

**FINAL REPORT**

GTI PROJECT NUMBER 21078

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**Landfill and Wastewater Treatment RNG  
Chemical and Physical Profiling:  
Increasing the Database Set**

**DOT Prj# 351**

**Contract Number: DTPH56-10-T-000006**

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## Executive Summary

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The purpose of this USDOT PHMSA sponsored research project was to address the continued development of a draft guidance document for the safe introduction of renewable gas into natural gas pipelines. This project was designed to build upon previous studies executed by GTI to further characterize and understand the chemical and biological composition of fully upgraded renewable gas. Gas samples (with an emphasis on post-clean up) were collected from landfills and subjected to quantitative analytical chemical and biological tests to measure the concentration of target species. The focus was on samples from facilities currently producing high BTU renewable gas. The two criteria for target species are that they (1) are likely to be in the product gas and (2) have potential to impact pipeline integrity or end use applications. The results of this study are not intended to endorse any specific clean up technologies or create national standards for concentration limits for constituents of concern.

This project was cancelled before the complete set of samples could be collected and analyzed. To date, samples were collected from six different landfills. Two landfills were collected a second time to examine seasonal variation, for a total of eight sites, and twenty-four samples. The clean up technologies used at the six landfills include membrane (one site), PSA (two sites), and physical solvent (three sites).

The complete database of analytical results collected to date is reported in the Appendix. A limited amount of statistical evaluation was started before the project was cancelled, this data is also presented in the Appendix. The data evaluation, to be performed in Task 2, had not started.

## Introduction / Background

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### *Challenge for this Research*

Local gas distribution companies (LDCs) and transmission companies are increasingly seeking to purchase and take delivery of renewable natural gas (RNG or biomethane) derived through biomass conversion in order to increase their “green portfolio” of gas products. However, the gas is often not routinely accepted into existing pipeline systems due to perceived quality issues. This perception is caused by a lack of understanding of the composition of the gas.

Although RNG products possess characteristics common to natural gas, the challenge is that there are many components captured under the category of “trace constituents” which may not be similar, and which may influence the overall RNG gas quality. The variances between natural gas and RNG are only beginning to be understood but the implications are clear: while there are limited concerns pertaining to trace constituents in cleaned RNG from dairy waste conversion, landfill and wastewater treatment (WWT) biomethane is more complex and the database for landfill and WWT derived RNG is still incomplete.

Understanding the composition of RNG is key to evaluating its quality and potential as an interchangeable product for general use in gas distribution and transmission networks.

### *Past Research*

GTI responded to a DOT/PHMSA BAA in late 2007 with a proposal to examine biomethane as an issue pertaining to New Fuels Transportation (DTPH56-07-000002). This proposal, *Pipeline Quality Biogas: Guidance Document for Dairy Waste, Waste Water Treatment Sludge and Landfill Conversion*, resulted in Project 250 (completed December 2009). Forty-two raw and cleaned biogas (biomethane) samples from three landfills (one region within the U.S.) and one WWT plant were tested for an exhaustive list of major, minor, and trace constituents, including volatile organic compounds, semi-volatile organic compounds, metals, pesticides, PCBs, siloxanes, and biologicals. The study resulted in the following conclusions:<sup>1</sup>

- Constituents present in biogas from landfills and WWT can vary widely.
- Raw biogas requires upgrading and conditioning for production of a suitable product.
- Landfill biogas/biomethane profiles may change with time.
- The database pertaining to landfill and WWT derived biomethane profiling is incomplete.

Because this dataset for landfill and WWT derived RNG was limited, additional characterization of renewable fuels from these sources was warranted in order to provide clear guidance to the industry. There is a concern that constituents resulting from the anaerobic digestion of the wide variety of materials found both in landfills and WWT will remain after the raw biogas has gone through gas processing and upgrading to the final biomethane product.

Work initiated under PHMSA Project 250 began the construction of a database to identify, characterize, and quantify major and trace constituents in RNG from various sources. This project was of high interest to the natural gas community and to those in the biogas cleanup community. The work on PHMSA Project 351 (the current project) was to produce a larger

dataset which could be subjected to statistical analysis in order to discern trends and infer conclusions on to the larger population. This data could influence the types of research, equipment, and monitoring devices required in order to maintain a safe pipeline network. It would further understand this new product, so that interchangeability is seamless and without consequence.

### ***Project Objectives***

GTI's goal is to help the natural gas industry establish renewable gas as a fungible zero-carbon product "fit for purpose" for injection into natural gas pipelines. This project was designed to continue the development of a draft guidance document for the safe introduction of renewable gas into natural gas pipelines. This project built upon previous studies executed by GTI to further characterize and understand the chemical and biological composition of fully upgraded renewable gas. Gas samples (with an emphasis on post-clean up) were to be collected from landfills and WWT plants, and subjected to quantitative analytical chemical and biological tests to measure the concentration of target species. The focus was on samples from facilities currently producing high BTU renewable gas.

The two criteria for target species selection were that they

- 1) are likely to be in the product gas and
- 2) have potential to impact pipeline integrity or end use applications.

The analytical results obtained from the testing program were to be combined with past data and used to report most probable concentrations for those constituents found to be present in renewable gas. The results of this study were not intended to endorse any specific clean up technologies or create national standards for concentration limits for constituents of concern.

### ***Project Benefit***

This project is relevant to PHMSA's mission of safety and environmental protection in that it addresses safe introduction and distribution of renewable gas to natural gas pipeline networks. Safe and reliable transportation of fuels is a strategic goal of PHMSA. RNG offers an exciting addition to a growing energy demand worldwide.

## Research Method / Scope

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A short description of each of the research tasks is provided below to explain the methodology and reasoning behind the approach. This project utilized the analytical chemistry, pipeline corrosion, gas combustion, and microbiology technical capabilities and resources within GTI. Through the co-funding project, it also incorporated the expertise and knowledge of those in the biogas cleanup industry through a liaison with the High-BTU group at SWANA (Solid Waste Association of North America). This association facilitated GTI's sampling of landfill gas for inclusion in the study.

The proposed work included four primary Tasks:

### ***Task 1 - Laboratory Testing and Analysis of Biogas/RNG (Months 1-14)***

This project's focus is on the sampling and analysis of processed biogas in order to validate the introduction of landfill- and WWTP-derived renewable gas into natural gas pipelines. To that end, the strategy for this project was to select up to three landfill sites per technology for a total of up to nine landfill sites. Up to four wastewater treatment plants sites were to be added to expand the source database. Samples were retrieved from as diverse regions as possible. The exact number and location of sites to be tested was ultimately based on access to sites that upgrade and process raw biogas. At least four sites encompassing the three technologies were to be visited multiple times to look at seasonal variations in the gas output. Sampling techniques will be similar to those in the previously executed PHMSA Project 250, in order to combine results for a common database. An off-site sampling service was used for the sampling services once they were trained on proper sampling techniques.

Only processed gas was sampled for this specific project. There is a 30-year history of raw biogas data, including data obtained from recent GTI projects. Based on feedback from the co-funding project sponsors and participants, the focus of this project was on validating the introduction of renewable gas into the pipeline. Samples were collected in triplicate to allow for statistical comparisons and for conclusions to be drawn.

Previous biogas and biomethane analytical samples were tested for a wide variety of analytes. This project focused on constituents that would have an impact on the fungibility of the renewable gas. The list of analytes was divided into two categories, those constituents with specific natural gas tariff limits, and those constituents known to be present in processed biomethane, or are of concern, due to potential breakthrough because of their presence in untreated biogas. The latter category can be considered the "other" classification in natural gas tariff documents, and is not well defined.

This project was cancelled before the WWT plant portion and some of the seasonal replicates for Task 1 of the project could be executed.

## **Task 2 - Data Compilation/Final Report (Months 12-16)**

Task 2 was designed to compile all results of Task 1 in a comprehensive, organized document. It was to present interpretation of the results from the acquired sample set and to provide data interpretation of the results in light of previously obtained data from Project 250.

This project was cancelled before Task 2 of the project could be executed.

## **Task 3 - Update the Guidance Document (Months 14-18)**

This task was to continue the generation of a draft Guidance Document regarding analytical parameters of consideration for introduction of renewable gas into the natural gas network. Once all of the data was compiled, a statistical analysis was to be performed including determination of means, medians, ranges, and standard deviations for each constituent of interest. The heating value, Wobbe Index, and hydrocarbon dewpoint will be calculated for each sample. The complete analysis was to incorporate the historical data collected from previous projects and data from scientific literature. Probability calculations were to be performed to draw conclusions from the data at different confidence levels to determine most probable concentration limits.

The Guidance Document was to be based on the format of GTI's previous report: *Pipeline Quality Biogas: Guidance Document for Dairy Waste, Waste Water Treatment Sludge and Landfill Conversion*.<sup>1</sup> The goal of the Guidance Document was to provide analytical and other key information to gas transmission companies and LDCs so that

- 1) parameters specific to clean biomethane derived from anaerobic digestion processes can be identified; and
- 2) productive discussion between the biomethane supplier and the gas utility company may be executed.

The draft document was to be reviewed by all project funders along with a panel of GTI experts in transmission, distribution and end use, prior to final publication. No references were to be made to a specific site, and all analytical data is to be presented without reference to its provenance. Activities from this task were to result in a revised draft Guidance Document.

This project was cancelled before Task 3 of the project could be executed.

## **Task 4: Project Management (Months 1-18)**

The purpose of this Task is to manage the project and provide all deliverables to DOT including scheduling, budgeting, and reporting. Project Management also includes all meetings with DOT, peer review meetings, public presentations, and project quality assurance activities at GTI through the Delivery Sector's Technical Quality Plan program and technical review board.

## Task 1 - Laboratory Testing and Analysis of Biogas/RNG - Status to Date

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Gas samples (post clean up) were collected from landfills and subjected to various chemical and biological testing, focusing on facilities that are currently producing high BTU renewable gas. Target constituents that are likely to be in the product gas and that have an impact on pipeline integrity or end use applications were included in the testing program.

### *Site and Technology Selection*

Considerable background work was completed in a separate project to determine the three most relevant gas cleanup technologies. With input from the High-Btu Group at the Solid Waste Association of North America (SWANA), landfills utilizing these gas cleanup technologies were chosen for this project. SWANA also assisted in obtaining access agreements with the candidate landfills. Per the agreement with SWANA and the co-funding project sponsors, the names of the facilities are being kept confidential.

The three specific gas cleanup technologies selected are

- 1) Physical Solvent;
- 2) Pressure Swing Adsorption; and
- 3) Gas Separation Membrane

While the gas cleanup technologies are divided into the three categories based on their CO<sub>2</sub> removal technology, these systems use multiple unit operations designed to remove other components such as oxygen and water. These add-on units are located either upstream or downstream from the main cleanup system.

Physical solvents preferentially absorb acid gases, unlike chemical solvents that react with acid gases. One popular solvent is based on a mixture of the dimethyl ethers of polyethylene glycol (DEPG). Solvents containing DEPG are licensed and/or manufactured by several companies including Coastal Chemical Company (as Coastal AGR), Dow (Selexol<sup>™</sup>), and UOP (Selexol<sup>™</sup>). Other process suppliers, such as Clariant GmbH of Germany, offer similar chemical solvents. The manufacturers claim that DEPG removes carbon dioxide, hydrogen sulfide, other sulfur compounds (COS, mercaptans), ammonia, HCN, and metal carbonyls. SouthTex Treaters is an example of one company that currently uses Selexol<sup>™</sup> technology to treat raw landfill gas at three different landfill sites in the US.

Pressure swing adsorption (PSA) separates mixtures of gases according to the species' molecular characteristics, affinity for, and attraction to the surface of an adsorbent material. These materials can be molecular sieves (zeolites), activated carbon, silica gel, and/or alumina. In gas cleanup applications the physical adsorption of CO<sub>2</sub> occurs at high pressure. The process then swings to a lower pressure to desorb the adsorbed gas. In most applications pre- or post-treatment is required to reduce contaminants such as non-methane organics (NMOC's) and hydrogen sulfide. One Midwest landfill that currently upgrades landfill gas uses the QuestAir gas purification system manufactured by Xebec Adsorption. Xebec claims removal of carbon dioxide, water, and some trace contaminants. Another example is Guild Associates who has installed seven landfill gas to high BTU projects. They claim that their Molecular Gate process removes nitrogen and carbon dioxide, or carbon dioxide and water, in a single step. A variant of

PSA is VPSA (V=Vacuum). Adding the vacuum step can improve removal of nitrogen and some oxygen.

Gas separation membranes use selective permeation, driven by partial pressure differences across the membrane, to separate gas components. Air Liquide's MEDAL™ (MEMbrane Systems DuPont Air Liquide) was originally a joint venture begun in 1988 between Air Liquide and DuPont. It uses polymeric fiber spinning technology developed by DuPont, and removes carbon dioxide, hydrogen sulfide, and water. Membranes can also remove about half the O<sub>2</sub>. Other species are removed by pre- and post- treatment. Many current landfills are using the MEDAL system for their biogas upgrading.

### ***List of Constituents Analyzed***

Previous biogas and biomethane analytical samples were tested for a wide variety of analytes. This project focused on constituents that would have an impact on the fungibility of the landfill-derived renewable gas. The spotlight was on those analytes that have known tariff limits or that may pass through the gas processing and purification equipment.

Gas quality specifications (tariffs) currently exist for traditional natural gas supplies; however, they often do not directly address trace constituents and therefore do not capture potentially significant components found in non-traditional gas such as landfill-derived renewable gas. Special emphasis must be given to constituents that are known to have an impact on pipeline integrity, end use applications, and environmental and human health.

The suggested list of analytes for inclusion in this project can be divided into two categories, those with specific natural gas tariff limits, and those constituents that are known to be present in processed biomethane, or are of interest, due to potential breakthrough because of their presence in untreated biogas. The latter category can be considered the “other” classification in natural gas tariff documents, and is not well defined. The following list specifies the recommended classes of analytes and reasons why they should be monitored.

- Analytes with Known Natural Gas Tariff Limits
  - Major hydrocarbons (C<sub>1</sub>-C<sub>6</sub>)
  - Major and Minor Non-Hydrocarbons
    - Carbon dioxide, nitrogen, oxygen, etc.
  - Sulfur Compounds
    - H<sub>2</sub>S, odorants, and other naturally occurring organic sulfur compounds
  - Mercury
  - Water Vapor
    - Water vapor will not be specifically monitored in this project, but should be included in any monitoring recommendation.

- Analytes Known to be Present or are of Interest<sup>1-21</sup>
  - Halocarbons
    - Chlorinated hydrocarbons can form corrosive acids in the presence of water and oxygen.
    - They are found at ppm to ppb levels in raw and processed landfill-derived renewable gas.
    - For example, vinyl chloride is a common halocarbon found in raw landfill gas and is highly toxic and regulated in some areas.
    - Vinyl chloride is suggested to be the most significant chlorinated compound in unprocessed landfill gas.<sup>8</sup>
    - It has been found up to 48 ppmv in raw landfill gas.<sup>10</sup> Results from processed landfill-derived renewable gas are lower.<sup>2</sup>
    - The California Public Utility Commission regulates vinyl chloride in landfill-derived gas supplied to an existing gas customer at 1170 ppbv (1.17 ppmv).<sup>19</sup>
  - Volatile organics
    - BTEX (benzene, toluene, ethyl benzene, xylenes), and certain aldehydes, ketones, VOCs (volatile organic compounds), SVOCs (semi-volatile organic compounds), and alkyl-PAHs (polycyclic aromatic hydrocarbons) are on the EPA target lists of hazardous compounds.
    - They are found at varying concentrations from ppm to ppb levels in raw and processed landfill-derived renewable gas.
    - Benzene has been found up to 686 ppmv in raw landfill gas.<sup>2</sup> Results from processed landfill-derived renewable gas are lower.<sup>2</sup>
    - There are potential health hazards associated with pipeline workers performing odorant sniff tests and end use applications.
  - Siloxanes
    - Siloxanes are known volatile contaminants generated from silicon-containing waste streams during anaerobic digestion.
    - D4 (octamethylcyclotetrasiloxane) and D5 (decamethylcyclopentasiloxane) are the most common compounds found in landfill-derived renewable gas.<sup>2,8</sup>
    - D4 has been found up to 160 mg/m<sup>3</sup> in raw landfill gas.<sup>20</sup> Results from processed landfill-derived renewable gas are lower.<sup>2</sup>
    - Past data has shown that siloxanes (D4) can break through into the processed landfill-derived renewable gas.<sup>2</sup>
    - During natural gas combustion, siloxanes decompose to a sticky, white powder that can foul end use equipment.
  - Other elements
    - Metals and other elements may be present due to the refuse source the landfill accepts.
    - Elements found include Hg, As, and Sb.<sup>2,13,18, 21</sup>
    - Mercury levels in raw gas can be as high as 1.7 µg/m<sup>3</sup>, arsenic as high as 339 µg/m<sup>3</sup>, and antimony as high as 417 µg/m<sup>3</sup>.<sup>2</sup>

- Ammonia
  - Ammonia can be present due to anaerobic digestion sources in landfill-derived renewable gas.
- Bacteria and MIC
  - Total bacteria, sulfate-reducing bacteria, acid-producing bacteria, iron-oxidizing bacteria.
  - Anaerobic and aerobic live bacteria and spores.
  - Some species can produce acidic by-products that can lead to microbially induced corrosion (MIC).
  - Environmental health is also a concern.
  - Levels seen to date are similar to both natural gas and processed renewable gas.<sup>2</sup>

Table 1 lists the suggested target analytes and suggested sampling and analytical references.

**Table 1. List of Suggested Analytes**

| Analysis                   | Suggested Sampling Method Reference(s) | Suggested Sampling Material                                          | Suggested Instrument/ Analytical Method                        |
|----------------------------|----------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------|
| Major and Minor Components | GTI SOP                                | Inerted Stainless Steel Cylinder                                     | ASTM D1946                                                     |
| Sulfur                     |                                        |                                                                      | ASTM D6228                                                     |
| Siloxane                   |                                        |                                                                      | GC/AED                                                         |
| Ammonia                    |                                        |                                                                      | GC/NCD                                                         |
| Extended Hydrocarbons      |                                        |                                                                      | GC/FID                                                         |
| Halocarbons and VOCs       |                                        |                                                                      | EPA TO-14 GC/ELCD                                              |
| SVOCs / PAHs / alkylPAHs   | NIOSH 5515, modified                   | XAD-2 resin                                                          | GC/MS<br>Mod EPA Method 8270C                                  |
| Aldehydes / Ketones        | EPA method TO-11                       | DNPH coated sorbent media                                            | HPLC EPA Method TO-11, or GC/MS                                |
| Mercury                    | ASTM D5954                             | Gold plated silica beads                                             | Atomic Absorption Spectroscopy, ASTM D5954                     |
| Metals                     | EPA Method 29 modified                 | HNO <sub>3</sub> and H <sub>2</sub> O <sub>2</sub> aqueous solutions | Inductively Coupled Plasma Optical Emission Spectroscopy (ICP) |
| Biologicals                | GTI SOP                                | 0.2 µm filter                                                        | MPN, qPCR, bacteria + spore identification                     |

### ***Status to Date***

To date, samples have been collected from six different landfills. Two landfills were collected a second time to provide for some seasonal variation, for a total of eight sites, and twenty-four samples. The clean up technologies used at the six landfills include membrane (one site), PSA (two sites), and physical solvent (three sites).

