continued presence of leachate indicators is expected and normal, in view of the short time that the landfill has been capped, and the time needed for the transport of solutes from the upgradient end of the landfill to the downgradient monitoring network.

- 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 2003.

- 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.

- Sediment samples collected from the Northern and Southern Pond of the Wooded Wetland area are below the maximum sediment benchmark concentrations for the metals of concern. Since the hazard quotient is less than 1.0, there is no potential risk to the adult salamander populations from pond sediments.

- Iron concentrations detected in the surface water samples from the Southern Pond of the Wooded Wetland indicate a low potential for risk to larval salamanders since, the ratio of their concentrations in the water to the critical concentrations is greater than 1.0 but less than 10.

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 no longer a significant source of VOC contamination. No VOCs were detected above groundwater standards in 2004. VOC concentrations in the downgradient wells were at or near the minimum detectable limits.
- Landfill-leachate indicators in downgradient wells continue to be detected at concentrations above background, indicating some continued generation of leachate. However, the leachate concentrations are very low and remain stable. This low level of generation is expected, given the age of the landfill.
- The Former Landfill no longer appears to be a significant source of strontium-90 contamination. Strontium-90 was only detected in a single downgradient well (097-64), but at a concentration below the standard of 8 μg/L.
- 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. Since leachate is continuing to discharge from the Landfill, there are no recommended changes to the monitoring program.

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 significant gas migration has been observed 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. If monitoring equipment fails during a sampling event, the sampling will be stopped and corrective action will be taken. Corrective action can include the repair of the equipment or obtaining new equipment. Once the corrective action is completed, the sampling event will continue.

6.2.3 Conclusions for the Former Landfill

Methane and hydrogen sulfide levels at the Former Landfill area continue to show little to no levels of landfill gasses.

6.2.4 Recommendations for the Former Landfill

There have been little to no detections of methane and/or hydrogen sulfide during monitoring at the Former Landfill over the past 6 years. If monitoring equipment fails during a sampling event, the sampling will be stopped and corrective action will be taken. Corrective action can include the repair of the equipment or obtaining new equipment. Once the corrective action is completed, the sampling event will continue.

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.

6.3.2 Former Landfill Area

Monthly inspections and maintenance will continue in accordance with the O&M requirements.

7.0 REFERENCES

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Table 1. Analytical Requirements for Groundwater Samples

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

NOTES:

a: Collect in 4th Quarter only.

b: Collect in 2nd and 4th Quarters.

Table 2. Current Landfill - Summary of 2004 VOC Data

Analyte	*Groundwater Standards ug/L*	087-09 3/10/2004 (ug/L)		087-09 5/3/2004 (ug/L)		087-09 11/17/2004 (ug/L)		087-11 3/10/2004 (ug/L)		087-11 5/3/2004 (ug/L)		087-11 11/17/2004 (ug/L)	
1,1,1,2-Tetrachloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
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*	0.5	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	**2**		**1.2**		**1.2**	
Benzene, 1,2,4-trimethyl	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.6	
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	UJ	0.5	U	0.5	U	0.5	UJ	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	1.1	
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	**6.6**		3.1		**6.1**	
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*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene chloride	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
n-Butylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
n-Propylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Naphthalene	*10*	0.5	U	0.5	U	0.5	U	0.71		0.5	U	1.1	
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	0.76	
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	0.67		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	--	0		0		0		9.31		4.97		10.86	

ug/L - Micrograms per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
R - Unusable data.

Table 2. Current Landfill - Summary of 2004 VOC Data

Analyte	Groundwater Standards ug/L	087-23 3/9/2004 (ug/L)		087-23 5/3/2004 (ug/L)		087-23 11/17/2004 (ug/L)		087-24 3/9/2004 (ug/L)		087-24 11/17/2004 (ug/L)		087-26 3/10/2004 (ug/L)	
1,1,1,2-Tetrachloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
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*	0.68		0.5	U	1.1		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*	0.97		0.99		**1.3**		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	UJ
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*	0.91		0.99		0.9		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*	**14**		**10**		**8.3**		0.5	U	0.5	U	0.5	U
Chloroform	*7*	0.5	U	0.5	U	0.5	U	0.5	U	0.11	J	0.5	U
cis-1,2-Dichloroethylene	*5*	0.5	U	0.5	U	0.16	J	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*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene chloride	*5*	0.5	U	0.5	U	0.56		0.5	U	0.31	J	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	UJ	0.5	U	0.5	U	0.5	UJ	0.5	U	0.5	U
o-Chlorotoluene	*5*	0.5	U	0.59		0.49	J	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*	0.61		0.6		0.62		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	--	17.17		13.17		13.43		0		0.42		0	

ug/L - Micrograms per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
R - Unusable data.

Table 2. Current Landfill - Summary of 2004 VOC Data

Analyte	Groundwater Standards ug/L	087-26 5/3/2004 (ug/L)		087-26 11/17/2004 (ug/L)		087-27 3/10/2004 (ug/L)		087-27 5/3/2004 (ug/L)		087-27 11/17/2004 (ug/L)		088-109 1/13/2004 (ug/L)	
1,1,1,2-Tetrachloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
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	UJ
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	1.4	
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	0.59		0.5	U	**1.1**		0.2	J
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	UJ	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	0.64		0.5	U	0.87		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	2.9		0.5	U	4		**9.7**	
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*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene chloride	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
n-Butylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
n-Propylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Naphthalene	*10*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	UJ
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	--	0		0		4.13		0		5.97		11.3	

ug/L - Micrograms per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
R - Unusable data.

Table 2. Current Landfill - Summary of 2004 VOC Data

Analyte	Groundwater Standards ug/L	088-109 5/3/2004 (ug/L)		088-109 8/3/2004 (ug/L)		088-109 11/17/2004 (ug/L)		088-110 3/10/2004 (ug/L)		088-110 5/3/2004 (ug/L)		088-110 11/17/2004 (ug/L)		088-21 3/9/2004 (ug/L)	
1,1,1,2-Tetrachloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	*1*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	*5*	2.6		4.8		2		1.2		0.5	U	0.53		0.5	U
1,1-Dichloroethylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloropropene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichloropropane	*0.04*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	*0.6*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	*1*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichloropropane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2,2-Dichloropropane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene	*1*	0.5	U	0.85		0.96		0.77		0.5	U	0.56		0.5	U
Benzene, 1,2,4-trimethyl	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene, 1,3,5-trimethyl-	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene, 1-methylethyl-	--	0.5	U	0.5	U	0.26	J	0.5	UJ	0.5	U	0.5	U	0.5	U
Bromobenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromodichloromethane	*50*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	*50*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon tetrachloride	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	*5*	0.5	U	0.08	J	0.14	J	0.5	U	0.5	U	0.3	J	0.5	U
Chlorobromomethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	*5*	**16**		**29**		**26**	D	**10**		2.1		3.9		0.5	U
Chloroform	*7*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.14	J	0.5	U
cis-1,2-Dichloroethylene	*5*	0.5	U	0.072	J	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,3-Dichloropropene	*0.4*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cymene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
DBCP	*0.04*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromochloromethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromomethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
EDB	*0.05*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethene, 1,2-dichloro-, (E)-	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorobutadiene	*0.5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
m-Dichlorobenzene	*3*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
m/p xylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl bromide	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl chloride	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl tert-butyl ether	*10*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene chloride	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
n-Butylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
n-Propylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Naphthalene	*10*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.43	J	0.5	UJ
o-Chlorotoluene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Dichlorobenzene	*3*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Xylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Chlorotoluene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Dichlorobenzene	*3*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.34	J	0.5	U
sec-Butylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
tert-Butylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	*0.4*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	*2*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
524.2 TVOC	--	18.6		34.802		29.79		11.97		2.1		6.58		0	

ug/L - Micrograms per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
R - Unusable data.

Table 2. Current Landfill - Summary of 2004 VOC Data

Analyte	Groundwater Standards ug/L	088-21 5/3/2004 (ug/L)		088-21 11/17/2004 (ug/L)		088-22 3/9/2004 (ug/L)		088-22 11/17/2004 (ug/L)		088-23 3/9/2004 (ug/L)		088-23 11/17/2004 (ug/L)	
1,1,1,2-Tetrachloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
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*	0.5	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*	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*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene chloride	*5*	0.5	U	0.37	J	0.5	U	0.35	J	0.5	U	0.33	J
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	UJ	0.5	U	0.5	UJ	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	--	0		0.37		0		0.35		0		0.33	

ug/L - Micrograms per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
R - Unusable data.

Table 3. Current Landfill - Summary of 2004 Water Chemistry Data

Analyte	***Groundwater Standards*** *mg/L*	**087-09** **1/13/2004** (mg/L)		**087-09** **5/3/2004** (mg/L)		**087-09** **8/3/2004** (mg/L)		**087-09** **11/17/2004** (mg/L)		**087-11** **1/13/2004** (mg/L)		**087-11** **5/3/2004** (mg/L)		**087-11** **8/3/2004** (mg/L)	
Alkalinity (as CaCO3)	--	26		21		23		16	J	223		165		173	
Ammonia (as N)	*2*	0.51		0.28		0.086		0.05	UJ	**8.5**		1.9		**4.2**	
Chloride	*250*	53.7		30.8		22.3		41.1	J	46.5		38.6		19.3	
Cyanide	*0.2*	0.005	R	0.005	U	0.005	U	0.005	U	0.005	R	0.005	U	0.005	U
Nitrate (as N)	*10*	0.1		0.17		0.11		0.42		0.02	U	0.02	U	0.011	B
Nitrite (as N)	*1*	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
Nitrogen	--	0.58		0.17				0.42		1.5		0.15	U		
Sulfate	*250*	12.5		12.8		12.4		16.5		9.6		13.4		10.1	
TDS	--	134	J	416	J	97	J	118	J	235	J	248	J	266	J
Total Kjeldahl Nitrogen	--	0.48	J	0.1	U	0.36	J	0.1	U	1.5	J	0.1	U	3.9	J
TSS	--	13		9		16		4		106		19		10	

mg/L - Milligrams per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
B - Result detected between the IDL and CRDL.
R - Unusable data.

Table 3. Current Landfill - Summary of 2004 Water Chemistry Data

Analyte	*Groundwater Standards* *mg/L*	**087-11** **11/17/2004** (mg/L)		**087-23** **1/13/2004** (mg/L)		**087-23** **5/3/2004** (mg/L)		**087-23** **8/4/2004** (mg/L)		**087-23** **11/17/2004** (mg/L)		**087-24** **3/9/2004** (mg/L)		**087-24** **5/3/2004** (mg/L)		**087-24** **8/4/2004** (mg/L)		**087-24** **11/17/2004** (mg/L)	
Alkalinity (as CaCO3)	--	149	J	114		118		180		118		5		5	U	5.5	U	12	
Ammonia (as N)	*2*	**2.1**	J	0.42		0.76				1.8		0.05	U	0.05	U			0.05	U
Chloride	*250*	12.7	J	18.8		15.1		11.7		10.8	J	16		16.5		15.6		14.7	J
Cyanide	*0.2*	0.005	U	0.0161	R	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Nitrate (as N)	*10*	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.54		0.5		0.45		0.4	
Nitrite (as N)	*1*	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
Nitrogen	--	0.25		0.45		0.15	U			0.11	B	0.54		0.5				0.4	
Sulfate	*250*	3.9		10.4		6.9		5	J	3		12.6		12		12.4	J	12.3	
TDS	--	207	J	87	J	197	J	205	J	169	J	56	J	64	J	75	J	58	J
Total Kjeldahl Nitrogen	--	0.25		0.45	J	0.1	U	2.6	J	0.11		0.1	R	0.1	U	0.26	UJ	0.1	U
TSS	--	28		48		4		27		34		1	U	1		2	U	1	U

mg/L - Milligrams per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
B - Result detected between the IDL and CRDL.
R - Unusable data.

Table 3. Current Landfill - Summary of 2004 Water Chemistry Data

Analyte	*Groundwater Standards* *mg/L*	**087-26** **1/13/2004** (mg/L)		**087-26** **5/3/2004** (mg/L)		**087-26** **8/3/2004** (mg/L)		**087-26** **11/17/2004** (mg/L)		**087-27** **1/13/2004** (mg/L)		**087-27** **5/3/2004** (mg/L)		**087-27** **8/3/2004** (mg/L)		**087-27** **11/17/2004** (mg/L)		**088-109** **1/13/2004** (mg/L)		**088-109** **5/3/2004** (mg/L)	
Alkalinity (as CaCO3)	--	25		5.5		5	U	12	J	107		61		93		94	J	63		40	
Ammonia (as N)	*2*	0.05	U	0.05	UJ	0.05	U	0.05	UJ	1		0.13	J	1.4		1.1	J	0.94		0.92	J
Chloride	*250*	15.6		14.5		15.4		15.1	J	24.2		3.8		13.5		25.7	J	12.9		6.5	
Cyanide	*0.2*	0.005	R	0.005	U	0.005	U	0.005	U	0.005	R	0.005	U	0.005	U	0.005	U	0.005	R	0.005	U
Nitrate (as N)	*10*	0.44		0.46		0.45		0.47		0.02	U	0.31		0.02	U	0.02	U	0.066		0.071	
Nitrite (as N)	*1*	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
Nitrogen	--	0.44		0.46				0.47		0.77		0.31				0.15	U	0.43		0.07	B
Sulfate	*250*	11.6		11.5		11.5		11.2		12.6		10		9.2		14.3		20.4		21.6	
TDS	--	19	J	57	J	67	J	69	J	144	J	90	J	148	J	10200	J	117	J	93	J
Total Kjeldahl Nitrogen	--	0.1	J	0.1	U	0.1	UJ	0.1	U	0.77	J	0.1	U	1.1	J	0.1	U	0.36	J	0.1	U
TSS	--	1		3	U	2		1	U	53		35		12		25		17		13	

mg/L - Milligrams per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
B - Result detected between the IDL and CRDL.
R - Unusable data.

Table 3. Current Landfill - Summary of 2004 Water Chemistry Data

Analyte	*Groundwater Standards* *mg/L*	**088-109** **8/3/2004** (mg/L)	**088-109** **11/17/2004** (mg/L)	**088-110** **1/13/2004** (mg/L)	**088-110** **5/3/2004** (mg/L)	**088-110** **8/3/2004** (mg/L)	**088-110** **11/17/2004** (mg/L)	**088-21** **1/13/2004** (mg/L)	**088-21** **5/3/2004** (mg/L)	**088-21** **8/3/2004** (mg/L)	**088-21** **11/17/2004** (mg/L)	**088-22** **3/9/2004** (mg/L)
Alkalinity (as CaCO3)	--	221	145 J	88	62	92	82 J	45	40	30	19.5	5 U
Ammonia (as N)	*2*	**5**	**2.1** J	**2.3**	0.69	1.1	**2.7** J	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U
Chloride	*250*	16.9	20.6 J	16.2	10.5	27.2	24.7 J	16.2	16.6	16.5	11.2 J	12.9
Cyanide	*0.2*	0.005 U	0.005 U	0.005 R	0.005 U	0.005 U	0.005 U	0.005 R	0.005 U	0.005 U	0.005 U	0.005 U
Nitrate (as N)	*10*	0.02 U	0.017 B	0.02 U	0.11	0.02 U	0.02 U	0.37	0.69	0.024	0.4	0.02 U
Nitrite (as N)	*1*	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Nitrogen	--		0.017 B	3.2	0.11 B		0.15 U	0.49	0.69		0.4	0.36
Sulfate	*250*	11.5	16.2	19.2	20	19.9	29.3	4.2	5.9	3.9	5.1	12.4
TDS	--	281 J	238 J	115 J	519 J	176 J	184 J	5 UJ	93 J	78 J	52 J	60 J
Total Kjeldahl Nitrogen	--	3.5 J	0.1 U	3.2 J	0.1 U	0.79 J	0.1 U	0.12 J	0.1 U	0.42 J	0.1 U	0.36 R
TSS	--	50	27	41	4	15	40	144	5 U	8	13	30

mg/L - Milligrams per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
B - Result detected between the IDL and CRDL.
R - Unusable data.

Table 3. Current Landfill - Summary of 2004 Water Chemistry Data

Analyte	*Groundwater Standards mg/L*	**088-22** **5/3/2004** (mg/L)		**088-22** **11/17/2004** (mg/L)		**088-23** **3/9/2004** (mg/L)		**088-23** **5/3/2004** (mg/L)		**088-23** **11/17/2004** (mg/L)	
Alkalinity (as CaCO3)	--	23		5	U	30		28		28	
Ammonia (as N)	*2*	0.05	UJ	0.05	U	0.05	U	0.05	UJ	0.05	U
Chloride	*250*	13.4		13.2	J	19.8		18.9		17.4	J
Cyanide	*0.2*	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Nitrate (as N)	*10*	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
Nitrite (as N)	*1*	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
Nitrogen	--	0.15	U	0.15	U	0.15	U	0.15	U	0.15	U
Sulfate	*250*	12.1		10.6		13.7		13.6		12	
TDS	--	91	J	54	J	60	J	80	J	90	J
Total Kjeldahl Nitrogen	--	0.1	U	0.1	U	0.1	R	0.1	U	0.1	U
TSS	--	64		16		3		4	U	6	

mg/L - Milligrams per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
B - Result detected between the IDL and CRDL.
R - Unusable data.

Table 4. Current Landfill - Summary of 2004 Metals Data

Analyte	*Groundwater Standards ug/L*	**087-09 1/13/04** (ug/L)		**087-09 5/3/04** (ug/L)		**087-09 8/3/04** (ug/L)		**087-09 11/17/04** (ug/L)		**087-11 1/13/04** (ug/L)		**087-11 5/3/04** (ug/L)		**087-11 8/3/04** (ug/L)		**087-11 11/17/04** (ug/L)	
Aluminum	*200*	92.9	R	52.4		69.5		**419**	*	**676**		112		33.4	B	118	*
Antimony	*3*	5	U	5	U	5	U	5	R	5	U	5	U	5	U	5	R
Arsenic	*10*	5	U	1.4	B	0.99	B	1.6	B	8.1		5.5		5.5		6.1	R
Barium	*1000*	45.5		32.2		30	E	23.9	NJ	62.4		38.4		41.8	E	28.9	NJ
Beryllium	*3*	2	U	0.049	B	2	U	2	U*	2	U	2	U	2	U	2	U*
Cadmium	*5*	2	U	2	U	2	U	0.043	R	2	U	2	U	2	U	2	R
Calcium	--	7690		8050		7750		6460		28300		19600		24900		21200	
Chromium	*50*	0.84	B	1.9	B	2.2	B	8.7	R	3.1	B	5	U	5	U	5	R
Cobalt	--	5	U	1.1	B	1.6	BE	0.4	B	5	U	0.42	B	0.55	BE	0.42	B
Copper	*200*	10	U	2.6	B	9.2	B	4	B	2.5	B	10	U	3.5	B	1.3	B
Iron	*300*	**7280**	NJ	**6330**	N	**8320**	J	**3600**	J	**68700**	NJ	**49400**	N	**60300**	J	**69400**	J
Lead	*25*	3	U	0.45	B	3	U	1.7	R	3	U	3	U	3	U	3	R
Magnesium	*35000*	3550		3560		3620		2880		8390		6750		7080		5880	
Manganese	*300*	**867**		**619**	E	261		34.5	NJ	**1960**		**1460**	E	**2210**		**2960**	NJ
Mercury	*0.7*	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Nickel	*100*	10	U	1.6	B	1.9	B	4.3	B	2.7	B	1.7	B	1.6	B	1.5	B
Potassium	--	1370	B	2160		2000	U	835	B	10100		7570		7200		4080	
Selenium	*10*	5	U	5	U	5	U	5	U*	5	U	5	U	1.6	B	5	U*
Silver	*50*	2	U	2	U	2	U	2	UJ	2	U	2	U	2	U	0.058	JB
Sodium	*20000*	**29000**		**21100**		17100		**36100**		**28200**		**23500**		18900		14900	
Thallium	*0.5*	5	U	5	U	5	U	5	UNJ	9.6		5	U	5	U	0.91	BNJ
Vanadium	--	0.64	B	1.1	B	3	B	3.5	B	3.2	B	5	U	1.9	B	5	U
Zinc	*2000*	6.6	B	11.2	R	11.7	J	11	R	10	U	13.8	R	9.1	B J	6.6	B

U - Not detected.
J - Estimated value.
R - Unusable data.

ug/L - Micrograms per liter.
-- No standard applicable.
B - Result detected between the IDL and CRDL.
N - Matrix spike recovery did not meet QC limits.
* - Lab duplicate did not meet QC limits.

Table 4. Current Landfill - Summary of 2004 Metals Data

Analyte	*Groundwater Standards ug/L*	**087-23 1/13/04** (ug/L)		**087-23 5/3/04** (ug/L)		**087-23 8/4/04** (ug/L)		**087-23 11/17/04** (ug/L)		**087-24 3/9/04** (ug/L)		**087-24 5/3/04** (ug/L)		**087-24 8/4/04** (ug/L)		**087-24 11/17/04** (ug/L)	
Aluminum	*200*	31.1	B	50	U	50	U	94.3	*	31.9	B	50	U	50	U	50	U*
Antimony	*3*	5	U	5	U	5	U	5	U*	5	U	5	U	5	U	5	U*
Arsenic	*10*	6		**10.4**		**11.8**		**11.8**		5	U	5	U	5	U	5	U
Barium	*1000*	53.3		68.6		111	E	75.3	N	11.4	B	11.4	B	12.5	BE	10.5	BN
Beryllium	*3*	2	U	2	U	2	U	2	U*	2	U	2	U	2	U	2	U*
Cadmium	*5*	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Calcium	--	6800		8400		13900		13700		4090		4090		4430		4480	
Chromium	*50*	5	U	5	U	5	U	5	U	4.2	B	5	U	5	U	5	U
Cobalt	--	3.2	B	9.9		11.6	E	4.5	B	0.36	B	1.6	B	1.8	BE	1.7	B
Copper	*200*	10	U	10	U	1.2	B	0.53	B	10	U	10	U	0.46	B	10	U
Iron	*300*	**47600**	NJ	**69100**	N	**83000**		**75700**		23.1	B	46	BN	18.5	B	50	U
Lead	*25*	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U
Magnesium	*35000*	2330		3070		4600		4380		2960		2980		2970		3260	
Manganese	*300*	**9380**		**8250**	E	**6060**		**4210**	N	5	U	1	BE	5	U	5	UN
Mercury	*0.7*	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Nickel	*100*	10	U	1.9	B	2.7	B	2.1	B	10	U	10	U	1.1	B	0.82	B
Potassium	--	2000	U	3270		2710		2320		2000	U	3410		1530	B	1080	B
Selenium	*10*	5	U	5	U	5	U	5	U*	0.54	B	5	U	1.7	B	5	U*
Silver	*50*	1.2	B	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Sodium	*20000*	13700		7740		9470		9230		11400		11400		12200		13300	
Thallium	*0.5*	7.7		5	U	5	U	5	UN	5	U	5	U	5	U	5	UN
Vanadium	--	0.81	B	1	B	5	U	5	U	5	U	5	U	5	U	5	U
Zinc	*2000*	10	U	5.9	B	10.7	R	4.4	B	4.7	B	3.7	B	4.6	B J	10	U

U - Not detected.
J - Estimated value.
R - Unusable data.

ug/L - Micrograms per liter.
-- No standard applicable.
B - Result detected between the IDL and CRDL.
N - Matrix spike recovery did not meet QC limits.
* - Lab duplicate did not meet QC limits.

Table 4. Current Landfill - Summary of 2004 Metals Data

Analyte	*Groundwater Standards ug/L*	**087-26 1/13/04** (ug/L)		**087-26 5/3/04** (ug/L)		**087-26 8/3/04** (ug/L)		**087-26 11/17/04** (ug/L)		**087-27 1/13/04** (ug/L)		**087-27 5/3/04** (ug/L)		**087-27 8/3/04** (ug/L)		**087-27 11/17/04** (ug/L)	
Aluminum	*200*	11	B	50	U	50	U	106	*	76.2	R	68.8		50	U	169	*
Antimony	*3*	5	U	5	U	5	U	5	R	5	U	5	U	5	U	5	R
Arsenic	*10*	5	U	5	U	5	U	0.6	B	3.7	B	1.2	B	3.3	B	9.5	R
Barium	*1000*	15.4	B	17.5	B	19.3	BE	18.8	BNJ	25.6		8	B	30	E	37.9	NJ
Beryllium	*3*	2	U	2	U	2	U	2	U*	2	U	2	U	2	U	2	U*
Cadmium	*5*	2	U	2	U	0.11	B	2	R	2	U	2	U	2	U	2	R
Calcium	--	3340		3980		4450		4730		13900		13400		13100		18700	
Chromium	*50*	5	U	5	U	5	U	5	R	5	U	5	U	5	U	5	R
Cobalt	--	0.64	B	1.9	B	2.2	BE	2.7	B	3.9	B	1.9	B	6	E	6.1	
Copper	*200*	3.9	B	4.5	B	4.6	B	3.8	B	10	U	4.6	B	0.56	B	0.61	B
Iron	*300*	**569**	NJ	**443**	N	**419**	J	255	J	**34600**	NJ	**9650**	N	**36600**	J	**48200**	J
Lead	*25*	3	U	3	U	3	U	3	R	3	U	3	U	3	U	3	R
Magnesium	*35000*	2330		2800		3060		3450		4330		6880		3230		6450	
Manganese	*300*	9.1	R	4.1	BE	2.3	B	2.9	BNJ	**2020**		**569**	E	**1580**		**2500**	NJ
Mercury	*0.7*	0.2	U	0.14	B	0.2	U	0.2	U	0.11	B	0.2	U	0.2	U	0.2	U
Nickel	*100*	10	U	1.3	B	1.6	B	1.6	B	10	U	0.84	B	1.9	B	2.5	B
Potassium	--	2000	U	2000	U	2000	U	820	B	1770	B	2950		4270		3530	
Selenium	*10*	5	U	0.71	B	5	U	5	U*	5	U	5	U	5	U	5	U*
Silver	*50*	2	U	2	U	0.065	B	2	UJ	2	U	2	U	2	U	0.049	JB
Sodium	*20000*	12500		11000		11000		13100		13200		3040		8170		**20800**	
Thallium	*0.5*	5	U	5	R	0.81	B	5	UNJ	5.2		5	R	5	U	0.57	BNJ
Vanadium	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Zinc	*2000*	4	B	10	U	3.5	B J	4.2	B	10	U	3.8	B	5.1	B J	4	B

U - Not detected.
J - Estimated value.
R - Unusable data.

ug/L - Micrograms per liter.
-- No standard applicable.
B - Result detected between the IDL and CRDL.
N - Matrix spike recovery did not meet QC limits.
* - Lab duplicate did not meet QC limits.