The sampling efforts were extensive and samples were acquired as per the QAP and standard sampling protocols set forth in the previous DOT project. Trained personnel collected samples using identical sample collection equipment and sampling conditions. Samples were shipped back to GTI within all approved holding time allotments. Samples were collected in triplicate to allow for statistical comparisons and conclusions to be drawn from the data. They were analyzed promptly within specified hold times. Thus far, the gas collected and analyzed is clean with only minor trace constituents.

The complete database of analytical results collected to date is reported in the Appendix. A limited amount of statistical evaluation was started before the project was cancelled, this data is also presented in the Appendix.

## Business Status

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Expenditure summary through 8/15/2011

**Table 2. Expenditure and Summary**

| Task No./Name                                 | Federal Obligations Current Budget | Federal Expense To Date |
|-----------------------------------------------|------------------------------------|-------------------------|
| 1. Laboratory Testing & Analysis of Biogas/RN | \$283,888                          | \$88,712                |
| 2. Data Compilation / Final Report            | \$70,871                           | \$0                     |
| 3. Update the Guidance Document               | \$40,968                           | \$0                     |
| 4. Project Management                         | \$60, 585                          | \$19,120                |
| Total                                         | \$456, 312                         | \$107,832               |

## Appendix 1 - References

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23. EXTOTOXNET, Pesticide Information Profiles (PIPs), <http://extoxnet.orst.edu/pips/ghindex.html>
24. Agency for Toxic Substances and Disease Registry, <http://www.atsdr.cdc.gov/>
25. Agency for Toxic Substances and Disease Registry,  
<http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=99>
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<http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=62>

## Appendix 2 - Sample Results and Summary Statistics

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The complete data set of samples collected to date follows on pages 15-90.

Some initial summary statistics are shown for each analyte on pages 91-101. Table 3 defines the terms. For calculation purposes, BDL is treated as zero.

**Table 3. Description of Statistical Terms**

| <b>Term</b>        | <b>Description</b>                                                                                                      |
|--------------------|-------------------------------------------------------------------------------------------------------------------------|
| Total # of Samples | The total number of samples collected for that analyte.                                                                 |
| Total # of Hits    | The total number of samples that had data above BDL.                                                                    |
| Average            | The arithmetic mean, i.e. the sum of all concentrations divided by the total number of samples. BDL is treated as zero. |
| Median             | The concentration at which half of the concentrations are higher and half are lower. BDL is treated as zero.            |
| Max Value          | The largest concentration.                                                                                              |
| Min Value          | The lowest concentration.                                                                                               |
| 0.90 Percentile    | The concentration below which 90% of the results lie.                                                                   |

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## Component Analysis by ASTM D1945 / D1946

| Component       | Detection<br>Limit | 101694-001       | 101694-002       | 101694-003       |
|-----------------|--------------------|------------------|------------------|------------------|
|                 |                    | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                 |                    | 11/01/10 1834    | 11/01/10 1829    | 11/01/10 1823    |
|                 |                    | Landfill #1      | Landfill #1      | Landfill #1      |
|                 |                    | Mol %            | Mol %            | Mol %            |
| Helium          | 0.1%               | BDL              | BDL              | BDL              |
| Hydrogen        | 0.1%               | 0.76             | 0.87             | 0.82             |
| Carbon Dioxide  | 0.03%              | 1.24             | 1.32             | 1.30             |
| Oxygen/Argon    | 0.03%              | 0.90             | 0.18             | 0.16             |
| Nitrogen        | 0.03%              | 4.79             | 2.46             | 2.37             |
| Carbon Monoxide | 0.03%              | BDL              | BDL              | BDL              |
| Methane         | 0.002%             | 92.31            | 95.17            | 95.34            |
| Ethane          | 0.002%             | BDL              | BDL              | BDL              |
| Ethene          | 0.002%             | BDL              | BDL              | BDL              |
| Ethyne          | 0.002%             | BDL              | BDL              | BDL              |
| Propane         | 0.002%             | BDL              | BDL              | BDL              |
| Propene         | 0.002%             | BDL              | BDL              | BDL              |
| Propadiene      | 0.002%             | BDL              | BDL              | BDL              |
| Propyne         | 0.002%             | BDL              | BDL              | BDL              |
| i-Butane        | 0.002%             | BDL              | BDL              | BDL              |
| n-Butane        | 0.002%             | BDL              | BDL              | BDL              |
| 1-Butene        | 0.002%             | BDL              | BDL              | BDL              |
| i-Butene        | 0.002%             | BDL              | BDL              | BDL              |
| trans-2-Butene  | 0.002%             | BDL              | BDL              | BDL              |
| cis-2-Butene    | 0.002%             | BDL              | BDL              | BDL              |
| 1,3-Butadiene   | 0.002%             | BDL              | BDL              | BDL              |
| i-Pentane       | 0.002%             | BDL              | BDL              | BDL              |
| n-Pentane       | 0.002%             | BDL              | BDL              | BDL              |
| neo-Pentane     | 0.002%             | BDL              | BDL              | BDL              |
| Pentenes        | 0.002%             | BDL              | BDL              | BDL              |
| Hexane Plus     | 0.0001%            | 0.0005           | 0.0002           | 0.0009           |
| Ammonia         | 0.001%             | BDL              | BDL              | BDL              |

| Calculated Real Gas Properties            | 60 °F, 14.73 psia | 60 °F, 14.73 psia | 60 °F, 14.73 psia |
|-------------------------------------------|-------------------|-------------------|-------------------|
| Compressibility Factor [z] (Dry)          | 0.99814           | 0.99808           | 0.99807           |
| Compressibility Factor [z] (Sat.)         | 0.99784           | 0.99777           | 0.99776           |
| Relative Density (Specific Gravity) (Dry) | 0.5879            | 0.5745            | 0.5742            |
| Gross HV (Dry) (Btu/ft <sup>3</sup> )     | 938.7             | 968.2             | 969.8             |
| Gross HV (Sat.) (Btu/ft <sup>3</sup> )    | 922.7             | 951.6             | 953.2             |
| Wobbe Index                               | 1224.2            | 1277.3            | 1279.8            |
| Net HV (Dry) (Btu/ft <sup>3</sup> )       | 845.1             | 871.6             | 873.0             |
| Net HV (Sat.) (Btu/ft <sup>3</sup> )      | 830.6             | 856.7             | 858.1             |
| Real Gas Density (lbs/ft <sup>3</sup> )   | 0.0450            | 0.0440            | 0.0439            |

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Component Analysis by ASTM D1945 / D1946

| Component       | Detection<br>Limit | 101786-001       | 101786-002       | 101786-003       |
|-----------------|--------------------|------------------|------------------|------------------|
|                 |                    | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                 |                    | 12/13/10 1542    | 12/13/10 1548    | 12/13/10 1552    |
|                 |                    | Landfill #5      | Landfill #5      | Landfill #5      |
|                 |                    | Mol %            | Mol %            | Mol %            |
| Helium          | 0.1%               | BDL              | BDL              | BDL              |
| Hydrogen        | 0.1%               | 0.47             | 0.48             | 0.48             |
| Carbon Dioxide  | 0.03%              | 1.68             | 1.55             | 1.69             |
| Oxygen/Argon    | 0.03%              | 0.33             | 0.27             | 0.26             |
| Nitrogen        | 0.03%              | 6.03             | 5.89             | 5.75             |
| Carbon Monoxide | 0.03%              | BDL              | BDL              | BDL              |
| Methane         | 0.002%             | 91.48            | 91.81            | 91.82            |
| Ethane          | 0.002%             | BDL              | BDL              | BDL              |
| Ethene          | 0.002%             | BDL              | BDL              | BDL              |
| Ethyne          | 0.002%             | BDL              | BDL              | BDL              |
| Propane         | 0.002%             | BDL              | BDL              | BDL              |
| Propene         | 0.002%             | BDL              | BDL              | BDL              |
| Propadiene      | 0.002%             | BDL              | BDL              | BDL              |
| Propyne         | 0.002%             | BDL              | BDL              | BDL              |
| i-Butane        | 0.002%             | BDL              | BDL              | BDL              |
| n-Butane        | 0.002%             | BDL              | BDL              | BDL              |
| 1-Butene        | 0.002%             | BDL              | BDL              | BDL              |
| i-Butene        | 0.002%             | BDL              | BDL              | BDL              |
| trans-2-Butene  | 0.002%             | BDL              | BDL              | BDL              |
| cis-2-Butene    | 0.002%             | BDL              | BDL              | BDL              |
| 1,3-Butadiene   | 0.002%             | BDL              | BDL              | BDL              |
| i-Pentane       | 0.002%             | BDL              | BDL              | BDL              |
| n-Pentane       | 0.002%             | BDL              | BDL              | BDL              |
| neo-Pentane     | 0.002%             | BDL              | BDL              | BDL              |
| Pentenes        | 0.002%             | BDL              | BDL              | BDL              |
| Hexane Plus     | 0.0001%            | 0.0012           | 0.0013           | 0.0011           |
| Ammonia         | 0.001%             | BDL              | BDL              | BDL              |

| Calculated Real Gas Properties            | 60 °F, 14.73 psia | 60 °F, 14.73 psia | 60 °F, 14.73 psia |
|-------------------------------------------|-------------------|-------------------|-------------------|
| Compressibility Factor [z] (Dry)          | 0.99814           | 0.99814           | 0.99813           |
| Compressibility Factor [z] (Sat.)         | 0.99784           | 0.99783           | 0.99783           |
| Relative Density (Specific Gravity) (Dry) | 0.5956            | 0.5933            | 0.5941            |
| Gross HV (Dry) (Btu/ft <sup>3</sup> )     | 929.4             | 932.8             | 932.9             |
| Gross HV (Sat.) (Btu/ft <sup>3</sup> )    | 913.5             | 916.9             | 916.9             |
| Wobbe Index                               | 1204.3            | 1211.0            | 1210.3            |
| Net HV (Dry) (Btu/ft <sup>3</sup> )       | 836.8             | 839.8             | 839.9             |
| Net HV (Sat.) (Btu/ft <sup>3</sup> )      | 822.5             | 825.5             | 825.5             |
| Real Gas Density (lbs/ft <sup>3</sup> )   | 0.0456            | 0.0454            | 0.0455            |

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Component Analysis by ASTM D1945 / D1946

| Component       | Detection Limit | 101788-001       | 101788-002       | 101788-003       |
|-----------------|-----------------|------------------|------------------|------------------|
|                 |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                 |                 | 12/15/10 1230    | 12/15/10 1233    | 12/15/10 1237    |
|                 |                 | Landfill #6      | Landfill #6      | Landfill #6      |
|                 |                 | Mol %            | Mol %            | Mol %            |
| Helium          | 0.1%            | BDL              | BDL              | BDL              |
| Hydrogen        | 0.1%            | 0.41             | 0.41             | 0.41             |
| Carbon Dioxide  | 0.03%           | 1.82             | 1.81             | 1.82             |
| Oxygen/Argon    | 0.03%           | 0.09             | 0.09             | 0.10             |
| Nitrogen        | 0.03%           | 2.77             | 2.77             | 2.78             |
| Carbon Monoxide | 0.03%           | BDL              | BDL              | BDL              |
| Methane         | 0.002%          | 94.92            | 94.91            | 94.90            |
| Ethane          | 0.002%          | BDL              | BDL              | BDL              |
| Ethene          | 0.002%          | BDL              | BDL              | BDL              |
| Ethyne          | 0.002%          | BDL              | BDL              | BDL              |
| Propane         | 0.002%          | BDL              | BDL              | BDL              |
| Propene         | 0.002%          | BDL              | BDL              | BDL              |
| Propadiene      | 0.002%          | BDL              | BDL              | BDL              |
| Propyne         | 0.002%          | BDL              | BDL              | BDL              |
| i-Butane        | 0.002%          | BDL              | BDL              | BDL              |
| n-Butane        | 0.002%          | BDL              | BDL              | BDL              |
| 1-Butene        | 0.002%          | BDL              | BDL              | BDL              |
| i-Butene        | 0.002%          | BDL              | BDL              | BDL              |
| trans-2-Butene  | 0.002%          | BDL              | BDL              | BDL              |
| cis-2-Butene    | 0.002%          | BDL              | BDL              | BDL              |
| 1,3-Butadiene   | 0.002%          | BDL              | BDL              | BDL              |
| i-Pentane       | 0.002%          | BDL              | BDL              | BDL              |
| n-Pentane       | 0.002%          | BDL              | BDL              | BDL              |
| neo-Pentane     | 0.002%          | BDL              | BDL              | BDL              |
| Pentenes        | 0.002%          | BDL              | BDL              | BDL              |
| Hexane Plus     | 0.0001%         | 0.0001           | 0.0001           | 0.0001           |
| Ammonia         | 0.001%          | BDL              | BDL              | BDL              |

| Calculated Real Gas Properties            | 60 °F, 14.73 psia | 60 °F, 14.73 psia | 60 °F, 14.73 psia |
|-------------------------------------------|-------------------|-------------------|-------------------|
| Compressibility Factor [z] (Dry)          | 0.99805           | 0.99805           | 0.99805           |
| Compressibility Factor [z] (Sat.)         | 0.99774           | 0.99774           | 0.99774           |
| Relative Density (Specific Gravity) (Dry) | 0.5823            | 0.5824            | 0.5825            |
| Gross HV (Dry) (Btu/ft <sup>3</sup> )     | 964.2             | 964.1             | 963.9             |
| Gross HV (Sat.) (Btu/ft <sup>3</sup> )    | 947.7             | 947.6             | 947.4             |
| Wobbe Index                               | 1263.5            | 1263.3            | 1263.0            |
| Net HV (Dry) (Btu/ft <sup>3</sup> )       | 868.1             | 868.0             | 867.8             |
| Net HV (Sat.) (Btu/ft <sup>3</sup> )      | 853.2             | 853.1             | 853.0             |
| Real Gas Density (lbs/ft <sup>3</sup> )   | 0.0446            | 0.0446            | 0.0446            |

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Component Analysis by ASTM D1945 / D1946

| Component       | Detection<br>Limit | 101793-001       | 101793-002       | 101793-003       |
|-----------------|--------------------|------------------|------------------|------------------|
|                 |                    | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                 |                    | 12/16/10 1702    | 12/16/10 1707    | 12/16/10 1713    |
|                 |                    | Landfill #7      | Landfill #7      | Landfill #7      |
|                 |                    | Mol %            | Mol %            | Mol %            |
| Helium          | 0.1%               | BDL              | BDL              | BDL              |
| Hydrogen        | 0.1%               | 0.16             | 0.15             | 0.17             |
| Carbon Dioxide  | 0.03%              | 2.21             | 2.19             | 2.20             |
| Oxygen/Argon    | 0.03%              | 0.41             | 0.45             | 0.42             |
| Nitrogen        | 0.03%              | 1.66             | 1.81             | 1.70             |
| Carbon Monoxide | 0.03%              | BDL              | BDL              | BDL              |
| Methane         | 0.002%             | 95.56            | 95.40            | 95.51            |
| Ethane          | 0.002%             | BDL              | BDL              | BDL              |
| Ethene          | 0.002%             | BDL              | BDL              | BDL              |
| Ethyne          | 0.002%             | BDL              | BDL              | BDL              |
| Propane         | 0.002%             | BDL              | BDL              | BDL              |
| Propene         | 0.002%             | BDL              | BDL              | BDL              |
| Propadiene      | 0.002%             | BDL              | BDL              | BDL              |
| Propyne         | 0.002%             | BDL              | BDL              | BDL              |
| i-Butane        | 0.002%             | BDL              | BDL              | BDL              |
| n-Butane        | 0.002%             | BDL              | BDL              | BDL              |
| 1-Butene        | 0.002%             | BDL              | BDL              | BDL              |
| i-Butene        | 0.002%             | BDL              | BDL              | BDL              |
| trans-2-Butene  | 0.002%             | BDL              | BDL              | BDL              |
| cis-2-Butene    | 0.002%             | BDL              | BDL              | BDL              |
| 1,3-Butadiene   | 0.002%             | BDL              | BDL              | BDL              |
| i-Pentane       | 0.002%             | BDL              | BDL              | BDL              |
| n-Pentane       | 0.002%             | BDL              | BDL              | BDL              |
| neo-Pentane     | 0.002%             | BDL              | BDL              | BDL              |
| Pentenes        | 0.002%             | BDL              | BDL              | BDL              |
| Hexane Plus     | 0.0001%            | 0.0003           | 0.0002           | 0.0002           |
| Ammonia         | 0.001%             | BDL              | BDL              | BDL              |

| Calculated Real Gas Properties            | 60 °F, 14.73 psia | 60 °F, 14.73 psia | 60 °F, 14.73 psia |
|-------------------------------------------|-------------------|-------------------|-------------------|
| Compressibility Factor [z] (Dry)          | 0.99801           | 0.99801           | 0.99801           |
| Compressibility Factor [z] (Sat.)         | 0.99770           | 0.99770           | 0.99770           |
| Relative Density (Specific Gravity) (Dry) | 0.5846            | 0.5853            | 0.5847            |
| Gross HV (Dry) (Btu/ft <sup>3</sup> )     | 969.8             | 968.2             | 969.4             |
| Gross HV (Sat.) (Btu/ft <sup>3</sup> )    | 953.2             | 951.7             | 952.8             |
| Wobbe Index                               | 1268.4            | 1265.6            | 1267.7            |
| Net HV (Dry) (Btu/ft <sup>3</sup> )       | 873.2             | 871.7             | 872.8             |
| Net HV (Sat.) (Btu/ft <sup>3</sup> )      | 858.3             | 856.8             | 857.9             |
| Real Gas Density (lbs/ft <sup>3</sup> )   | 0.0447            | 0.0448            | 0.0447            |

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Component Analysis by ASTM D1945 / D1946

| Component       | Detection<br>Limit | 111212-001                  | 111212-002                  | 111212-003                  |
|-----------------|--------------------|-----------------------------|-----------------------------|-----------------------------|
|                 |                    | Processed Gas 01            | Processed Gas 02            | Processed Gas 03            |
|                 |                    | 3/28/11 1633<br>Landfill #8 | 3/28/11 1635<br>Landfill #8 | 3/28/11 1637<br>Landfill #8 |
|                 |                    | Mol %                       | Mol %                       | Mol %                       |
| Helium          | 0.1%               | BDL                         | BDL                         | BDL                         |
| Hydrogen        | 0.1%               | 0.50                        | 0.33                        | 0.32                        |
| Carbon Dioxide  | 0.03%              | 1.85                        | 1.84                        | 1.83                        |
| Oxygen/Argon    | 0.03%              | 0.10                        | 0.08                        | 0.09                        |
| Nitrogen        | 0.03%              | 1.50                        | 1.16                        | 1.17                        |
| Carbon Monoxide | 0.03%              | BDL                         | BDL                         | BDL                         |
| Methane         | 0.002%             | 96.04                       | 96.60                       | 96.59                       |
| Ethane          | 0.002%             | BDL                         | BDL                         | BDL                         |
| Ethene          | 0.002%             | BDL                         | BDL                         | BDL                         |
| Ethyne          | 0.002%             | BDL                         | BDL                         | BDL                         |
| Propane         | 0.002%             | BDL                         | BDL                         | BDL                         |
| Propene         | 0.002%             | BDL                         | BDL                         | BDL                         |
| Propadiene      | 0.002%             | BDL                         | BDL                         | BDL                         |
| Propyne         | 0.002%             | BDL                         | BDL                         | BDL                         |
| i-Butane        | 0.002%             | BDL                         | BDL                         | BDL                         |
| n-Butane        | 0.002%             | BDL                         | BDL                         | BDL                         |
| 1-Butene        | 0.002%             | BDL                         | BDL                         | BDL                         |
| i-Butene        | 0.002%             | BDL                         | BDL                         | BDL                         |
| trans-2-Butene  | 0.002%             | BDL                         | BDL                         | BDL                         |
| cis-2-Butene    | 0.002%             | BDL                         | BDL                         | BDL                         |
| 1,3-Butadiene   | 0.002%             | BDL                         | BDL                         | BDL                         |
| i-Pentane       | 0.002%             | BDL                         | BDL                         | BDL                         |
| n-Pentane       | 0.002%             | BDL                         | BDL                         | BDL                         |
| neo-Pentane     | 0.002%             | BDL                         | BDL                         | BDL                         |
| Pentenes        | 0.002%             | BDL                         | BDL                         | BDL                         |
| Hexane Plus     | 0.0001%            | BDL                         | BDL                         | BDL                         |
| Ammonia         | 0.001%             | BDL                         | BDL                         | BDL                         |

| Calculated Real Gas Properties            | 60 °F, 14.73 psia | 60 °F, 14.73 psia | 60 °F, 14.73 psia |
|-------------------------------------------|-------------------|-------------------|-------------------|
| Compressibility Factor [z] (Dry)          | 0.99802           | 0.99801           | 0.99801           |
| Compressibility Factor [z] (Sat.)         | 0.99771           | 0.99770           | 0.99770           |
| Relative Density (Specific Gravity) (Dry) | 0.5771            | 0.5762            | 0.5763            |
| Gross HV (Dry) (Btu/ft <sup>3</sup> )     | 975.8             | 980.9             | 980.8             |
| Gross HV (Sat.) (Btu/ft <sup>3</sup> )    | 959.1             | 964.1             | 964.1             |
| Wobbe Index                               | 1284.5            | 1292.2            | 1292.0            |
| Net HV (Dry) (Btu/ft <sup>3</sup> )       | 878.5             | 883.1             | 883.1             |
| Net HV (Sat.) (Btu/ft <sup>3</sup> )      | 863.5             | 868.0             | 868.0             |
| Real Gas Density (lbs/ft <sup>3</sup> )   | 0.0442            | 0.0441            | 0.0441            |

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Component Analysis by ASTM D1945 / D1946

| Component       | Detection Limit | 111220-001                  | 111220-002                  | 111220-003                  |
|-----------------|-----------------|-----------------------------|-----------------------------|-----------------------------|
|                 |                 | Processed Gas 01            | Processed Gas 02            | Processed Gas 03            |
|                 |                 | 3/29/11 1650<br>Landfill #7 | 3/29/11 1653<br>Landfill #7 | 3/29/11 1656<br>Landfill #7 |
|                 |                 | Mol %                       | Mol %                       | Mol %                       |
| Helium          | 0.1%            | BDL                         | BDL                         | BDL                         |
| Hydrogen        | 0.1%            | 0.28                        | 0.28                        | 0.29                        |
| Carbon Dioxide  | 0.03%           | 1.70                        | 1.70                        | 1.70                        |
| Oxygen/Argon    | 0.03%           | 0.36                        | 0.36                        | 0.36                        |
| Nitrogen        | 0.03%           | 2.44                        | 2.45                        | 2.42                        |
| Carbon Monoxide | 0.03%           | BDL                         | BDL                         | BDL                         |
| Methane         | 0.002%          | 95.22                       | 95.21                       | 95.25                       |
| Ethane          | 0.002%          | BDL                         | BDL                         | BDL                         |
| Ethene          | 0.002%          | BDL                         | BDL                         | BDL                         |
| Ethyne          | 0.002%          | BDL                         | BDL                         | BDL                         |
| Propane         | 0.002%          | BDL                         | BDL                         | BDL                         |
| Propene         | 0.002%          | BDL                         | BDL                         | BDL                         |
| Propadiene      | 0.002%          | BDL                         | BDL                         | BDL                         |
| Propyne         | 0.002%          | BDL                         | BDL                         | BDL                         |
| i-Butane        | 0.002%          | BDL                         | BDL                         | BDL                         |
| n-Butane        | 0.002%          | BDL                         | BDL                         | BDL                         |
| 1-Butene        | 0.002%          | BDL                         | BDL                         | BDL                         |
| i-Butene        | 0.002%          | BDL                         | BDL                         | BDL                         |
| trans-2-Butene  | 0.002%          | BDL                         | BDL                         | BDL                         |
| cis-2-Butene    | 0.002%          | BDL                         | BDL                         | BDL                         |
| 1,3-Butadiene   | 0.002%          | BDL                         | BDL                         | BDL                         |
| i-Pentane       | 0.002%          | BDL                         | BDL                         | BDL                         |
| n-Pentane       | 0.002%          | BDL                         | BDL                         | BDL                         |
| neo-Pentane     | 0.002%          | BDL                         | BDL                         | BDL                         |
| Pentenes        | 0.002%          | BDL                         | BDL                         | BDL                         |
| Hexane Plus     | 0.0001%         | BDL                         | BDL                         | BDL                         |
| Ammonia         | 0.001%          | BDL                         | BDL                         | BDL                         |

| Calculated Real Gas Properties            | 60 °F, 14.73 psia | 60 °F, 14.73 psia | 60 °F, 14.73 psia |
|-------------------------------------------|-------------------|-------------------|-------------------|
| Compressibility Factor [z] (Dry)          | 0.99805           | 0.99805           | 0.99805           |
| Compressibility Factor [z] (Sat.)         | 0.99774           | 0.99774           | 0.99774           |
| Relative Density (Specific Gravity) (Dry) | 0.5820            | 0.5821            | 0.5818            |
| Gross HV (Dry) (Btu/ft <sup>3</sup> )     | 966.8             | 966.6             | 967.0             |
| Gross HV (Sat.) (Btu/ft <sup>3</sup> )    | 950.2             | 950.1             | 950.5             |
| Wobbe Index                               | 1267.2            | 1267.0            | 1267.8            |
| Net HV (Dry) (Btu/ft <sup>3</sup> )       | 870.4             | 870.3             | 870.7             |
| Net HV (Sat.) (Btu/ft <sup>3</sup> )      | 855.5             | 855.4             | 855.8             |
| Real Gas Density (lbs/ft <sup>3</sup> )   | 0.0445            | 0.0445            | 0.0445            |

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Component Analysis by ASTM D1945 / D1946

| Component       | Detection<br>Limit | 111221-001                  | 111221-002                  | 111221-003                  |
|-----------------|--------------------|-----------------------------|-----------------------------|-----------------------------|
|                 |                    | Processed Gas 01            | Processed Gas 02            | Processed Gas 03            |
|                 |                    | 3/30/11 1345<br>Landfill #6 | 3/30/11 1348<br>Landfill #6 | 3/30/11 1357<br>Landfill #6 |
|                 |                    | Mol %                       | Mol %                       | Mol %                       |
| Helium          | 0.1%               | BDL                         | BDL                         | BDL                         |
| Hydrogen        | 0.1%               | 0.36                        | 0.37                        | 0.36                        |
| Carbon Dioxide  | 0.03%              | 1.60                        | 1.60                        | 1.59                        |
| Oxygen/Argon    | 0.03%              | 0.19                        | 0.18                        | 0.21                        |
| Nitrogen        | 0.03%              | 3.93                        | 3.89                        | 3.99                        |
| Carbon Monoxide | 0.03%              | BDL                         | BDL                         | BDL                         |
| Methane         | 0.002%             | 93.93                       | 93.96                       | 93.84                       |
| Ethane          | 0.002%             | BDL                         | BDL                         | BDL                         |
| Ethene          | 0.002%             | BDL                         | BDL                         | BDL                         |
| Ethyne          | 0.002%             | BDL                         | BDL                         | BDL                         |
| Propane         | 0.002%             | BDL                         | BDL                         | BDL                         |
| Propene         | 0.002%             | BDL                         | BDL                         | BDL                         |
| Propadiene      | 0.002%             | BDL                         | BDL                         | BDL                         |
| Propyne         | 0.002%             | BDL                         | BDL                         | BDL                         |
| i-Butane        | 0.002%             | BDL                         | BDL                         | BDL                         |
| n-Butane        | 0.002%             | BDL                         | BDL                         | BDL                         |
| 1-Butene        | 0.002%             | BDL                         | BDL                         | BDL                         |
| i-Butene        | 0.002%             | BDL                         | BDL                         | BDL                         |
| trans-2-Butene  | 0.002%             | BDL                         | BDL                         | BDL                         |
| cis-2-Butene    | 0.002%             | BDL                         | BDL                         | BDL                         |
| 1,3-Butadiene   | 0.002%             | BDL                         | BDL                         | BDL                         |
| i-Pentane       | 0.002%             | BDL                         | BDL                         | BDL                         |
| n-Pentane       | 0.002%             | BDL                         | BDL                         | BDL                         |
| neo-Pentane     | 0.002%             | BDL                         | BDL                         | BDL                         |
| Pentenes        | 0.002%             | BDL                         | BDL                         | BDL                         |
| Hexane Plus     | 0.0001%            | 0.0001                      | 0.0002                      | 0.0001                      |
| Ammonia         | 0.001%             | BDL                         | BDL                         | BDL                         |

| Calculated Real Gas Properties            | 60 °F, 14.73 psia | 60 °F, 14.73 psia | 60 °F, 14.73 psia |
|-------------------------------------------|-------------------|-------------------|-------------------|
| Compressibility Factor [z] (Dry)          | 0.99809           | 0.99809           | 0.99809           |
| Compressibility Factor [z] (Sat.)         | 0.99778           | 0.99778           | 0.99778           |
| Relative Density (Specific Gravity) (Dry) | 0.5858            | 0.5856            | 0.5861            |
| Gross HV (Dry) (Btu/ft <sup>3</sup> )     | 953.9             | 954.2             | 953.0             |
| Gross HV (Sat.) (Btu/ft <sup>3</sup> )    | 937.6             | 937.9             | 936.7             |
| Wobbe Index                               | 1246.2            | 1246.9            | 1244.8            |
| Net HV (Dry) (Btu/ft <sup>3</sup> )       | 858.8             | 859.1             | 858.0             |
| Net HV (Sat.) (Btu/ft <sup>3</sup> )      | 844.1             | 844.4             | 843.3             |
| Real Gas Density (lbs/ft <sup>3</sup> )   | 0.0448            | 0.0448            | 0.0449            |

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Component Analysis by ASTM D1945 / D1946

| Component       | Detection<br>Limit | 111225-001                  | 111225-002                  | 111225-003                  |
|-----------------|--------------------|-----------------------------|-----------------------------|-----------------------------|
|                 |                    | Processed Gas 01            | Processed Gas 02            | Processed Gas 03            |
|                 |                    | 3/31/11 1635<br>Landfill #9 | 3/31/11 1637<br>Landfill #9 | 3/31/11 1639<br>Landfill #9 |
|                 |                    | Mol %                       | Mol %                       | Mol %                       |
| Helium          | 0.1%               | BDL                         | BDL                         | BDL                         |
| Hydrogen        | 0.1%               | BDL                         | BDL                         | BDL                         |
| Carbon Dioxide  | 0.03%              | 1.88                        | 1.79                        | 1.85                        |
| Oxygen/Argon    | 0.03%              | 0.12                        | 0.13                        | 0.12                        |
| Nitrogen        | 0.03%              | 2.50                        | 2.58                        | 2.52                        |
| Carbon Monoxide | 0.03%              | BDL                         | BDL                         | BDL                         |
| Methane         | 0.002%             | 95.49                       | 95.49                       | 95.51                       |
| Ethane          | 0.002%             | BDL                         | BDL                         | BDL                         |
| Ethene          | 0.002%             | BDL                         | BDL                         | BDL                         |
| Ethyne          | 0.002%             | BDL                         | BDL                         | BDL                         |
| Propane         | 0.002%             | BDL                         | BDL                         | BDL                         |
| Propene         | 0.002%             | BDL                         | BDL                         | BDL                         |
| Propadiene      | 0.002%             | BDL                         | BDL                         | BDL                         |
| Propyne         | 0.002%             | BDL                         | BDL                         | BDL                         |
| i-Butane        | 0.002%             | BDL                         | BDL                         | BDL                         |
| n-Butane        | 0.002%             | BDL                         | BDL                         | BDL                         |
| 1-Butene        | 0.002%             | BDL                         | BDL                         | BDL                         |
| i-Butene        | 0.002%             | BDL                         | BDL                         | BDL                         |
| trans-2-Butene  | 0.002%             | BDL                         | BDL                         | BDL                         |
| cis-2-Butene    | 0.002%             | BDL                         | BDL                         | BDL                         |
| 1,3-Butadiene   | 0.002%             | BDL                         | BDL                         | BDL                         |
| i-Pentane       | 0.002%             | BDL                         | BDL                         | BDL                         |
| n-Pentane       | 0.002%             | BDL                         | BDL                         | BDL                         |
| neo-Pentane     | 0.002%             | BDL                         | BDL                         | BDL                         |
| Pentenes        | 0.002%             | BDL                         | BDL                         | BDL                         |
| Hexane Plus     | 0.0001%            | 0.0006                      | 0.0003                      | 0.0002                      |
| Ammonia         | 0.001%             | BDL                         | BDL                         | BDL                         |

| Calculated Real Gas Properties            | 60 °F, 14.73 psia | 60 °F, 14.73 psia | 60 °F, 14.73 psia |
|-------------------------------------------|-------------------|-------------------|-------------------|
| Compressibility Factor [z] (Dry)          | 0.99803           | 0.99803           | 0.99803           |
| Compressibility Factor [z] (Sat.)         | 0.99772           | 0.99772           | 0.99772           |
| Relative Density (Specific Gravity) (Dry) | 0.5841            | 0.5836            | 0.5838            |
| Gross HV (Dry) (Btu/ft <sup>3</sup> )     | 968.7             | 968.8             | 968.9             |
| Gross HV (Sat.) (Btu/ft <sup>3</sup> )    | 952.2             | 952.2             | 952.3             |
| Wobbe Index                               | 1267.5            | 1268.2            | 1268.0            |
| Net HV (Dry) (Btu/ft <sup>3</sup> )       | 872.2             | 872.3             | 872.4             |
| Net HV (Sat.) (Btu/ft <sup>3</sup> )      | 857.3             | 857.4             | 857.5             |
| Real Gas Density (lbs/ft <sup>3</sup> )   | 0.0447            | 0.0447            | 0.0447            |

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Extended Hydrocarbon Analysis by GC/FID

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|                                        |           | 101694-001       | 101694-002       | 101694-003       |
|----------------------------------------|-----------|------------------|------------------|------------------|
|                                        |           | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                        |           | 11/01/10 1834    | 11/01/10 1829    | 11/01/10 1823    |
|                                        | Detection | Landfill #1      | Landfill #1      | Landfill #1      |
| Component Name                         | Limit     | ppmv             | ppmv             | ppmv             |
| Cycloalkanes                           |           |                  |                  |                  |
| Cyclopentane                           | 1         | BDL              | BDL              | BDL              |
| Methylcyclopentane                     | 1         | BDL              | BDL              | BDL              |
| Cyclohexane                            | 1         | 1                | BDL              | 1                |
| Methylcyclohexane                      | 1         | BDL              | BDL              | 1                |
| Aromatics                              |           |                  |                  |                  |
| Benzene                                | 1         | BDL              | BDL              | 1                |
| Toluene                                | 1         | BDL              | BDL              | BDL              |
| Ethylbenzene                           | 1         | BDL              | BDL              | BDL              |
| m,p-Xylene                             | 1         | BDL              | BDL              | BDL              |
| Styrene                                | 1         | BDL              | BDL              | BDL              |
| o-Xylene                               | 1         | BDL              | BDL              | BDL              |
| C3 Benzenes                            | 1         | BDL              | BDL              | BDL              |
| Naphthalene                            | 1         | BDL              | BDL              | BDL              |
| C1 Naphthalenes                        | 1         | BDL              | BDL              | BDL              |
| C2 Naphthalenes                        | 1         | BDL              | BDL              | BDL              |
| Paraffins                              |           |                  |                  |                  |
| Hexanes                                | 1         | 2                | 1                | 3                |
| Heptanes                               | 1         | 2                | 1                | 2                |
| 2,2,4-Trimethylpentane                 | 1         | BDL              | BDL              | BDL              |
| Octanes                                | 1         | BDL              | BDL              | 1                |
| Nonanes                                | 1         | BDL              | BDL              | BDL              |
| Decanes                                | 1         | BDL              | BDL              | BDL              |
| Undecanes                              | 1         | BDL              | BDL              | BDL              |
| Dodecanes                              | 1         | BDL              | BDL              | BDL              |
| Tridecanes                             | 1         | BDL              | BDL              | BDL              |
| Tetradecanes                           | 1         | BDL              | BDL              | BDL              |
| Pentadecanes                           | 1         | BDL              | BDL              | BDL              |
| Hexadecanes                            | 1         | BDL              | BDL              | BDL              |
| Heptadecanes                           | 1         | BDL              | BDL              | BDL              |
| Octadecanes                            | 1         | BDL              | BDL              | BDL              |
| Nonadecanes                            | 1         | BDL              | BDL              | BDL              |
| Eicosanes +                            | 1         | BDL              | BDL              | BDL              |
| Total from Cyclopentane to Eicosanes + |           | 5                | 2                | 9                |

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Extended Hydrocarbon Analysis by GC/FID

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|                                        |           | 101786-001       | 101786-002       | 101786-003       |
|----------------------------------------|-----------|------------------|------------------|------------------|
|                                        |           | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                        |           | 12/13/10 1542    | 12/13/10 1548    | 12/13/10 1552    |
|                                        | Detection | Landfill #5      | Landfill #5      | Landfill #5      |
| Component Name                         | Limit     | ppmv             | ppmv             | ppmv             |
| Cycloalkanes                           |           |                  |                  |                  |
| Cyclopentane                           | 1         | BDL              | BDL              | BDL              |
| Methylcyclopentane                     | 1         | BDL              | BDL              | BDL              |
| Cyclohexane                            | 1         | BDL              | BDL              | BDL              |
| Methylcyclohexane                      | 1         | BDL              | BDL              | BDL              |
| Aromatics                              |           |                  |                  |                  |
| Benzene                                | 1         | BDL              | BDL              | BDL              |
| Toluene                                | 1         | 1                | 1                | 1                |
| Ethylbenzene                           | 1         | BDL              | BDL              | BDL              |
| m,p-Xylene                             | 1         | 1                | 1                | 1                |
| Styrene                                | 1         | BDL              | BDL              | BDL              |
| o-Xylene                               | 1         | BDL              | BDL              | BDL              |
| C3 Benzenes                            | 1         | 1                | 1                | 1                |
| Naphthalene                            | 1         | BDL              | BDL              | BDL              |
| C1 Naphthalenes                        | 1         | BDL              | BDL              | BDL              |
| C2 Naphthalenes                        | 1         | BDL              | BDL              | BDL              |
| Paraffins                              |           |                  |                  |                  |
| Hexanes                                | 1         | BDL              | 1                | 1                |
| Heptanes                               | 1         | BDL              | BDL              | BDL              |
| 2,2,4-Trimethylpentane                 | 1         | BDL              | BDL              | BDL              |
| Octanes                                | 1         | 1                | 1                | 1                |
| Nonanes                                | 1         | 2                | 2                | 1                |
| Decanes                                | 1         | 4                | 4                | 4                |
| Undecanes                              | 1         | 2                | 2                | 1                |
| Dodecanes                              | 1         | BDL              | BDL              | BDL              |
| Tridecanes                             | 1         | BDL              | BDL              | BDL              |
| Tetradecanes                           | 1         | BDL              | BDL              | BDL              |
| Pentadecanes                           | 1         | BDL              | BDL              | BDL              |
| Hexadecanes                            | 1         | BDL              | BDL              | BDL              |
| Heptadecanes                           | 1         | BDL              | BDL              | BDL              |
| Octadecanes                            | 1         | BDL              | BDL              | BDL              |
| Nonadecanes                            | 1         | BDL              | BDL              | BDL              |
| Eicosanes +                            | 1         | BDL              | BDL              | BDL              |
| Total from Cyclopentane to Eicosanes + |           | 12               | 13               | 11               |