Table 4. Current Landfill - Summary of 2004 Metals Data

Analyte	*Groundwater Standards ug/L*	**088-109 1/13/04** (ug/L)		**088-109 5/3/04** (ug/L)		**088-109 8/3/04** (ug/L)		**088-109 11/17/04** (ug/L)		**088-110 1/13/04** (ug/L)		**088-110 5/3/04** (ug/L)		**088-110 8/3/04** (ug/L)		**088-110 11/17/04** (ug/L)		**088-21 1/13/04** (ug/L)		**088-21 5/3/04** (ug/L)	
Aluminum	*200*	68.1	R	86.3		49.5	B	61.4	*	46.8	B	50	U	50	U	511	*	**257**		67.7	
Antimony	*3*	5	U	5	U	5	U	5	R	5	U	5	U	5	U	5	R	5	U	5	U
Arsenic	*10*	5	U	5	U	5.7		**12.3**	R	6.3		5.2		**11.2**		**14.9**	R	5	U	5	U
Barium	*1000*	30.5		25.2		115	E	83.4	NJ	25		27.6		32.1	E	47.1	NJ	5.7	B	2.9	B
Beryllium	*3*	2	U	2	U	2	U	2	U*	2	U	2	U	2	U	2	U*	2	U	2	U
Cadmium	*5*	2	U	0.48	B	2	U	2	R	2	U	2	U	2	U	2	R	2	U	2	U
Calcium	--	19500		18300		53200		37500		13200		9940		14700		17400		5940		6610	
Chromium	*50*	5	U	5	U	5	U	5	R	5	U	5	U	5	U	5	R	5	U	5	U
Cobalt	--	4	B	4.1	B	4.9	BE	6.3		2.9	B	2.6	B	2.8	BE	5	B	5	U	5	U
Copper	*200*	10	U	10	U	1.9	B	1.3	B	10	U	10	U	1	B	0.52	B	10	U	10	U
Iron	*300*	**9110**	NJ	**8840**	N	**56900**	J	**49900**	J	**32500**	NJ	**24700**	N	**43200**	J	**54300**	J	**14600**	NJ	**3020**	N
Lead	*25*	3	U	3	U	3	U	3	R	3	U	3	U	3	U	3	R	3	U	3	U
Magnesium	*35000*	5500		5650		8590		7020		3410		3510		3730		5150		2790		3410	
Manganese	*300*	**885**		**559**	E	**1210**		**1660**	NJ	**2010**		**1740**	E	**3190**		**3540**	NJ	99.1		23.1	E
Mercury	*0.7*	0.2	U	0.1	B	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Nickel	*100*	10	U	1.8	B	4.3	B	3.4	B	10	U	1.2	B	2	B	2.4	B	10	U	10	U
Potassium	--	2830		3300		12600		8660		4110		5030		3010		4250		2000	U	2000	U
Selenium	*10*	5	U	5	U	5	U	5	U*	5	U	5	U	5	U	5	U*	5	U	5	U
Silver	*50*	2	U	2	U	0.046	B	2	UJ	2	U	2	U	2	U	2.9	J	2	U	2	U
Sodium	*20000*	7360		5510		15500		17600		12300		10400		16000		**22500**		15200		18700	
Thallium	*0.5*	5	U	5	R	5	U	5	UNJ	3.9	B	5	U	5	U	5	UNJ	5	U	5	R
Vanadium	--	5	U	5	U	1.7	B	5	U	5	U	5	U	1.6	B	5	U	12.6		4	B
Zinc	*2000*	10	U	23.9	R	8.2	B J	10	U	10	U	10	U	4.6	B J	10	U	10	U	10	U

U - Not detected.
J - Estimated value.
R - Unusable data.

ug/L - Micrograms per liter.
-- No standard applicable.
B - Result detected between the IDL and CRDL.
N - Matrix spike recovery did not meet QC limits.
* - Lab duplicate did not meet QC limits.

Table 4. Current Landfill - Summary of 2004 Metals Data

Analyte	*Groundwater Standards ug/L*	**088-21 8/3/04** (ug/L)		**088-21 11/17/04** (ug/L)		**088-22 3/9/04** (ug/L)		**088-22 5/3/04** (ug/L)		**088-22 11/17/04** (ug/L)		**088-23 3/9/04** (ug/L)		**088-23 5/3/04** (ug/L)		**088-23 11/17/04** (ug/L)	
Aluminum	*200*	166		**1500**	*	50	U	50	U	50	U*	22.9	B	50	U	180	*
Antimony	*3*	5	U	5	U*	5	U	5	U	5	U*	1.4	B	5	U	5	U*
Arsenic	*10*	1.8	B	1.7	B	**22.8**		**35.4**		**18**		2.4	B	2.5	B	3.1	B
Barium	*1000*	5.7	BE	10.4	BN	26.4		26.7		25.2	N	3.6	B	3.7	B	5	BN
Beryllium	*3*	2	U	2	U*	2	U	2	U	2	U*	2	U	2	U	2	U*
Cadmium	*5*	2	U	2	U	2	U	**7.8**		2	U	2	U	1.9	B	2	U
Calcium	--	5020		3390		2650		2530		2380		9150		10300		9310	
Chromium	*50*	5	U	5	U	3.3	B	5	U	5	U	3.3	B	5	U	3.9	B
Cobalt	--	1.2	BE	1.5	B	1.5	B	5		3.9	B	5	U	0.33	B	0.32	B
Copper	*200*	3.7	B	2.4	B	5.8	B	10	U	0.41	B	10	U	10	U	1	B
Iron	*300*	**11700**	J	**8330**		**23300**		**27600**	N	**13300**		**3030**		**2840**	N	**3330**	
Lead	*25*	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U
Magnesium	*35000*	2400		1830		752		684		750		2460		2500		2520	
Manganese	*300*	**437**		252	N	**724**		**842**	E	**994**	N	**1880**		**1750**	E	**2320**	N
Mercury	*0.7*	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Nickel	*100*	1.9	B	0.52	B	2.9	B	3	B	3.2	B	10	U	10	U	1.7	B
Potassium	--	1740	B	1400	B	2000	U	1450	B	1090	B	1390	B	2000	U	616	B
Selenium	*10*	5	U	5	U*	0.57	B	5	U	5	U*	0.6	B	0.65	B	5	U*
Silver	*50*	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Sodium	*20000*	15800		15900		13300		13000		14600		13500		13600		15700	
Thallium	*0.5*	5	U	5	UN	5	U	5	R	5	UN	5	U	5	R	5	UN
Vanadium	--	13.1		29.9		5	U	5	U	5	U	5	U	5	U	5	U
Zinc	*2000*	9.2	B J	4.3	B	10	U	3.7	B	5.3	B	10	U	10	U	10	U

U - Not detected.
J - Estimated value.
R - Unusable data.

ug/L - Micrograms per liter.
-- No standard applicable.
B - Result detected between the IDL and CRDL.
N - Matrix spike recovery did not meet QC limits.
* - Lab duplicate did not meet QC limits.

Table 5. Current Landfill - Summary of 2004 Radionuclide Data.

Analyte	Groundwater Standards pCi/L	087-09 3/10/2004 pCi/L				087-09 11/17/2004 pCi/L				087-11 3/10/2004 pCi/L				087-11 11/17/2004 pCi/L			
		Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error
Americium-241	*1.2*	4.2	U	11	6.1	-1.3	U	14	8.3	5	U	10	5.5	3.9	U	16	8.9
Beryllium-7	*40000*	-0.8	U	63	35	-41	U	93	56	5	U	58	31	-6	U	80	43
Cesium-134	*80*	-1.1	U	8.1	4.5	-12.6	U	12	8.4	-0.5	U	8.2	4.5	3.5	U	13	7.4
Cesium-137	*120*	0.3	U	11	5.7	5.8	U	16	8.5	-3.1	U	11	6	4.3	U	14	6.7
Co-60	*200*	2.4	U	15	7.3	3.4	U	18	8.7	0.7	U	15	7.3	-5.3	U	14	8.3
Cobalt-57	*4000*	1.4	U	4.2	2.3	-0.3	U	5.5	3.2	-1.1	U	3.6	2.1	-1.6	U	5.4	3.2
Europium-152	*841*	16	U	69	32	29	U	110	53	-31	U	64	39	-5	U	100	53
Europium-154	*573*	12	U	81	41	23	U	110	58	-14	U	72	40	-9	U	120	67
Europium-155	*4000*	-5.5	U	14	8.7	-7	U	21	13	-6.5	U	13	8.2	13	U	22	12
Gross Alpha	*15*	0.95	U	1.1	0.77	-0.43	U	1.4	0.63	2.9	U	2.9	2.1	0.32	U	1.1	0.64
Gross Beta	*1000*	1.7	J	1.6	1	0.46	UJ-D	1.2	0.75	8.1		2	1.8	1.03	J-D	1	0.65
Manganese-54	*2000*	2.5	U	9.5	4.7	4.3	U	15	7.7	-2.8	U	7	4.2	2.8	U	15	7.5
Sodium-22	*10000*	1.4	U	12	6	-1.2	U	16	8.8	5.4	U	13	5.9	-0.5	U	14	7.3
Strontium-90	*8*	0.23	U	0.65	0.39	0.84	J(+)-S	0.65	0.43	0.88		0.59	0.43	0.79	J(+)-S	0.5	0.34
Tritium	*20000*	220	U	270	180	-90	U	320	200	680		280	250	410	J	320	210
Zinc-65	*360*	-9	U	17	10	-3	U	28	15	-2	U	19	10	-9	U	26	16

pCi/L - PicoCuries per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
R - Unusable data.
(+) - Biased high.
-S - Chemical yield recovery failed.
-D - Duplicate recovery failed.

Table 5. Current Landfill - Summary of 2004 Radionuclide Data.

Analyte	Groundwater Standards pCi/L	087-23 3/9/2004 pCi/L				087-23 11/17/2004 pCi/L				087-24 3/9/2004 pCi/L				087-24 11/17/2004 pCi/L				087-26 3/10/2004 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*	2.8	U	11	5.9	4.8	U	15	8.4	-3.1	U	11	6.5	7.3	U	15	7.9	0.7	U	11	6.3
Beryllium-7	*40000*	-16	U	50	29	6	U	85	46	-27	U	49	30	3	U	74	39	6	U	73	40
Cesium-134	*80*	-7.5	U	6.9	4.8	-1	U	9.6	6.2	-4.1	U	6.8	4.4	-3.1	U	11	6.3	-0.5	U	7.1	4
Cesium-137	*120*	-1.1	U	11	5.6	-1.2	U	11	5.9	-4.7	U	8.4	5.2	6.6	U	19	9	-1.1	U	9.4	5.2
Co-60	*200*	5	U	16	7.1	-5.4	U	12	7.4	1.5	U	11	5	3.2	U	20	9.5	-0.7	U	8.3	4.2
Cobalt-57	*4000*	1	U	4.1	2.2	-0.4	U	5.5	3.1	0.7	U	4.5	2.4	2.7	U	5.7	3.1	0.5	U	4.3	2.4
Europium-152	*841*	13	U	79	39	32	U	110	50	4	U	76	38	28	U	110	51	2	U	67	32
Europium-154	*573*	-6	U	70	38	62	U	110	47	0.7	U	77	41	35	U	120	59	23	U	75	34
Europium-155	*4000*	2.6	U	15	8.3	2	U	20	11	-4.2	U	16	9.4	-6	U	18	11	8.4	U	18	9.2
Gross Alpha	*15*	0.84	U	1.4	0.92	-0.06	U	1.3	0.66	0.35	U	0.9	0.53	0.04	U	0.6	0.33	0.38	U	1	0.6
Gross Beta	*1000*	1.83	J	1.4	0.97	0.2	U	1.8	1.1	-0.21	U	1.4	0.81	0.34	U	1	0.62	0.63	U	1.3	0.79
Manganese-54	*2000*	0.3	U	7.9	4	2	U	13	6.7	0.2	U	9.6	5.1	-3.7	U	11	6.5	-0.6	U	9.1	4.8
Sodium-22	*10000*	-2.1	U	8.4	4.7	4.6	U	15	6.6	2.1	U	10	4.7	-0.1	U	14	7.3	7.3	U	14	6.2
Strontium-90	*8*	0.3	U	0.6	0.37	0.27	U	0.38	0.24	-0.32	U	0.67	0.38	0.09	U	0.57	0.33	-0.07	U	0.62	0.36
Tritium	*20000*	220	U	280	180	260	U	290	180	630		280	250	650		290	210	820		280	270
Zinc-65	*360*	-10	U	19	12	-13	U	26	16	-7	U	17	10	0.9	U	27	14	-2	U	19	10

pCi/L - PicoCuries per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
R - Unusable data.
(+) - Biased high.
-S - Chemical yield recovery failed.
-D - Duplicate recovery failed.

Table 5. Current Landfill - Summary of 2004 Radionuclide Data.

Analyte	Groundwater Standards pCi/L	087-26 11/17/2004 pCi/L				087-27 3/10/2004 pCi/L				087-27 11/17/2004 pCi/L				088-109 3/9/2004 pCi/L				088-109 11/17/2004 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*	0.2	U	16	9	-2.6	U	11	6.6	3.9	U	14	7.7	0.3	U	11	6	4.8	U	16	8.8
Beryllium-7	*40000*	-11	U	82	46	-2	U	56	30	-45	U	71	45	17	U	59	29	-44	U	75	47
Cesium-134	*80*	-0.4	U	11	6.7	-1.3	U	8.1	4.6	-8.6	U	12	7.8	-2.6	U	7.8	5.1	-2.1	U	12	8
Cesium-137	*120*	-0.7	U	14	7.6	1.6	U	10	5.3	0.5	U	18	9.2	-0.5	U	8.5	4.5	3.4	U	14	6.8
Co-60	*200*	-1.1	U	14	7.5	-1.8	U	10	5.5	-3	U	20	11	5.3	U	14	6.2	-4.2	U	13	7.2
Cobalt-57	*4000*	-0.6	U	5.2	3	0.1	U	4.1	2.3	-1.5	U	4.7	2.9	-1	U	4.4	2.6	2	U	6.2	3.3
Europium-152	*841*	21	U	110	55	13	U	62	26	-8	U	110	58	-23	U	74	42	-48	U	85	54
Europium-154	*573*	-19	U	110	61	-13	U	74	41	21	U	110	57	-24	U	68	40	-12	U	110	60
Europium-155	*4000*	-5	U	21	12	15	U	19	10	-4	U	19	11	-0.5	U	17	9.4	2	U	21	12
Gross Alpha	*15*	-0.37	U	0.79	0.39	1.4	U	1.7	1.2	-0.22	U	1.2	0.65	0.47	U	1.1	0.67	0.13	U	0.82	0.46
Gross Beta	*1000*	-0.51	UJ-D	1	0.59	2.6	J	1.5	1.1	0.53	UJ-D	1	0.63	1.38	U	1.6	0.99	1.73	J-D	0.94	0.66
Manganese-54	*2000*	0.8	U	10	5	4.2	U	9.9	4.5	-0.05	U	11	5.9	-2.3	U	6.1	3.6	6.2	U	15	7.5
Sodium-22	*10000*	-0.9	U	13	6.6	-1.2	U	11	5.7	-4	U	14	7.9	3.3	U	13	6.1	2	U	13	5.6
Strontium-90	*8*	0.22	U	0.63	0.38	0.55	U	0.6	0.39	0.6	J(+)-S	0.43	0.28	-0.05	U	0.69	0.4	0.51	J(+)-S	0.34	0.24
Tritium	*20000*	290	U	310	190	480	J	280	220	150	U	310	170	10	U	280	140	50	U	320	160
Zinc-65	*360*	-5	U	28	15	-6.7	U	11	7.4	0.8	U	30	16	-7	U	19	11	6	U	29	16

pCi/L - PicoCuries per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
R - Unusable data.
(+) - Biased high.
-S - Chemical yield recovery failed.
-D - Duplicate recovery failed.

Table 5. Current Landfill - Summary of 2004 Radionuclide Data.

Analyte	Groundwater Standards pCi/L	088-110 3/10/2004 pCi/L				088-110 11/17/2004 pCi/L				088-21 3/9/2004 pCi/L				088-21 11/17/2004 pCi/L				088-22 3/9/2004 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*	2.5	U	11	5.9	3.9	U	16	8.6	-2.6	U	12	6.9	3.6	U	16	9.3	-4.8	U	10	6.4
Beryllium-7	*40000*	19	U	60	31	-6	U	86	48	-0.2	U	71	40	-27	U	81	48	4	U	63	34
Cesium-134	*80*	0.5	U	8.6	4.6	-1.1	U	12	6.7	-9.8	U	7.7	5.7	4.3	U	14	7.7	-6.4	U	8.4	5.5
Cesium-137	*120*	-0.09	U	12	5.9	1.7	U	11	5.6	1	U	9.5	5.1	7.3	U	16	8	3.5	U	12	6.2
Co-60	*200*	-0.6	U	14	7	-2	U	14	7.2	5.4	U	12	5.5	1.6	U	18	9	-0.1	U	8.8	4.4
Cobalt-57	*4000*	0.9	U	3.9	2.1	-0.8	U	5.6	3.2	-2	U	4.2	2.6	-0.8	U	5.6	3.3	0.9	U	4.5	2.5
Europium-152	*841*	-10	U	63	34	-15	U	100	54	1	U	75	38	15	U	110	51	-8	U	65	35
Europium-154	*573*	35	U	80	37	5	U	120	65	22	U	86	42	-40	U	120	69	2	U	74	38
Europium-155	*4000*	-6.3	U	14	8.9	4	U	21	12	6	U	17	9.4	-1	U	21	12	-1	U	16	9.4
Gross Alpha	*15*	0.9	U	1.8	1.1	-0.06	U	1.4	0.74	1.05	J	0.84	0.67	0.53	J	0.52	0.35	0.42	U	1.1	0.63
Gross Beta	*1000*	5.3		1.5	1.3	0.9	UJ-D	0.91	0.58	3.2	J	1.3	1	0.06	U	1	0.59	0.98	U	1.3	0.82
Manganese-54	*2000*	0.6	U	7.6	3.8	6	U	14	6.6	2.9	U	11	5.6	2.3	U	14	7	3.9	U	10	4.8
Sodium-22	*10000*	-1.5	U	9.8	5.4	-1.8	U	13	6.9	-1.1	U	11	6.2	-4.2	U	16	8.9	1.2	U	11	5.4
Strontium-90	*8*	0.47	U	0.63	0.4	0.6	J(+)-S	0.39	0.27	0.95		0.57	0.42	1.9		0.48	0.45	0.3	U	0.59	0.37
Tritium	*20000*	650		370	330	150	U	320	180	50	U	270	140	200	U	290	180	700		280	260
Zinc-65	*360*	-2.6	U	17	9	-13	U	25	16	-6	U	19	11	2	U	28	16	-1	U	20	11

pCi/L - PicoCuries per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
R - Unusable data.
(+) - Biased high.
-S - Chemical yield recovery failed.
-D - Duplicate recovery failed.

Table 5. Current Landfill - Summary of 2004 Radionuclide Data.

Analyte	Groundwater Standards pCi/L	088-22 11/17/2004 pCi/L				088-23 3/9/2004 pCi/L				088-23 11/17/2004 pCi/L			
		Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error
Americium-241	*1.2*	-2.9	U	13	7.8	-3.7	U	10	6	-7.7	U	14	8.4
Beryllium-7	*40000*	7	U	88	48	-3	U	65	35	1	U	88	47
Cesium-134	*80*	-2.5	U	13	7.7	-3.1	U	7.2	4.4	-2.2	U	11	6.2
Cesium-137	*120*	0.7	U	14	7.3	-1	U	8.3	4.5	4	U	14	6.9
Co-60	*200*	2.2	U	15	7	3.5	U	12	5.2	4	U	18	8.3
Cobalt-57	*4000*	2.1	U	5.3	2.8	-0.9	U	4.1	2.4	0.04	U	5.4	3
Europium-152	*841*	-56	U	98	61	35	U	91	41	-24	U	95	54
Europium-154	*573*	-55	U	110	69	6	U	75	38	-53	U	88	57
Europium-155	*4000*	-0.3	U	21	12	-8	U	15	9.3	-1	U	21	12
Gross Alpha	*15*	0.01	U	0.67	0.37	0.24	U	1.1	0.62	0.75	U	1.3	0.8
Gross Beta	*1000*	0.46	U	1.1	0.65	-0.15	U	1.5	0.85	0.37	U	1.6	0.93
Manganese-54	*2000*	-0.9	U	16	8.7	-0.5	U	8.6	4.7	0.9	U	12	6.2
Sodium-22	*10000*	-0.3	U	15	8	-1.4	U	7.6	4	1.2	U	15	7.3
Strontium-90	*8*	0.27	U	0.43	0.27	0.09	U	0.62	0.36	-0.12	U	0.51	0.28
Tritium	*20000*	660		290	220	290	J	280	200	230	U	290	180
Zinc-65	*360*	-7	U	32	18	-8	U	16	10	5	U	32	16

pCi/L - PicoCuries per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
R - Unusable data.
(+) - Biased high.
-S - Chemical yield recovery failed.
-D - Duplicate recovery failed.

Table 6. Former Landfill - Summary of 2004 VOC Data

Analyte	Groundwater Standards ug/L	086-42 11/18/2004 (ug/L)		086-72 11/18/2004 (ug/L)		087-22 11/17/2004 (ug/L)		097-17 5/5/2004 (ug/L)		097-17 11/18/2004 (ug/L)		097-277 5/5/2004 (ug/L)		097-277 11/18/2004 (ug/L)	
1,1,1,2-Tetrachloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	*1*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloropropene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichloropropane	*0.04*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	*5*	0.5	U	0.22	J	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	*0.6*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	*1*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichloropropane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2,2-Dichloropropane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene	*1*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene, 1,2,4-trimethyl	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene, 1,3,5-trimethyl-	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene, 1-methylethyl-	*--*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromobenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromodichloromethane	*50*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	*50*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon tetrachloride	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobromomethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroform	*7*	0.5	U	1.9		0.3	J	1.4		0.79		0.5		1.3	
cis-1,2-Dichloroethylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,3-Dichloropropene	*0.4*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cymene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
DBCP	*0.04*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromochloromethane		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromomethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
EDB	*0.05*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethene, 1,2-dichloro-, (E)-	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorobutadiene	*0.5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
m-Dichlorobenzene	*3*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
m/p xylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl bromide	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl chloride	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl tert-butyl ether	*10*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene chloride	*5*	0.5	U	0.5	U	0.4	J	0.5	U	0.5	U	0.5	U	0.5	U
n-Butylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
n-Propylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Naphthalene	*10*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Chlorotoluene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Dichlorobenzene	*3*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Xylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Chlorotoluene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Dichlorobenzene	*3*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
sec-Butylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
tert-Butylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	*0.4*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	*2*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
524.2 TVOC	--	0.52		2.59		0.7		1.4		1.26		0.5		1.65	

ug/L - Micrograms per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.

Table 6. Former Landfill - Summary of 2004 VOC Data

Analyte	Groundwater Standards ug/L	097-64 5/5/2004 (ug/L)		097-64 11/18/2004 (ug/L)		106-02 5/5/2004 (ug/L)		106-02 11/18/2004 (ug/L)		106-30 5/5/2004 (ug/L)		106-30 11/18/2004 (ug/L)	
1,1,1,2-Tetrachloroethane	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	*5*	0.5	U	0.19	J	0.5	U	0.5	U	0.5	U	0.65	
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	0.55	
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*	0.5	U	0.29	J	0.5	U	0.53		0.5	U	0.36	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		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*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene chloride	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
n-Butylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
n-Propylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Naphthalene	*10*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Chlorotoluene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Dichlorobenzene	*3*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Xylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Chlorotoluene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Dichlorobenzene	*3*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
sec-Butylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
tert-Butylbenzene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethylene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	*5*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	*0.4*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethylene	*5*	0.5	U	0.36	J	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	--	0		0.84		0		0.95		0		1.86	

ug/L - Micrograms per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.

Table 7. Former Landfill - Summary of 2004 Water Chemistry Data

Analyte	***Groundwater Standards*** *mg/L*	**086-42** **5/5/2004** (mg/L)		**086-42** **11/18/2004** (mg/L)		**086-72** **5/5/2004** (mg/L)		**086-72** **11/18/2004** (mg/L)		**087-22** **5/3/2004** (mg/L)		**087-22** **11/17/2004** (mg/L)		**097-17** **5/5/2004** (mg/L)	
Alkalinity (as CaCO3)	--	5.5		13		5	U	5	U	5	U	5		5	U
Ammonia (as N)	*2*	0.05	R	0.05	U	0.05	R	0.05	U	0.05	U	0.05	U	0.05	R
Chloride	*250*	14.9		15.3		11.1		6.6		5.8		3	J	8.2	
Cyanide	*0.2*	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Nitrate (as N)	*10*	0.48		0.4		0.057		0.014	B	0.37		0.6		0.1	
Nitrite (as N)	*1*	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
Nitrogen	--	0.48		0.4		0.06	B	0.014	B	0.37		0.6		0.1	B
Sulfate	*250*	12.6		12.6		11.6		11.6		10.1		10.8		12.6	
TDS	--	87	UJ	53	J	79	UJ	35	J	47	J	41	J	57	UJ
Total Kjeldahl Nitrogen	--	0.1	R	0.1	U	0.1	R	0.1	U	0.1	U	0.1	U	0.1	R
TSS	--	1	U	1	U	5		1	U	1	U	1	U	1	U

mg/L - Milligrams per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
B - Result detected between the IDL and CRDL.
R - Unusable data.

Table 7. Former Landfill - Summary of 2004 Water Chemistry Data

Analyte	***Groundwater Standards*** *mg/L*	**097-17** **11/18/2004** (mg/L)		**097-277** **5/5/2004** (mg/L)		**097-277** **11/18/2004** (mg/L)		**097-64** **5/5/2004** (mg/L)		**097-64** **11/18/2004** (mg/L)		**106-02** **5/5/2004** (mg/L)		**106-02** **11/18/2004** (mg/L)	
Alkalinity (as CaCO3)	--	7		5	U	6		5		30		7.5		14.5	
Ammonia (as N)	*2*	0.05	U	0.05	R	0.05	U	0.05	R	0.05	U	0.05	R	0.05	U
Chloride	*250*	5.2		17.3		9.7		8.8		8		4.9		5.9	
Cyanide	*0.2*	0.005	U	0.005	U	0.005	U			0.005	U	0.005	U	0.005	U
Nitrate (as N)	*10*	0.23		0.44		0.11		0.32		1.1		0.34		0.34	
Nitrite (as N)	*1*	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
Nitrogen	--	0.23		0.44		0.11	B	0.32		1.1		0.34		0.34	
Sulfate	*250*	8.9		20.5		16.7		17.9		15.1		18		14.3	
TDS	--	31	J	93	UJ	45	J	77	UJ	70	J	80	UJ	52	J
Total Kjeldahl Nitrogen	--	0.1	U	0.1	R	0.1	R	0.1	R	0.1	R	0.1	R	0.1	U
TSS	--	6		1		1	U	2		1	U	2		1	

mg/L - Milligrams per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
B - Result detected between the IDL and CRDL.
R - Unusable data.

Table 7. Former Landfill - Summary of 2004 Water Chemistry Data

Analyte	***Groundwater Standards*** *mg/L*	**106-30** **5/5/2004** (mg/L)		**106-30** **11/18/2004** (mg/L)	
Alkalinity (as CaCO3)	--	5	U	8.5	
Ammonia (as N)	*2*	0.05	R	0.05	U
Chloride	*250*	7.3		7.5	
Cyanide	*0.2*	0.0059		0.005	U
Nitrate (as N)	*10*	0.23		0.37	
Nitrite (as N)	*1*	0.02	U	0.02	U
Nitrogen	--	0.23		0.37	
Sulfate	*250*	10		19.5	
TDS	--	67	UJ	49	J
Total Kjeldahl Nitrogen	--	0.1	R	0.1	R
TSS	--	2		1	U

mg/L - Milligrams per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
B - Result detected between the IDL and CRDL.
R - Unusable data.