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Extended Hydrocarbon Analysis by GC/FID

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|                                        |           | 101788-001       | 101788-002       | 101788-003       |
|----------------------------------------|-----------|------------------|------------------|------------------|
|                                        |           | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                        |           | 12/15/10 1230    | 12/15/10 1233    | 12/15/10 1237    |
|                                        | Detection | Landfill #6      | Landfill #6      | Landfill #6      |
| Component Name                         | Limit     | ppmv             | ppmv             | ppmv             |
| Cycloalkanes                           |           |                  |                  |                  |
| Cyclopentane                           | 1         | BDL              | BDL              | BDL              |
| Methylcyclopentane                     | 1         | BDL              | BDL              | BDL              |
| Cyclohexane                            | 1         | BDL              | BDL              | BDL              |
| Methylcyclohexane                      | 1         | BDL              | BDL              | BDL              |
| Aromatics                              |           |                  |                  |                  |
| Benzene                                | 1         | BDL              | BDL              | BDL              |
| Toluene                                | 1         | BDL              | BDL              | BDL              |
| Ethylbenzene                           | 1         | BDL              | BDL              | BDL              |
| m,p-Xylene                             | 1         | BDL              | BDL              | BDL              |
| Styrene                                | 1         | BDL              | BDL              | BDL              |
| o-Xylene                               | 1         | BDL              | BDL              | BDL              |
| C3 Benzenes                            | 1         | BDL              | BDL              | BDL              |
| Naphthalene                            | 1         | BDL              | BDL              | BDL              |
| C1 Naphthalenes                        | 1         | BDL              | BDL              | BDL              |
| C2 Naphthalenes                        | 1         | BDL              | BDL              | BDL              |
| Paraffins                              |           |                  |                  |                  |
| Hexanes                                | 1         | BDL              | BDL              | BDL              |
| Heptanes                               | 1         | BDL              | BDL              | BDL              |
| 2,2,4-Trimethylpentane                 | 1         | BDL              | BDL              | BDL              |
| Octanes                                | 1         | BDL              | BDL              | BDL              |
| Nonanes                                | 1         | BDL              | BDL              | BDL              |
| Decanes                                | 1         | 1                | 1                | 1                |
| Undecanes                              | 1         | BDL              | BDL              | BDL              |
| Dodecanes                              | 1         | BDL              | BDL              | BDL              |
| Tridecanes                             | 1         | BDL              | BDL              | BDL              |
| Tetradecanes                           | 1         | BDL              | BDL              | BDL              |
| Pentadecanes                           | 1         | BDL              | BDL              | BDL              |
| Hexadecanes                            | 1         | BDL              | BDL              | BDL              |
| Heptadecanes                           | 1         | BDL              | BDL              | BDL              |
| Octadecanes                            | 1         | BDL              | BDL              | BDL              |
| Nonadecanes                            | 1         | BDL              | BDL              | BDL              |
| Eicosanes +                            | 1         | BDL              | BDL              | BDL              |
| Total from Cyclopentane to Eicosanes + |           | 1                | 1                | 1                |

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Extended Hydrocarbon Analysis by GC/FID

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|                                        |           | 101793-001       | 101793-002       | 101793-003       |
|----------------------------------------|-----------|------------------|------------------|------------------|
|                                        |           | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                        |           | 12/16/10 1702    | 12/16/10 1707    | 12/16/10 1713    |
|                                        | Detection | Landfill #7      | Landfill #7      | Landfill #7      |
| Component Name                         | Limit     | ppmv             | ppmv             | ppmv             |
| Cycloalkanes                           |           |                  |                  |                  |
| Cyclopentane                           | 1         | BDL              | BDL              | BDL              |
| Methylcyclopentane                     | 1         | BDL              | BDL              | BDL              |
| Cyclohexane                            | 1         | BDL              | BDL              | BDL              |
| Methylcyclohexane                      | 1         | BDL              | BDL              | BDL              |
| Aromatics                              |           |                  |                  |                  |
| Benzene                                | 1         | BDL              | BDL              | BDL              |
| Toluene                                | 1         | BDL              | BDL              | BDL              |
| Ethylbenzene                           | 1         | BDL              | BDL              | BDL              |
| m,p-Xylene                             | 1         | BDL              | BDL              | BDL              |
| Styrene                                | 1         | BDL              | BDL              | BDL              |
| o-Xylene                               | 1         | BDL              | BDL              | BDL              |
| C3 Benzenes                            | 1         | BDL              | BDL              | BDL              |
| Naphthalene                            | 1         | BDL              | BDL              | BDL              |
| C1 Naphthalenes                        | 1         | BDL              | BDL              | BDL              |
| C2 Naphthalenes                        | 1         | BDL              | BDL              | BDL              |
| Paraffins                              |           |                  |                  |                  |
| Hexanes                                | 1         | BDL              | BDL              | BDL              |
| Heptanes                               | 1         | BDL              | BDL              | BDL              |
| 2,2,4-Trimethylpentane                 | 1         | BDL              | BDL              | BDL              |
| Octanes                                | 1         | BDL              | BDL              | BDL              |
| Nonanes                                | 1         | BDL              | BDL              | BDL              |
| Decanes                                | 1         | 2                | 1                | 1                |
| Undecanes                              | 1         | 1                | 1                | 1                |
| Dodecanes                              | 1         | BDL              | BDL              | BDL              |
| Tridecanes                             | 1         | BDL              | BDL              | BDL              |
| Tetradecanes                           | 1         | BDL              | BDL              | BDL              |
| Pentadecanes                           | 1         | BDL              | BDL              | BDL              |
| Hexadecanes                            | 1         | BDL              | BDL              | BDL              |
| Heptadecanes                           | 1         | BDL              | BDL              | BDL              |
| Octadecanes                            | 1         | BDL              | BDL              | BDL              |
| Nonadecanes                            | 1         | BDL              | BDL              | BDL              |
| Eicosanes +                            | 1         | BDL              | BDL              | BDL              |
| Total from Cyclopentane to Eicosanes + |           | 3                | 2                | 2                |

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Extended Hydrocarbon Analysis by GC/FID

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| Component Name                         | Detection Limit | 111212-001       | 111212-002       | 111212-003       |
|----------------------------------------|-----------------|------------------|------------------|------------------|
|                                        |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                        |                 | 3/28/11 1633     | 3/28/11 1635     | 3/28/11 1637     |
|                                        |                 | Landfill #8      | Landfill #8      | Landfill #8      |
|                                        |                 | ppmv             | ppmv             | ppmv             |
| Cycloalkanes                           |                 |                  |                  |                  |
| Cyclopentane                           | 1               | BDL              | BDL              | BDL              |
| Methylcyclopentane                     | 1               | BDL              | BDL              | BDL              |
| Cyclohexane                            | 1               | BDL              | BDL              | BDL              |
| Methylcyclohexane                      | 1               | BDL              | BDL              | BDL              |
| Aromatics                              |                 |                  |                  |                  |
| Benzene                                | 1               | BDL              | BDL              | BDL              |
| Toluene                                | 1               | BDL              | BDL              | BDL              |
| Ethylbenzene                           | 1               | BDL              | BDL              | BDL              |
| m,p-Xylene                             | 1               | BDL              | BDL              | BDL              |
| Styrene                                | 1               | BDL              | BDL              | BDL              |
| o-Xylene                               | 1               | BDL              | BDL              | BDL              |
| C3 Benzenes                            | 1               | BDL              | BDL              | BDL              |
| Naphthalene                            | 1               | BDL              | BDL              | BDL              |
| C1 Naphthalenes                        | 1               | BDL              | BDL              | BDL              |
| C2 Naphthalenes                        | 1               | BDL              | BDL              | BDL              |
| Paraffins                              |                 |                  |                  |                  |
| Hexanes                                | 1               | BDL              | BDL              | BDL              |
| Heptanes                               | 1               | BDL              | BDL              | BDL              |
| 2,2,4-Trimethylpentane                 | 1               | BDL              | BDL              | BDL              |
| Octanes                                | 1               | BDL              | BDL              | BDL              |
| Nonanes                                | 1               | BDL              | BDL              | BDL              |
| Decanes                                | 1               | BDL              | BDL              | BDL              |
| Undecanes                              | 1               | BDL              | BDL              | BDL              |
| Dodecanes                              | 1               | BDL              | BDL              | BDL              |
| Tridecanes                             | 1               | BDL              | BDL              | BDL              |
| Tetradecanes                           | 1               | BDL              | BDL              | BDL              |
| Pentadecanes                           | 1               | BDL              | BDL              | BDL              |
| Hexadecanes                            | 1               | BDL              | BDL              | BDL              |
| Heptadecanes                           | 1               | BDL              | BDL              | BDL              |
| Octadecanes                            | 1               | BDL              | BDL              | BDL              |
| Nonadecanes                            | 1               | BDL              | BDL              | BDL              |
| Eicosanes +                            | 1               | BDL              | BDL              | BDL              |
| Total from Cyclopentane to Eicosanes + |                 | BDL              | BDL              | BDL              |

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Extended Hydrocarbon Analysis by GC/FID

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|                                        |           | 111220-001       | 111220-002       | 111220-003       |
|----------------------------------------|-----------|------------------|------------------|------------------|
|                                        |           | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                        |           | 3/29/11 1650     | 3/29/11 1653     | 3/29/11 1656     |
|                                        | Detection | Landfill #7      | Landfill #7      | Landfill #7      |
| Component Name                         | Limit     | ppmv             | ppmv             | ppmv             |
| Cycloalkanes                           |           |                  |                  |                  |
| Cyclopentane                           | 1         | BDL              | BDL              | BDL              |
| Methylcyclopentane                     | 1         | BDL              | BDL              | BDL              |
| Cyclohexane                            | 1         | BDL              | BDL              | BDL              |
| Methylcyclohexane                      | 1         | BDL              | BDL              | BDL              |
| Aromatics                              |           |                  |                  |                  |
| Benzene                                | 1         | BDL              | BDL              | BDL              |
| Toluene                                | 1         | BDL              | BDL              | BDL              |
| Ethylbenzene                           | 1         | BDL              | BDL              | BDL              |
| m,p-Xylene                             | 1         | BDL              | BDL              | BDL              |
| Styrene                                | 1         | BDL              | BDL              | BDL              |
| o-Xylene                               | 1         | BDL              | BDL              | BDL              |
| C3 Benzenes                            | 1         | BDL              | BDL              | BDL              |
| Naphthalene                            | 1         | BDL              | BDL              | BDL              |
| C1 Naphthalenes                        | 1         | BDL              | BDL              | BDL              |
| C2 Naphthalenes                        | 1         | BDL              | BDL              | BDL              |
| Paraffins                              |           |                  |                  |                  |
| Hexanes                                | 1         | BDL              | BDL              | BDL              |
| Heptanes                               | 1         | BDL              | BDL              | BDL              |
| 2,2,4-Trimethylpentane                 | 1         | BDL              | BDL              | BDL              |
| Octanes                                | 1         | BDL              | BDL              | BDL              |
| Nonanes                                | 1         | BDL              | BDL              | BDL              |
| Decanes                                | 1         | BDL              | BDL              | 1                |
| Undecanes                              | 1         | BDL              | BDL              | 1                |
| Dodecanes                              | 1         | BDL              | BDL              | BDL              |
| Tridecanes                             | 1         | BDL              | BDL              | BDL              |
| Tetradecanes                           | 1         | BDL              | BDL              | BDL              |
| Pentadecanes                           | 1         | BDL              | BDL              | BDL              |
| Hexadecanes                            | 1         | BDL              | BDL              | BDL              |
| Heptadecanes                           | 1         | BDL              | BDL              | BDL              |
| Octadecanes                            | 1         | BDL              | BDL              | BDL              |
| Nonadecanes                            | 1         | BDL              | BDL              | BDL              |
| Eicosanes +                            | 1         | BDL              | BDL              | BDL              |
| Total from Cyclopentane to Eicosanes + |           | BDL              | BDL              | 2                |

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Extended Hydrocarbon Analysis by GC/FID

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| Component Name                         | Detection Limit | 111221-001       | 111221-002       | 111221-003       |
|----------------------------------------|-----------------|------------------|------------------|------------------|
|                                        |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                        |                 | 3/30/11 1345     | 3/30/11 1348     | 3/30/11 1357     |
|                                        |                 | Landfill #6      | Landfill #6      | Landfill #6      |
|                                        |                 | ppmv             | ppmv             | ppmv             |
| Cycloalkanes                           |                 |                  |                  |                  |
| Cyclopentane                           | 1               | BDL              | BDL              | BDL              |
| Methylcyclopentane                     | 1               | BDL              | BDL              | BDL              |
| Cyclohexane                            | 1               | BDL              | BDL              | BDL              |
| Methylcyclohexane                      | 1               | BDL              | BDL              | BDL              |
| Aromatics                              |                 |                  |                  |                  |
| Benzene                                | 1               | BDL              | BDL              | BDL              |
| Toluene                                | 1               | BDL              | BDL              | BDL              |
| Ethylbenzene                           | 1               | BDL              | BDL              | BDL              |
| m,p-Xylene                             | 1               | BDL              | 1                | BDL              |
| Styrene                                | 1               | BDL              | BDL              | BDL              |
| o-Xylene                               | 1               | BDL              | BDL              | BDL              |
| C3 Benzenes                            | 1               | BDL              | BDL              | BDL              |
| Naphthalene                            | 1               | BDL              | BDL              | BDL              |
| C1 Naphthalenes                        | 1               | BDL              | BDL              | BDL              |
| C2 Naphthalenes                        | 1               | BDL              | BDL              | BDL              |
| Paraffins                              |                 |                  |                  |                  |
| Hexanes                                | 1               | BDL              | BDL              | BDL              |
| Heptanes                               | 1               | BDL              | BDL              | BDL              |
| 2,2,4-Trimethylpentane                 | 1               | BDL              | BDL              | BDL              |
| Octanes                                | 1               | BDL              | BDL              | BDL              |
| Nonanes                                | 1               | BDL              | BDL              | BDL              |
| Decanes                                | 1               | 1                | 1                | 1                |
| Undecanes                              | 1               | BDL              | BDL              | BDL              |
| Dodecanes                              | 1               | BDL              | BDL              | BDL              |
| Tridecanes                             | 1               | BDL              | BDL              | BDL              |
| Tetradecanes                           | 1               | BDL              | BDL              | BDL              |
| Pentadecanes                           | 1               | BDL              | BDL              | BDL              |
| Hexadecanes                            | 1               | BDL              | BDL              | BDL              |
| Heptadecanes                           | 1               | BDL              | BDL              | BDL              |
| Octadecanes                            | 1               | BDL              | BDL              | BDL              |
| Nonadecanes                            | 1               | BDL              | BDL              | BDL              |
| Eicosanes +                            | 1               | BDL              | BDL              | BDL              |
| Total from Cyclopentane to Eicosanes + |                 | 1                | 2                | 1                |

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Extended Hydrocarbon Analysis by GC/FID

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| Component Name                         | Detection Limit | 111225-001       | 111225-002       | 111225-003       |
|----------------------------------------|-----------------|------------------|------------------|------------------|
|                                        |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                        |                 | 3/31/11 1635     | 3/31/11 1637     | 3/31/11 1639     |
|                                        |                 | Landfill #9      | Landfill #9      | Landfill #9      |
|                                        |                 | ppmv             | ppmv             | ppmv             |
| Cycloalkanes                           |                 |                  |                  |                  |
| Cyclopentane                           | 1               | 1                | 1                | 1                |
| Methylcyclopentane                     | 1               | 1                | BDL              | BDL              |
| Cyclohexane                            | 1               | BDL              | BDL              | BDL              |
| Methylcyclohexane                      | 1               | BDL              | BDL              | BDL              |
| Aromatics                              |                 |                  |                  |                  |
| Benzene                                | 1               | BDL              | BDL              | BDL              |
| Toluene                                | 1               | BDL              | BDL              | BDL              |
| Ethylbenzene                           | 1               | BDL              | BDL              | BDL              |
| m,p-Xylene                             | 1               | BDL              | BDL              | BDL              |
| Styrene                                | 1               | BDL              | BDL              | BDL              |
| o-Xylene                               | 1               | BDL              | BDL              | BDL              |
| C3 Benzenes                            | 1               | BDL              | BDL              | BDL              |
| Naphthalene                            | 1               | BDL              | BDL              | BDL              |
| C1 Naphthalenes                        | 1               | BDL              | BDL              | BDL              |
| C2 Naphthalenes                        | 1               | BDL              | BDL              | BDL              |
| Paraffins                              |                 |                  |                  |                  |
| Hexanes                                | 1               | 4                | 2                | 1                |
| Heptanes                               | 1               | BDL              | BDL              | BDL              |
| 2,2,4-Trimethylpentane                 | 1               | BDL              | BDL              | BDL              |
| Octanes                                | 1               | BDL              | BDL              | BDL              |
| Nonanes                                | 1               | BDL              | BDL              | BDL              |
| Decanes                                | 1               | BDL              | BDL              | BDL              |
| Undecanes                              | 1               | BDL              | BDL              | BDL              |
| Dodecanes                              | 1               | BDL              | BDL              | BDL              |
| Tridecanes                             | 1               | BDL              | BDL              | BDL              |
| Tetradecanes                           | 1               | BDL              | BDL              | BDL              |
| Pentadecanes                           | 1               | BDL              | BDL              | BDL              |
| Hexadecanes                            | 1               | BDL              | BDL              | BDL              |
| Heptadecanes                           | 1               | BDL              | BDL              | BDL              |
| Octadecanes                            | 1               | BDL              | BDL              | BDL              |
| Nonadecanes                            | 1               | BDL              | BDL              | BDL              |
| Eicosanes +                            | 1               | BDL              | BDL              | BDL              |
| Total from Cyclopentane to Eicosanes + |                 | 6                | 3                | 2                |