Table 8. Former Landfill - Summary of 2004 Metals Data

Analyte	Groundwater Standards ug/L	086-42 05/05/04 (ug/L)		086-42 11/18/04 (ug/L)		086-72 05/05/04 (ug/L)		086-72 11/18/04 (ug/L)		087-22 05/03/04 (ug/L)		087-22 11/17/04 (ug/L)		097-17 05/05/04 (ug/L)		097-17 11/18/04 (ug/L)	
Aluminum	*200*	44.7	B	50	U	46.5	B	50	U	50	U			83.5	R	**708**	
Antimony	*3*	5	U	5	U	5	U	5	U	5	U	5	U*	5	U	5	U
Arsenic	*10*	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Barium	*1000*	7.8	B	7.1	B	14.6	B	11.2	B	13.6	B	12.5	BN	12.9	B	12.3	B
Beryllium	*3*	2	U	2	U	2	U	2	U	2	U	2	U*	0.08	B	2	U
Cadmium	*5*	2	U	2	U	0.22	B	2	U	2	U	2	U	2	U	0.1	B
Calcium	--	6830		7500		2680		2140		2540		2120		4130		3580	
Chromium	*50*	3.2	B	5	U	5	U	5	U	5	U	1.9	B	5	U	5	U
Cobalt	--	0.72	B	0.66	B	5	U	5	U	5	U	0.029	B	5	U	0.36	B
Copper	*200*	10	U	1.3	B	2.2	B	1	B	10	U	0.46	B	10	U	1.5	B
Iron	*300*	29.5	B	36.6	B J	14.9	B	19.5	B J	15.2	BN	50	U	23.4	B	**1050**	J
Lead	*25*	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U
Magnesium	*35000*	3100		3440		1970		1740		1650		1660		1490		1320	
Manganese	*300*	0.88	B	5	U	4.8	B	3.9	B	3.1	BE	2.5	BN	24.4		56.8	
Mercury	*0.7*	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Nickel	*100*	10	U	0.63	B	3.3	B	0.36	B	10	U	0.48	B	1.1	B	0.9	B
Potassium	--	2000	U	1070	B	2000	U	714	B	2000	U			2000	U	967	B
Selenium	*10*	5	U	5	U	0.82	B	5	U	5	U	5	U*	5	U	1.5	B
Silver	*50*	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Sodium	*20000*	9230		9540		7500		6890		4880		5280		6170		5330	
Thallium	*0.5*	5	R	5	U	5	R	5	U	5	U	5	UN	5	R	**0.69**	B
Vanadium	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Zinc	*2000*	10	U	3.3	B	5.1	B	10	U	10	U	10	U	8.8	B	10	U

U - Not detected.
J - Estimated value.
R - Unusable data.
ug/L - Micrograms per liter.
-- No standard applicable.
B - Result detected between the IDL and CRDL.
N - Matrix spike recovery did not meet QC limits.
* - Lab duplicate did not meet QC limits.

Table 8. Former Landfill - Summary of 2004 Metals Data

Analyte	Groundwater Standards ug/L	097-277 05/05/04 (ug/L)		097-277 11/18/04 (ug/L)		097-64 05/05/04 (ug/L)		097-64 11/18/04 (ug/L)		106-02 05/05/04 (ug/L)		106-02 11/18/04 (ug/L)		106-30 05/05/04 (ug/L)		106-30 11/18/04 (ug/L)	
Aluminum	*200*	46.2	B	50	U	148	R	48.5	B	89.8	R	39.3	B	291	R	121	
Antimony	*3*	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Arsenic	*10*	5	U	5	U	5	U	5	U	0.79	B	5	U	5	U	5	U
Barium	*1000*	14.4	B	7.9	B	30.5		19.7	B	10.6	B	8.2	B	15.4	B	19.9	B
Beryllium	*3*	2	U	2	U	0.16	B	2	U	2	U	2	U	0.17	B	0.29	B
Cadmium	*5*	2	U	2	U	0.089	B	0.045	B	2	U	2	U	0.11	B	0.08	B
Calcium	--	6380		4440		11900		14800		12100		9160		5840		8390	
Chromium	*50*	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Cobalt	--	0.22	B	0.031	B	5	U	0.042	B	5	U	5	U	0.14	B	0.057	B
Copper	*200*	10	U	2.9	B	10	U	10	U	2.4	B	1.6	B	10	U	0.71	B
Iron	*300*	80.8	R	78.2	J	51.5	R	47.4	B J	22.1	B	56.4	J	151	R	73.9	J
Lead	*25*	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U
Magnesium	*35000*	2710		1720		2240		2100		2120		1650		1900		2140	
Manganese	*300*	234		55.9		34.3		8.7		5		5.5		38.3		21.2	
Mercury	*0.7*	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Nickel	*100*	10	U	0.55	B	10	U	0.68	B	10	U	0.6	B	10	U	0.78	B
Potassium	--	2000	U	1150	B	2000	U	1640	B	2000	U	949	B	2330		1470	B
Selenium	*10*	5	U	5	U	5	U	5	U	5	U	5	U	5	U	1.4	B
Silver	*50*	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Sodium	*20000*	12800		8660		6780		7140		4950		3870		3890		5610	
Thallium	*0.5*	5	R	5	U	5	R	5	U	5	R	**0.54**	B	5	R	5	U
Vanadium	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Zinc	*2000*	10	U	10	U	10	U	10	U	10	U	3.2	B	10	U	7.6	B

U - Not detected.
J - Estimated value.
R - Unusable data.
ug/L - Micrograms per liter.
-- No standard applicable.
B - Result detected between the IDL and CRDL.
N - Matrix spike recovery did not meet QC limits.
* - Lab duplicate did not meet QC limits.

Table 9. Former Landfill - Summary of 2004 Pesticide/PCB Data

Analyte	Groundwater Standards ug/L	086-42 11/18/2004 (ug/L)		086-72 11/18/2004 (ug/L)		087-22 11/17/2004 (ug/L)		097-17 11/18/2004 (ug/L)		097-277 11/18/2004 (ug/L)		097-64 11/18/2004 (ug/L)	
4,4''-DDD	*0.3*	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
4,4''-DDE	*0.2*	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
4,4''-DDT	*0.2*	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Aldrin	*0*	0.05	UJ	0.05	UJ	0.05	UJ	0.05	UJ	0.05	UJ	0.05	UJ
alpha-BHC	*0.01*	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Aroclor 1016	*0.09*	1	U	1	U	1	U	1	U	1	U	1	U
Aroclor 1221	*0.09*	2	U	2	U	2	U	2	U	2	U	2	U
Aroclor 1232	*0.09*	1	U	1	U	1	U	1	U	1	U	1	U
Aroclor 1248	*0.09*	1	U	1	U	1	U	1	U	1	U	1	U
Aroclor 1254	*0.09*	1	U	1	U	1	U	1	U	1	U	1	U
Aroclor 1260	*0.09*	1	U	1	U	1	U	1	U	1	U	1	U
Aroclor-1242	*0.09*	1	U	1	U	1	U	1	U	1	U	1	U
beta-BHC	*0.01*	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Chlordane	*0.05*	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
delta-BHC	*0.04*	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Dieldrin	*0.004*	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Endosulfan I	*0.009*	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Endosulfan II	--	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Endosulfan sulfate	--	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Endrin	*0*	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Endrin aldehyde	*5*	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Endrin ketone	*5*	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Heptachlor	*0.04*	0.05	R	0.05	R	0.05	UJ	0.05	R	0.05	R	0.05	R
Heptachlor epoxide	*0.03*	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Lindane	*0.05*	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Methoxychlor	*35*	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toxaphene	*0.06*	5	U	5	U	5	U	5	U	5	U	5	U

ug/L - Micrograms per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
R - Unusable data.

Table 9. Former Landfill - Summary of 2004 Pesticide/PCB Data

Analyte	Groundwater Standards ug/L	106-02 11/18/2004 (ug/L)		106-30 11/18/2004 (ug/L)	
4,4''-DDD	*0.3*	0.05	U	0.05	U
4,4''-DDE	*0.2*	0.1	U	0.1	U
4,4''-DDT	*0.2*	0.1	U	0.1	U
Aldrin	*0*	0.05	UJ	0.05	UJ
alpha-BHC	*0.01*	0.05	U	0.05	U
Aroclor 1016	*0.09*	1	U	1	U
Aroclor 1221	*0.09*	2	U	2	U
Aroclor 1232	*0.09*	1	U	1	U
Aroclor 1248	*0.09*	1	U	1	U
Aroclor 1254	*0.09*	1	U	1	U
Aroclor 1260	*0.09*	1	U	1	U
Aroclor-1242	*0.09*	1	U	1	U
beta-BHC	*0.01*	0.05	U	0.05	U
Chlordane	*0.05*	0.05	U	0.05	U
delta-BHC	*0.04*	0.1	U	0.1	U
Dieldrin	*0.004*	0.1	U	0.1	U
Endosulfan I	*0.009*	0.05	U	0.05	U
Endosulfan II	--	0.1	U	0.1	U
Endosulfan sulfate	--	0.1	U	0.1	U
Endrin	*0*	0.1	U	0.1	U
Endrin aldehyde	*5*	0.1	U	0.1	U
Endrin ketone	*5*	0.1	U	0.1	U
Heptachlor	*0.04*	0.05	R	0.05	R
Heptachlor epoxide	*0.03*	0.05	U	0.05	U
Lindane	*0.05*	0.05	U	0.05	U
Methoxychlor	*35*	0.5	U	0.5	U
Toxaphene	*0.06*	5	U	5	U

ug/L - Micrograms per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
R - Unusable data.

Table 10. Former Landfill - Summary of 2004 Radionuclide Data

Analyte	Groundwater Standards pCi/L	086-42 5/5/2004 pCi/L				086-42 11/18/2004 pCi/L				086-72 11/18/2004 pCi/L				087-22 11/17/2004 pCi/L			
		Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error	Result	Qual	MDA	Error
Americium-241	*1.2*					-4.7	U	13	7.9	3.8	U	11	5.9	1.1	U	14	7.9
Beryllium-7	*40000*					-23	U	64	38	6	U	73	40	-13	U	75	42
Cesium-134	*80*					0.8	U	9.7	5.2	-1.3	U	8.8	4.9	-9.2	U	9.2	6.2
Cesium-137	*120*					0.1	U	10	5.4	3.3	U	14	6.9	10	U	14	11
Co-60	*200*					2.3	U	12	5.2	0.4	U	15	7.5	12	U	24	11
Cobalt-57	*4000*					1.1	U	4.7	2.6	1.3	U	4.3	2.4	-3.4	U	4.6	3
Europium-152	*841*					-6	U	80	42	-5	U	76	40	-28	U	87	50
Europium-154	*573*					14	U	93	47	-11	U	81	44	-25	U	84	48
Europium-155	*4000*					-6	U	17	10	5	U	19	10	4	U	20	11
Gross Alpha	*15*					-0.07	U	1.1	0.62	0	U	0.81	0.16	0.11	U	0.57	0.32
Gross Beta	*1000*					1.28	U	1.5	0.96	0.5	U	1.3	0.82	0.6	U	1.1	0.65
Manganese-54	*2000*					-3.9	U	8.3	5	-2.1	U	9	5.1	3.5	U	12	5.9
Sodium-22	*10000*					2.1	U	9.7	4.1	4.6	U	12	5.6	-2.6	U	13	7.1
Strontium-90	*8*					0.86	J-N2	0.75	0.48	0.58	U	0.59	0.38	0.13	U	0.42	0.25
Tritium	*20000*	370	J	320	230	770		290	230	-30	U	290	170	-7	U	320	750
Zinc-65	*360*					-0.5	U	22	11	-15	U	19	13	-4	U	30	17

pCi/L - PicoCuries per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
R - Unusable data.
(+) - Biased high.
-S - Chemical yield recovery failed.

Table 10. Former Landfill - Summary of 2004 Radionuclide Data

Analyte	Groundwater Standards pCi/L	097-17 11/18/2004 pCi/L				097-277 11/18/2004 pCi/L				097-64 11/18/2004 pCi/L				106-02 11/18/2004 pCi/L				106-30 11/18/2004 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*	0.9	U	13	7.2	-2.1	U	12	7	0.8	U	12	6.9	-0.2	U	14	7.7	1.5	U	11	6
Beryllium-7	*40000*	-4	U	74	41	18	U	76	40	23	U	70	35	13	U	75	40	-8	U	63	36
Cesium-134	*80*	-1.9	U	9.8	6.8	-8	U	9.4	6.1	-7.2	U	9.4	6	-5.8	U	8.1	5.3	-4.4	U	8.1	4.9
Cesium-137	*120*	-1.1	U	11	6.1	6.1	U	13	6.7	3.5	U	11	5.6	-0.2	U	9.4	4.9	1.6	U	14	6.8
Co-60	*200*	1.2	U	13	6.6	0.8	U	14	7.2	-2.5	U	11	6.1	-1.2	U	9.8	5.1	1.5	U	13	6
Cobalt-57	*4000*	-0.5	U	4.5	2.6	1	U	5.2	2.9	0.8	U	4.9	2.8	0.5	U	4.8	2.6	-1.5	U	3.9	2.4
Europium-152	*841*	-29	U	80	47	-75	U	67	49	21	U	84	40	-4	U	75	39	-24	U	68	40
Europium-154	*573*	-8	U	94	52	27	U	97	49	12	U	92	48	3	U	96	51	16	U	91	47
Europium-155	*4000*	-0.2	U	17	9.8	0.2	U	18	10	-8	U	17	10	4	U	18	10	-1.4	U	15	8.8
Gross Alpha	*15*	0.24	U	0.73	0.43	0	U	1	0.16	0.31	U	0.72	0.44	-0.21	U	0.87	0.43	0.11	U	0.93	0.52
Gross Beta	*1000*	0.6	U	1.5	0.89	0.93	U	1.6	0.96	0.69	U	1.4	0.83	0.82	U	1.3	0.82	1.81	J-N2	1.5	0.95
Manganese-54	*2000*	6.6	U	12	5.7	-3.5	U	9.1	5.4	-2.3	U	8.8	5.1	-1	U	9.8	5.4	-2.1	U	8	4.5
Sodium-22	*10000*	-2.1	U	12	6.7	2.2	U	14	7	-2.1	U	11	6.5	-0.4	U	11	5.7	1.1	U	10	5.1
Strontium-90	*8*	0.58	U	0.62	0.39	0.32	U	0.59	0.36	3.85	J(+)-S	0.61	0.64	0.71	J	0.57	0.38	0.62	U	0.69	0.43
Tritium	*20000*	50	U	290	190	40	U	170	100	-30	U	290	140	80	U	290	190	140	U	280	170
Zinc-65	*360*	-5	U	23	13	9	U	28	14	-11	U	22	14	2	U	21	11	-0.2	U	22	12

pCi/L - PicoCuries per liter.
U - Not Detected.
J - Estimated value.
-- No standard applicable.
R - Unusable data.
(+) - Biased high.
-S - Chemical yield recovery failed.

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

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	198	0	122	21	0	0	SGMW-12A
SGMW-12B	0.0	0.2	7.2	0.0	0	4	144	0	136	0	0	0	SGMW-12B
SGMW-13A	0.0	0.6	1.0	0.0	0	12	20	0	0	0	0	0	SGMW-13A
SGMW-13B	0.0	0.1	0	1.1	0	2	0	22	191	0	0	0	SGMW-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

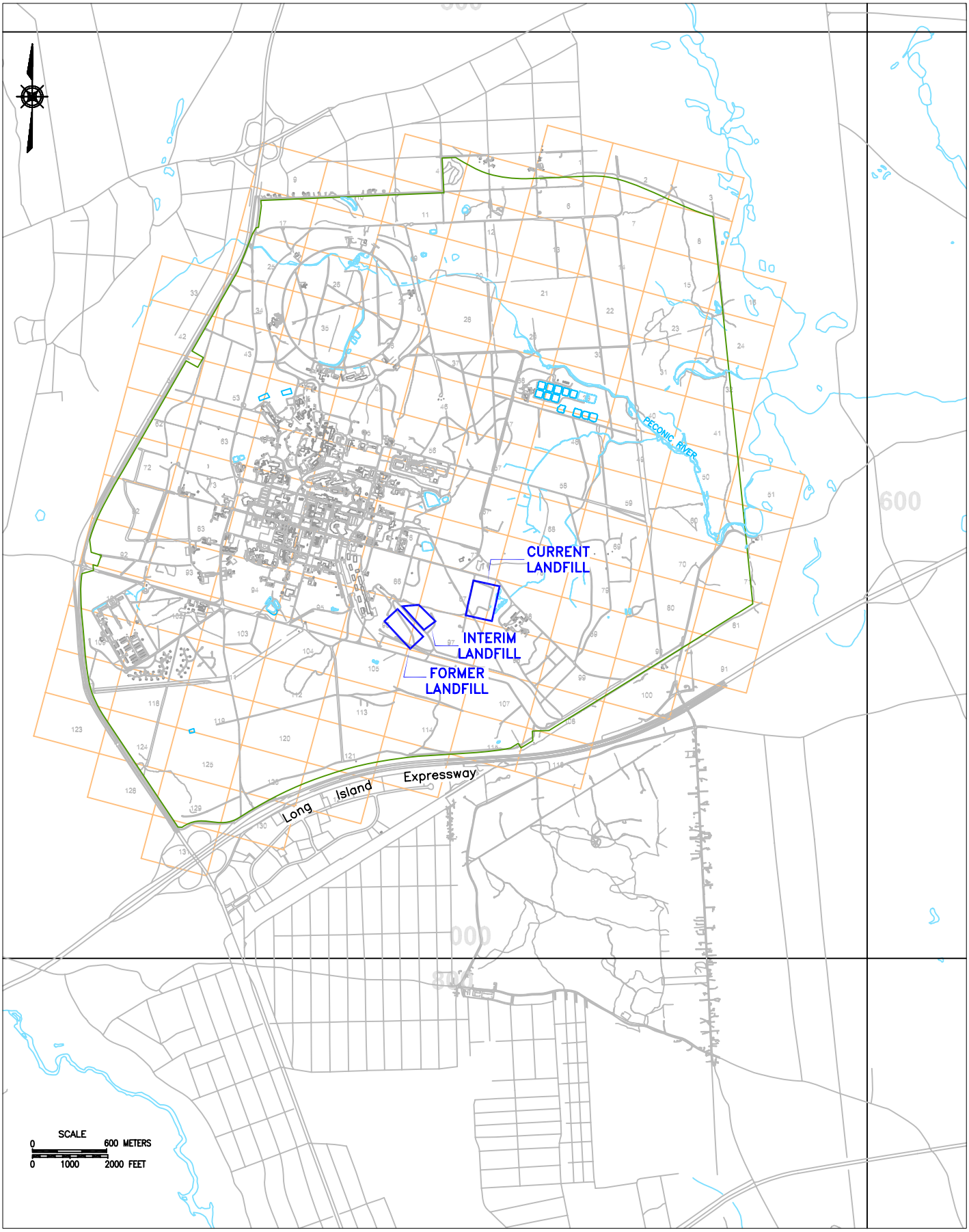
Measurements in ( ) are calculated, not measured.
H2S pod suspected of not operating correctlyin March.

Table 13

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.



T:\LTRA Projects\Landfills\2003 Report\Figures\final figures\FIG 1.DWG

BROOKHAVEN NATIONAL LABORATORY

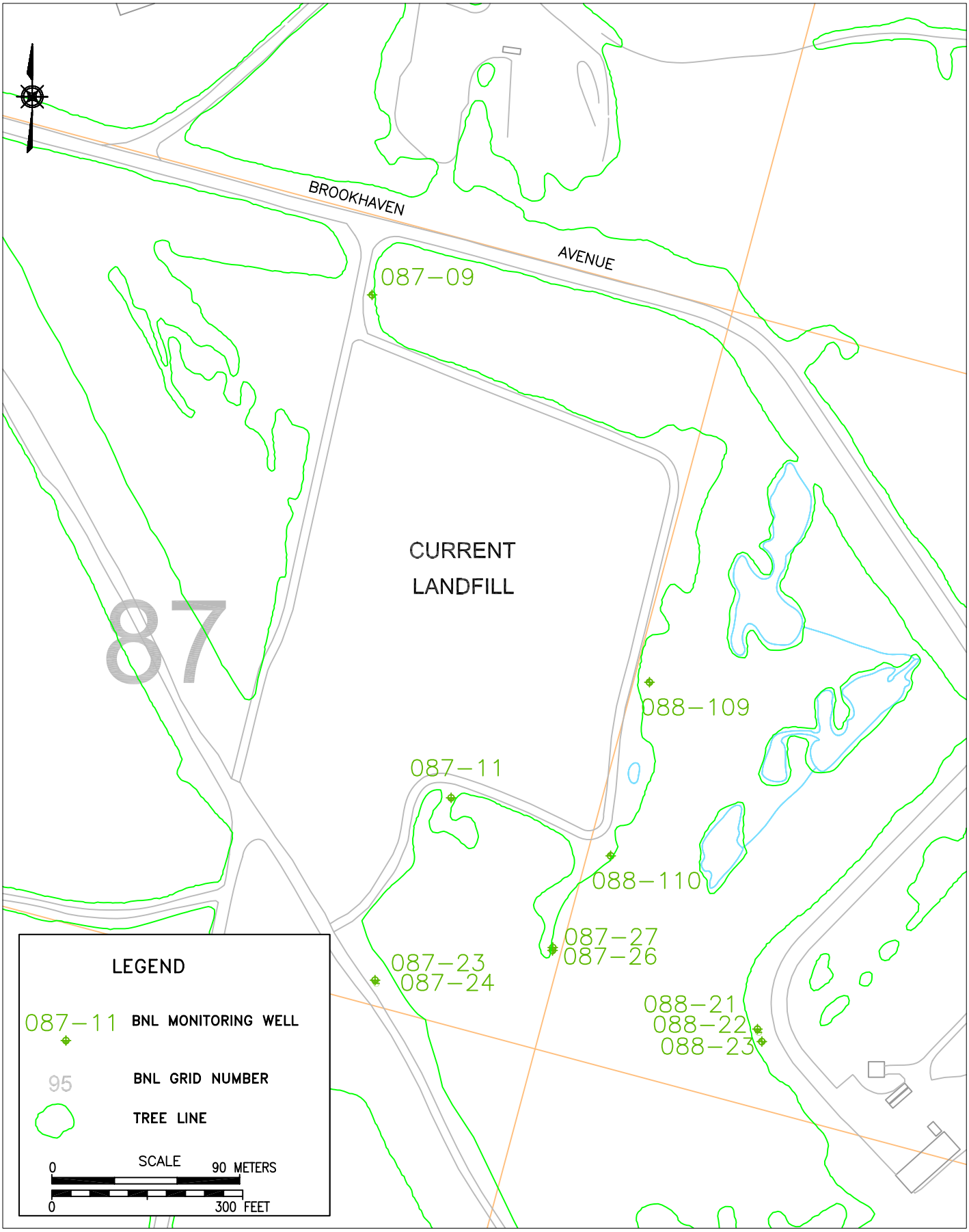
EWMS Division

TITLE:

SITE LOCATION MAP
2004 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



T:\LTRA Projects\Landfills\2003 Report\Figures\final figures\FIG 2.DWG

BROOKHAVEN NATIONAL LABORATORY

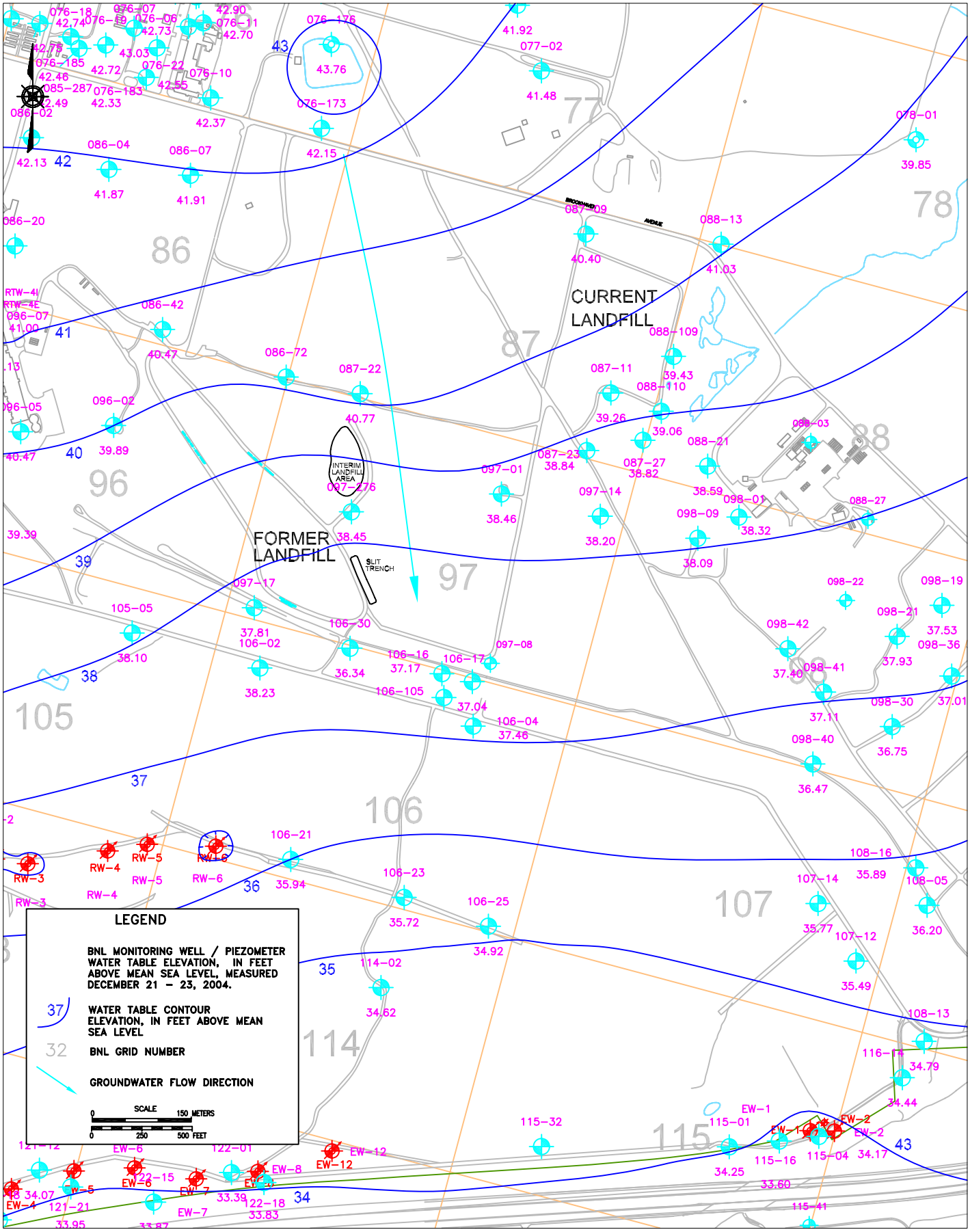
EWMS Division

TITLE:

CURRENT LANDFILL
MONITORING WELL LOCATIONS
2004 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\2004 Report\Figures\final figures\FIG 3.DWG