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Trace Sulfur Analysis by ASTM D6228

| Component Name                       | 101694-001       | 101694-002       | 101694-003       |
|--------------------------------------|------------------|------------------|------------------|
|                                      | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                      | 11/01/10 1834    | 11/01/10 1829    | 11/01/10 1823    |
|                                      | Landfill #1      | Landfill #1      | Landfill #1      |
|                                      | ppmv             | ppmv             | ppmv             |
| Hydrogen Sulfide                     | BDL              | BDL              | BDL              |
| Sulfur Dioxide                       | BDL              | BDL              | BDL              |
| Carbonyl Sulfide                     | BDL              | BDL              | BDL              |
| Carbon Disulfide                     | BDL              | BDL              | BDL              |
| Methyl Mercaptan                     | BDL              | BDL              | BDL              |
| Ethyl Mercaptan                      | BDL              | BDL              | BDL              |
| i-Propyl Mercaptan                   | BDL              | BDL              | BDL              |
| n-Propyl Mercaptan                   | BDL              | BDL              | BDL              |
| t-Butyl Mercaptan                    | BDL              | BDL              | BDL              |
| Dimethyl Sulfide                     | 1.20             | 0.39             | 1.25             |
| Methyl Ethyl Sulfide                 | BDL              | BDL              | BDL              |
| Diethyl Sulfide                      | BDL              | BDL              | BDL              |
| Di-t-Butyl Sulfide                   | BDL              | BDL              | BDL              |
| Dimethyl Disulfide                   | BDL              | BDL              | BDL              |
| Methyl Ethyl Disulfide               | BDL              | BDL              | BDL              |
| Methyl i-Propyl Disulfide            | BDL              | BDL              | BDL              |
| Diethyl Disulfide                    | BDL              | BDL              | BDL              |
| Methyl n-Propyl Disulfide            | BDL              | BDL              | BDL              |
| Methyl t-Butyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl i-Propyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl n-Propyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl t-Butyl Disulfide              | BDL              | BDL              | BDL              |
| Di-i-Propyl Disulfide                | BDL              | BDL              | BDL              |
| i-Propyl n-Propyl Disulfide          | BDL              | BDL              | BDL              |
| Di-n-Propyl Disulfide                | BDL              | BDL              | BDL              |
| i-Propyl t-Butyl Disulfide           | BDL              | BDL              | BDL              |
| n-Propyl t-Butyl Disulfide           | BDL              | BDL              | BDL              |
| Di-t-Butyl Disulfide                 | BDL              | BDL              | BDL              |
| Dimethyl Trisulfide                  | BDL              | BDL              | BDL              |
| Diethyl Trisulfide                   | BDL              | BDL              | BDL              |
| Di-t-Butyl Trisulfide                | BDL              | BDL              | BDL              |
| Thiophene                            | BDL              | BDL              | BDL              |
| C1-Thiophenes                        | BDL              | BDL              | BDL              |
| C2-Thiophenes                        | BDL              | BDL              | BDL              |
| C3-Thiophenes                        | BDL              | BDL              | BDL              |
| Benzothiophene                       | BDL              | BDL              | BDL              |
| C1-Benzothiophenes                   | BDL              | BDL              | BDL              |
| C2-Benzothiophenes                   | BDL              | BDL              | BDL              |
| Thiophane                            | BDL              | BDL              | BDL              |
| Thiophenol                           | BDL              | BDL              | BDL              |
| Total Sulfur                         |                  |                  |                  |
| As molar PPM S                       | 1.20             | 0.39             | 1.25             |
| As Grains/100 SCF @ 14.73 psia, 60°F | 0.071            | 0.023            | 0.074            |

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Trace Sulfur Analysis by ASTM D6228

| Component Name                       | 101786-001       | 101786-002       | 101786-003       |
|--------------------------------------|------------------|------------------|------------------|
|                                      | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                      | 12/13/10 1542    | 12/13/10 1548    | 12/13/10 1552    |
|                                      | Landfill #5      | Landfill #5      | Landfill #5      |
| Component Name                       | ppmv             | ppmv             | ppmv             |
| Hydrogen Sulfide                     | BDL              | BDL              | BDL              |
| Sulfur Dioxide                       | BDL              | BDL              | BDL              |
| Carbonyl Sulfide                     | BDL              | BDL              | BDL              |
| Carbon Disulfide                     | BDL              | BDL              | BDL              |
| Methyl Mercaptan                     | BDL              | BDL              | BDL              |
| Ethyl Mercaptan                      | BDL              | BDL              | BDL              |
| i-Propyl Mercaptan                   | BDL              | BDL              | BDL              |
| n-Propyl Mercaptan                   | BDL              | BDL              | BDL              |
| t-Butyl Mercaptan                    | BDL              | BDL              | BDL              |
| Dimethyl Sulfide                     | BDL              | BDL              | BDL              |
| Methyl Ethyl Sulfide                 | BDL              | BDL              | BDL              |
| Diethyl Sulfide                      | BDL              | BDL              | BDL              |
| Di-t-Butyl Sulfide                   | BDL              | BDL              | BDL              |
| Dimethyl Disulfide                   | BDL              | BDL              | BDL              |
| Methyl Ethyl Disulfide               | BDL              | BDL              | BDL              |
| Methyl i-Propyl Disulfide            | BDL              | BDL              | BDL              |
| Diethyl Disulfide                    | BDL              | BDL              | BDL              |
| Methyl n-Propyl Disulfide            | BDL              | BDL              | BDL              |
| Methyl t-Butyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl i-Propyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl n-Propyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl t-Butyl Disulfide              | BDL              | BDL              | BDL              |
| Di-i-Propyl Disulfide                | BDL              | BDL              | BDL              |
| i-Propyl n-Propyl Disulfide          | BDL              | BDL              | BDL              |
| Di-n-Propyl Disulfide                | BDL              | BDL              | BDL              |
| i-Propyl t-Butyl Disulfide           | BDL              | BDL              | BDL              |
| n-Propyl t-Butyl Disulfide           | BDL              | BDL              | BDL              |
| Di-t-Butyl Disulfide                 | BDL              | BDL              | BDL              |
| Dimethyl Trisulfide                  | BDL              | BDL              | BDL              |
| Diethyl Trisulfide                   | BDL              | BDL              | BDL              |
| Di-t-Butyl Trisulfide                | BDL              | BDL              | BDL              |
| Thiophene                            | BDL              | BDL              | BDL              |
| C1-Thiophenes                        | BDL              | BDL              | BDL              |
| C2-Thiophenes                        | BDL              | BDL              | BDL              |
| C3-Thiophenes                        | BDL              | BDL              | BDL              |
| Benzothiophene                       | BDL              | BDL              | BDL              |
| C1-Benzothiophenes                   | BDL              | BDL              | BDL              |
| C2-Benzothiophenes                   | BDL              | BDL              | BDL              |
| Thiophane                            | BDL              | BDL              | BDL              |
| Thiophenol                           | BDL              | BDL              | BDL              |
| Total Sulfur                         |                  |                  |                  |
| As molar PPM S                       | BDL              | BDL              | BDL              |
| As Grains/100 SCF @ 14.73 psia, 60°F | BDL              | BDL              | BDL              |

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Trace Sulfur Analysis by ASTM D6228

| Component Name                       | 101788-001       | 101788-002       | 101788-003       |
|--------------------------------------|------------------|------------------|------------------|
|                                      | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                      | 12/15/10 1230    | 12/15/10 1233    | 12/15/10 1237    |
|                                      | Landfill #6      | Landfill #6      | Landfill #6      |
| Component Name                       | ppmv             | ppmv             | ppmv             |
| Hydrogen Sulfide                     | BDL              | BDL              | BDL              |
| Sulfur Dioxide                       | BDL              | BDL              | BDL              |
| Carbonyl Sulfide                     | BDL              | BDL              | BDL              |
| Carbon Disulfide                     | BDL              | BDL              | BDL              |
| Methyl Mercaptan                     | BDL              | BDL              | BDL              |
| Ethyl Mercaptan                      | BDL              | BDL              | BDL              |
| i-Propyl Mercaptan                   | BDL              | BDL              | BDL              |
| n-Propyl Mercaptan                   | BDL              | BDL              | BDL              |
| t-Butyl Mercaptan                    | BDL              | BDL              | BDL              |
| Dimethyl Sulfide                     | BDL              | BDL              | BDL              |
| Methyl Ethyl Sulfide                 | BDL              | BDL              | BDL              |
| Diethyl Sulfide                      | BDL              | BDL              | BDL              |
| Di-t-Butyl Sulfide                   | BDL              | BDL              | BDL              |
| Dimethyl Disulfide                   | BDL              | BDL              | BDL              |
| Methyl Ethyl Disulfide               | BDL              | BDL              | BDL              |
| Methyl i-Propyl Disulfide            | BDL              | BDL              | BDL              |
| Diethyl Disulfide                    | BDL              | BDL              | BDL              |
| Methyl n-Propyl Disulfide            | BDL              | BDL              | BDL              |
| Methyl t-Butyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl i-Propyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl n-Propyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl t-Butyl Disulfide              | BDL              | BDL              | BDL              |
| Di-i-Propyl Disulfide                | BDL              | BDL              | BDL              |
| i-Propyl n-Propyl Disulfide          | BDL              | BDL              | BDL              |
| Di-n-Propyl Disulfide                | BDL              | BDL              | BDL              |
| i-Propyl t-Butyl Disulfide           | BDL              | BDL              | BDL              |
| n-Propyl t-Butyl Disulfide           | BDL              | BDL              | BDL              |
| Di-t-Butyl Disulfide                 | BDL              | BDL              | BDL              |
| Dimethyl Trisulfide                  | BDL              | BDL              | BDL              |
| Diethyl Trisulfide                   | BDL              | BDL              | BDL              |
| Di-t-Butyl Trisulfide                | BDL              | BDL              | BDL              |
| Thiophene                            | BDL              | BDL              | BDL              |
| C1-Thiophenes                        | BDL              | BDL              | BDL              |
| C2-Thiophenes                        | BDL              | BDL              | BDL              |
| C3-Thiophenes                        | BDL              | BDL              | BDL              |
| Benzothiophene                       | BDL              | BDL              | BDL              |
| C1-Benzothiophenes                   | BDL              | BDL              | BDL              |
| C2-Benzothiophenes                   | BDL              | BDL              | BDL              |
| Thiophane                            | BDL              | BDL              | BDL              |
| Thiophenol                           | BDL              | BDL              | BDL              |
| Total Sulfur                         |                  |                  |                  |
| As molar PPM S                       | BDL              | BDL              | BDL              |
| As Grains/100 SCF @ 14.73 psia, 60°F | BDL              | BDL              | BDL              |

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Trace Sulfur Analysis by ASTM D6228

| Component Name                       | 101793-001       | 101793-002       | 101793-003       |
|--------------------------------------|------------------|------------------|------------------|
|                                      | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                      | 12/16/10 1702    | 12/16/10 1707    | 12/16/10 1713    |
|                                      | Landfill #7      | Landfill #7      | Landfill #7      |
| Component Name                       | ppmv             | ppmv             | ppmv             |
| Hydrogen Sulfide                     | BDL              | BDL              | BDL              |
| Sulfur Dioxide                       | BDL              | BDL              | BDL              |
| Carbonyl Sulfide                     | BDL              | BDL              | BDL              |
| Carbon Disulfide                     | BDL              | BDL              | BDL              |
| Methyl Mercaptan                     | BDL              | BDL              | BDL              |
| Ethyl Mercaptan                      | BDL              | BDL              | BDL              |
| i-Propyl Mercaptan                   | BDL              | BDL              | BDL              |
| n-Propyl Mercaptan                   | BDL              | BDL              | BDL              |
| t-Butyl Mercaptan                    | BDL              | BDL              | BDL              |
| Dimethyl Sulfide                     | 0.08             | 0.15             | 0.11             |
| Methyl Ethyl Sulfide                 | BDL              | BDL              | BDL              |
| Diethyl Sulfide                      | BDL              | BDL              | BDL              |
| Di-t-Butyl Sulfide                   | BDL              | BDL              | BDL              |
| Dimethyl Disulfide                   | BDL              | BDL              | BDL              |
| Methyl Ethyl Disulfide               | BDL              | BDL              | BDL              |
| Methyl i-Propyl Disulfide            | BDL              | BDL              | BDL              |
| Diethyl Disulfide                    | BDL              | BDL              | BDL              |
| Methyl n-Propyl Disulfide            | BDL              | BDL              | BDL              |
| Methyl t-Butyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl i-Propyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl n-Propyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl t-Butyl Disulfide              | BDL              | BDL              | BDL              |
| Di-i-Propyl Disulfide                | BDL              | BDL              | BDL              |
| i-Propyl n-Propyl Disulfide          | BDL              | BDL              | BDL              |
| Di-n-Propyl Disulfide                | BDL              | BDL              | BDL              |
| i-Propyl t-Butyl Disulfide           | BDL              | BDL              | BDL              |
| n-Propyl t-Butyl Disulfide           | BDL              | BDL              | BDL              |
| Di-t-Butyl Disulfide                 | BDL              | BDL              | BDL              |
| Dimethyl Trisulfide                  | BDL              | BDL              | BDL              |
| Diethyl Trisulfide                   | BDL              | BDL              | BDL              |
| Di-t-Butyl Trisulfide                | BDL              | BDL              | BDL              |
| Thiophene                            | BDL              | BDL              | BDL              |
| C1-Thiophenes                        | BDL              | BDL              | BDL              |
| C2-Thiophenes                        | BDL              | BDL              | BDL              |
| C3-Thiophenes                        | BDL              | BDL              | BDL              |
| Benzothiophene                       | BDL              | BDL              | BDL              |
| C1-Benzothiophenes                   | BDL              | BDL              | BDL              |
| C2-Benzothiophenes                   | BDL              | BDL              | BDL              |
| Thiophane                            | BDL              | BDL              | BDL              |
| Thiophenol                           | BDL              | BDL              | BDL              |
| Total Sulfur                         |                  |                  |                  |
| As molar PPM S                       | 0.08             | 0.15             | 0.11             |
| As Grains/100 SCF @ 14.73 psia, 60°F | 0.005            | 0.009            | 0.007            |

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Trace Sulfur Analysis by ASTM D6228

| Component Name                       | 111212-001       | 111212-002       | 111212-003       |
|--------------------------------------|------------------|------------------|------------------|
|                                      | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                      | 3/28/11 1633     | 3/28/11 1635     | 3/28/11 1637     |
|                                      | Landfill #8      | Landfill #8      | Landfill #8      |
|                                      | ppmv             | ppmv             | ppmv             |
| Hydrogen Sulfide                     | BDL              | BDL              | BDL              |
| Sulfur Dioxide                       | BDL              | BDL              | BDL              |
| Carbonyl Sulfide                     | 0.07             | 0.08             | 0.08             |
| Carbon Disulfide                     | BDL              | BDL              | BDL              |
| Methyl Mercaptan                     | BDL              | BDL              | BDL              |
| Ethyl Mercaptan                      | BDL              | BDL              | BDL              |
| i-Propyl Mercaptan                   | BDL              | BDL              | BDL              |
| n-Propyl Mercaptan                   | BDL              | BDL              | BDL              |
| t-Butyl Mercaptan                    | BDL              | BDL              | BDL              |
| Dimethyl Sulfide                     | BDL              | BDL              | BDL              |
| Methyl Ethyl Sulfide                 | BDL              | BDL              | BDL              |
| Diethyl Sulfide                      | BDL              | BDL              | BDL              |
| Di-t-Butyl Sulfide                   | BDL              | BDL              | BDL              |
| Dimethyl Disulfide                   | BDL              | BDL              | BDL              |
| Methyl Ethyl Disulfide               | BDL              | BDL              | BDL              |
| Methyl i-Propyl Disulfide            | BDL              | BDL              | BDL              |
| Diethyl Disulfide                    | BDL              | BDL              | BDL              |
| Methyl n-Propyl Disulfide            | BDL              | BDL              | BDL              |
| Methyl t-Butyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl i-Propyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl n-Propyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl t-Butyl Disulfide              | BDL              | BDL              | BDL              |
| Di-i-Propyl Disulfide                | BDL              | BDL              | BDL              |
| i-Propyl n-Propyl Disulfide          | BDL              | BDL              | BDL              |
| Di-n-Propyl Disulfide                | BDL              | BDL              | BDL              |
| i-Propyl t-Butyl Disulfide           | BDL              | BDL              | BDL              |
| n-Propyl t-Butyl Disulfide           | BDL              | BDL              | BDL              |
| Di-t-Butyl Disulfide                 | BDL              | BDL              | BDL              |
| Dimethyl Trisulfide                  | BDL              | BDL              | BDL              |
| Diethyl Trisulfide                   | BDL              | BDL              | BDL              |
| Di-t-Butyl Trisulfide                | BDL              | BDL              | BDL              |
| Thiophene                            | BDL              | BDL              | BDL              |
| C1-Thiophenes                        | BDL              | BDL              | BDL              |
| C2-Thiophenes                        | BDL              | BDL              | BDL              |
| C3-Thiophenes                        | BDL              | BDL              | BDL              |
| Benzothiophene                       | BDL              | BDL              | BDL              |
| C1-Benzothiophenes                   | BDL              | BDL              | BDL              |
| C2-Benzothiophenes                   | BDL              | BDL              | BDL              |
| Thiophane                            | BDL              | BDL              | BDL              |
| Thiophenol                           | BDL              | BDL              | BDL              |
| Total Sulfur                         |                  |                  |                  |
| As molar PPM S                       | 0.07             | 0.08             | 0.08             |
| As Grains/100 SCF @ 14.73 psia, 60°F | 0.004            | 0.005            | 0.005            |

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Trace Sulfur Analysis by ASTM D6228

| Component Name                       | 111220-001       | 111220-002       | 111220-003       |
|--------------------------------------|------------------|------------------|------------------|
|                                      | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                      | 3/29/11 1650     | 3/29/11 1653     | 3/29/11 1656     |
|                                      | Landfill #7      | Landfill #7      | Landfill #7      |
| Component Name                       | ppmv             | ppmv             | ppmv             |
| Hydrogen Sulfide                     | BDL              | BDL              | BDL              |
| Sulfur Dioxide                       | BDL              | BDL              | BDL              |
| Carbonyl Sulfide                     | BDL              | BDL              | BDL              |
| Carbon Disulfide                     | BDL              | BDL              | BDL              |
| Methyl Mercaptan                     | BDL              | BDL              | BDL              |
| Ethyl Mercaptan                      | BDL              | BDL              | BDL              |
| i-Propyl Mercaptan                   | BDL              | BDL              | BDL              |
| n-Propyl Mercaptan                   | BDL              | BDL              | BDL              |
| t-Butyl Mercaptan                    | BDL              | BDL              | BDL              |
| Dimethyl Sulfide                     | BDL              | BDL              | BDL              |
| Methyl Ethyl Sulfide                 | BDL              | BDL              | BDL              |
| Diethyl Sulfide                      | BDL              | BDL              | BDL              |
| Di-t-Butyl Sulfide                   | BDL              | BDL              | BDL              |
| Dimethyl Disulfide                   | BDL              | BDL              | BDL              |
| Methyl Ethyl Disulfide               | BDL              | BDL              | BDL              |
| Methyl i-Propyl Disulfide            | BDL              | BDL              | BDL              |
| Diethyl Disulfide                    | BDL              | BDL              | BDL              |
| Methyl n-Propyl Disulfide            | BDL              | BDL              | BDL              |
| Methyl t-Butyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl i-Propyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl n-Propyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl t-Butyl Disulfide              | BDL              | BDL              | BDL              |
| Di-i-Propyl Disulfide                | BDL              | BDL              | BDL              |
| i-Propyl n-Propyl Disulfide          | BDL              | BDL              | BDL              |
| Di-n-Propyl Disulfide                | BDL              | BDL              | BDL              |
| i-Propyl t-Butyl Disulfide           | BDL              | BDL              | BDL              |
| n-Propyl t-Butyl Disulfide           | BDL              | BDL              | BDL              |
| Di-t-Butyl Disulfide                 | BDL              | BDL              | BDL              |
| Dimethyl Trisulfide                  | BDL              | BDL              | BDL              |
| Diethyl Trisulfide                   | BDL              | BDL              | BDL              |
| Di-t-Butyl Trisulfide                | BDL              | BDL              | BDL              |
| Thiophene                            | BDL              | BDL              | BDL              |
| C1-Thiophenes                        | BDL              | BDL              | BDL              |
| C2-Thiophenes                        | BDL              | BDL              | BDL              |
| C3-Thiophenes                        | BDL              | BDL              | BDL              |
| Benzothiophene                       | BDL              | BDL              | BDL              |
| C1-Benzothiophenes                   | BDL              | BDL              | BDL              |
| C2-Benzothiophenes                   | BDL              | BDL              | BDL              |
| Thiophane                            | BDL              | BDL              | BDL              |
| Thiophenol                           | BDL              | BDL              | BDL              |
| Total Sulfur                         |                  |                  |                  |
| As molar PPM S                       | BDL              | BDL              | BDL              |
| As Grains/100 SCF @ 14.73 psia, 60°F | BDL              | BDL              | BDL              |

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Trace Sulfur Analysis by ASTM D6228

| Component Name                       | 111221-001       | 111221-002       | 111221-003       |
|--------------------------------------|------------------|------------------|------------------|
|                                      | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                      | 3/30/11 1345     | 3/30/11 1348     | 3/30/11 1357     |
|                                      | Landfill #6      | Landfill #6      | Landfill #6      |
| Component Name                       | ppmv             | ppmv             | ppmv             |
| Hydrogen Sulfide                     | BDL              | BDL              | BDL              |
| Sulfur Dioxide                       | BDL              | BDL              | BDL              |
| Carbonyl Sulfide                     | BDL              | BDL              | BDL              |
| Carbon Disulfide                     | BDL              | BDL              | BDL              |
| Methyl Mercaptan                     | BDL              | BDL              | BDL              |
| Ethyl Mercaptan                      | BDL              | BDL              | BDL              |
| i-Propyl Mercaptan                   | BDL              | BDL              | BDL              |
| n-Propyl Mercaptan                   | BDL              | BDL              | BDL              |
| t-Butyl Mercaptan                    | BDL              | BDL              | BDL              |
| Dimethyl Sulfide                     | BDL              | BDL              | BDL              |
| Methyl Ethyl Sulfide                 | BDL              | BDL              | BDL              |
| Diethyl Sulfide                      | BDL              | BDL              | BDL              |
| Di-t-Butyl Sulfide                   | BDL              | BDL              | BDL              |
| Dimethyl Disulfide                   | BDL              | BDL              | BDL              |
| Methyl Ethyl Disulfide               | BDL              | BDL              | BDL              |
| Methyl i-Propyl Disulfide            | BDL              | BDL              | BDL              |
| Diethyl Disulfide                    | BDL              | BDL              | BDL              |
| Methyl n-Propyl Disulfide            | BDL              | BDL              | BDL              |
| Methyl t-Butyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl i-Propyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl n-Propyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl t-Butyl Disulfide              | BDL              | BDL              | BDL              |
| Di-i-Propyl Disulfide                | BDL              | BDL              | BDL              |
| i-Propyl n-Propyl Disulfide          | BDL              | BDL              | BDL              |
| Di-n-Propyl Disulfide                | BDL              | BDL              | BDL              |
| i-Propyl t-Butyl Disulfide           | BDL              | BDL              | BDL              |
| n-Propyl t-Butyl Disulfide           | BDL              | BDL              | BDL              |
| Di-t-Butyl Disulfide                 | BDL              | BDL              | BDL              |
| Dimethyl Trisulfide                  | BDL              | BDL              | BDL              |
| Diethyl Trisulfide                   | BDL              | BDL              | BDL              |
| Di-t-Butyl Trisulfide                | BDL              | BDL              | BDL              |
| Thiophene                            | BDL              | BDL              | BDL              |
| C1-Thiophenes                        | BDL              | BDL              | BDL              |
| C2-Thiophenes                        | BDL              | BDL              | BDL              |
| C3-Thiophenes                        | BDL              | BDL              | BDL              |
| Benzothiophene                       | BDL              | BDL              | BDL              |
| C1-Benzothiophenes                   | BDL              | BDL              | BDL              |
| C2-Benzothiophenes                   | BDL              | BDL              | BDL              |
| Thiophane                            | BDL              | BDL              | BDL              |
| Thiophenol                           | BDL              | BDL              | BDL              |
| Total Sulfur                         |                  |                  |                  |
| As molar PPM S                       | BDL              | BDL              | BDL              |
| As Grains/100 SCF @ 14.73 psia, 60°F | BDL              | BDL              | BDL              |

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Trace Sulfur Analysis by ASTM D6228

| Component Name                       | 111225-001       | 111225-002       | 111225-003       |
|--------------------------------------|------------------|------------------|------------------|
|                                      | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                      | 3/31/11 1635     | 3/31/11 1637     | 3/31/11 1639     |
|                                      | Landfill #9      | Landfill #9      | Landfill #9      |
| Component Name                       | ppmv             | ppmv             | ppmv             |
| Hydrogen Sulfide                     | BDL              | BDL              | BDL              |
| Sulfur Dioxide                       | BDL              | BDL              | BDL              |
| Carbonyl Sulfide                     | BDL              | BDL              | BDL              |
| Carbon Disulfide                     | BDL              | BDL              | BDL              |
| Methyl Mercaptan                     | BDL              | BDL              | BDL              |
| Ethyl Mercaptan                      | BDL              | BDL              | BDL              |
| i-Propyl Mercaptan                   | BDL              | BDL              | BDL              |
| n-Propyl Mercaptan                   | BDL              | BDL              | BDL              |
| t-Butyl Mercaptan                    | BDL              | BDL              | BDL              |
| Dimethyl Sulfide                     | 5.18             | 5.45             | 5.45             |
| Methyl Ethyl Sulfide                 | BDL              | BDL              | BDL              |
| Diethyl Sulfide                      | BDL              | BDL              | BDL              |
| Di-t-Butyl Sulfide                   | BDL              | BDL              | BDL              |
| Dimethyl Disulfide                   | BDL              | BDL              | BDL              |
| Methyl Ethyl Disulfide               | BDL              | BDL              | BDL              |
| Methyl i-Propyl Disulfide            | BDL              | BDL              | BDL              |
| Diethyl Disulfide                    | BDL              | BDL              | BDL              |
| Methyl n-Propyl Disulfide            | BDL              | BDL              | BDL              |
| Methyl t-Butyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl i-Propyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl n-Propyl Disulfide             | BDL              | BDL              | BDL              |
| Ethyl t-Butyl Disulfide              | BDL              | BDL              | BDL              |
| Di-i-Propyl Disulfide                | BDL              | BDL              | BDL              |
| i-Propyl n-Propyl Disulfide          | BDL              | BDL              | BDL              |
| Di-n-Propyl Disulfide                | BDL              | BDL              | BDL              |
| i-Propyl t-Butyl Disulfide           | BDL              | BDL              | BDL              |
| n-Propyl t-Butyl Disulfide           | BDL              | BDL              | BDL              |
| Di-t-Butyl Disulfide                 | BDL              | BDL              | BDL              |
| Dimethyl Trisulfide                  | BDL              | BDL              | BDL              |
| Diethyl Trisulfide                   | BDL              | BDL              | BDL              |
| Di-t-Butyl Trisulfide                | BDL              | BDL              | BDL              |
| Thiophene                            | BDL              | BDL              | BDL              |
| C1-Thiophenes                        | BDL              | BDL              | BDL              |
| C2-Thiophenes                        | BDL              | BDL              | BDL              |
| C3-Thiophenes                        | BDL              | BDL              | BDL              |
| Benzothiophene                       | BDL              | BDL              | BDL              |
| C1-Benzothiophenes                   | BDL              | BDL              | BDL              |
| C2-Benzothiophenes                   | BDL              | BDL              | BDL              |
| Thiophane                            | BDL              | BDL              | BDL              |
| Thiophenol                           | BDL              | BDL              | BDL              |
| Total Sulfur                         |                  |                  |                  |
| As molar PPM S                       | 5.18             | 5.45             | 5.45             |
| As Grains/100 SCF @ 14.73 psia, 60°F | 0.307            | 0.323            | 0.323            |

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## TO-14 Halocarbon and Volatile Organic Compound Analysis

| Component Name                                  | Detection Limit | 101694-001       | 101694-002       | 101694-003       |
|-------------------------------------------------|-----------------|------------------|------------------|------------------|
|                                                 |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                                 |                 | 11/01/10 1834    | 11/01/10 1829    | 11/01/10 1823    |
|                                                 |                 | Landfill #1      | Landfill #1      | Landfill #1      |
|                                                 |                 | ppmv             | ppmv             | ppmv             |
| Dichlorodifluoromethane (CFC-12)                | 0.10            | 0.14             | 0.11             | 0.11             |
| 1,2-Dichlorotetrafluoroethane (CFC-114)         | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113) | 0.10            | BDL              | BDL              | BDL              |
| Trichlorofluoromethane (CFC-11)                 | 0.10            | BDL              | BDL              | BDL              |
| Chloromethane                                   | 0.10            | BDL              | BDL              | BDL              |
| Dichloromethane (Methylene Chloride)            | 0.10            | BDL              | BDL              | BDL              |
| Chloroform                                      | 0.10            | BDL              | BDL              | BDL              |
| Carbon Tetrachloride                            | 0.10            | BDL              | BDL              | BDL              |
| Chloroethane                                    | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloroethane                              | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichloroethane                              | 0.10            | BDL              | BDL              | BDL              |
| 1,1,1-Trichloroethane                           | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2-Trichloroethane                           | 0.10            | BDL              | BDL              | BDL              |
| 1,1,1,2-Tetrachloroethane                       | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2,2-Tetrachloroethane                       | 0.10            | BDL              | BDL              | BDL              |
| Hexachloroethane                                | 0.10            | BDL              | BDL              | BDL              |
| Chloroethene (Vinyl Chloride)                   | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloroethene                              | 0.10            | BDL              | BDL              | BDL              |
| cis-1,2-Dichloroethene                          | 0.10            | BDL              | BDL              | BDL              |
| trans-1,2-Dichloroethene                        | 0.10            | BDL              | BDL              | BDL              |
| Trichloroethene                                 | 0.10            | BDL              | BDL              | BDL              |
| Tetrachloroethene                               | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichloropropane                             | 0.10            | BDL              | BDL              | BDL              |
| 2,2-Dichloropropane                             | 0.10            | BDL              | BDL              | BDL              |
| 1,2,3-Trichloropropane                          | 0.10            | BDL              | BDL              | BDL              |
| 3-Chloropropene                                 | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloropropene                             | 0.10            | BDL              | BDL              | BDL              |
| cis-1,3-Dichloropropene                         | 0.10            | BDL              | BDL              | BDL              |
| trans-1,3-Dichloropropene                       | 0.10            | BDL              | BDL              | BDL              |
| Bromomethane                                    | 0.10            | BDL              | BDL              | BDL              |
| Dibromomethane                                  | 0.10            | BDL              | BDL              | BDL              |
| Bromoform                                       | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dibromoethane                               | 0.10            | BDL              | BDL              | BDL              |
| Bromochloromethane                              | 0.10            | BDL              | BDL              | BDL              |
| Bromodichloromethane                            | 0.10            | BDL              | BDL              | BDL              |
| Dibromochloromethane                            | 0.10            | BDL              | BDL              | BDL              |
| Chlorobenzene                                   | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |
| 1,3-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |
| 1,4-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |

The results within this report relate only to the items tested.

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## TO-14 Halocarbon and Volatile Organic Compound Analysis

| Component Name              | Detection Limit | 101694-001       | 101694-002       | 101694-003       |
|-----------------------------|-----------------|------------------|------------------|------------------|
|                             |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                             |                 | 11/01/10 1834    | 11/01/10 1829    | 11/01/10 1823    |
|                             |                 | Landfill #1      | Landfill #1      | Landfill #1      |
|                             |                 | ppmv             | ppmv             | ppmv             |
| 1,2,3-Trichlorobenzene      | 0.10            | BDL              | BDL              | BDL              |
| 1,2,4-Trichlorobenzene      | 0.10            | BDL              | BDL              | BDL              |
| Bromobenzene                | 0.10            | BDL              | BDL              | BDL              |
| 2-Chlorotoluene             | 0.10            | BDL              | BDL              | BDL              |
| 4-Chlorotoluene             | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dibromo-3-chloropropene | 0.10            | BDL              | BDL              | BDL              |
| Hexachloro-1,3-butadiene    | 0.10            | BDL              | BDL              | BDL              |
| 1,3-Butadiene               | 1.0             | BDL              | BDL              | BDL              |
| Acrylonitrile               | 1.0             | BDL              | BDL              | BDL              |
| Benzene                     | 1.0             | BDL              | BDL              | BDL              |
| Toluene                     | 1.0             | BDL              | BDL              | BDL              |
| Ethylbenzene                | 1.0             | BDL              | BDL              | BDL              |
| m,p-Xylene                  | 1.0             | BDL              | BDL              | BDL              |
| o-Xylene                    | 1.0             | BDL              | BDL              | BDL              |
| Styrene                     | 1.0             | BDL              | BDL              | BDL              |
| i-Propylbenzene             | 1.0             | BDL              | BDL              | BDL              |
| 4-Ethyltoluene              | 1.0             | BDL              | BDL              | BDL              |
| n-Propylbenzene             | 1.0             | BDL              | BDL              | BDL              |
| 1,3,5-Trimethylbenzene      | 1.0             | BDL              | BDL              | BDL              |
| t-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| 1,2,4-Trimethylbenzene      | 1.0             | BDL              | BDL              | BDL              |
| s-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| p-Isopropyltoluene          | 1.0             | BDL              | BDL              | BDL              |
| n-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| Naphthalene                 | 1.0             | BDL              | BDL              | BDL              |
| Pyridine                    | 1.0             | BDL              | BDL              | BDL              |
| Nitrobenzene                | 1.0             | BDL              | BDL              | BDL              |

BDL = Below Detection Limit

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## TO-14 Halocarbon and Volatile Organic Compound Analysis

| Component Name                                  | Detection Limit | 101786-001       | 101786-002       | 101786-003       |
|-------------------------------------------------|-----------------|------------------|------------------|------------------|
|                                                 |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                                 |                 | 12/13/10 1542    | 12/13/10 1548    | 12/13/10 1552    |
|                                                 |                 | Landfill #5      | Landfill #5      | Landfill #5      |
|                                                 |                 | ppmv             | ppmv             | ppmv             |
| Dichlorodifluoromethane (CFC-12)                | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichlorotetrafluoroethane (CFC-114)         | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113) | 0.10            | BDL              | BDL              | BDL              |
| Trichlorofluoromethane (CFC-11)                 | 0.10            | BDL              | BDL              | BDL              |
| Chloromethane                                   | 0.10            | BDL              | BDL              | BDL              |
| Dichloromethane (Methylene Chloride)            | 0.10            | BDL              | BDL              | BDL              |
| Chloroform                                      | 0.10            | BDL              | BDL              | BDL              |
| Carbon Tetrachloride                            | 0.10            | BDL              | BDL              | BDL              |
| Chloroethane                                    | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloroethane                              | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichloroethane                              | 0.10            | BDL              | BDL              | BDL              |
| 1,1,1-Trichloroethane                           | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2-Trichloroethane                           | 0.10            | BDL              | BDL              | BDL              |
| 1,1,1,2-Tetrachloroethane                       | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2,2-Tetrachloroethane                       | 0.10            | BDL              | BDL              | BDL              |
| Hexachloroethane                                | 0.10            | BDL              | BDL              | BDL              |
| Chloroethene (Vinyl Chloride)                   | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloroethene                              | 0.10            | BDL              | BDL              | BDL              |
| cis-1,2-Dichloroethene                          | 0.10            | BDL              | BDL              | BDL              |
| trans-1,2-Dichloroethene                        | 0.10            | BDL              | BDL              | BDL              |
| Trichloroethene                                 | 0.10            | BDL              | BDL              | BDL              |
| Tetrachloroethene                               | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichloropropane                             | 0.10            | BDL              | BDL              | BDL              |
| 2,2-Dichloropropane                             | 0.10            | BDL              | BDL              | BDL              |
| 1,2,3-Trichloropropane                          | 0.10            | BDL              | BDL              | BDL              |
| 3-Chloropropene                                 | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloropropene                             | 0.10            | BDL              | BDL              | BDL              |
| cis-1,3-Dichloropropene                         | 0.10            | BDL              | BDL              | BDL              |
| trans-1,3-Dichloropropene                       | 0.10            | BDL              | BDL              | BDL              |
| Bromomethane                                    | 0.10            | BDL              | BDL              | BDL              |
| Dibromomethane                                  | 0.10            | BDL              | BDL              | BDL              |
| Bromoform                                       | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dibromoethane                               | 0.10            | BDL              | BDL              | BDL              |
| Bromochloromethane                              | 0.10            | BDL              | BDL              | BDL              |
| Bromodichloromethane                            | 0.10            | BDL              | BDL              | BDL              |
| Dibromochloromethane                            | 0.10            | BDL              | BDL              | BDL              |
| Chlorobenzene                                   | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |
| 1,3-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |
| 1,4-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |

The results within this report relate only to the items tested.