BROOKHAVEN NATIONAL LABORATORY

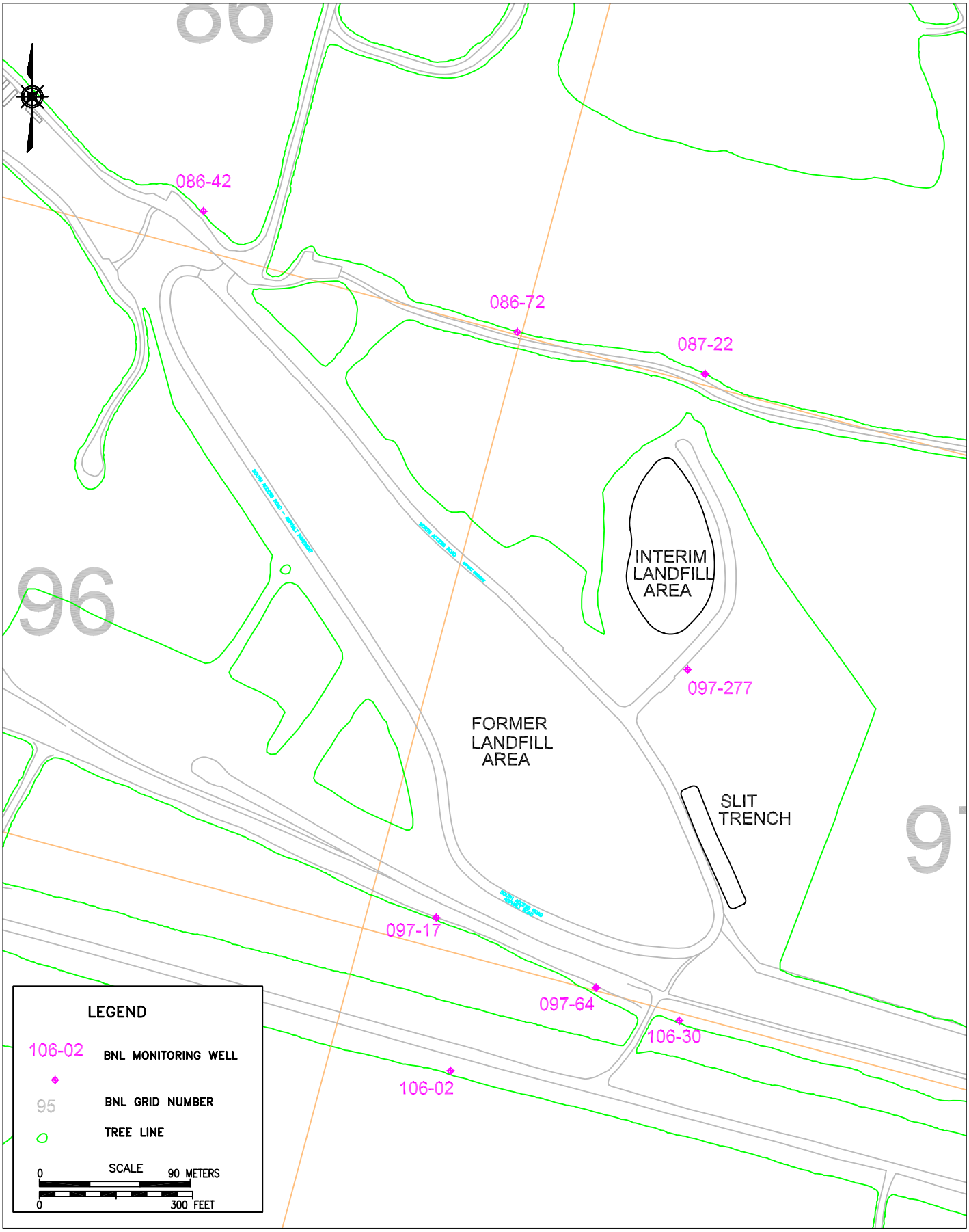
EWMS Division
N

TITLE:

WATER TABLE CONTOUR MAP
2004 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
CAJ	–	03/03/05	07928
CHKD:	APPD:	REV.:	NOTES:
WRD	WRD	–	–

FIGURE NO.: 3



T:\LTRA Projects\Landfills\2003 Report\Figures\final figures\FIG 4.DWG

BROOKHAVEN NATIONAL LABORATORY

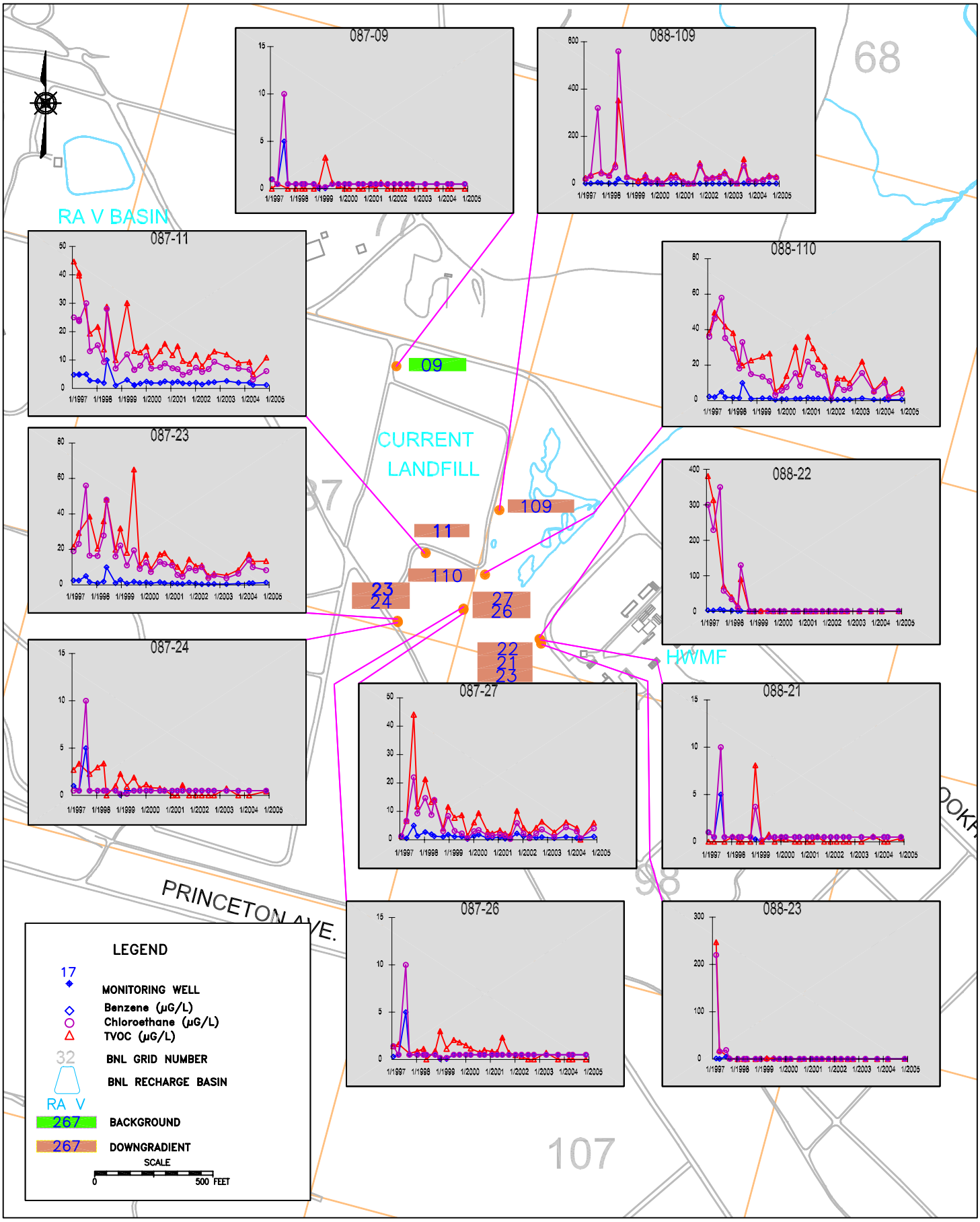
EWMS Division

TITLE:

FORMER LANDFILL
MONITORING WELL LOCATIONS
2004 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.: 4



T:\LTRA Projects\Landfills\2004 Report\Figures\final figures\FIG 5.DWG

BROOKHAVEN NATIONAL LABORATORY

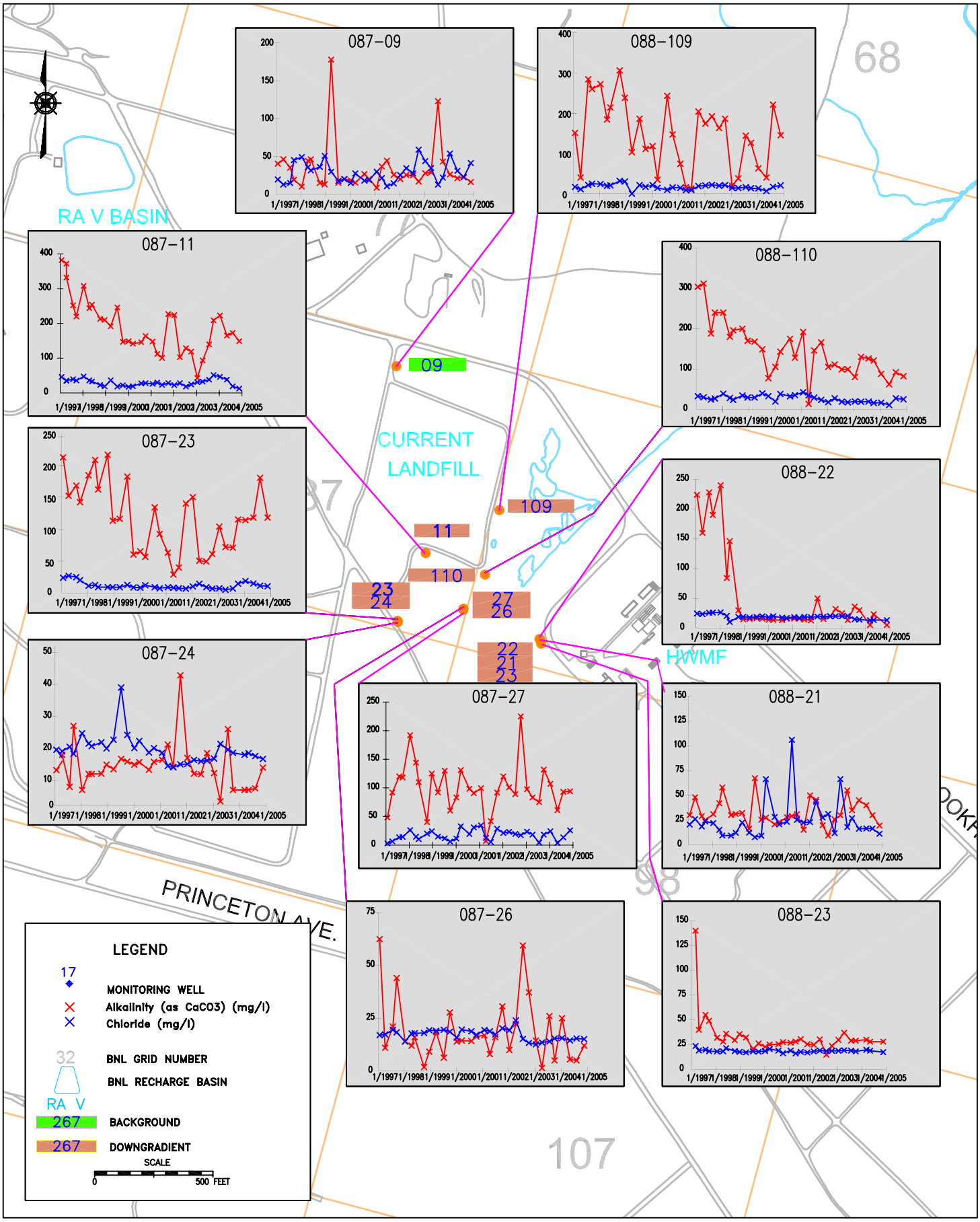
EWMS Division

TITLE:

CURRENT LANDFILL
VOC TREND PLOTS
2004 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
CAJ	–	03/03/05	07928
CHKD:	APPD:	REV.:	NOTES:
WRD	WRD	1	--

FIGURE NO.: 5



BROOKHAVEN NATIONAL LABORATORY

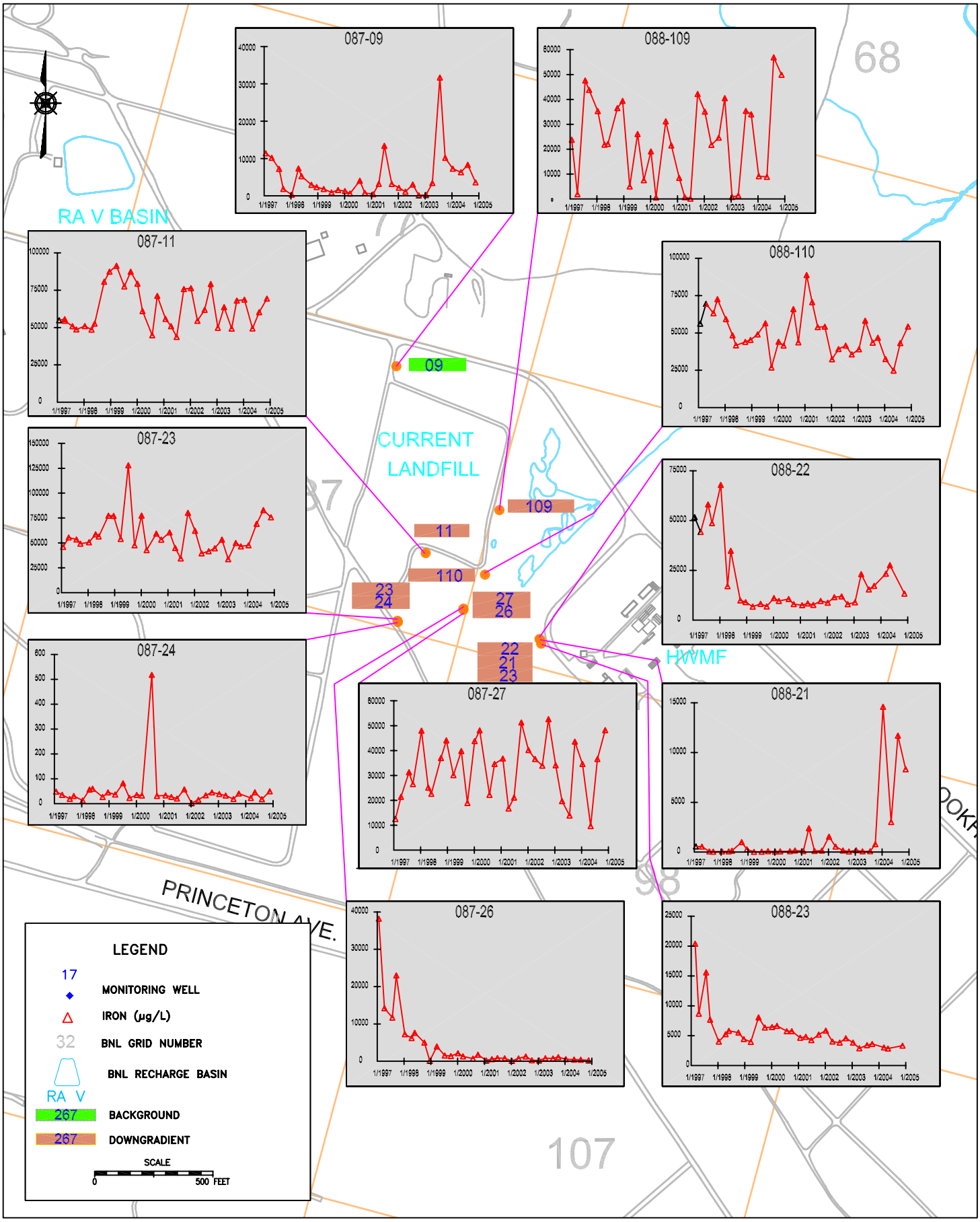
EWMS Division

TITLE:

CURRENT LANDFILL
ALKALINITY AND CHLORIDE TREND PLOTS
2004 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
CAJ	–	03/03/05	07928
CHKD:	APPD:	REV.:	NOTES:
WRD	WRD	1	--

FIGURE NO.: 6



T:\LTRA Projects\Landfills\2004 Report\Figures\final figures\FIG 7.DWG

BROOKHAVEN NATIONAL LABORATORY

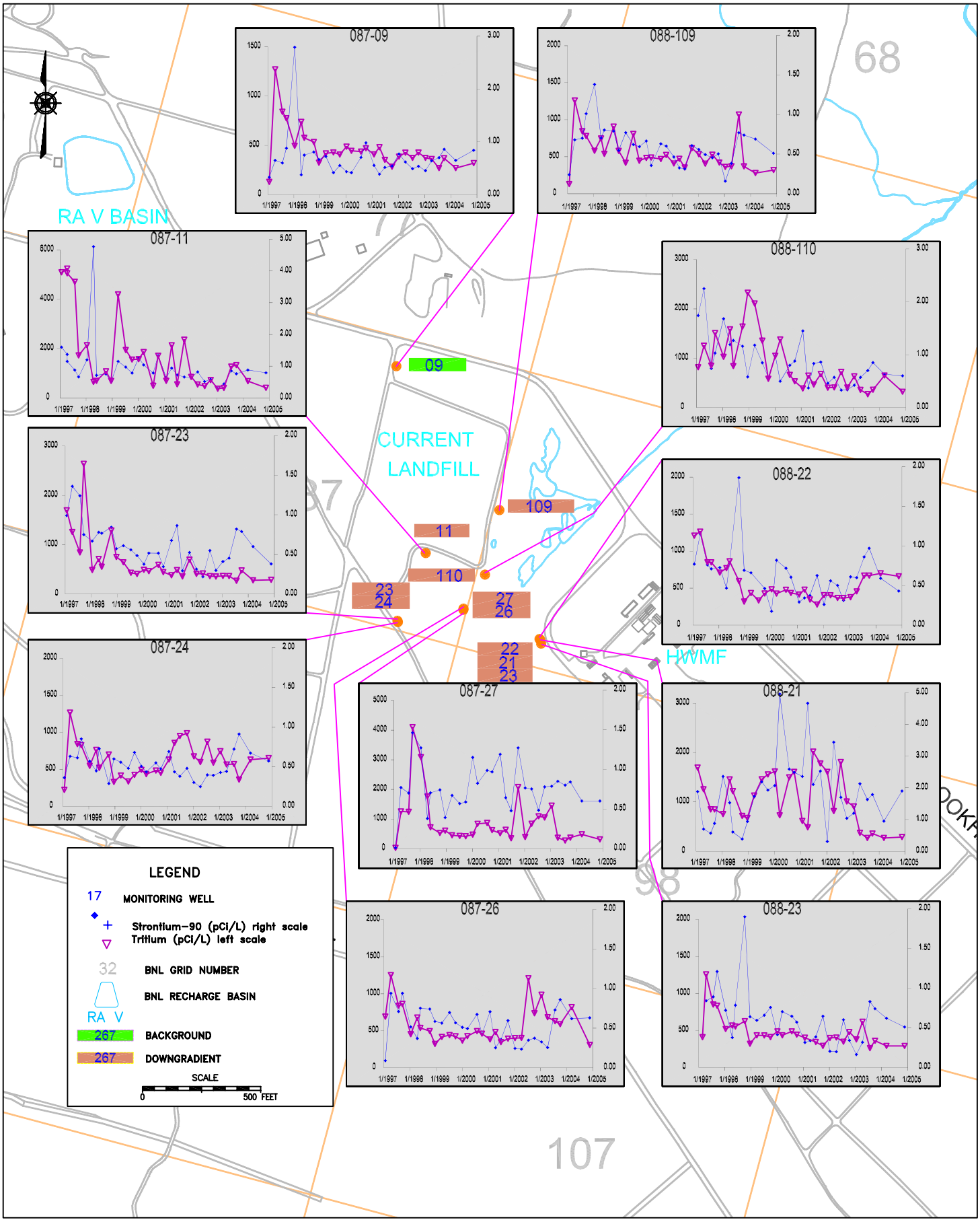
EWMS Division

TITLE:

CURRENT LANDFILL
IRON TREND PLOTS
2004 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
KCK	–	03/03/05	07928
CHKD:	APPD:	REV.:	NOTES:
WRD	WRD	1	--

FIGURE NO.: 7



T:\LTRA Projects\Landfills\2004 Report\Figures\final figures\FIG 8.DWG

BROOKHAVEN NATIONAL LABORATORY

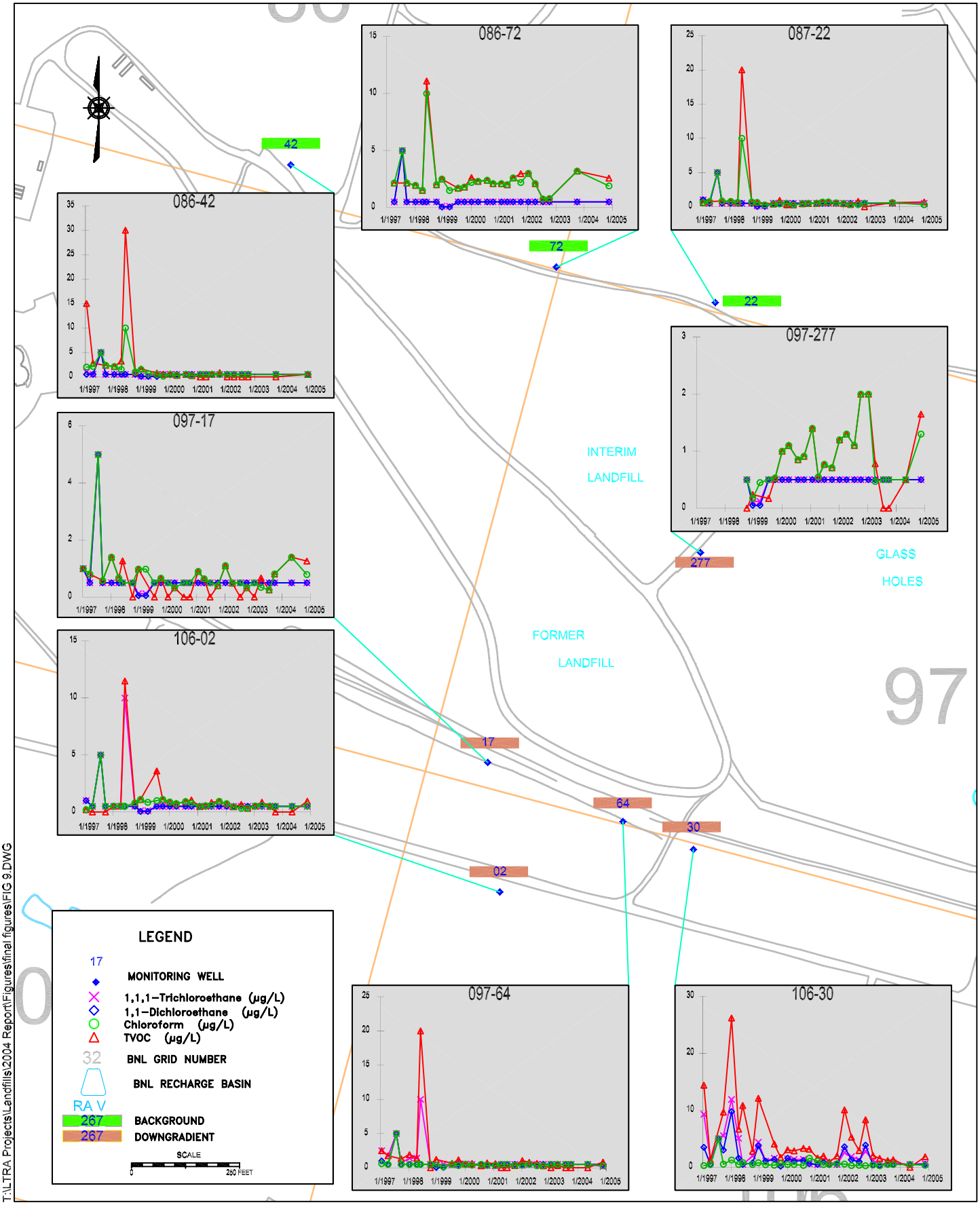
EWMS Division

TITLE:

CURRENT LANDFILL
TRITIUM AND SR-90 TREND PLOTS
2004 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
KCK	–	03/03/05	07928
CHKD:	APPD:	REV.:	NOTES:
WRD	WRD	1	--

FIGURE NO.: 8



T:\LTRA Projects\Landfills\2004 Report\Figures\final figures\FIG 9.DWG

BROOKHAVEN NATIONAL LABORATORY

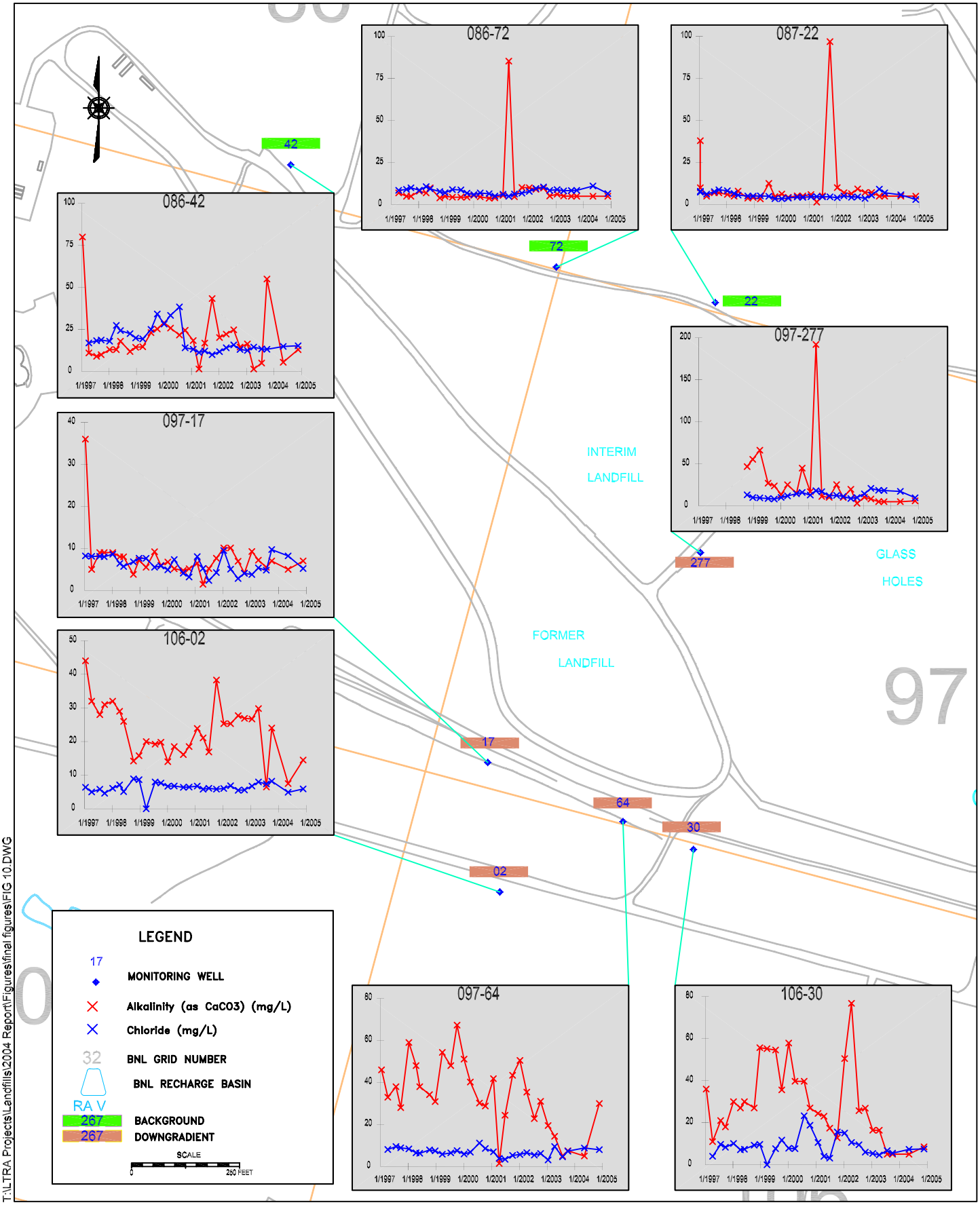
EWMS Division

TITLE:

FORMER LANDFILL
VOC TREND PLOTS
2004 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
CAJ	–	03/03/05	07928
CHKD:	APPD:	REV.:	NOTES:
WRD	WRD	1	--

FIGURE NO.: 9



T:\LTRA Projects\Landfills\2004 Report\Figures\final figures\FIG 10.DWG

BROOKHAVEN NATIONAL LABORATORY

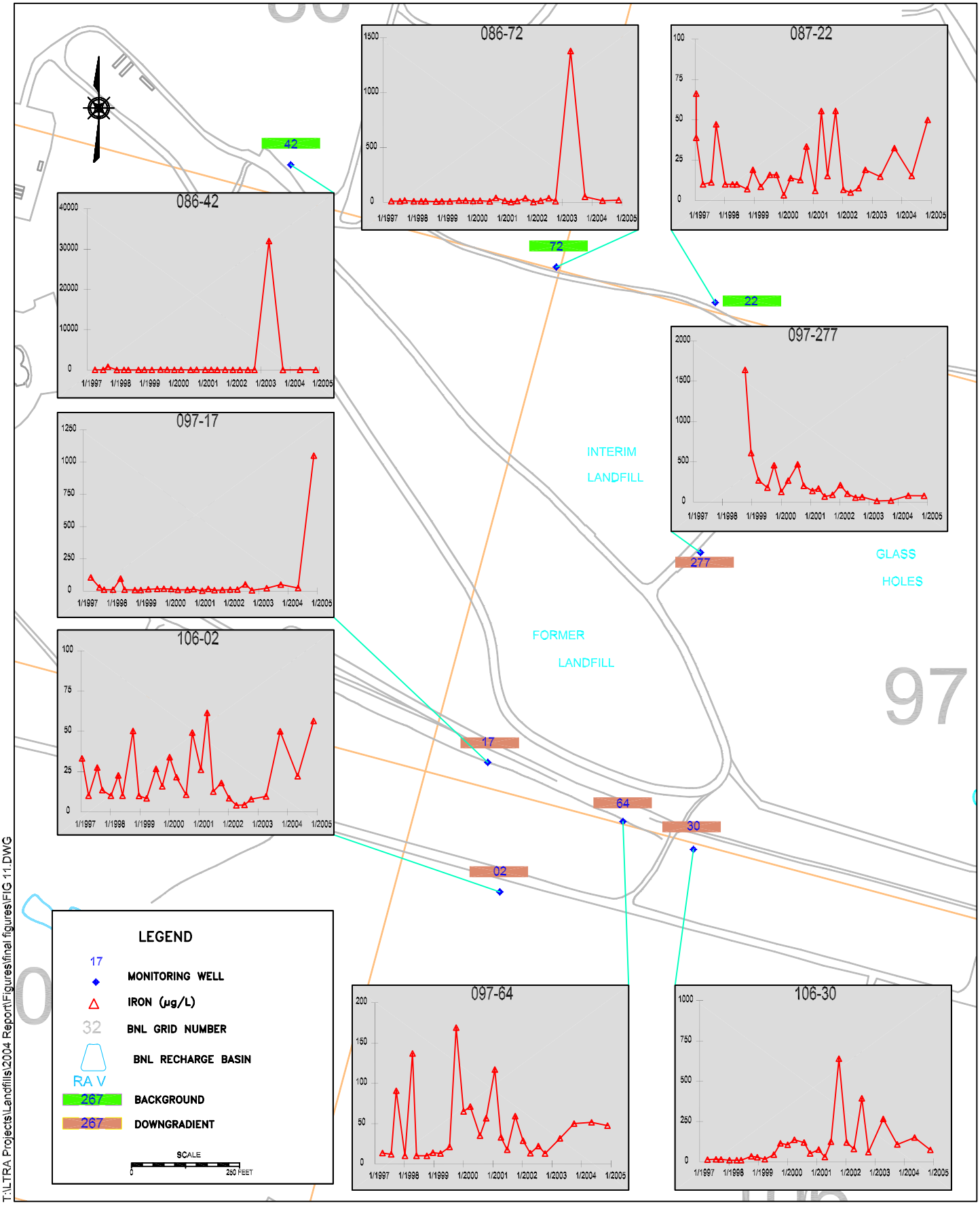
EWMS Division

TITLE:

FORMER LANDFILL
ALKALINITY AND CHLORIDE TREND PLOTS
2004 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
CAJ	–	03/03/05	07928
CHKD:	APPD:	REV.:	NOTES:
WRD	WRD	1	––

FIGURE NO.: 10



T:\LTRA Projects\Landfills\2004 Report\Figures\final figures\FIG 11.DWG

BROOKHAVEN NATIONAL LABORATORY

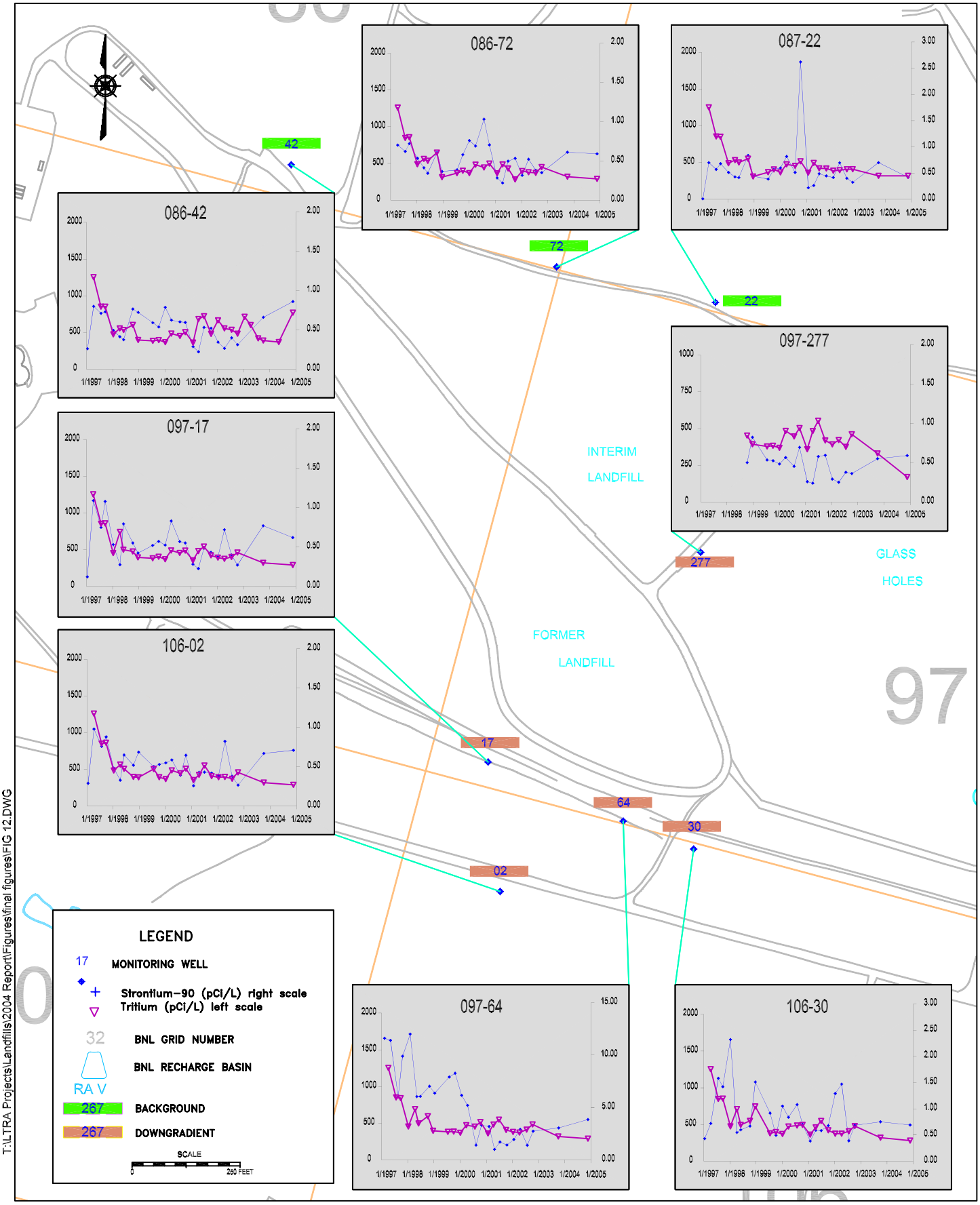
EWMS Division

TITLE:

FORMER LANDFILL
IRON TREND PLOTS
2004 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
KCK	–	03/03/05	07928
CHKD:	APPD:	REV.:	NOTES:
WRD	WRD	1	––

FIGURE NO.: 11



T:\LTRA Projects\Landfills\2004 Report\Figures\final figures\FIG 12.DWG

BROOKHAVEN NATIONAL LABORATORY

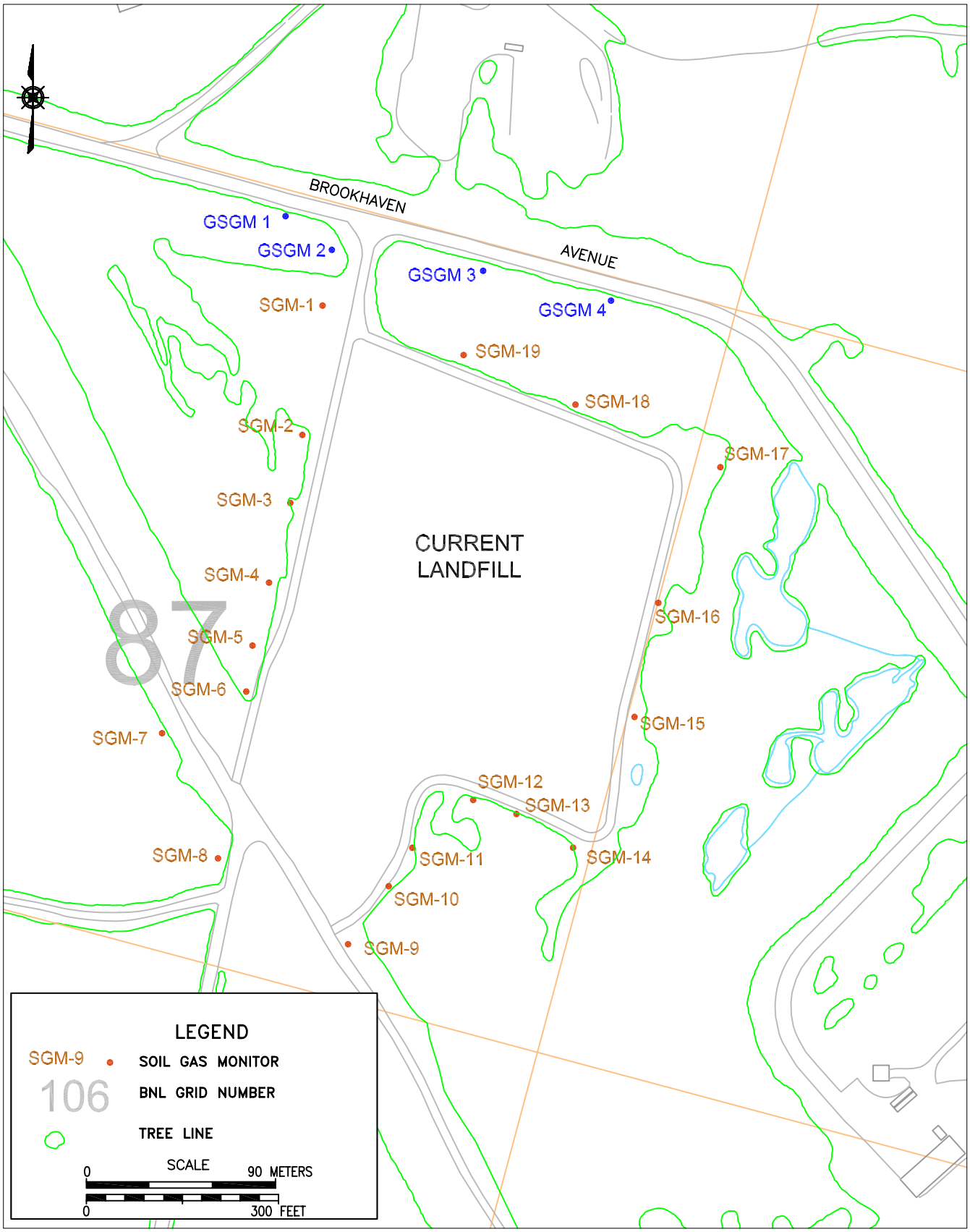
EWMS Division

TITLE:

FORMER LANDFILL
TRITIUM AND SR-90 TREND PLOTS
2004 ENVIRONMENTAL MONITORING REPORT
CURRENT AND FORMER LANDFILL AREAS

DWN:	VT: HZ.:	DATE:	PROJECT NO.:
CAJ	–	03/03/05	07928
CHKD:	APPD:	REV.:	NOTES:
WRD	WRD	1	--

FIGURE NO.: 12



\\T\LTRA\Landfills\2004 REPORT\FIGURES\final figures\FIG 13.DWG

BROOKHAVEN NATIONAL LABORATORY

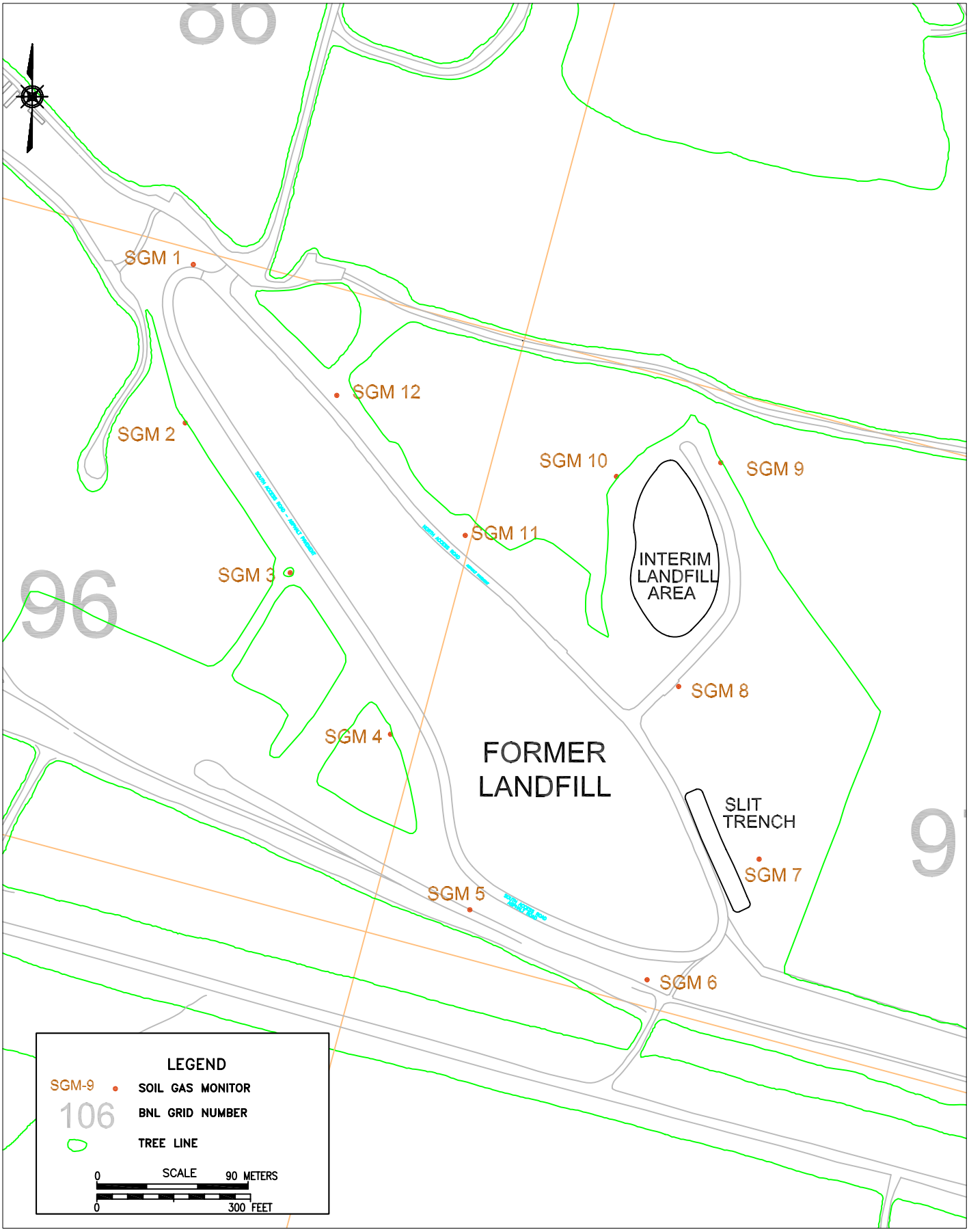
EWMS Division

TITLE:

CURRENT LANDFILL
SOIL GAS MONITOR LOCATION MAP
2004 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.: 13



\\T\LTRA\Landfills\2004 REPORT\FIGURES\final figures\FIG 14.DWG

BROOKHAVEN NATIONAL LABORATORY

EWMS Division

TITLE:

FORMER LANDFILL
SOIL GAS MONITOR LOCATION MAP
2004 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.: 14

Appendix A

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

ANNUAL WOODED WETLAND REPORT
2004

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 2004 from two ponds (North and South), in the Wooded Wetland area, and analyzed for total metals.

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 feet 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 feet, and 1 to 1.5 feet. 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 this 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.

Samples of surface-water and sediment were collected at five locations in May 2004, as shown on Figure 2. These places were chosen based upon the locations where samples were collected in 1994 and 1997. Locations SW/SD-5 and SW/SD-6 were near to 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.

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 (2 from each pond), and seven sediment samples (4 from the South Pond, 3 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 2001through 2004 seven 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 2004 sampling season.

2.0 GENERAL PROCEDURES

2.1 Environmental Sampling Procedures

Sampling was conducted by BNL on May 7, 2004, 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 were sent to an off-site certified laboratory for analysis. They were submitted for total metals analysis, target analyte list (TAL) by EPA Methods 6010B, and mercury by EPA Methods 7470 and 7471. 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. 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 and analyzed for total metals in 2004 from the Northern and Southern Ponds. Four sediment and four surface-water samples were taken from the Southern Pond, and three sediment and three surface-water samples were collected from the Northern Pond. Table 1 lists 2004 samples with cross-references of the sampling locations to 1994, 1997, 1999, 2000, 2001, 2002 and 2003. 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 Northern and Southern Ponds. These results are compared with the maximum and background sediment concentrations from Table 2A.

To evaluate sediment concentrations in the Northern and Southern Ponds for the metals of concern, 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 results from the four Southern Pond locations, SD-5, SD-6, SD-16, and SD-17, indicate that the concentrations of the metals of concern at these locations are below the maximum contaminant and background concentrations, with the exception of manganese taken at location SD-5. The average concentrations for metals of concern in 2004 are within the historic range seen in the Southern Pond and are below both the maximum and background sediment concentration values.

The 2004 concentrations of the metals of concern from the Northern Pond samples were similar to, or lower than, the maximum benchmark sediment concentrations. The average 2004 concentrations were also similar to, or less than previous 3 years levels. No significant trend in concentrations since 1999 is apparent.

3.2 Surface-Water

Table 6 presents the results of the ten metals of concern for each of the seven surface water samples collected during 2004. 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 Southern Pond (SW-5S, SW-6, SW-16 and SW-17) and three samples were collected from the Northern Pond (SW-4, SW-5N and SW-2001).

The Southern Pond samples show concentrations of aluminum above the critical concentration value at location SW-16. Values for iron were in excess of the critical concentration value at three of four locations (SW-5S, SW16 and SW17). Zinc concentrations were below the critical concentration value at all locations compared to being above the critical concentration value in 2003. Comparison of average values indicated that iron was the only metal of concern that was above the critical concentration value.

Aluminum and iron concentrations in the Northern Pond have historically been detected in excess of the critical threshold value. In 2004 no value was above the critical threshold value. With the exception of aluminum and iron, the average 2004 concentrations are similar to those in previous years.

4.0 CONCLUSIONS & RECOMMENDATIONS

The results of the May 2004 sediment and surface water sampling program indicate no elevated risk to adult salamanders from sediments in the Southern or the Northern Ponds when compared to the maximum benchmark concentrations (Table 2A). The sample concentrations for both ponds were lower than the maximum benchmark concentrations that would result in an elevated hazard quotient as discussed in the Final Focused Ecological Risk Assessment for OU I (CDM, 1999b). The potential risk is based on comparing the 2004 results with the maximum benchmark concentrations for copper, lead, mercury, and zinc. In addition, because concentrations were not detected above BNL background, they are not considered a potential risk. A hazard quotient greater than 1.0 but less than 10 is considered a low risk. When the averages of the parameters in the sediments collected during 2004 were used in evaluating potential risk, none of them were above the BNL background concentrations.

Surface water samples indicated an average iron concentration of 1,114 ug/l in the Southern Pond, which is higher than the 1,000 ug/l critical concentration. Although the iron concentration exceeded the background concentration in three of the seven samples in both ponds, the average concentration seen in the southern pond was within the historic range. The average iron concentration was below the critical concentration in the northern pond where historically it has been above this value. The average concentration of aluminum was below the critical water concentration (525 ug/l) in the both Southern and Northern Ponds where in the past it had been above the critical concentration in the Northern Pond. Zinc levels were below the critical water concentration (23.8 ug/l) in both ponds compared to being higher than this level in 2003.

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. In the case of aluminum, the critical water concentration is calculated by applying a correction factor of 0.1 (to account for uncertainty) to the mortality as indicated by the Lowest Observed Adverse Effects Level (LOAEL) for the mortality of the Jefferson salamander larvae. The Jefferson salamander larvae species is the closest match for the tiger salamander larvae. 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 2004 sampling indicates that most of the metals of concern in both sediment and surface-water are within the range of variability as compared to previous year values. The number of sediment and water samples collected from the Southern Pond in 2004 was the same as those collected in 2003, so the averages can be directly compared. No substantive effect due to leached metals from the landfill is evident in the sediments or surface-water.

In summary, the average values of the concentrations of the metals of concern in the sediments in either pond in 2004 were not above benchmark or BNL background concentrations. This indicates that a risk to adult salamanders is unlikely. The averages for the water samples collected from each pond in 2004 indicate that no metal of concern was above the critical concentration in the Northern

Pond and only aluminum was above the BNL critical water concentration in the Southern Pond. However, there is considerable uncertainty inherent in establishing the critical water concentration for aluminum in assigning the actual risk posed to tiger salamander larvae.

Based on the results of the 2004 sampling event, annual sampling of the Wooded Wetlands during the spring should continue for another year to document and confirm the trends monitored as part of the O&M Landfill Report.

5.0 REFERENCES

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TABLES

Table 1
Sediment and Surface Sample Locations

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

Sediment Sample Locations								
Pond Sampled	**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-B	SD-5	NS
South	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	NS	NS	SD-16
South	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	NS	NS	SD-11
North	SD-12	SD-12	SD-12	SD-12	SD-12	SD-D	NS	SD-12
North	NS	NS	NS	NS	SD-13	SD-E	NS	SD-13
North	SD-2001	SD-2001	SD-2001	SD-2001	NS	NS	NS	NS

Surface-Water Sample Locations								
Pond Sampled	**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	SW-B	SW-5	SW-5
South	SW-6	SW-6	SW-6	SW-6	SW-6	SW-C	SW-6	NS
South	SW-16	SW-16	SW-16	SW-16	NS	NS	NS	NS
South	SW-17	SW-17	SW-17	SW-17	NS	SW-A	NS	NS
North	SW-4	SW-4	SW-4	SW-4	SW-4	NS	NS	SW-4
North	SW-5N	SW-5 N	SW-5 N	SW-5 N	SW-5	SW-D	NS	NS
North	NS	NS	NS	NS	NS	SW-E	NS	NS
North	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	1990	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
SD-5	Aluminum	NS	4,470	11,600	11,000	8,490	10,200	11,300 *	9,200 *
(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
	Arsenic	NS	1.1 B	1.4	1.81	1.39 B	1.66	1.8	1.79
	Barium	NS	18.4 B	19.4	24.4	25.1 B	26.6	28	26.9
	Beryllium	NS	0.15 B	0.23 B	0.364 B	0.34 B	0.327 B	0.406 B	0.401 B
	Cadmium	NS	0.15 B	0.05 B	0.396 B	0.145 B	0.154 B	0.091 U	0.196 B
	Calcium	NS	915 B	343 B	432 B	554 B	727 *	394 *N	1110 N
	Chromium	NS	6.1	9.9	13.9	11.7	11.6	14	10.6 *
	Cobalt	NS	1.3 B	1.7 B	3.15 B	3.36 B	1.97	3.53	1.91
	Copper	NS	4.8 B	8.1	9.59	9.03	9.65	11.7	10.5
	Iron	NS	2,560	7,490	7,590	8,670	6,130	8,820 *N	5,700
	Lead	NS	28	19.4	13.4	13.0	21.1 N	12.7	30.1 *
	Magnesium	NS	487 B	1150	1890	2,240	1,420	2,080 *N	1,310 *
	Manganese	NS	41.5	45.1	82.4	123	78.7 *	88.3 *N	109 *
	Mercury	NS	0.11 U	0.05	0.098	0.053	0.053	0.021	0.052
	Nickel	NS	4.1 B	5.7	8.02	9.25	6.74	8.17	7.31 *
	Potassium	NS	238 B	397 B	653 B	891	602	889 N	734 E*N
	Selenium	NS	1.3 U	0.36 B	0.896	0.508 B	0.827	0.468 U	0.384 B
	Silver	NS	0.44 U	0.29 B	0.151 U	0.126 U	0.172 U	0.235 U	0.166 U
	Sodium	NS	42.2 B	27.2 B	33.6 B	50.2 B	40.8	44.9	34.5
	Thallium	NS	1 U	0.82 U	0.34 U	0.561 U	0.748 U	0.502 U	3.18
	Vanadium	NS	15.6 B	17.4	24.1	20.4	21.8	22.5	22.3 *
	Zinc	NS	22.3	25.1	31.4	29.8	31.9	29.5	26.3 *
	Cyanide	NS	NA	0.489	NA	NA	NA	NA	NA