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## TO-14 Halocarbon and Volatile Organic Compound Analysis

| Component Name              | Detection Limit | 101786-001       | 101786-002       | 101786-003       |
|-----------------------------|-----------------|------------------|------------------|------------------|
|                             |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                             |                 | 12/13/10 1542    | 12/13/10 1548    | 12/13/10 1552    |
|                             |                 | Landfill #5      | Landfill #5      | Landfill #5      |
|                             |                 | ppmv             | ppmv             | ppmv             |
| 1,2,3-Trichlorobenzene      | 0.10            | BDL              | BDL              | BDL              |
| 1,2,4-Trichlorobenzene      | 0.10            | BDL              | BDL              | BDL              |
| Bromobenzene                | 0.10            | BDL              | BDL              | BDL              |
| 2-Chlorotoluene             | 0.10            | BDL              | BDL              | BDL              |
| 4-Chlorotoluene             | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dibromo-3-chloropropene | 0.10            | BDL              | BDL              | BDL              |
| Hexachloro-1,3-butadiene    | 0.10            | BDL              | BDL              | BDL              |
| 1,3-Butadiene               | 1.0             | BDL              | BDL              | BDL              |
| Acrylonitrile               | 1.0             | BDL              | BDL              | BDL              |
| Benzene                     | 1.0             | BDL              | BDL              | BDL              |
| Toluene                     | 1.0             | 1.4              | 1.3              | 1.4              |
| Ethylbenzene                | 1.0             | BDL              | BDL              | BDL              |
| m,p-Xylene                  | 1.0             | 1.0              | BDL              | 1.0              |
| o-Xylene                    | 1.0             | BDL              | BDL              | BDL              |
| Styrene                     | 1.0             | BDL              | BDL              | BDL              |
| i-Propylbenzene             | 1.0             | BDL              | BDL              | BDL              |
| 4-Ethyltoluene              | 1.0             | BDL              | BDL              | BDL              |
| n-Propylbenzene             | 1.0             | BDL              | BDL              | BDL              |
| 1,3,5-Trimethylbenzene      | 1.0             | BDL              | BDL              | BDL              |
| t-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| 1,2,4-Trimethylbenzene      | 1.0             | BDL              | BDL              | BDL              |
| s-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| p-Isopropyltoluene          | 1.0             | BDL              | BDL              | BDL              |
| n-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| Naphthalene                 | 1.0             | BDL              | BDL              | BDL              |
| Pyridine                    | 1.0             | BDL              | BDL              | BDL              |
| Nitrobenzene                | 1.0             | BDL              | BDL              | BDL              |

BDL = Below Detection Limit

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## TO-14 Halocarbon and Volatile Organic Compound Analysis

| Component Name                                  | Detection Limit | 101788-001       | 101788-002       | 101788-003       |
|-------------------------------------------------|-----------------|------------------|------------------|------------------|
|                                                 |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                                 |                 | 12/15/10 1230    | 12/15/10 1233    | 12/15/10 1237    |
|                                                 |                 | Landfill #6      | Landfill #6      | Landfill #6      |
|                                                 |                 | ppmv             | ppmv             | ppmv             |
| Dichlorodifluoromethane (CFC-12)                | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichlorotetrafluoroethane (CFC-114)         | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113) | 0.10            | BDL              | BDL              | BDL              |
| Trichlorofluoromethane (CFC-11)                 | 0.10            | BDL              | BDL              | BDL              |
| Chloromethane                                   | 0.10            | BDL              | BDL              | BDL              |
| Dichloromethane (Methylene Chloride)            | 0.10            | BDL              | BDL              | BDL              |
| Chloroform                                      | 0.10            | BDL              | BDL              | BDL              |
| Carbon Tetrachloride                            | 0.10            | BDL              | BDL              | BDL              |
| Chloroethane                                    | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloroethane                              | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichloroethane                              | 0.10            | BDL              | BDL              | BDL              |
| 1,1,1-Trichloroethane                           | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2-Trichloroethane                           | 0.10            | BDL              | BDL              | BDL              |
| 1,1,1,2-Tetrachloroethane                       | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2,2-Tetrachloroethane                       | 0.10            | BDL              | BDL              | BDL              |
| Hexachloroethane                                | 0.10            | BDL              | BDL              | BDL              |
| Chloroethene (Vinyl Chloride)                   | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloroethene                              | 0.10            | BDL              | BDL              | BDL              |
| cis-1,2-Dichloroethene                          | 0.10            | BDL              | BDL              | BDL              |
| trans-1,2-Dichloroethene                        | 0.10            | BDL              | BDL              | BDL              |
| Trichloroethene                                 | 0.10            | BDL              | BDL              | BDL              |
| Tetrachloroethene                               | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichloropropane                             | 0.10            | BDL              | BDL              | BDL              |
| 2,2-Dichloropropane                             | 0.10            | BDL              | BDL              | BDL              |
| 1,2,3-Trichloropropane                          | 0.10            | BDL              | BDL              | BDL              |
| 3-Chloropropene                                 | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloropropene                             | 0.10            | BDL              | BDL              | BDL              |
| cis-1,3-Dichloropropene                         | 0.10            | BDL              | BDL              | BDL              |
| trans-1,3-Dichloropropene                       | 0.10            | BDL              | BDL              | BDL              |
| Bromomethane                                    | 0.10            | BDL              | BDL              | BDL              |
| Dibromomethane                                  | 0.10            | BDL              | BDL              | BDL              |
| Bromoform                                       | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dibromoethane                               | 0.10            | BDL              | BDL              | BDL              |
| Bromochloromethane                              | 0.10            | BDL              | BDL              | BDL              |
| Bromodichloromethane                            | 0.10            | BDL              | BDL              | BDL              |
| Dibromochloromethane                            | 0.10            | BDL              | BDL              | BDL              |
| Chlorobenzene                                   | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |
| 1,3-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |
| 1,4-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |

The results within this report relate only to the items tested.

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## TO-14 Halocarbon and Volatile Organic Compound Analysis

| Component Name              | Detection Limit | 101788-001       | 101788-002       | 101788-003       |
|-----------------------------|-----------------|------------------|------------------|------------------|
|                             |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                             |                 | 12/15/10 1230    | 12/15/10 1233    | 12/15/10 1237    |
|                             |                 | Landfill #6      | Landfill #6      | Landfill #6      |
|                             |                 | ppmv             | ppmv             | ppmv             |
| 1,2,3-Trichlorobenzene      | 0.10            | BDL              | BDL              | BDL              |
| 1,2,4-Trichlorobenzene      | 0.10            | BDL              | BDL              | BDL              |
| Bromobenzene                | 0.10            | BDL              | BDL              | BDL              |
| 2-Chlorotoluene             | 0.10            | BDL              | BDL              | BDL              |
| 4-Chlorotoluene             | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dibromo-3-chloropropene | 0.10            | BDL              | BDL              | BDL              |
| Hexachloro-1,3-butadiene    | 0.10            | BDL              | BDL              | BDL              |
| 1,3-Butadiene               | 1.0             | BDL              | BDL              | BDL              |
| Acrylonitrile               | 1.0             | BDL              | BDL              | BDL              |
| Benzene                     | 1.0             | BDL              | BDL              | BDL              |
| Toluene                     | 1.0             | BDL              | BDL              | BDL              |
| Ethylbenzene                | 1.0             | BDL              | BDL              | BDL              |
| m,p-Xylene                  | 1.0             | BDL              | BDL              | BDL              |
| o-Xylene                    | 1.0             | BDL              | BDL              | BDL              |
| Styrene                     | 1.0             | BDL              | BDL              | BDL              |
| i-Propylbenzene             | 1.0             | BDL              | BDL              | BDL              |
| 4-Ethyltoluene              | 1.0             | BDL              | BDL              | BDL              |
| n-Propylbenzene             | 1.0             | BDL              | BDL              | BDL              |
| 1,3,5-Trimethylbenzene      | 1.0             | BDL              | BDL              | BDL              |
| t-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| 1,2,4-Trimethylbenzene      | 1.0             | BDL              | BDL              | BDL              |
| s-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| p-Isopropyltoluene          | 1.0             | BDL              | BDL              | BDL              |
| n-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| Naphthalene                 | 1.0             | BDL              | BDL              | BDL              |
| Pyridine                    | 1.0             | BDL              | BDL              | BDL              |
| Nitrobenzene                | 1.0             | BDL              | BDL              | BDL              |

BDL = Below Detection Limit

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## TO-14 Halocarbon and Volatile Organic Compound Analysis

| Component Name                                  | Detection Limit | 101793-001       | 101793-002       | 101793-003       |
|-------------------------------------------------|-----------------|------------------|------------------|------------------|
|                                                 |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                                 |                 | 12/16/10 1702    | 12/16/10 1707    | 12/16/10 1713    |
|                                                 |                 | Landfill #7      | Landfill #7      | Landfill #7      |
|                                                 |                 | ppmv             | ppmv             | ppmv             |
| Dichlorodifluoromethane (CFC-12)                | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichlorotetrafluoroethane (CFC-114)         | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113) | 0.10            | BDL              | BDL              | BDL              |
| Trichlorofluoromethane (CFC-11)                 | 0.10            | BDL              | BDL              | BDL              |
| Chloromethane                                   | 0.10            | BDL              | BDL              | BDL              |
| Dichloromethane (Methylene Chloride)            | 0.10            | BDL              | BDL              | BDL              |
| Chloroform                                      | 0.10            | BDL              | BDL              | BDL              |
| Carbon Tetrachloride                            | 0.10            | BDL              | BDL              | BDL              |
| Chloroethane                                    | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloroethane                              | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichloroethane                              | 0.10            | BDL              | BDL              | BDL              |
| 1,1,1-Trichloroethane                           | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2-Trichloroethane                           | 0.10            | BDL              | BDL              | BDL              |
| 1,1,1,2-Tetrachloroethane                       | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2,2-Tetrachloroethane                       | 0.10            | BDL              | BDL              | BDL              |
| Hexachloroethane                                | 0.10            | BDL              | BDL              | BDL              |
| Chloroethene (Vinyl Chloride)                   | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloroethene                              | 0.10            | BDL              | BDL              | BDL              |
| cis-1,2-Dichloroethene                          | 0.10            | BDL              | BDL              | BDL              |
| trans-1,2-Dichloroethene                        | 0.10            | BDL              | BDL              | BDL              |
| Trichloroethene                                 | 0.10            | BDL              | BDL              | BDL              |
| Tetrachloroethene                               | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichloropropane                             | 0.10            | BDL              | BDL              | BDL              |
| 2,2-Dichloropropane                             | 0.10            | BDL              | BDL              | BDL              |
| 1,2,3-Trichloropropane                          | 0.10            | BDL              | BDL              | BDL              |
| 3-Chloropropene                                 | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloropropene                             | 0.10            | BDL              | BDL              | BDL              |
| cis-1,3-Dichloropropene                         | 0.10            | BDL              | BDL              | BDL              |
| trans-1,3-Dichloropropene                       | 0.10            | BDL              | BDL              | BDL              |
| Bromomethane                                    | 0.10            | BDL              | BDL              | BDL              |
| Dibromomethane                                  | 0.10            | BDL              | BDL              | BDL              |
| Bromoform                                       | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dibromoethane                               | 0.10            | BDL              | BDL              | BDL              |
| Bromochloromethane                              | 0.10            | BDL              | BDL              | BDL              |
| Bromodichloromethane                            | 0.10            | BDL              | BDL              | BDL              |
| Dibromochloromethane                            | 0.10            | BDL              | BDL              | BDL              |
| Chlorobenzene                                   | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |
| 1,3-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |
| 1,4-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |

The results within this report relate only to the items tested.

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## TO-14 Halocarbon and Volatile Organic Compound Analysis

| Component Name              | Detection Limit | 101793-001       | 101793-002       | 101793-003       |
|-----------------------------|-----------------|------------------|------------------|------------------|
|                             |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                             |                 | 12/16/10 1702    | 12/16/10 1707    | 12/16/10 1713    |
|                             |                 | Landfill #7      | Landfill #7      | Landfill #7      |
|                             |                 | ppmv             | ppmv             | ppmv             |
| 1,2,3-Trichlorobenzene      | 0.10            | BDL              | BDL              | BDL              |
| 1,2,4-Trichlorobenzene      | 0.10            | BDL              | BDL              | BDL              |
| Bromobenzene                | 0.10            | BDL              | BDL              | BDL              |
| 2-Chlorotoluene             | 0.10            | BDL              | BDL              | BDL              |
| 4-Chlorotoluene             | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dibromo-3-chloropropene | 0.10            | BDL              | BDL              | BDL              |
| Hexachloro-1,3-butadiene    | 0.10            | BDL              | BDL              | BDL              |
| 1,3-Butadiene               | 1.0             | BDL              | BDL              | BDL              |
| Acrylonitrile               | 1.0             | BDL              | BDL              | BDL              |
| Benzene                     | 1.0             | BDL              | BDL              | BDL              |
| Toluene                     | 1.0             | BDL              | BDL              | BDL              |
| Ethylbenzene                | 1.0             | BDL              | BDL              | BDL              |
| m,p-Xylene                  | 1.0             | BDL              | BDL              | BDL              |
| o-Xylene                    | 1.0             | BDL              | BDL              | BDL              |
| Styrene                     | 1.0             | BDL              | BDL              | BDL              |
| i-Propylbenzene             | 1.0             | BDL              | BDL              | BDL              |
| 4-Ethyltoluene              | 1.0             | BDL              | BDL              | BDL              |
| n-Propylbenzene             | 1.0             | BDL              | BDL              | BDL              |
| 1,3,5-Trimethylbenzene      | 1.0             | BDL              | BDL              | BDL              |
| t-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| 1,2,4-Trimethylbenzene      | 1.0             | BDL              | BDL              | BDL              |
| s-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| p-Isopropyltoluene          | 1.0             | BDL              | BDL              | BDL              |
| n-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| Naphthalene                 | 1.0             | BDL              | BDL              | BDL              |
| Pyridine                    | 1.0             | BDL              | BDL              | BDL              |
| Nitrobenzene                | 1.0             | BDL              | BDL              | BDL              |

BDL = Below Detection Limit

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## TO-14 Halocarbon and Volatile Organic Compound Analysis

| Component Name                                  | Detection Limit | 111212-001       | 111212-002       | 111212-003       |
|-------------------------------------------------|-----------------|------------------|------------------|------------------|
|                                                 |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                                 |                 | 3/28/11 1633     | 3/28/11 1635     | 3/28/11 1637     |
|                                                 |                 | Landfill #8      | Landfill #8      | Landfill #8      |
|                                                 |                 | ppmv             | ppmv             | ppmv             |
| Dichlorodifluoromethane (CFC-12)                | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichlorotetrafluoroethane (CFC-114)         | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113) | 0.10            | BDL              | BDL              | BDL              |
| Trichlorofluoromethane (CFC-11)                 | 0.10            | BDL              | BDL              | BDL              |
| Chloromethane                                   | 0.10            | BDL              | BDL              | BDL              |
| Dichloromethane (Methylene Chloride)            | 0.10            | BDL              | BDL              | BDL              |
| Chloroform                                      | 0.10            | BDL              | BDL              | BDL              |
| Carbon Tetrachloride                            | 0.10            | BDL              | BDL              | BDL              |
| Chloroethane                                    | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloroethane                              | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichloroethane                              | 0.10            | BDL              | BDL              | BDL              |
| 1,1,1-Trichloroethane                           | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2-Trichloroethane                           | 0.10            | BDL              | BDL              | BDL              |
| 1,1,1,2-Tetrachloroethane                       | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2,2-Tetrachloroethane                       | 0.10            | BDL              | BDL              | BDL              |
| Hexachloroethane                                | 0.10            | BDL              | BDL              | BDL              |
| Chloroethene (Vinyl Chloride)                   | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloroethene                              | 0.10            | BDL              | BDL              | BDL              |
| cis-1,2-Dichloroethene                          | 0.10            | BDL              | BDL              | BDL              |
| trans-1,2-Dichloroethene                        | 0.10            | BDL              | BDL              | BDL              |
| Trichloroethene                                 | 0.10            | BDL              | BDL              | BDL              |
| Tetrachloroethene                               | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichloropropane                             | 0.10            | BDL              | BDL              | BDL              |
| 2,2-Dichloropropane                             | 0.10            | BDL              | BDL              | BDL              |
| 1,2,3-Trichloropropane                          | 0.10            | BDL              | BDL              | BDL              |
| 3-Chloropropene                                 | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloropropene                             | 0.10            | BDL              | BDL              | BDL              |
| cis-1,3-Dichloropropene                         | 0.10            | BDL              | BDL              | BDL              |
| trans-1,3-Dichloropropene                       | 0.10            | BDL              | BDL              | BDL              |
| Bromomethane                                    | 0.10            | BDL              | BDL              | BDL              |
| Dibromomethane                                  | 0.10            | BDL              | BDL              | BDL              |
| Bromoform                                       | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dibromoethane                               | 0.10            | BDL              | BDL              | BDL              |
| Bromochloromethane                              | 0.10            | BDL              | BDL              | BDL              |
| Bromodichloromethane                            | 0.10            | BDL              | BDL              | BDL              |
| Dibromochloromethane                            | 0.10            | BDL              | BDL              | BDL              |
| Chlorobenzene                                   | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |
| 1,3-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |
| 1,4-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |

The results within this report relate only to the items tested.

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## TO-14 Halocarbon and Volatile Organic Compound Analysis

| Component Name              | Detection Limit | 111212-001       | 111212-002       | 111212-003       |
|-----------------------------|-----------------|------------------|------------------|------------------|
|                             |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                             |                 | 3/28/11 1633     | 3/28/11 1635     | 3/28/11 1637     |
|                             |                 | Landfill #8      | Landfill #8      | Landfill #8      |
|                             |                 | ppmv             | ppmv             | ppmv             |
| 1,2,3-Trichlorobenzene      | 0.10            | BDL              | BDL              | BDL              |
| 1,2,4-Trichlorobenzene      | 0.10            | BDL              | BDL              | BDL              |
| Bromobenzene                | 0.10            | BDL              | BDL              | BDL              |
| 2-Chlorotoluene             | 0.10            | BDL              | BDL              | BDL              |
| 4-Chlorotoluene             | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dibromo-3-chloropropene | 0.10            | BDL              | BDL              | BDL              |
| Hexachloro-1,3-butadiene    | 0.10            | BDL              | BDL              | BDL              |
| 1,3-Butadiene               | 1.0             | BDL              | BDL              | BDL              |
| Acrylonitrile               | 1.0             | BDL              | BDL              | BDL              |
| Benzene                     | 1.0             | BDL              | BDL              | BDL              |
| Toluene                     | 1.0             | BDL              | BDL              | BDL              |
| Ethylbenzene                | 1.0             | BDL              | BDL              | BDL              |
| m,p-Xylene                  | 1.0             | BDL              | BDL              | BDL              |
| o-Xylene                    | 1.0             | BDL              | BDL              | BDL              |
| Styrene                     | 1.0             | BDL              | BDL              | BDL              |
| i-Propylbenzene             | 1.0             | BDL              | BDL              | BDL              |
| 4-Ethyltoluene              | 1.0             | BDL              | BDL              | BDL              |
| n-Propylbenzene             | 1.0             | BDL              | BDL              | BDL              |
| 1,3,5-Trimethylbenzene      | 1.0             | BDL              | BDL              | BDL              |
| t-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| 1,2,4-Trimethylbenzene      | 1.0             | BDL              | BDL              | BDL              |
| s-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| p-Isopropyltoluene          | 1.0             | BDL              | BDL              | BDL              |
| n-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| Naphthalene                 | 1.0             | BDL              | BDL              | BDL              |
| Pyridine                    | 1.0             | BDL              | BDL              | BDL              |
| Nitrobenzene                | 1.0             | BDL              | BDL              | BDL              |

BDL = Below Detection Limit

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## TO-14 Halocarbon and Volatile Organic Compound Analysis

| Component Name                                  | Detection Limit | 111220-001       | 111220-002       | 111220-003       |
|-------------------------------------------------|-----------------|------------------|------------------|------------------|
|                                                 |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                                 |                 | 3/29/11 1650     | 3/29/11 1653     | 3/29/11 1656     |
|                                                 |                 | Landfill #7      | Landfill #7      | Landfill #7      |
|                                                 |                 | ppmv             | ppmv             | ppmv             |
| Dichlorodifluoromethane (CFC-12)                | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichlorotetrafluoroethane (CFC-114)         | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113) | 0.10            | BDL              | BDL              | BDL              |
| Trichlorofluoromethane (CFC-11)                 | 0.10            | BDL              | BDL              | BDL              |
| Chloromethane                                   | 0.10            | BDL              | BDL              | BDL              |
| Dichloromethane (Methylene Chloride)            | 0.10            | BDL              | BDL              | BDL              |
| Chloroform                                      | 0.10            | BDL              | BDL              | BDL              |
| Carbon Tetrachloride                            | 0.10            | BDL              | BDL              | BDL              |
| Chloroethane                                    | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloroethane                              | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichloroethane                              | 0.10            | BDL              | BDL              | BDL              |
| 1,1,1-Trichloroethane                           | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2-Trichloroethane                           | 0.10            | BDL              | BDL              | BDL              |
| 1,1,1,2-Tetrachloroethane                       | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2,2-Tetrachloroethane                       | 0.10            | BDL              | BDL              | BDL              |
| Hexachloroethane                                | 0.10            | BDL              | BDL              | BDL              |
| Chloroethene (Vinyl Chloride)                   | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloroethene                              | 0.10            | BDL              | BDL              | BDL              |
| cis-1,2-Dichloroethene                          | 0.10            | BDL              | BDL              | BDL              |
| trans-1,2-Dichloroethene                        | 0.10            | BDL              | BDL              | BDL              |
| Trichloroethene                                 | 0.10            | BDL              | BDL              | BDL              |
| Tetrachloroethene                               | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichloropropane                             | 0.10            | BDL              | BDL              | BDL              |
| 2,2-Dichloropropane                             | 0.10            | BDL              | BDL              | BDL              |
| 1,2,3-Trichloropropane                          | 0.10            | BDL              | BDL              | BDL              |
| 3-Chloropropene                                 | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloropropene                             | 0.10            | BDL              | BDL              | BDL              |
| cis-1,3-Dichloropropene                         | 0.10            | BDL              | BDL              | BDL              |
| trans-1,3-Dichloropropene                       | 0.10            | BDL              | BDL              | BDL              |
| Bromomethane                                    | 0.10            | BDL              | BDL              | BDL              |
| Dibromomethane                                  | 0.10            | BDL              | BDL              | BDL              |
| Bromoform                                       | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dibromoethane                               | 0.10            | BDL              | BDL              | BDL              |
| Bromochloromethane                              | 0.10            | BDL              | BDL              | BDL              |
| Bromodichloromethane                            | 0.10            | BDL              | BDL              | BDL              |
| Dibromochloromethane                            | 0.10            | BDL              | BDL              | BDL              |
| Chlorobenzene                                   | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |
| 1,3-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |
| 1,4-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |

The results within this report relate only to the items tested.