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
SD-6	Aluminum	NS	4,920	9,780	1,670	10,500	1,900	1,390 *	2,000 *
(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
	Arsenic	NS	0.47 U	1.3 U	0.556 B	1.34	0.535 U	0.372 U	0.366 B
	Barium	NS	15.2 B	21.5	3.57	26.2	4.74	3.27	5
	Beryllium	NS	0.11 B	0.08 B	0.07 U	0.336	0.045 B	0.033 B	0.082 B
	Cadmium	NS	0.2 B	0.17 U	0.105 U	0.057 B	0.064 B	0.074 U	0.067 U
	Calcium	NS	487 B	774 B	88.3 B	279 B	136 *	51.5 *N	133 N
	Chromium	NS	6.1	6.5	1.87	13	2.31	1.47	2.33 *
	Cobalt	NS	1.4 B	0.81 B	0.344 B	3.68 B	0.308 B	0.397 B	0.393 B
	Copper	NS	4.8 B	7.8	0.72 B	7.27	1.85	0.549 B	1.37
	Iron	NS	2,620	5,710	1,040	8,050	1,060	816 *N	1,280
	Lead	NS	19.8	63.5	4.62 B	5.28	9.74 N	1.6	10.3 *
	Magnesium	NS	596 B	568 B	250	2,750	245	214 *N	300 *
	Manganese	NS	29.3	39.3	10.4	144	13.4 *	9,87 *N	15 *
	Mercury	NS	0.1 U	0.18	0.049	0.004 U	0.011 B	0.006 U	0.019
	Nickel	NS	4.1 B	5.3	1.28	9.9	1.51	1.05	1.84 *
	Potassium	NS	273 B	268	103 B	1,240	94	100 N	137 E*N
	Selenium	NS	1 U	0.95 B	0.328 U	0.374 U	0.359 U	0.381 U	0.227 U
	Silver	NS	0.34 U	0.44 U	0.143 U	0.111 U	0.155 U	0.191 U	0.126 U
	Sodium	NS	35.1 B	96.9 U	11.5 B	50.9 B	18.6	13.9	11 B
	Thallium	NS	0.8 U	2.8 B	0.324 U	0.495 U	0.671 U	0.409 U	1.4 U
	Vanadium	NS	11.5 B	20.2 U	3.35 B	16 B	4.85	2.35	4.96 *
	Zinc	NS	19.7	26 B	5.86	27.6	6.45	3.98	6.67 *
	Cyanide	NS	NA	1.27	NA	NA	NA	NA	NA

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
SD-16	Aluminum	5,110 *	NS	NS	1,780	1,240	2,660	716 *	6,120 *
	Antimony	8.7 U	NS	NS	0.226 U	0.302 U	0.702 UN	0.568 B	0.859 BN
	Arsenic	0.59 B	NS	NS	0.566 B	0.377 B	0.582 U	0.357 U	0.411 U
	Barium	7.1 B	NS	NS	5.25	3.6 B	9.13	1.89	28.5
	Beryllium	0.25 U	NS	NS	0.064 U	0.036 B	0.071 B	0.023 U	0.23 B
	Cadmium	1.2 U	NS	NS	0.096 U	0.031 U	0.132 B	0.071 U	0.292 B
	Calcium	125 B	NS	NS	216 B	137 B	451 *	62 *N	2160 N
	Chromium	5.5	NS	NS	2.41	1.63	3.21	1.44	5.7 *
	Cobalt	1.2 U	NS	NS	0.347 B	0.248 B	0.372 B	0.197 B	1
	Copper	1 B	NS	NS	1.48	0.904 B	3.78	0.389 B	8.14
	Iron	1,730 *	NS	NS	1,120	817	1320	569 *N	2960
	Lead	4.4 NJ	NS	NS	9.99	3.19	16.1 N	1.7	39.5 *
	Magnesium	259 B	NS	NS	239 B	185 B	293	109 *N	580 *
	Manganese	11.5 *	NS	NS	12.4	9.68	17.7 *	8.07 *N	45 *
	Mercury	0.01 B	NS	NS	0.064	0.003 U	0.033	0.005 U	0.028
	Nickel	7.5 U	NS	NS	1.43	1.2 B	2.01	0.78	4.74 *
	Potassium	138 U	NS	NS	113 B	114 B	133	54.5 N	414 E*N
	Selenium	0.25 U,	NS	NS	0.365 B	0.334 U	0.391 U	0.366 U	0.323 U
	Silver	1 U	NS	NS	0.131 U	0.099 U	0.168 U	0.183 U	0.18 U
	Sodium	39 B	NS	NS	14.4 B	17 B	22.9	11.5	17 B
	Thallium	0.25 U,	NS	NS	0.295 U	0.442 U	0.73 U	0.393 U	2.03
	Vanadium	5.1 B	NS	NS	5.26 B	2.39 B	6.58	1.6	15.1 *
	Zinc	4.7 B	NS	NS	7.34	6.48	12.9	2.58	29.1 *
	Cyanide	3.1 U	NS	NS	NA	NA	NA	NA	NA

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
SD-17	Aluminum	3,550	NS	3,500	2,840	1,440	1,870	2,870 *	1,080 *
(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
	Arsenic	0.25 U	NS	1.1	0.397 B	0.424 B	0.51 U	0.435 B	0.296 U
	Barium	8.8 B	NS	21.6	6.32	5.34 B	4.96	5.63	2.96
	Beryllium	0.25 U	NS	0.17 B	0.056 U	0.037 B	0.042 B	0.052 B	0.072 U
	Cadmium	1.3 U	NS	0.11 B	0.092 B	0.075 B	0.055 B	0.077 U	0.069 U
	Calcium	80.4 B	NS	785	240 B	136 B	183 *	137 *N	107 N
	Chromium	4.4	NS	7.4	2.54	1.98	1.99	2.68	1.21 *
	Cobalt	1.3 U	NS	1.1 B	0.209 B	0.196 B	0.166 B	0.504 B	0.114 U
	Copper	2.9 B	NS	8.2	1.64	1.41 B	1.42	12.6	1.39
	Iron	1,590	NS	1,750	757	740	742	1210 *N	614
	Lead	4.1 NJ	NS	21.3	6.98	6.15	5.29 N	4.71	2.49 *
	Magnesium	389 B	NS	665 B	157 B	162 B	169	280 *N	128 *
	Manganese	14.8	NS	40.1	10.9	12.3	9.72 *	16 *N	9.49 *
	Mercury	0.02 B	NS	0.028 U	0.038	0.003 U	0.014	0.012 B	0.012 B
	Nickel	7.6 U	NS	4.3	1.13	1.25 B	1	3.34	0.792 *
	Potassium	140 U	NS	216 B	88.7 B	91.6 B	83.2	117 N	69.4 E*N
	Selenium	0.25 U	NS	0.57 B	0.412 B	0.482 B	0.342 U	0.396 U	0.232 U
	Silver	1 U	NS	0.22 B	0.115 U	0.103 U	0.147 U	0.199 U	0.129 U
	Sodium	16.5 B	NS	31.9 B	9.14 B	19.3 B	17	15.6	5.21 U
	Thallium	0.25 U	NS	0.79 U	0.259 U	0.457 U	0.639 U	0.425 U	1.43 U
	Vanadium	4.4 B	NS	12.6	4.52 B	2.99 B	3.19	4.09	1.62 *
	Zinc	8.8	NS	27.5	7.37	4.6	6.37	6.24	3.4 *
	Cyanide	3.2 U	NS	0.243	NA	NA	NA	NA	NA

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
SD-11	Aluminum	4,030 *	NS	NS	5,070	12,800	11,400	6,920 *	7,570 *
	Antimony	10.9 U	NS	NS	0.311 U	0.532 U	1.51 UN	0.688 U	0.761 UN
	Arsenic	0.31 U,	NS	NS	1.07	0.859 B	2.35	1.81	1.27
	Barium	9.3 NB	NS	NS	27.1	53.4	61.1	35.4	34.6
	Beryllium	0.31 U	NS	NS	0.134 B	0.291 B	0.342 B	0.232 B	0.281 B
	Cadmium	1.6 U	NS	NS	0.135 B	0.06 B	0.232 B	0.144 B	0.152 B
	Calcium	125 B	NS	NS	225 B	389	1750 *	551 *N	467 N
	Chromium	4.5	NS	NS	4.99	11.6	10.5	6.48	7.1 *
	Cobalt	1.6 U	NS	NS	0.221 B	0.258 B	1.9	0.586 B	0.439 B
	Copper	R	NS	NS	5.25	7.06	21.3	7.52	7.55
	Iron	763 *	NS	NS	938	1,260 B	4,920	1,570 *N	1,660
	Lead	6.3 N	NS	NS	8.41	13.2	85.7 N	17.8	16.9 *
	Magnesium	168 B	NS	NS	118 B	295 B	819	262 *N	293 *
	Manganese	6.6 *	NS	NS	3.74	9.41	33.9 *	10.5 *N	11.4 *
	Mercury	0.03 B	NS	NS	0.074	0.12	0.198	0.056	0.044
	Nickel	9.3 U	NS	NS	2	2.77 B	7.51	3.13	3.3 *
	Potassium	171 U	NS	NS	131 B	308 B	488	285 N	355 E*N
	Selenium	0.31 B	NS	NS	1.43	2.68	1.59	0.993 B	0.817 B
	Silver	1.2 U	NS	NS	0.198 B	0.175 U	0.363 U	0.338 U	0.2 U
	Sodium	40.9 B	NS	NS	32.2 B	58.4 B	87.2	44.3	21 B
	Thallium	0.31 U,	NS	NS	0.723 B	0.779 U	1.57 U	0.724 U	2.22 U
	Vanadium	4.2 B	NS	NS	4.27 B	8.33 B	35.8	9.46	10.3 *
	Zinc	R	NS	NS	15.4	16.5	61.7	22.3	20.4 *
	Cyanide	3.9 U	NS	NS	NA	NA	NA	NA	NA

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
SD-12	Aluminum	7,220 *	NS	30,300	4,420	27,900	20,600	13,600 *	10,500 *
(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
	Arsenic	0.76 B,	NS	5	0.981	6.58 B	4.46	4.17	2.17
	Barium	17.4 B	NS	85.9	32	77.5	68.2	49.5	46.5
	Beryllium	0.25 U	NS	0.73 B	0.129 B	0.82 B	0.546 B	0.348 B	0.399 B
	Cadmium	1.2 U	NS	0.54 B	0.148 B	0.724 B	0.241 B	0.199 B	0.096 U
	Calcium	379 B	NS	1,820	964	2,780	2,020 *	2,260 *N	1,870 N
	Chromium	7.8	NS	22.1	4.7	27.8	20.3	13.3	10.9 *
	Cobalt	2.5 B	NS	5.3 B	0.428 B	6.59 B	3.82	3.09	1.65
	Copper	R	NS	44.6	7.41	36.6	26.4	20.2	13.6
	Iron	5,150	NS	22,000	1,840	18,700	11,700	8,940 *N	5,960
	Lead	10.4 NJ	NS	86.3	6.11	71.1	59.8 N	42.3	25.5 *
	Magnesium	943 B	NS	2220	207 B	3,020	1,610	885 *N	672 *
	Manganese	56 *	NS	125	4.12	147	73.3 *	48.4 *N	33.4 *
	Mercury	0.03 B	NS	0.37	0.074	0.272	0.215	0.214	0.079
	Nickel	7.5 U	NS	16.5	2.04	19.6	11.6	7.9	5.5 *
	Potassium	292 B	NS	766 B	130 B	1,300 B	774	611 N	570 E*N
	Selenium	0.25 U	NS	2.2	1.22	2.01	1.74	1.44	1.23
	Silver	1 U	NS	1.3 B	0.146 B	0.441 U	0.284 U	0.47 U	0.18 U
	Sodium	29.8 B	NS	106 B	31.4 B	133 B	81.1	69.4	26.5
	Thallium	0.25 U	NS	1.8 U	0.323 U	1.03 U	1.23 U	1.01 U	2.46
	Vanadium	10.8 B	NS	54.5	3.49 B	59.9	45.7	31.1	18.7 *
	Zinc	R	NS	123	5.91	137	70.3	38.4	22.3 *
	Cyanide	3.1 U	NS	0.708	NA	NA	NA	NA	NA

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
SD-13	Aluminum	9,100 *	NS	8,360	2,090	NS	NS	NS	NS
(SD-E)	Antimony	9.2 U	NS	0.51 U	0.194 U	NS	NS	NS	NS
	Arsenic	1.2 B,	NS	1 B	0.46 B	NS	NS	NS	NS
	Barium	22.7 B	NS	21.7	10.2	NS	NS	NS	NS
	Beryllium	0.26 U	NS	0.08 B	0.055 U	NS	NS	NS	NS
	Cadmium	1.3 U	NS	0.18 B	0.083 U	NS	NS	NS	NS
	Calcium	640 B	NS	993 B	264 B	NS	NS	NS	NS
	Chromium	9.1	NS	5.3	2.58	NS	NS	NS	NS
	Cobalt	2.7 B	NS	0.64 B	0.124 B	NS	NS	NS	NS
	Copper	8.1	NS	9.5	1.42	NS	NS	NS	NS
	Iron	7,040 *	NS	3,340	781	NS	NS	NS	NS
	Lead	15.8 NJ	NS	39.9 B	5.14	NS	NS	NS	NS
	Magnesium	1190 B	NS	312	108 B	NS	NS	NS	NS
	Manganese	85 *	NS	16	3.96	NS	NS	NS	NS
	Mercury	0.06 B	NS	0.13	0.054	NS	NS	NS	NS
	Nickel	7.9 U	NS	3.2	0.848	NS	NS	NS	NS
	Potassium	300 B	NS	209 B	113 B	NS	NS	NS	NS
	Selenium	0.26 U	NS	0.89 B	0.502 B	NS	NS	NS	NS
	Silver	1.1 U	NS	0.35 B	0.113 U	NS	NS	NS	NS
	Sodium	48.4 B	NS	76.1 B	14.1 B	NS	NS	NS	NS
	Thallium	0.26 U	NS	1.5 U	0.254 U	NS	NS	NS	NS
	Vanadium	16.3	NS	14.9	2.99 B	NS	NS	NS	NS
	Zinc	27.9	NS	17.3	4.35	NS	NS	NS	NS
	Cyanide	3.3 U	NS	0.847	NA	NS	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
SD-2001	Aluminum	NS	NS	NS	1,780	46,900	15,800	14,900 *	11,600 *
	Antimony	NS	NS	NS	0.226 U	0.821 U	1.32 UN	1.44 B	0.953 BN
	Arsenic	NS	NS	NS	0.566 B	9.03	4.21	4.4	2.23
	Barium	NS	NS	NS	5.25	118	52.9	52.1	45.4
	Beryllium	NS	NS	NS	0.064 U	1.23 B	0.434 B	0.359 B	0.397 B
	Cadmium	NS	NS	NS	0.096 U	1.07 B	0.277 B	0.249 B	0.102 U
	Calcium	NS	NS	NS	216 B	2,310 B	1,900 *	1,720 *N	1,430 N
	Chromium	NS	NS	NS	2.41	45.5	15.7	15.1	11.4 *
	Cobalt	NS	NS	NS	0.347 B	8.87 B	2.98	3.16	1.7
	Copper	NS	NS	NS	1.48	52.9	23.3	21.2	11.6
	Iron	NS	NS	NS	1,120	25,600	8,720	7,180 *N	5,690
	Lead	NS	NS	NS	9.99	145	57 N	60.8	29.7 *
	Magnesium	NS	NS	NS	239 B	3,940	1,210	853 *N	675 *
	Manganese	NS	NS	NS	12.4	158	69.3 *	41.2 *N	40.4 *
	Mercury	NS	NS	NS	0.064	0.727	0.192	0.18	0.098
	Nickel	NS	NS	NS	1.43	28	10.1	9.12	5.73 *
	Potassium	NS	NS	NS	113 B	1,780	603	599 N	570 E*N
	Selenium	NS	NS	NS	0.365 B	2.42	1.4	1.31	0.623 B
	Silver	NS	NS	NS	0.131 U	0.689 B	0.316 U	0.441 U	0.192 U
	Sodium	NS	NS	NS	14.4 B	149 B	74.7	74.9	21.8
	Thallium	NS	NS	NS	0.295 U	1.2 U	1.37 U	0.943 U	3.05
	Vanadium	NS	NS	NS	5.26 B	107	40	41.5	22.6 *
	Zinc	NS	NS	NS	7.34	186	76.6	42.1	24.2 *
	Cyanide	NS	NS	NS	NA	NA	NA	NA	NA

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

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

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
SW-5S	Aluminum	38,600	304	1,240	253	385	445 E	429	434
(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
	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
	Barium	136 B	11.7 B	19.6	5.32 B	7.7 B	6.32 B	6.91 B	10.2 B
	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
	Cadmium	5 U	0.2 U	0.44 B	0.69 U	0.274 B	0.21 U	0.66 U	0.313 U
	Calcium	29,700	8,860	5,520	2,360 B	3,170 B	3,590 B	2,450 B	2,720 B
	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
	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
	Copper	56.2	0.9 U	13.4	1.63 U	2.24 B	1.52 B	2.58 B	1.39 U
	Iron	44,000	347	3,740	1,120	1,100	890	779	1,210
	Lead	NA	2.2 B	5.3	1.38 U	1.47 U	2.16 B	2.4 U	1.72 U
	Magnesium	12,500	2,460 B	1,560 B	985 B	1,060 B	1,230 B	774 B	848 B
	Manganese	1,410	96.1	383	181	339	227	153	176
	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
	Nickel	30 U	1.6 U	7.6	1.29 U	1.91 B	2.09 B	1.64 U	1.19 B
	Potassium	5,720 B	2,430 B	4,790 B	2,340 B	3,470 B	2,700 B	2,010 B	1,860 B
	Selenium	1 U	2.4 U	2.6 B	3.66 U	2.93 U	2.67 U	3.39 U	2.81 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
	Sodium	7,200	3,500 B	4,250 B	1,840 B	2,670 B	2,620 B	2,290 BE	2,530 B
	Thallium	1 U	1.9 U	5.6 U	2.11 U	3.88 U	4.99 U	3.64 U	10 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
	Zinc	252	47.5	65.8	8.12 B	12.4 B	13.7 B	34.4	15.4 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
SW- 6	Aluminum	NS	762	110,000	503	523	541 E	413	346
(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
	Arsenic	NS	1.1 U	19.8	2.09 U	2.33 U	3.97 U	3.31 U	2.24 U
	Barium	NS	13.8 B	507	9.62 B	7.9 B	7.37 B	5.89 B	5.74 B
	Beryllium	NS	0.1 B	3.3 B	0.46 U	0.158 U	0.185 U	0.21 U	0.158 U
	Cadmium	NS	0.1 B	7.4 B	0.69 U	0.272 U	0.21 U	0.66 U	0.313 U
	Calcium	NS	7,000	28,400	2,660 B	2150 B	2450 B	1540 B	1450 B
	Chromium	NS	0.7 U	99.4	1.41 B	0.779 B	0.533 B	1.69 U	0.643 B
	Cobalt	NS	1.3 U	22.7 B	0.91 U	0.419 U	0.581 U	1.33 B	0.738 B
	Copper	NS	8.1 B	165	1.92 B	2.48 B	1.55 B	1.91 B	1.39 U
	Iron	NS	692	77,500	2,140	1,250	725	522	595
	Lead	NS	4.4	887	1.38 U	1.47 U	1.24 U	2.4 U	1.72 U
	Magnesium	NS	2,690 B	13200	860 B	810 B	982 B	642 B	624 B
	Manganese	NS	256	1,280	107	106	133	78.1	71.6
	Mercury	NS	0.1 U	1	0.085 B	0.057 U	0.04 U	0.095 U	0.047 U
	Nickel	NS	3.4 B	121	1.93 B	2.07 B	2.07 B	1.64 U	1.07 B
	Potassium	NS	2,610 B	9,990 B	1,940 B	2,360 B	1,920 B	1,180 B	1,270 B
	Selenium	NS	2.4 U	10 B	3.66 U	3.46 B	2.67 U	3.61 B	3.5 B
	Silver	NS	0.8 U	2.3 B	0.94 U	0.871 U	1.15 U	1.7 U	0.835 U
	Sodium	NS	3,330 B	4,350 B	2,070 B	2,920 B	3,180 B	2,270 BE	2,560 B
	Thallium	NS	1.9 U	11.3 U	2.11 U	3.88 U	4.99 U	3.64 U	10 U
	Vanadium	NS	9.1 B	348	3.19 B	2.94 B	3.33 B	4.71 B	1.51 B
	Zinc	NS	53.2	699	16.8 B	14.1 B	14.4 B	29.9	11.5 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
SW- 16	Aluminum	NS	NS	NS	NS	928	521 E	446	543
	Antimony	NS	NS	NS	NS	2.65 U	4.79 U	3.46 U	5.08 U
	Arsenic	NS	NS	NS	NS	2.33 U	3.97 U	3.31 U	2.24 U
	Barium	NS	NS	NS	NS	27.3 B	11.2 B	8.81 B	11.7 B
	Beryllium	NS	NS	NS	NS	0.158 U	0.185 U	0.21 U	0.158 U
	Cadmium	NS	NS	NS	NS	0.272 U	0.21 U	0.66 U	0.313 U
	Calcium	NS	NS	NS	NS	5,480	6,040	4,200 B	3,150 B
	Chromium	NS	NS	NS	NS	1.31 B	0.723 B	2.07 B	1.26 B
	Cobalt	NS	NS	NS	NS	0.627 B	0.581 U	1.69 B	0.812 B
	Copper	NS	NS	NS	NS	3.3 B	2.21 B	3.09 B	1.39 U
	Iron	NS	NS	NS	NS	2,320	1,330	1,430	1,480
	Lead	NS	NS	NS	NS	3.86	1.39 B	2.4 U	1.72 U
	Magnesium	NS	NS	NS	NS	1,420 B	1,580 B	1,120 B	922 B
	Manganese	NS	NS	NS	NS	156	158	116	83.6
	Mercury	NS	NS	NS	NS	0.057 U	0.04 U	0.095 U	0.047 U
	Nickel	NS	NS	NS	NS	2.81 B	2.23 B	1.64 U	1.03 B
	Potassium	NS	NS	NS	NS	2,730 B	2,270 B	1,730 B	1,590 B
	Selenium	NS	NS	NS	NS	2.93 U	2.67 U	3.39 U	2.81 U
	Silver	NS	NS	NS	NS	0.871 U	1.15 U	1.7 U	0.835 U
	Sodium	NS	NS	NS	NS	2,520 B	2,680 B	2,170 BE	2,400 B
	Thallium	NS	NS	NS	NS	3.88 U	4.99 U	3.64 U	10 U
	Vanadium	NS	NS	NS	NS	4.61 B	2.96 B	5.02 B	3.44 B
	Zinc	NS	NS	NS	NS	15.5 B	14.6 B	34	14.8 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
SW-17	Aluminum	NS	NS	1,260	NS	612	441 E	490	485
(SW-A)	Antimony	NS	NS	2 U	NS	2.65 U	4.79 U	3.46 U	5.08 U
	Arsenic	NS	NS	2.7 U	NS	3.21 B	3.97 U	3.31 U	2.24 U
	Barium	NS	NS	21.6	NS	36 B	14.6 B	10.3 B	13 B
	Beryllium	NS	NS	0.14 U	NS	0.158 U	0.185 U	0.21 U	0.158 U
	Cadmium	NS	NS	0.34 U	NS	0.272 U	0.21 U	0.66 U	0.313 U
	Calcium	NS	NS	8,570	NS	9,120	7,900	6,930	3,920 B
	Chromium	NS	NS	3 B	NS	1.73 B	1.16 B	1.69 U	0.984 B
	Cobalt	NS	NS	1.1 B	NS	1.49 B	0.759 B	1.82 B	0.754 B
	Copper	NS	NS	5	NS	4.2 B	2.21 B	3.26 B	1.39 U
	Iron	NS	NS	5,410	NS	5430	1650	1120	1170
	Lead	NS	NS	6	NS	3.31	2.04 B	2.4 U	1.72 U
	Magnesium	NS	NS	1,950 B	NS	1,950 B	1,780 B	1,530 B	1,050 B
	Manganese	NS	NS	240	NS	469	150	157	102
	Mercury	NS	NS	0.12 U	NS	0.057 U	0.04 U	0.095 U	0.047 U
	Nickel	NS	NS	6	NS	3.28 B	2.27 B	1.64 U	1.04 B
	Potassium	NS	NS	2,480 B	NS	3,310 B	2,400 B	1,960 B	1,550 B
	Selenium	NS	NS	2.1 B	NS	3 U	3 U	3 U	3 U
	Silver	NS	NS	0.89 U	NS	0.871 U	1.15 U	1.7 U	0.835 U
	Sodium	NS	NS	3,610 B	NS	2,560 B	2,470 B	2,050 BE	2,220 B
	Thallium	NS	NS	6 U	NS	3.88 U	4.99 U	3.64 U	10 U
	Vanadium	NS	NS	6.5 B	NS	7.54 B	4.11 B	4.25 B	2.63 B
	Zinc	NS	NS	31.5	NS	24	14.2 B	30.1	16.6 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
SW- 4	Aluminum	829	NS	NS	179 B	1,500	1,320 E	326	258
	Antimony	35 U	NS	NS	4.14 U	2.65 U	4.79 U	3.46 U	5.08 U
	Arsenic	1.3 B	NS	NS	2.09 U	2.33 U	3.97 U	3.31 U	2.24 U
	Barium	21.9 B	NS	NS	17.4 B	77.9 B	15.1 B	6.39 B	8.11 B
	Beryllium	1 U	NS	NS	0.46 U	0.158 U	0.185 U	0.21 U	0.158 U
	Cadmium	5 U	NS	NS	0.69 U	0.272 U	0.21 U	0.66 U	0.313 U
	Calcium	8,150	NS	NS	16,400	7,230	5,350	3,630 B	4,300 B
	Chromium	5 UUB	NS	NS	0.87 U	1.62 B	1.62 B	1.99 B	0.795 B
	Cobalt	5	NS	NS	0.91 U	1.84 B	0.581 U	1.68 B	0.903 B
	Copper	8.5 B	NS	NS	1.63 U	5.79 B	3.79 B	2.59 B	1.39 U
	Iron	3930	NS	NS	2,600	3,670	1,760	499	996
	Lead	NA	NS	NS	1.38 U	5.61	3.53	2.4 U	1.72 U
	Magnesium	4,260 B	NS	NS	2,780 B	2,170 B	1,930 B	1,340 B	1,560 B
	Manganese	146	NS	NS	135	312	69.5	39.6	112
	Mercury	0.2 B	NS	NS	0.109 B	0.057 U	0.04 U	0.095 U	0.047 U
	Nickel	30 U	NS	NS	1.29 U	3.5 b	2.14 B	1.64 U	0.69 U
	Potassium	2,130 B	NS	NS	3,350 B	2,980 B	2,200 B	1,380 B	1,560 B
	Selenium	1 U	NS	NS	3.66 U	2.93 U	2.67 U	3.84 B	2.81 U
	Silver	4 U	NS	NS	0.94 U	0.871 U	1.15 U	1.8 B	0.835 U
	Sodium	6,850	NS	NS	2,410 B	2,860 B	2,960 B	2,390 BE	2,570 B
	Thallium	1 U	NS	NS	2.48 B	3.88 U	4.99 U	3.64 U	10 U
	Vanadium	9 U	NS	NS	2.05 B	6.95 B	4.03 B	4.06 B	1.38 B
	Zinc	33.3	NS	NS	2.19 U	28	22	55.8	12.2 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
SW- 5N	Aluminum	NS	NS	945	179 B	575	238 E	1180	133 B
(SW-D)	Antimony	NS	NS	1.9 U	4.14 U	2.89 B	4.79 U	3.46 U	5.08 U
	Arsenic	NS	NS	2.7 U	2.09 U	2.33 U	3.97 U	3.31 U	2.24 U
	Barium	NS	NS	22.8	17.4 B	25.6 B	9.22 B	9.58 B	6.4 B
	Beryllium	NS	NS	0.14 U	0.46 U	0.158 U	0.185 U	0.21 U	0.158 U
	Cadmium	NS	NS	0.34 U	0.69 U	0.272 U	0.21 U	0.66 U	0.313 U
	Calcium	NS	NS	7,990	16,400	15,700	11,000	10,500	9,730
	Chromium	NS	NS	1.4 B	0.87 U	1.06 B	0.532 U	2.12 B	0.558 B
	Cobalt	NS	NS	1.1 B	0.91 U	0.515 B	0.581 U	1.78 B	0.541 U
	Copper	NS	NS	3.2 B	1.63 U	2.28 B	1.3 U	4.09 B	1.39 U
	Iron	NS	NS	6,900	2,600	1,290	598	1,070	564
	Lead	NS	NS	3.6 B	1.38 U	2.27 B	1.24 U	2.4 U	1.72 U
	Magnesium	NS	NS	2,560 B	2,780 B	2,850 B	2,110 B	2,010 B	2,010 B
	Manganese	NS	NS	146	135	103	33.2	35.2	18
	Mercury	NS	NS	0.12 U	0.109 B	0.057 U	0.04 U	0.095 U	0.047 U
	Nickel	NS	NS	5 B	1.29 U	1.09 B	0.837 U	1.64 U	0.69 U
	Potassium	NS	NS	3,910 B	3,350 B	3,160 B	2,210 B	1,600 B	1,370 B
	Selenium	NS	NS	1.9 U	3.66 U	2.93 U	2.67 U	3.39 U	2.81 U
	Silver	NS	NS	0.89 U	0.94 U	0.871 U	1.15 U	2 B	0.835 U
	Sodium	NS	NS	3,870 B	2,410 B	2,280 B	2,160 B	1,650 BE	1,830 B
	Thallium	NS	NS	5.6 U	2.48 B	3.88 U	4.99 U	3.64 U	10 U
	Vanadium	NS	NS	4.6 B	2.05 B	2.56 B	1.27 B	4.4 B	1.06 B
	Zinc	NS	NS	21.9	2.19 U	4.96 B	4.54 B	25.4	7.02 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
SW- E	Aluminum	NS	NS	1,170	NS	NS	NS	NS	NS
	Antimony	NS	NS	1.9 U	NS	NS	NS	NS	NS
	Arsenic	NS	NS	2.7 U	NS	NS	NS	NS	NS
	Barium	NS	NS	30.4	NS	NS	NS	NS	NS
	Beryllium	NS	NS	0.14 U	NS	NS	NS	NS	NS
	Cadmium	NS	NS	0.34 U	NS	NS	NS	NS	NS
	Calcium	NS	NS	8,410	NS	NS	NS	NS	NS
	Chromium	NS	NS	3.9 B	NS	NS	NS	NS	NS
	Cobalt	NS	NS	2.3 B	NS	NS	NS	NS	NS
	Cooper	NS	NS	6.4	NS	NS	NS	NS	NS
	Iron	NS	NS	6,970	NS	NS	NS	NS	NS
	Lead	NS	NS	4.5 B	NS	NS	NS	NS	NS
	Magnesium	NS	NS	2,610 B	NS	NS	NS	NS	NS
	Manganese	NS	NS	323	NS	NS	NS	NS	NS
	Mercury	NS	NS	0.12 U	NS	NS	NS	NS	NS
	Nickel	NS	NS	6.7	NS	NS	NS	NS	NS
	Potassium	NS	NS	4,140 B	NS	NS	NS	NS	NS
	Selenium	NS	NS	1.9 U	NS	NS	NS	NS	NS
	Silver	NS	NS	0.89 U	NS	NS	NS	NS	NS
	Sodium	NS	NS	3,990 B	NS	NS	NS	NS	NS
	Thallium	NS	NS	5.6 U	NS	NS	NS	NS	NS
	Vanadium	NS	NS	7.5 B	NS	NS	NS	NS	NS
	Zinc	NS	NS	38.2	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
SW- 2001	Aluminum	NS	NS	NS	NS	466	427 E	4090	119 B
	Antimony	NS	NS	NS	NS	2.65 U	4.79 U	3.46 U	5.08 U
	Arsenic	NS	NS	NS	NS	2.33 U	3.97 U	3.31 U	2.24 U
	Barium	NS	NS	NS	NS	42.9 B	11.2 B	20.9 B	6.54 B
	Beryllium	NS	NS	NS	NS	0.158 U	0.185 U	0.21 U	0.158 U
	Cadmium	NS	NS	NS	NS	0.272 U	0.21 U	0.66 U	0.313 U
	Calcium	NS	NS	NS	NS	15,300	11,700	10,400	9,780
	Chromium	NS	NS	NS	NS	0.977 B	0.532 U	4.52 B	0.503 U
	Cobalt	NS	NS	NS	NS	0.518 B	0.581 U	2.86 B	0.541 U
	Copper	NS	NS	NS	NS	1.94 B	2.74 B	7.14 B	1.39 U
	Iron	NS	NS	NS	NS	1,190	753	3,420	558
	Lead	NS	NS	NS	NS	1.66 B	1.24 U	8.68	1.72 U
	Magnesium	NS	NS	NS	NS	2,760 B	2,180 B	2,320 B	2,020 B
	Manganese	NS	NS	NS	NS	130	103	105	18.9
	Mercury	NS	NS	NS	NS	0.057 U	0.04 U	0.095 U	0.047 U
	Nickel	NS	NS	NS	NS	0.815 U	1.08 B	1.64 U	0.69 U
	Potassium	NS	NS	NS	NS	3,050 B	2,130 B	1,960 B	1,360 B
	Selenium	NS	NS	NS	NS	2.93 U	2.67 U	3.39 U	2.81 U
	Silver	NS	NS	NS	NS	0.871 U	1.15 U	1.7 U	0.835 U
	Sodium	NS	NS	NS	NS	2,270 B	2,230 B	1,800 BE	1,830 B
	Thallium	NS	NS	NS	NS	3.88 U	4.99 U	3.64 U	10 U
	Vanadium	NS	NS	NS	NS	2.32 B	2.13 B	12 B	1.03 B
	Zinc	NS	NS	NS	NS	4.25 B	5.91 B	72.6	7.05 B

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	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04
Copper	NS	4.8 B	8.1	9.59	9.03	9.65	11.7	10.5	NS	4.8 B	7.8	0.72 B	7.27	1.85	0.55 B	1.37
Lead	NS	28	19.4	13.4	13	21.1 N	12.7	30.1 *	NS	19.8	63.5	4.62	5.28	9.74 N	1.6	10.3 *
Manganese	NS	41.5	45.1	82.4	123	78.7	88.3 *N	109 *	NS	29.3	39.3	10.4	144	13.4	9.87 *N	15 *
Mercury	NS	0.11 U	0.05	0.098	0.053	0.053	0.021	0.052	NS	0.1 U	0.18	0.049	0.004	0.011 B	0.01 U	0.02
Zinc	NS	22.3	25.1	31.4	29.8	31.9	29.5	26.3 *	NS	19.7	26	5.86	27.6	6.45	3.98	6.67 *

	SD-16								SD-17 (SD-A)							
	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04
Copper	1 B	NS	NS	1.48	0.904	3.78	0.389 B	8.14	2.9 B	NS	8.2	1.64	1.41	1.42	12.6	1.39
Lead	4.4 NJ	NS	NS	9.99	3.19	16.1 N	1.7	39.5 *	4.1 NJ	NS	21.3	6.98	6.15	5.29 N	4.71	2.49 *
Manganese	11.5	NS	NS	12.4	9.68	17.7	8.07 *N	45 *	14.8	NS	40.1	10.9	12.3	9.72	16 *N	9.49 *
Mercury	0.001 B	NS	NS	0.064	0.003	0.033	0.005 U	0.028	0.02 B	NS	0.03 U	0.038	0.003	0.014	0.01 B	0.01 B
Zinc	4.7 B	NS	NS	7.34	6.48	12.9	2.58	29.1 *	8.8	NS	27.5	7.37	4.6	6.37	6.24	3.4 *

South Pond Averages

Contaminant							**Maximum Sediment**	**Bkg. Sediment**
units mg/Kg	1999	2000	2001	2002	2003	2004	**Conc.[1]**	**Conc.**
Copper	8.03	3.36	4.7	4.2	6.3	5.4	29	52.5
Lead	34.73	8.75	6.9	13.1	5.2	20.6	82.9	97.6
Manganese	41.50	29.03	72.2	29.9	30.6	44.6	541	84.3
Mercury	0.09	0.06	0.02	0.03	0.01	0.03	0.17	0.41
Zinc	26.20	12.99	17.1	14.4	10.6	16.4	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	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04
Copper	NA	NS	NS	5.25	7.06	21.3	7.52	7.55	NA	NS	45	7.41	37	26.4	20.2	13.6
Lead	6.3 N	NS	NS	8.41	13.2	85.7 N	17.8	16.9 *	10.4 NJ	NS	86	6.11	71.1	59.8 N	42.3	25.5 *
Manganese	6.6	NS	NS	3.74	9.41	33.9	10.5 *N	11.4 *	56	NS	125	4.12	147	73.3	48.4 *N	33.4 *
Mercury	0.030 B	NS	NS	0.074	0.120	0.198	0.056	0.044	0.03 B	NS	0.370	0.074	0.272	0.215	0.21	0.08
Zinc	NA	NS	NS	15.4	16.5	61.7	22.3	20.4 *	NA	NS	123	5.91	137	70.3	38.4	22.3 *

	SD-13 (SD-E)								SD-2001							
	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04
Copper	8.1	NS	9.5	1.42	NS	NS	NS	NS	NS	NS	NS	NS	53	23.3	21.2	11.6
Lead	15.8 NJ	NS	39.9	5.14	NS	NS	NS	NS	NS	NS	NS	NS	145	57 N	60.8	29.7 *
Manganese	85	NS	16.0	4.0	NS	NS	NS	NS	NS	NS	NS	NS	158	69.3	41.2 *N	40.4 *
Mercury	0.08 B	NS	0.13	0.054	NS	NS	NS	NS	NS	NS	NS	NS	0.727	0.192	0.18	0.098
Zinc	27.9	NS	17.3	4.35	NS	NS	NS	NS	NS	NS	NS	NS	186	76.6	42.1	24.2 *

North Pond Averages

Contaminant							**Maximum Sediment**	**Bkg. Sediment**
units mg/Kg	1999	2000	2001	2002	2003	2004	**Conc.[1]**	**Conc.**
Copper	27.1	4.7	32.2	23.7	16.3	16.3	29	52.5
Lead	63.1	6.6	76.4	67.5	40.3	40.0	82.9	97.6
Manganese	70.5	3.9	104.8	58.8	33.4	33.7	541	84.3
Mercury	0.25	0.07	0.37	0.20	0.15	0.15	0.17	0.41
Zinc	70.2	8.6	113.2	69.5	34.3	33.6	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	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May -04
Aluminum	NS	304	1,240	253	385	445 E	429	434	NS	762	110,000	503	523	541 E	413	346
Cadmium	NS	0.2 B	0.44 B	0.69 U	0.274 B	0.210 U	0.660 U	0.313 U	NS	NA	7.4 B	0.69 U	0.272 U	0.210 U	0.660 U	0.313 U
Cobalt	NS	1.3 U	1.1 B	0.91 U	0.679 B	0.581 U	1.710 B	0.918 B	NS	1.4 B	22.7 B	0.91 U	0.419 U	0.581 U	1.330 B	0.738 B
Copper	NS	0.9 U	13.4	1.63 U	2.24 B	1.52 B	2.58 B	1.39 U	NS	8.1 B	165	1.92 B	2.48 B	1.55 B	1.91 B	1.39 U
Iron	NS	347	3,740	1,120	1,100	890	779	1,210	NS	692	77,500	2,140	1,250	725	522	595
Lead	NS	2.2 B	5.3	1.38 U	1.47 U	2.16 B	2.4 U	1.72 U	NS	4.4	887	1.38 U	1.47 U	1.24 U	2.4 U	1.72 U
Mercury	NS	0.1 B	0.13 B	0.05 B	0.057 U	0.04 U	0.10 U	0.05 U	NS	NA	1	0.085 B	0.057 U	0.04 U	0.10 U	0.05 B
Nickel	NS	1.6 U	7.6	1.29 U	1.91 B	2.09 B	1.64 U	1.19 B	NS	NA	121	1.93 B	2.07 B	2.07 B	1.64 U	1.07 B
Silver	NS	0.8 U	0.89 U	0.94 U	0.871 U	1.15 U	1.70 U	0.84 U	NS	NA	2.3 B	0.94 U	0.871 U	1.15 U	1.70 U	0.84 U
Zinc	NS	47.5	65.8	8.12 B	12.4 B	13.7 B	34.4	15.4 B	NS	53.2	699	16.8 B	14.1 B	14.4 B	29.9	11.5 B

	SW-16								SW-17 (SW-A)							
	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04
Aluminum	NS	NS	NS	NS	928	521 E	446	543	NS	NS	1,260	NS	612	441 E	490	485
Cadmium	NS	NS	NS	NS	0.272 U	0.210 U	0.660 U	0.313 U	NS	NS	0.34 U	NS	0.272 U	0.210 U	0.660 U	0.313 U
Cobalt	NS	NS	NS	NS	0.627 B	0.581 U	1.690 B	0.812 B	NS	NS	1.1 B	NS	1.49 B	0.759 B	1.820 B	0.754 B
Copper	NS	NS	NS	NS	3.3 B	2.21 B	3.09 B	1.39 U	NS	NS	5	NS	4.2 B	2.21 B	3.26 B	1.39 U
Iron	NS	NS	NS	NS	2,320	1,330	1,430	1480	NS	NS	5,410	NS	5,430	1,650	1,120	1170
Lead	NS	NS	NS	NS	3.86	1.39 B	2.4 U	1.72 U	NS	NS	5.7	NS	3.31	2.04 B	2.4 U	1.72 U
Mercury	NS	NS	NS	NS	0.057 U	0.04 U	0.10 U	0.047 U	NS	NS	0.12 U	NS	0.057 U	0.04 U	0.10 U	0.047 U
Nickel	NS	NS	NS	NS	2.81 B	2.23 B	1.64 U	1.03 B	NS	NS	5.5	NS	3.28 B	2.27 B	1.64 U	1.04 B
Silver	NS	NS	NS	NS	0.871 U	1.15 U	1.70 U	0.835 U	NS	NS	0.89 U	NS	0.871 U	1.15 U	1.70 U	0.835 U
Zinc	NS	NS	NS	NS	15.5 B	14.6 B	34	14.8 B	NS	NS	32	NS	24	14.2 B	30.1	16.6 B

South Pond Averages

Contaminant	**Bench-mark[1]**							**Critical**
units ug/L	1994/97	1999	2000	2001	2002	2003	2004	**Conc.[1]**
Aluminum	**762**	**37,500**	378	**612**	487	445	452	525
Cadmium	0.3	2.73	0.69	0.27	0.21	0.66	0.31	12.8
Cobalt	8.1	8.30	0.91	0.80	0.63	1.64	0.81	15
Copper	18.7	**61.13**	1.78	3.06	1.87	2.71	1.39	50
Iron	**4,400**	**28,883**	**1,630**	**2,525**	1148.75	963	1,114	1,000
Lead	4.4	**299**	1.38	2.53	1.71	2.40	1.72	14.6
Mercury	0.24	0.42	0.07	0.06	0.04	0.10	0.05	27
Nickel	3.5	44.70	1.61	2.52	2.17	1.64	1.08	420
Silver	ND	1.36	0.94	0.87	1.15	1.70	0.84	2.4
Zinc	**64.9**	**265.4**	12.5	16.5	14.23	32.10	14.6	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	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04
Aluminum	829	NS	NS	193 B	1,500	1320 E	326	258	38,600	NS	945	179 B	575	238 E	1180	133 B
Cadmium	5 U	NS	NS	0.69 U	0.272 U	0.210 U	0.66 U	0.313 U	NA	NS	0.34 U	0.69 U	0.272 U	0.210 U	0.66 U	0.313 U
Cobalt	5 U	NS	NS	0.91 U	1.84 B	0.581 U	1.68 B	0.903 B	18.7 B	NS	1.1 B	0.91 U	0.515 B	0.581 U	1.78 B	0.541 U
Copper	8.5 B	NS	NS	1.63 U	5.79 B	3.79 B	2.59 B	1.39 U	56.2	NS	3.2 B	1.63 U	2.28 B	1.3 U	4.09 B	1.39 U
Iron	3,930	NS	NS	2,790	3,670	1,760	499	996	4,400	NS	6,900	2,600	1,290	598	1070	564
Lead	NA	NS	NS	1.38 U	5.61	3.53	2.4 U	1.72 U	NA	NS	3.6 B	1.38 U	2.27	1.24 U	2.4 U	1.72 U
Mercury	0.2 B	NS	NS	0.106 B	0.057 U	0.04 U	0.095 U	0.047 U	0.24 B	NS	0.12 U	0.109 B	0.057 U	0.04 U	0.095 U	0.047 U
Nickel	30 U	NS	NS	1.29 U	3.5 B	2.14 B	1.64 U	0.69 U	3.5 B	NS	5 B	1.29 U	1.09 B	0.837 U	1.64 U	0.69 U
Silver	4 U	NS	NS	0.94 U	0.871 U	1.15 U	1.8 B	0.835 U	NA	NS	0.89 U	0.94 U	0.871 U	1.15 U	2 B	0.835 U
Zinc	33	NS	NS	2.19 U	28	22	55.8	12.2 B	252	NS	21.9	2.19 U	4.96 B	4.54 B	25.4	7.02 B

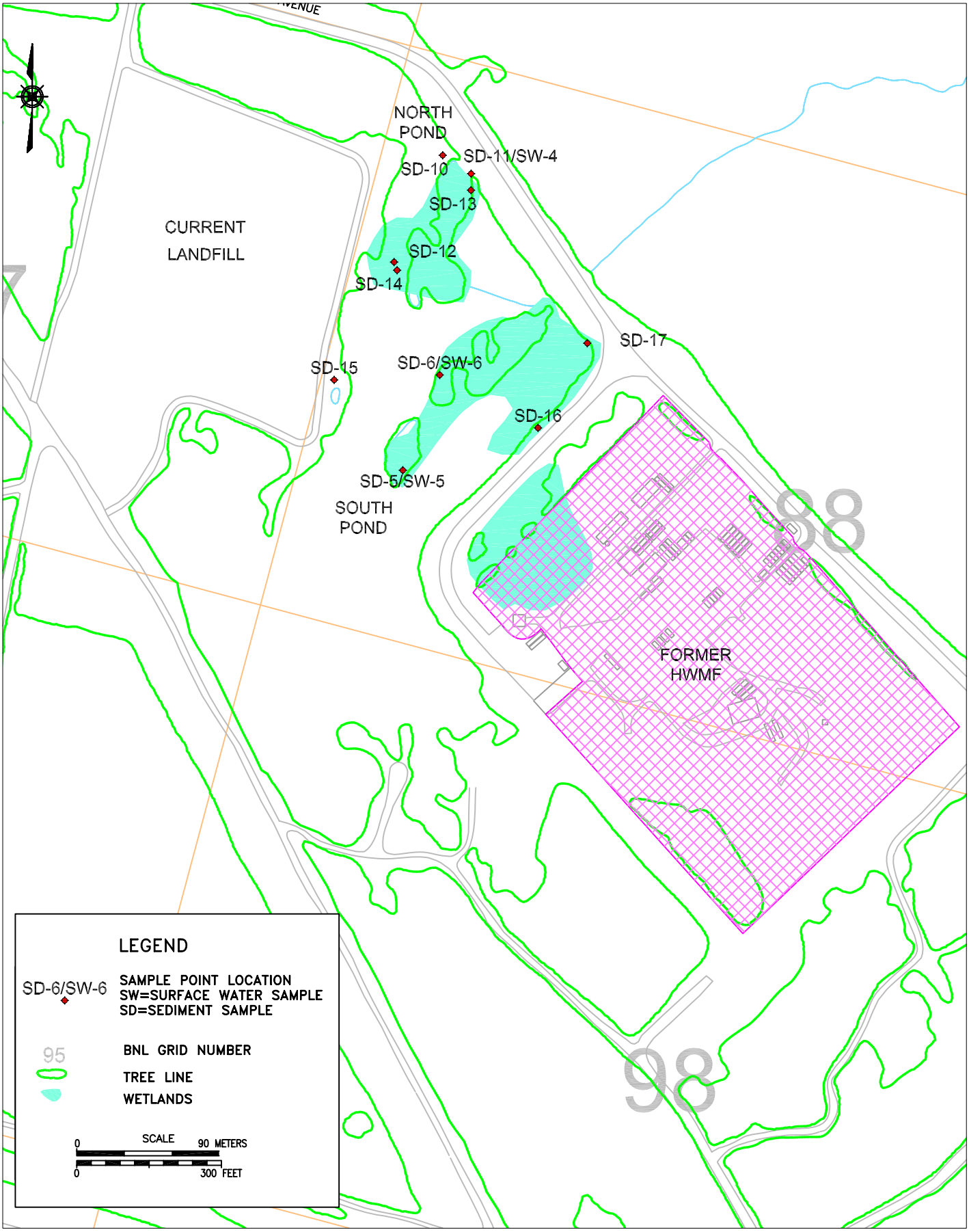
	SW-E								SW-2001							
	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04	1994	1997	Jun-99	Aug-00	Jun-01	May-02	May-03	May-04
Aluminum	NS	NS	1,170	NS	NS	NS	NS	NS	NS	NS	NS	NS	466	427 E	4090	119 B
Cadmium	NS	NS	0.34 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.272 U	0.210 U	0.66 U	0.313 U
Cobalt	NS	NS	2.3 B	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.518 B	0.581 U	2.86 B	0.541 U
Copper	NS	NS	6.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	1.94 B	2.74 B	7.14 B	1.39 U
Iron	NS	NS	6,970	NS	NS	NS	NS	NS	NS	NS	NS	NS	1,190	753	3420	558
Lead	NS	NS	4.5 B	NS	NS	NS	NS	NS	NS	NS	NS	NS	1.66 B	1.24 U	8.68	1.72 U
Mercury	NS	NS	0.12 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.057 U	0.04 U	0.095 U	0.047 U
Nickel	NS	NS	6.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.815 U	1.08 B	1.64 U	0.69 U
Silver	NS	NS	0.89 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.871 U	1.15 U	1.7 U	0.835 U
Zinc	NS	NS	38.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	4.25 B	5.91 B	72.6	7.05 B

North Pond Averages

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

FIGURES



T:\LTRA Projects\Landfills\2004 Report\Figures\final figures\wooded wetlands FIG 1.DWG

BROOKHAVEN NATIONAL LABORATORY

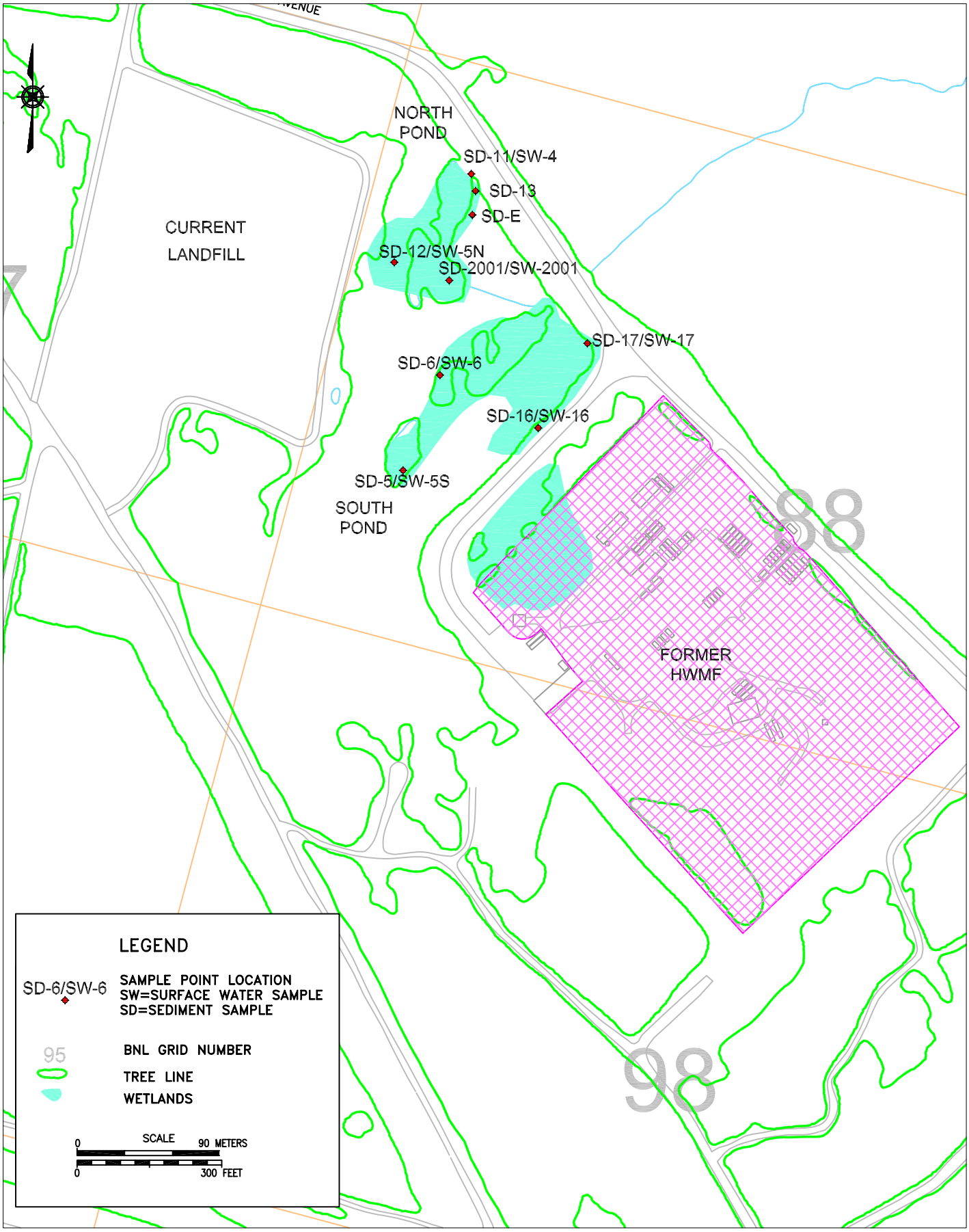
EWMS Division

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

2004 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



T:\LTRA Projects\Landfills\2004 Report\Figures\Final Figures\wooded wetlands FIG 2.DWG

BROOKHAVEN NATIONAL LABORATORY

EWMS Division

TITLE:

WOODED WETLANDS
SEDIMENT AND SURFACE WATER
SAMPLING LOCATIONS

2004 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.: 2

Appendix B

Soil Gas Sampling Field Notes

CO Gas

10/7/04

Current Landfill

Location	CH4%	LEL %	H2S ppm	Comment
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	2.0	40	0	
10B	12.0	240	0	
10C	10.0	200	0	
SGM 11A	5.5	110	0	
11B	10.1	202	0	
SGM 12A	9.9	198	0	
12B	7.2	144	0	
SGM 13A	1.0	20	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	

CO Gas

10/7/04

Current Landfill

Location	CH4%	LEL %	H2S ppm	Comment
SGM 17A	0	0	0	
17B	0	0	0	
SGM 18A	0	0	0	
18B	0	0	0	
SGM 19A	25.9	518	0	
19B	27.7	554	0	
SGM 1A	0	0	0	
1B	0	0	0	
1C	0	0	0	
SGM 2A	0	0	0	
2B	0	0	0	
2C	0	0	0	
SGM 3A	0	0	0	
3B	0	0	0	
SGM 4A	0	0	0	
4B	0	0	0	

Calibration check of Canetec GA-90 S/N 690 w/ H_2S pod completed prior to use.

Ogden

Current Landfill

[illegible] check [illegible] [illegible] 490 [illegible] 490 [illegible] [illegible] to use.

Time write 0825

Location	CH4%	LEL %	H2S ppm	Comments
SGM 1A	6.8	136	1	
1B	2.5	50	0	
1C	6.3	126	0	
SGM 2A	2.1	42	0	
2B	0	0	0	
2C	4.6	92	0	
SGM 3A	0	0	0	
3B	0.1	2	0	
3C	0	0	0	
SGM 4A	1.8	36	0	
4B	14.4	288	0	
4C	14.5	290	0	
SGM 5A	3.7	74	0	
5B	13.6	272	0	
5C	13.6	272	0	

Ogden

11/30/04

Current Landfill

Location	CH4%	LEL %	H2S ppm	Location
SGM 6A	1.8	36	0	
6B	0.3	6	0	
6C	13.2	264	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	3.9	78	0	
10C	5.4	48	0	
SGM 11A	0	0	0	
11B	0.5	6	0	
SGM 12A	0	0	0	
12B	0	0	0	
SGM 13A	[illegible]	0		
13B	1.1	22	0	

Cogeta

Current Landfill

Location	CH_4 %	LEL %	H_2S ppm	Comment
GM14A	0	0	0	
14B	2.3	46	0	
GM15A	0	0	0	
15B	5.8	116	0	
GM16A	0	0	0	
16B	0	0	0	
GM17A	0		0	
17B	0		0	
GM18A	0		0	
18B	0		0	
GM19A	13.0	260	4	
19B	9.2	184	0	
GSGM1A	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		

55

3/11/04

Wed 30

CO Ocala

Formal Landfill

Calibration check of Landtec GA-90 SN 690 w/ H_2S pod performed prior to use.

Time Onsite 0940

Time offsite

Location	CH4%	LEL%	H2S ppm
SGM 1A	0.1	2	150
1B	0	0	63
SGM 2A	0	0	0
SGM 2B	0	0	0
SGM 3A	0	0	109
3B	0	0	0
SGM 4A	0.1	2	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

Sw
3/11/04

Former Landfill

Location	CH_4 %	LEL %	H_2S ppm
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

H_2S pack gave uncertain readings

3/11/04

57
6/25/04

Calibration check of landtec GA 90 sn 690 w/ H_2SO_4 pack performed prior to use
Time in 1324 Time out 1457

Location	CH_4 %	LEL %	H_2S ppm
SGM 1-A	0.0	0.0	0.0
SGM 1B	0.0	0.0	0
SGM 2A	0.0	0	0
SGM 2B	0.0	0	0
SGM 3A	0.0	0.0	0
SGM 3B	0.1	002	0
SGM 4A	0.1	002	0
SGM 4B	0.1	002	0
SGM 5A	0	0	0
SGM 5B	0	0	0
SGM 6A	0	0	0
SGM 6B	0	0	0
SGM 7A	0	0	0
SGM 7B	0	0	0
SGM 8A	0	0	0
SGM 8B	0	0	0
SGM 9A	0	0	0
SGM 9B	0	0	0

58

6/25/04

Former Landfill

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

6/25/04

59

10/20/04

Cloudy windy 50°

Calibration check of Landtec GA 90 SN 690 w/ H_2SO_4 pad 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	
SGM 9A	0	0	0	
9B	0	0	0	

60
10/20/04

Ogeka

Former Landfill

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

61
10/30/04
Sun 50

Ogeka

Former Landfill

Calibration check of Landtec GA-90 SN 1090 performed prior to use.
Time on site 1345

Location	CH_4 %	LEL %	H_2S ppm	Comment
SGM 1A	0.1	2	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	not accessible			
7B		behind radio		
SGM 8A	0	0	0	
8B	0	0	0	

62

11/30/04

Ogata

Former Landfill

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

NO

COgeka

3/10/04 Current landfill

Sun, wind 4s

calibration check of Landtec GA 90 w/ H_2S probe performed prior to use S/N 690.

Time onsite 13:25

Location	CH_4%	LEL%	H_2S ppm
SGM 1A	16.6	332	150
1B	15.6	312	23
1C	14.0	280	34
SGM 2A	34.5	692	191
2B	22.7	454	177
2C	44.4	888	0
SGM 3A	25.4	508	0
3B	52.1	(1042)	0
3C	51.3	(1026)	0
SGM 4A	37.5	748	0
4B	43.0	860	0
4C	36.2	724	0
SGM 5A	36.1	722	150
5B	36.8	736	0
5C	29.0	580	0
SGM 6A	31.8	636	0
6B	40.4	808	0
6C	42.1	842	0

COgeka

3/10/04 Current landfill

Location	CH_4%	LEL%	H_2S ppm
SGM 7A	0.2	4	0
7B	0.5	10	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	0.2	4	0
SGM 10A	1.9	38	0
10B	2.4	48	0
10C	0	0	0
SGM 11A	0	0	0
11B	0	0	109
SGM 12A	22.5	450	122
12B	0	0	136
SGM 13A	0	0	0
13B	0	0	191
SGM 14A	0	0	130
14B	0	0	122
SGM 15A	0	0	0
15B	0	0	0
SGM 16A	0	0	0
16B	0	0	0

CO gekta

3/10/04

Current Landfill

Location	CH_4 %	LEL %	H_2S ppm
SGM 17A	0	0	0
17B	0	0	0
SGM 18A	0	0	0
18B	0	0	0
SGM 19A	6.0	120	0
19B	5.8	116	0
GSGM 1A	0	0	0
1B	0	0	0
1C	0	0	0
GSGM 2A	0	0	0
2B	0	0	0
2C	0	0	0
GSGM 3A	0	0	0
3B	0	0	0
GSGM 4A	0	0	0
4B	0	0	0

Values in ( ) are calculated not measured

CO

CO gekta

10/25/04
overcast
breeze 70°

Current Landfill

Calibration check of Landtec GA-90 SN 6490 w/ H_2S pod performed prior to use
Time onsite 0820
Time offsite 1130

Location	CH_4 %	LEL %	H_2S ppm	Comment
SGM 1A	14.4	288	2	
1B	8.6	172	0	
1C	0.2	4	0	
SGM 2A	8.6	172	0	
2B	0.6	12	0	
2C	0	0	0	
SGM 3A	15.2	304	0	
3B	28.0	560	0	
3C	7.3	146	0	
SGM 4A	49.1	982	0	
4B	50.7	(1014)	0	
4C	40.9	818	0	
SGM 5A	40.0	800	0	
5B	41.4	828	0	

CO gate

6/25/04

Current Landfill

Location	CH4%	LEL %	H2S ppm	Comment
SGM 5C	24.0	480	0	
SGM 6A	9.7	194	0	
6B	27.4	548	0	
6C	29.8	596	0	
SGM 7A	0.1	2	0	
7B	0.1	2	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	16.4	328	1	
10B	16.1	322	2	
10C	14.5	290	0	
SGM 11A	16.0	320	2	
11B	14.7	294	0	
SGM 12A	48.5	970	21	
12B	0.2	4	0	H_2O in Screen

CO gate

6/25/04

Current Landfill

Location	CH4%	LEL%	H2S ppm	Comment
SGM 13A	0.6	12	0	
13B	0.1	2	0	
SGM 14A	0.1	2	0	
14B	0.1	2	0	
SGM 15A	0.1	2	0	
15B	0	0	0	H_2O in screen
SGM 16A	0.1	2	0	
16B	0	0	0	
SGM 17A	0	0	0	
17B	0	0	0	
SGM 18A	0	0	0	
SGM 18B	0	0	0	
SGM 19A	26.7	534	0	
19B	30.0	600	0	
GSGM 1A	0	0	0	
1B	0	0	0	
1C	0	0	0	
GSGM 2A	0	0	0	
2B	0	0	0	
2C	0	0	1	

CO geka

6/25/04

Current Landfill.

Location	CH_4%	LEL%	H_2S ppm	Comment
GSM 3A	0	0	0	
3B	0	0	0	
GSM 4A	0	0	0	
4B	0	0	0	

values in ( ) are calculated - not measured

CO geka

10/7/04

Sun 76°

Current Landfill

Location	CH_4%	LEL%	H_2S ppm	Comment
SGM 1A	6.8	136	3	
1B	6.0	120	0	
1C	4.2	84	0	
SGM 2A	39.7	794	11	
2B	12.7	254	0	
2C	2	4	0	
SGM 3A	4.1	82	0	
3B	14.0	280	0	
3C	1.8	36	0	
SGM 4A	3.5	70	0	
4B	23.2	454	0	
4C	21.2	424	0	
SGM 5A	13.6	272	0	
5B	25.2	504	0	
5C	18.6	372	0	
SGM 6A	3.9	78	0	
6B	20.6	412	0	
6C	4.7	94	0	
SGM 7A	0	0	0	
7B	0	0	0	
7C	0	0	0	

Appendix C

Monthly Landfill Site Inspection Forms

BROOKHAVEN NATIONAL LABORATORY
FORMER LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Tom Doyle

Date of Inspection: 4/8/04

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

Time on Site: 1030

Time off Site: 1100

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			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:

Observed Conditions:

Recommendations:

BROOKHAVEN NATIONAL LABORATORY
FORMER LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Thomas Doyle

Date of Inspection: 2/13/08

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

Time on Site: 10 40

Time off Site: 11 40

Weather Conditions: cold snow pack

A. Inspection Checklist

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

B. Description of Further Action Requirements:

1. Location:

Observed Conditions: snow cover on area, roads plowed

Recommendations:

BROOKHAVEN NATIONAL LABORATORY
FORMER LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Thomas Dry

Date of Inspection: 3/19/98

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

Time on Site: 1100

Time off Site: 1140

Weather Conditions: cold 37°

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
	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): Thomas Doyle

Date of Inspection: 4/19/04

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

Time on Site: 1300

Time off Site: 1335

Weather Conditions: Fair 50°

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:

1. Location:

Observed Conditions: Vegetation coming out of Dormancy

Recommendations:

BROOKHAVEN NATIONAL LABORATORY
FORMER LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Thomas Doyle

Date of Inspection: 5/12/04

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

Time on Site: 1400

Time off Site: 1440

Weather Conditions: mild 70°

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	**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: grass got its first cut, look ok

Recommendations:

BROOKHAVEN NATIONAL LABORATORY
FORMER LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Thomas Dyke

Date of Inspection: 6/18/04

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				
	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:

Observed Conditions: grass will need mowing soon drainage channel & toe drain have some weeds

Recommendations:

BROOKHAVEN NATIONAL LABORATORY
FORMER LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Thomas Dyl

Date of Inspection: 7/23/04

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

Time on Site: 1400

Time off Site: 1445

Weather Conditions: Not Humid

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:

Observed Conditions:

Recommendations:

BROOKHAVEN NATIONAL LABORATORY
FORMER LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Thomas Doyle

Date of Inspection: 8/11/04

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

Time on Site: 10 50

Time off Site: 11 45

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	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:

Observed Conditions: Grass needs mowing, weed growth on edges. Vegetation needs to be removed from drainage channel

Recommendations: See attach PE work order

Info Work Order Request

Work Order #	EP0117244
Name :	Tom Doyle
Life Number	20898
Bldg Number :	900
Description	Former landfill needs mowing, weed wacking around edges and vegetation
Work Permit :	No
Safety Related :	No
Project ID :	07717
Activity ID :	07724
Shop :	00551:LABORER

Enter more Requests?

Comments :

vegetation needs to be removed from the drainage channel

BROOKHAVEN NATIONAL LABORATORY
FORMER LANDFILL AREA
SITE INSPECTION FORM

Name of Inspector(s): Eric Kramer

Date of Inspection: 11-29-04

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

Time on Site: 1320

Time off Site: 1420

Weather Conditions: Clear Cool

A. Inspection Checklist

	Component	Observed Condition			Further Action Required	
		Excellent	Fair	Poor	Yes	No
1.0	**Landfill Cap:**					
	Vegetation		X		X	
	Cap	X				
	Gas Vents	X				
2.0	**Drainage Structures:**					
	Toe Drain		X		X	
	Drainage Channels		X		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: Area (Landfill) Needs to Be Weed Wacked, Trees Growing in Drainage Area which Need to be pulled, CUT.

Recommendations: Have Grounds Preform Recommended Clean-Up

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.

Brookhaven National Laboratory

1998 Landfills Environmental Monitoring Report

1998 Current Landfill Soil Gas Monitoring Summary Table

Soil Gas Monitoring Well	Methane (% By Volume) February-98	Methane (% By Volume) May-98	Methane (% By Volume) August-98	Methane (% By Volume) December-98	Hydrogen sulfide (ppm By Volume) February-98	Hydrogen sulfide (ppm By Volume) May-98	Hydrogen sulfide (ppm By Volume) August-98	Hydrogen sulfide (ppm By Volume) December-98	Soil Gas Monitoring Well
SGMW-01A	26.3	28.1	24.2	20.4	5	0	0	0	SGMW-01A
SGMW-01B	25.1	30.1	29	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	68	68	64.8	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	78.8	2.5	10	3	2	1	SGMW-03A
SGMW-03B	76.6	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	5	4	3	0	SGMW-04B
SGMW-04C	60.5	57.5	57.5	0	17	5	2	0	SGMW-04C
SGMW-05A	48.1	52.4	50	49.9	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	6	0	SGMW-06A
SGMW-06B	44.8	46.5	7.8	47.2	15	0	0	1	SGMW-06B
SGMW-06C	46.3	48	5.4	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	8.5	7	0	0	4	3	0	SGMW-07B
SGMW-07C	4.9	8.5	8.5	0.1	1	8	6	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	19.9	29	25.3	25.4	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	69	0	9	0	0	0	SGMW-13A
SGMW-13B	0.1	0.1	0	0	9	0	0	0	SGMW-13B
SGMW-14A	17.1	21	20	1.2	0	1	2	0	SGMW-14A
SGMW-14B	0	0	15	0	0	0	2	0	SGMW-14B
SGMW-15A	4	1.2	0	0	5	0	0	0	SGMW-15A
SGMW-15B	0	0	0.7	0	0	0	0	0	SGMW-15B
SGMW-16A	0	0	0	0	0	0	0	0	SGMW-16A
SGMW-16B	0	0	0	0	0	1	0	0	SGMW-16B
SGMW-17A	0	0	0	0	0	0	0	0	SGMW-17A
SGMW-17B	0	0	0	0	0	0	0	0	SGMW-17B
SGMW-18A	0.2	0	0	0	0	0	2	0	SGMW-18A
SGMW-18B	0	0	0	0	0	0	0	0	SGMW-18B
SGMW-19A	37.4	47.2	30.4	6.7	69	0	0	1	SGMW-19A
SGMW-19B	38.7	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.

Brookhaven National Laboratory
1999 Landfills Environmental Monitoring Report
1999 Current 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	19.5	17.9	19.8	390	360	394	0	<>	2	SGMW-01A
SGMW-01B	18.6	18.1	16.6	370	362	372	0	<>	3	SGMW-01B
SGMW-01C	17.2	14.2	16.7	344	286	334	0	<>	1	SGMW-01C
SGMW-02A	52.4	52.6	55.6	1048	1052	1116	13	<>	25	SGMW-02A
SGMW-02B	54.4	55	56.7	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	50	3	<>	1	SGMW-03A
SGMW-03B	61.4	58.3	61.3	1228	1166	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	47.6	51.1	47.4	940	1022	944	0	<>	6	SGMW-05A
SGMW-05B	45	51.5	48	900	1030	984	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	46.6	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	28	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	17.8	22.8	16.1	358	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	14.8	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	56	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

Brookhaven National Laboratory
1999 Landfills Environmental Monitoring Report
1999 Current 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
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.

Brookhaven National Laboratory
2000 Landfill Environmental Monitoring Report
2000 Current 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	20.0	20.5	21.0	18.8	402	410	422	388	0	0	4	0	SGMW-01A
SGMW-01B	19.3	20.3	11.2	14.3	388	408	222	296	1	0	1	0	SGMW-01B
SGMW-01C	17.5	13.7	11.5	13.0	350	276	230	260	0	0	1	0	SGMW-01C
SGMW-02A	49.6	54.0	50	54.4	990	(1080)	(1000)	(1088)	1	3	2	16	SGMW-02A
SGMW-02B	55.1	57.1	56.3	56.2	(1102)	(1142)	(1120)	(1124)	4	20	9	11	SGMW-02B
SGMW-02C	58.0	48.3	56.9	56.0	(1120)	966	(1120)	(1120)	2	0	4	6	SGMW-02C
SGMW-03A	40.3	62.6	64.0	57.6	986	(1256)	(1280)	(1152)	1	8	0	3	SGMW-03A
SGMW-03B	57.0	67.0	00.2	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	33.7	61.9	2.8	51.6	614	(1038)	52	(1132)	1	4	1	1	SGMW-04A
SGMW-04B	48.9	52.8	46.0	50.0	978	(1056)	922	(1000)	2	2	0	2	SGMW-04B
SGMW-04C	43.0	52.1	43.0	45.2	860	(1042)	858	906	4	0	1	8	SGMW-04C
SGMW-05A	47.7	48.4	47.6	47.2	954	855	950	944	1	0	6	8	SGMW-05A
SGMW-05B	44.6	50.0	48.2	43.9	892	(1000)	964	878	1	0	5	6	SGMW-05B
SGMW-05C	36.7	43.7	40.7	36.7	734	874	814	738	2	1	0	5	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	906	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	38	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	28.1	15.8	270	424	522	310	1	0	2	2	SGMW-10B
SGMW-10C	10.6	19.5	22.2	12.8	212	390	444	258	1	0	2	3	SGMW-10C
SGMW-11A	10.1	27.1	54.6	13.6	202	342	(1080)	272	2	20	10	7	SGMW-11A
SGMW-11B	6.8	28.4	54.3	9.2	136	528	(1088)	184	2	21	2	8	SGMW-11B
SGMW-12A	43.0	60.0	64.4	46.5	878	(1200)	(1288)	930	2	63	2	7	SGMW-12A
SGMW-12B	42.6	49.8	48.1	47.0	852	996	962	940	1	0	0	5	SGMW-12B
SGMW-13A	23.4	57.6	63.8	49.8	468	(1152)	(1276)	998	1	0	2	2	SGMW-13A
SGMW-13A	45.1	0	0	49.2	902	0	0	984	1	0	0	57	SGMW-13A
SGMW-14A	2.7	20.2	15.8	12.1	54	404	316	242	1	0	9	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.

Brookhaven National Laboratory
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	388	2	11	0
SGMW-01B	2.6	0.0	17.1	434	0	354	4	0	0
SGMW-01C	15.3	20.4	15.3	306	408	306	0	0	0
SGMW-02A	59.9	52.9	57.9	1208	1058	>1,000	140	57	48
SGMW-02B	58.9	0.0	55.3	1188	0	>1,000	191	1	0
SGMW-02C	0.0	0.0	53.2	0	0	>1,000	1	0	0
SGMW-03A	39.6	51.8	52.9	780	1156	>1,000	5	14	43
SGMW-03B	67.2	56.5	54.7	1344	1330	>1,000	28	21	0
SGMW-03C	0.2	0.0	63.5	4	0	>1,000	1	2	0
SGMW-04A	42.8	3.8	62.6	856	76	>1,000	2	4	32
SGMW-04B	50.8	53.6	62.8	1016	1072	>1,000	3	15	14
SGMW-04C	0.0	0.2	60.9	0	4	>1,000	1	2	0
SGMW-05A	45.6	46.2	57.5	912	964	>1,000	3	2	0
SGMW-05B	43.9	0.2	52.6	878	4	>1,000	2	3	0
SGMW-05C	0.0	0.1	45.3	0	2	906	2	3	0
SGMW-06A	16.4	6.3	54.4	328	126	>1,000	3	4	64
SGMW-06B	0.0	0.2	53.9	0	4	>1,000	2	4	5
SGMW-06C	0.0	0.1	52.6	0	2	>1,000	2	3	0
SGMW-07A	0.6	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	0.9	0.0	1.1	18	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	5	0
SGMW-10A	10.9	16.9	29.6	218	338	590	4	2	0
SGMW-10B	11.2	18.9	25.5	224	378	512	2	3	0
SGMW-10C	6.0	13.2	18.9	160	264	378	2	2	0
SGMW-11A	8.9	21.5	28.3	178	430	566	16	43	2
SGMW-11B	6.1	19.3	26.9	122	386	540	0	27	38
SGMW-12A	49.5	53.4	53.7	990	1068	1074	1	95	168
SGMW-12B	44.4	0.2	50.1	888	4	1002	3	0	101
SGMW-13A	16.3	65.1	55.7	326	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	6	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	21.9	38.2	28.6	238	764	572	3	200	0
SGMW-19B	20.3	38.6	26.1	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.

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	6	SGMW-07A
SGMW-07B	0	<>	0	0	0	<>	0	0	0	<>	0	6	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	6	SGMW-09A
SGMW-09B	0	0	0	0	0	0	0	0	0	1	2	4	SGMW-09B
SGMW-10A	0	0	0	0	0	0	0	0	0	0	1	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 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	278	282	102	354	0	7	10	3	SGMW-01A
SGMW-01B	13.7	11.5	6.2	18.9	274	230	184	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	40.0	48.6	48.2	56.6	920	992	984	(1130)	54	132	141	0	SGMW-02A
SGMW-02B	17.1	28.5	34.6	43.2	342	570	692	884	0	2	8	40	SGMW-02B
SGMW-02C	37.6	43.8	52.0	51.7	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	59.8	65.9	(1140)	(1248)	(1192)	(1318)	13	18	34	12	SGMW-03B
SGMW-03C	54.1	59.6	58.9	60.0	(1082)	(1172)	(1178)	(1200)	0	8	28	8	SGMW-03C
SGMW-04A	40.8	46.9	50.8	48.1	816	938	(1016)	960	0	1	20	3	SGMW-04A
SGMW-04B	44.9	49.0	51.3	19.2	898	480	(1026)	982	2	11	75	37	SGMW-04B
SGMW-04C	36.5	43.5	44.4	42.5	730	870	888	844	25	38	32	38	SGMW-04C
SGMW-05A	39.1	38.6	38.8	42.5	782	772	776	850	6	44	2	34	SGMW-05A
SGMW-05B	37.4	36.4	42.0	41.2	738	788	840	838	1	13	53	20	SGMW-05B
SGMW-05C	29.0	31.0	31.6	34.2	579	620	832	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	35.6	40.6	43.1	712	718	812	864	11	22	82	22	SGMW-06B
SGMW-06C	36.3	35.2	38.1	42.0	722	704	762	848	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	25.5	16.6	212	300	510	336	4	13	1	6	SGMW-10A
SGMW-10B	10.7	14.2	20.0	14.8	214	284	400	292	0	0	6	2	SGMW-10B
SGMW-10C	8.0	12.2	17.1	12.2	160	244	342	248	0	3	1	9	SGMW-10C
SGMW-11A	9.2	14.0	20.7	17.0	184	298	334	338	9	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	880	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	158	78	3	SGMW-13A
SGMW-13A	33.7	42.3	46.2	47.1	674	848	924	942	2	4	22	5	SGMW-13A
SGMW-14A	1.0	4.9	2.8	10.5	20	98	56	212	2	2	0	7	SGMW-14A
SGMW-14B	5.6	11.0	10.4	14.8	112	220	208	296	1	3	0	1	SGMW-14B
SGMW-15A	0.1	0	4.0	8.3	2	0	80	168	0	3	4	4	SGMW-15A
SGMW-15B	0.1	0	44.5	19.1	2	0	890	378	0	4	9	35	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	5.6	15.9	28.5	0.0	118	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

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	8	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 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	16.2	19.7	19.8	372	324	394	396	3	-	81	-	SGMW-01B
SGMW-01C	18.0	13.9	20.0	17.3	360	282	400	348	3	-	80	-	SGMW-01C
SGMW-02A	58.2	41.2	5.0	22.2	(1164)	324	100	442	14	-	68	-	SGMW-02A
SGMW-02B	55.7	0.0	0.1	0.0	(1140)	0	2	0	32	-	13	-	SGMW-02B
SGMW-02C	59.1	0.0	0	42.7	538	0	0	858	9	-	0	-	SGMW-02C
SGMW-03A	29.8	57.8	55.0	0.0	(1182)	(1156)	(1100)	0	19	-	0	-	SGMW-03A
SGMW-03B	69.1	0.0	54.2	11.7	(1078)	0	(1084)	234	23	-	95	-	SGMW-03B
SGMW-03C	63.9	0.0	0.2	41.0	(1052)	0	4	820	3	-	0	-	SGMW-03C
SGMW-04A	54.1	0.0	0.5	9.4	966	0	10	188	3	-	109	-	SGMW-04A
SGMW-04B	53.9	0.0	0.2	47.0	938	0	4	940	7	-	27	-	SGMW-04B
SGMW-04C	52.6	0.0	0.1	41.5	952	0	2	832	15	-	0	-	SGMW-04C
SGMW-05A	48.3	45.0	54.9	23.4	968	960	(1058)	468	2	-	163	-	SGMW-05A
SGMW-05B	46.9	43.8	53.8	38.8	938	878	(1078)	776	3	-	0	-	SGMW-05B
SGMW-05C	43.1	0.0	41.8	32.3	862	0	836	646	3	-	0	-	SGMW-05C
SGMW-06A	40.3	8.6	15.5		806	116	310	420	1	-	0	-	SGMW-06A
SGMW-06B	42.9	0.0	0.0	20.7	858	0	0	896	3	-	0	-	SGMW-06B
SGMW-06C	43.6	0.0	0.1	44.8	872	0	2	900	2	-	0	-	SGMW-06C
SGMW-07A	0.8	0.0	0.0	45.1	16	0	0	0	1	-	0	-	SGMW-07A
SGMW-07B	0.9	0.0	0.1	0.0	18	0	2	0	2	-	0	-	SGMW-07B
SGMW-07C	4.9	0.0	0.1	0.0	80	0	2	0	0	-	0	-	SGMW-07C
SGMW-08A	0.0	0	0.1	0.0	0	0	2	0	0	-	27	-	SGMW-08A
SGMW-08B	0.0	0	0	0.0	0	0	0	0	0	-	0	-	SGMW-08B
SGMW-08C	0.0	0	0	0.0	0	0	0	0	0	-	0	-	SGMW-08C
SGMW-09A	0	0	0.1	0.0	0	0	2	0	0	-	13	-	SGMW-09A
SGMW-09B	0	0	0	0.0	0	0	0	0	0	-	0	-	SGMW-09B
SGMW-09C	0.1	0	0.1	0.0	2	0	2	0	0	-	0	-	SGMW-09C
SGMW-10A	18.0	22.0	27.9	5.6	360	440	558	112	1	-	0	-	SGMW-10A
SGMW-10B	15.8	17.7	22.0	0.0	316	354	440	0	1	-	0	-	SGMW-10B
SGMW-10C	14.0	16.6	18.2	0.0	280	332	364	0	2	-	0	-	SGMW-10C
SGMW-11A	15.6	29.3	0.4	17.7	312	586	8	358	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	50.0	0.3	0.5	1.8	(1018)	6	10	36	1	-	0	-	SGMW-12B
SGMW-13A	30.5	0.0	67.2	66.4	610	0	(1344)	1328	1	-	163	-	SGMW-13A
SGMW-13B	0.0	0.8	0.1	0.0	0	16	2	0	1	-	0	-	SGMW-13A
SGMW-14A	29.4	9.6	6.3	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	38	-	101	-	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.

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 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	13.8	736	828	504	272	0	0	0	0	SGMW-05B
SGMW-05C	29.0	24.0	18.6	13.8	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	198	0	122	21	0	0	SGMW-12A
SGMW-12B	0.0	0.2	7.2	0.0	0	4	144	0	136	0	0	0	SGMW-12B
SGMW-13A	0.0	0.6	1.0	0.0	0	12	20	0	0	0	0	0	SGMW-13A
SGMW-13B	0.0	0.1	0	1.1	0	2	0	22	191	0	0	0	SGMW-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 correctly in March

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.