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## TO-14 Halocarbon and Volatile Organic Compound Analysis

| Component Name              | Detection Limit | 111220-001       | 111220-002       | 111220-003       |
|-----------------------------|-----------------|------------------|------------------|------------------|
|                             |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                             |                 | 3/29/11 1650     | 3/29/11 1653     | 3/29/11 1656     |
|                             |                 | Landfill #7      | Landfill #7      | Landfill #7      |
|                             |                 | ppmv             | ppmv             | ppmv             |
| 1,2,3-Trichlorobenzene      | 0.10            | BDL              | BDL              | BDL              |
| 1,2,4-Trichlorobenzene      | 0.10            | BDL              | BDL              | BDL              |
| Bromobenzene                | 0.10            | BDL              | BDL              | BDL              |
| 2-Chlorotoluene             | 0.10            | BDL              | BDL              | BDL              |
| 4-Chlorotoluene             | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dibromo-3-chloropropene | 0.10            | BDL              | BDL              | BDL              |
| Hexachloro-1,3-butadiene    | 0.10            | BDL              | BDL              | BDL              |
| 1,3-Butadiene               | 1.0             | BDL              | BDL              | BDL              |
| Acrylonitrile               | 1.0             | BDL              | BDL              | BDL              |
| Benzene                     | 1.0             | BDL              | BDL              | BDL              |
| Toluene                     | 1.0             | BDL              | BDL              | BDL              |
| Ethylbenzene                | 1.0             | BDL              | BDL              | BDL              |
| m,p-Xylene                  | 1.0             | BDL              | BDL              | BDL              |
| o-Xylene                    | 1.0             | BDL              | BDL              | BDL              |
| Styrene                     | 1.0             | BDL              | BDL              | BDL              |
| i-Propylbenzene             | 1.0             | BDL              | BDL              | BDL              |
| 4-Ethyltoluene              | 1.0             | BDL              | BDL              | BDL              |
| n-Propylbenzene             | 1.0             | BDL              | BDL              | BDL              |
| 1,3,5-Trimethylbenzene      | 1.0             | BDL              | BDL              | BDL              |
| t-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| 1,2,4-Trimethylbenzene      | 1.0             | BDL              | BDL              | BDL              |
| s-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| p-Isopropyltoluene          | 1.0             | BDL              | BDL              | BDL              |
| n-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| Naphthalene                 | 1.0             | BDL              | BDL              | BDL              |
| Pyridine                    | 1.0             | BDL              | BDL              | BDL              |
| Nitrobenzene                | 1.0             | BDL              | BDL              | BDL              |

BDL = Below Detection Limit

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## TO-14 Halocarbon and Volatile Organic Compound Analysis

| Component Name                                  | Detection Limit | 111221-001       | 111221-002       | 111221-003       |
|-------------------------------------------------|-----------------|------------------|------------------|------------------|
|                                                 |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                                 |                 | 3/30/11 1345     | 3/30/11 1348     | 3/30/11 1357     |
|                                                 |                 | Landfill #6      | Landfill #6      | Landfill #6      |
|                                                 |                 | ppmv             | ppmv             | ppmv             |
| Dichlorodifluoromethane (CFC-12)                | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichlorotetrafluoroethane (CFC-114)         | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113) | 0.10            | BDL              | BDL              | BDL              |
| Trichlorofluoromethane (CFC-11)                 | 0.10            | BDL              | BDL              | BDL              |
| Chloromethane                                   | 0.10            | BDL              | BDL              | BDL              |
| Dichloromethane (Methylene Chloride)            | 0.10            | BDL              | BDL              | BDL              |
| Chloroform                                      | 0.10            | BDL              | BDL              | BDL              |
| Carbon Tetrachloride                            | 0.10            | BDL              | BDL              | BDL              |
| Chloroethane                                    | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloroethane                              | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichloroethane                              | 0.10            | BDL              | BDL              | BDL              |
| 1,1,1-Trichloroethane                           | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2-Trichloroethane                           | 0.10            | BDL              | BDL              | BDL              |
| 1,1,1,2-Tetrachloroethane                       | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2,2-Tetrachloroethane                       | 0.10            | BDL              | BDL              | BDL              |
| Hexachloroethane                                | 0.10            | BDL              | BDL              | BDL              |
| Chloroethene (Vinyl Chloride)                   | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloroethene                              | 0.10            | BDL              | BDL              | BDL              |
| cis-1,2-Dichloroethene                          | 0.10            | BDL              | BDL              | BDL              |
| trans-1,2-Dichloroethene                        | 0.10            | BDL              | BDL              | BDL              |
| Trichloroethene                                 | 0.10            | BDL              | BDL              | BDL              |
| Tetrachloroethene                               | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichloropropane                             | 0.10            | BDL              | BDL              | BDL              |
| 2,2-Dichloropropane                             | 0.10            | BDL              | BDL              | BDL              |
| 1,2,3-Trichloropropane                          | 0.10            | BDL              | BDL              | BDL              |
| 3-Chloropropene                                 | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloropropene                             | 0.10            | BDL              | BDL              | BDL              |
| cis-1,3-Dichloropropene                         | 0.10            | BDL              | BDL              | BDL              |
| trans-1,3-Dichloropropene                       | 0.10            | BDL              | BDL              | BDL              |
| Bromomethane                                    | 0.10            | BDL              | BDL              | BDL              |
| Dibromomethane                                  | 0.10            | BDL              | BDL              | BDL              |
| Bromoform                                       | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dibromoethane                               | 0.10            | BDL              | BDL              | BDL              |
| Bromochloromethane                              | 0.10            | BDL              | BDL              | BDL              |
| Bromodichloromethane                            | 0.10            | BDL              | BDL              | BDL              |
| Dibromochloromethane                            | 0.10            | BDL              | BDL              | BDL              |
| Chlorobenzene                                   | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |
| 1,3-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |
| 1,4-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |

The results within this report relate only to the items tested.

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## TO-14 Halocarbon and Volatile Organic Compound Analysis

| Component Name              | Detection Limit | 111221-001       | 111221-002       | 111221-003       |
|-----------------------------|-----------------|------------------|------------------|------------------|
|                             |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                             |                 | 3/30/11 1345     | 3/30/11 1348     | 3/30/11 1357     |
|                             |                 | Landfill #6      | Landfill #6      | Landfill #6      |
|                             |                 | ppmv             | ppmv             | ppmv             |
| 1,2,3-Trichlorobenzene      | 0.10            | BDL              | BDL              | BDL              |
| 1,2,4-Trichlorobenzene      | 0.10            | BDL              | BDL              | BDL              |
| Bromobenzene                | 0.10            | BDL              | BDL              | BDL              |
| 2-Chlorotoluene             | 0.10            | BDL              | BDL              | BDL              |
| 4-Chlorotoluene             | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dibromo-3-chloropropene | 0.10            | BDL              | BDL              | BDL              |
| Hexachloro-1,3-butadiene    | 0.10            | BDL              | BDL              | BDL              |
| 1,3-Butadiene               | 1.0             | BDL              | BDL              | BDL              |
| Acrylonitrile               | 1.0             | BDL              | BDL              | BDL              |
| Benzene                     | 1.0             | BDL              | BDL              | BDL              |
| Toluene                     | 1.0             | BDL              | BDL              | BDL              |
| Ethylbenzene                | 1.0             | BDL              | BDL              | BDL              |
| m,p-Xylene                  | 1.0             | BDL              | BDL              | BDL              |
| o-Xylene                    | 1.0             | BDL              | BDL              | BDL              |
| Styrene                     | 1.0             | BDL              | BDL              | BDL              |
| i-Propylbenzene             | 1.0             | BDL              | BDL              | BDL              |
| 4-Ethyltoluene              | 1.0             | BDL              | BDL              | BDL              |
| n-Propylbenzene             | 1.0             | BDL              | BDL              | BDL              |
| 1,3,5-Trimethylbenzene      | 1.0             | BDL              | BDL              | BDL              |
| t-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| 1,2,4-Trimethylbenzene      | 1.0             | BDL              | BDL              | BDL              |
| s-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| p-Isopropyltoluene          | 1.0             | BDL              | BDL              | BDL              |
| n-Butylbenzene              | 1.0             | BDL              | BDL              | BDL              |
| Naphthalene                 | 1.0             | BDL              | BDL              | BDL              |
| Pyridine                    | 1.0             | BDL              | BDL              | BDL              |
| Nitrobenzene                | 1.0             | BDL              | BDL              | BDL              |

BDL = Below Detection Limit

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## TO-14 Halocarbon and Volatile Organic Compound Analysis

| Component Name                                  | Detection Limit | 111225-001       | 111225-002       | 111225-003       |
|-------------------------------------------------|-----------------|------------------|------------------|------------------|
|                                                 |                 | Processed Gas 01 | Processed Gas 02 | Processed Gas 03 |
|                                                 |                 | 3/31/11 1635     | 3/31/11 1637     | 3/31/11 1639     |
|                                                 |                 | Landfill #9      | Landfill #9      | Landfill #9      |
|                                                 |                 | ppmv             | ppmv             | ppmv             |
| Dichlorodifluoromethane (CFC-12)                | 0.10            | 2.30             | 2.28             | 2.25             |
| 1,2-Dichlorotetrafluoroethane (CFC-114)         | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113) | 0.10            | BDL              | BDL              | BDL              |
| Trichlorofluoromethane (CFC-11)                 | 0.10            | BDL              | BDL              | BDL              |
| Chloromethane                                   | 0.10            | BDL              | BDL              | BDL              |
| Dichloromethane (Methylene Chloride)            | 0.10            | BDL              | BDL              | BDL              |
| Chloroform                                      | 0.10            | BDL              | BDL              | BDL              |
| Carbon Tetrachloride                            | 0.10            | BDL              | BDL              | BDL              |
| Chloroethane                                    | 0.10            | 0.31             | 0.30             | 0.31             |
| 1,1-Dichloroethane                              | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichloroethane                              | 0.10            | BDL              | BDL              | BDL              |
| 1,1,1-Trichloroethane                           | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2-Trichloroethane                           | 0.10            | BDL              | BDL              | BDL              |
| 1,1,1,2-Tetrachloroethane                       | 0.10            | BDL              | BDL              | BDL              |
| 1,1,2,2-Tetrachloroethane                       | 0.10            | BDL              | BDL              | BDL              |
| Hexachloroethane                                | 0.10            | BDL              | BDL              | BDL              |
| Chloroethene (Vinyl Chloride)                   | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloroethene                              | 0.10            | BDL              | BDL              | BDL              |
| cis-1,2-Dichloroethene                          | 0.10            | BDL              | BDL              | BDL              |
| trans-1,2-Dichloroethene                        | 0.10            | BDL              | BDL              | BDL              |
| Trichloroethene                                 | 0.10            | BDL              | BDL              | BDL              |
| Tetrachloroethene                               | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichloropropane                             | 0.10            | BDL              | BDL              | BDL              |
| 2,2-Dichloropropane                             | 0.10            | BDL              | BDL              | BDL              |
| 1,2,3-Trichloropropane                          | 0.10            | BDL              | BDL              | BDL              |
| 3-Chloropropene                                 | 0.10            | BDL              | BDL              | BDL              |
| 1,1-Dichloropropene                             | 0.10            | BDL              | BDL              | BDL              |
| cis-1,3-Dichloropropene                         | 0.10            | BDL              | BDL              | BDL              |
| trans-1,3-Dichloropropene                       | 0.10            | BDL              | BDL              | BDL              |
| Bromomethane                                    | 0.10            | BDL              | BDL              | BDL              |
| Dibromomethane                                  | 0.10            | BDL              | BDL              | BDL              |
| Bromoform                                       | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dibromoethane                               | 0.10            | BDL              | BDL              | BDL              |
| Bromochloromethane                              | 0.10            | BDL              | BDL              | BDL              |
| Bromodichloromethane                            | 0.10            | BDL              | BDL              | BDL              |
| Dibromochloromethane                            | 0.10            | BDL              | BDL              | BDL              |
| Chlorobenzene                                   | 0.10            | BDL              | BDL              | BDL              |
| 1,2-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |
| 1,3-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |
| 1,4-Dichlorobenzene                             | 0.10            | BDL              | BDL              | BDL              |

The results within this report relate only to the items tested.

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## TO-14 Halocarbon and Volatile Organic Compound Analysis

| Component Name              | Detection Limit | 111225-001<br>Processed Gas 01<br>3/31/11 1635<br>Landfill #9 | 111225-002<br>Processed Gas 02<br>3/31/11 1637<br>Landfill #9 | 111225-003<br>Processed Gas 03<br>3/31/11 1639<br>Landfill #9 |
|-----------------------------|-----------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
|                             |                 | ppmv                                                          | ppmv                                                          | ppmv                                                          |
| 1,2,3-Trichlorobenzene      | 0.10            | BDL                                                           | BDL                                                           | BDL                                                           |
| 1,2,4-Trichlorobenzene      | 0.10            | BDL                                                           | BDL                                                           | BDL                                                           |
| Bromobenzene                | 0.10            | BDL                                                           | BDL                                                           | BDL                                                           |
| 2-Chlorotoluene             | 0.10            | BDL                                                           | BDL                                                           | BDL                                                           |
| 4-Chlorotoluene             | 0.10            | BDL                                                           | BDL                                                           | BDL                                                           |
| 1,2-Dibromo-3-chloropropene | 0.10            | BDL                                                           | BDL                                                           | BDL                                                           |
| Hexachloro-1,3-butadiene    | 0.10            | BDL                                                           | BDL                                                           | BDL                                                           |
| 1,3-Butadiene               | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| Acrylonitrile               | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| Benzene                     | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| Toluene                     | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| Ethylbenzene                | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| m,p-Xylene                  | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| o-Xylene                    | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| Styrene                     | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| i-Propylbenzene             | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| 4-Ethyltoluene              | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| n-Propylbenzene             | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| 1,3,5-Trimethylbenzene      | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| t-Butylbenzene              | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| 1,2,4-Trimethylbenzene      | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| s-Butylbenzene              | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| p-Isopropyltoluene          | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| n-Butylbenzene              | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| Naphthalene                 | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| Pyridine                    | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |
| Nitrobenzene                | 1.0             | BDL                                                           | BDL                                                           | BDL                                                           |

BDL = Below Detection Limit

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## Semi- Volatile Organic Compound Analysis

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| Analyte                       | detection<br>limit | 101694-004         | 101694-005         | 101694-006         |   |
|-------------------------------|--------------------|--------------------|--------------------|--------------------|---|
|                               |                    | Processed Gas 01   | Processed Gas 02   | Processed Gas 03   |   |
|                               |                    | 11/01/10 0957-1357 | 11/01/10 0957-1357 | 11/01/10 1410-1810 |   |
|                               |                    | Landfill #1        | Landfill #1        | Landfill #1        |   |
|                               |                    | ppbv               | ppbv               | ppbv               |   |
| N-nitrosodimethylamine        | 1                  | BDL                | BDL                | BDL                |   |
| Phenol                        | 1                  | BDL                | BDL                | BDL                |   |
| Aniline                       | 1                  | BDL                | BDL                | BDL                |   |
| Bis(2-Chloroethyl) ether      | 1                  | BDL                | BDL                | BDL                |   |
| 2-Chlorophenol                | 1                  | BDL                | BDL                | BDL                |   |
| Benzyl Alcohol                | 1                  | BDL                | BDL                | BDL                |   |
| 2-methylphenol                | 1                  | BDL                | BDL                | BDL                |   |
| bis(2-chloroisopropyl)ether   | 1                  | BDL                | BDL                | BDL                |   |
| N-Nitroso-di-n-propylamine    | 1                  | BDL                | BDL                | BDL                |   |
| 4-methylphenol/3-methylphenol | 1                  | BDL                | BDL                | BDL                |   |
| Isophorone                    | 1                  | BDL                | BDL                | BDL                |   |
| 2-nitrophenol                 | 1                  | BDL                | BDL                | BDL                |   |
| 2,4-dimethylphenol            | 1                  | BDL                | BDL                | BDL                |   |
| Bis(2-chloroethoxy)methane    | 1                  | BDL                | BDL                | BDL                |   |
| 2,4-dichlorophenol            | 1                  | BDL                | BDL                | BDL                |   |
| 4-Chloroaniline               | 1                  | BDL                | BDL                | BDL                |   |
| 4-chloro-3-methylphenol       | 1                  | BDL                | BDL                | BDL                |   |
| 2-methylnaphthalene           | 1                  | BDL                | BDL                | BDL                |   |
| 1-methylnaphthalene           | 1                  | BDL                | BDL                | BDL                |   |
| Hexachlorocyclopentadiene     | 1                  | BDL                | BDL                | BDL                |   |
| 2,4,6-trichlorophenol         | 1                  | BDL                | BDL                | BDL                |   |
| 2,4,5-trichlorophenol         | 1                  | BDL                | BDL                | BDL                |   |
| 2-chloronaphthalene           | 1                  | BDL                | BDL                | BDL                |   |
| 2-Nitroaniline                | 1                  | BDL                | BDL                | BDL                |   |
| 1,4-dinitrobenzene            | 1                  | BDL                | BDL                | BDL                |   |
| Dimethyl phthalate            | 1                  | BDL                | BDL                | BDL                |   |
| 1,3-dinitrobenzene            | 1                  | BDL                | BDL                | BDL                |   |
| 2,6-dinitrotoluene            | 1                  | BDL                | BDL                | BDL                |   |
| Acenaphthylene                | 1                  | BDL                | BDL                | BDL                |   |
| 1,2-Dinitrobenzene            | 1                  | BDL                | BDL                | BDL                |   |
| 3-Nitroaniline                | 1                  | BDL                | BDL                | BDL                |   |
| Acenaphthene                  | 1                  | BDL                | BDL                | BDL                |   |
| 2,4-dinitrophenol             | 1                  | BDL                | BDL                | BDL                |   |
| 4-nitrophenol                 | 1                  | BDL                | BDL                | BDL                |   |
| Dibenzofuran                  | 1                  | BDL                | BDL                | BDL                |   |
| 2,4-dinitrotoluene            | 1                  | BDL                | BDL                | BDL                |   |
| 2,3,4,6-Tetrachlorophenol     | 1                  | BDL                | BDL                | BDL                |   |
| 2,3,5,6-Tetrachlorophenol     | 1                  | BDL                | BDL                | BDL                |   |
| Diethyl Phthalate             | 1                  | BDL                | B                  | BDL                | B |

The results within this report relate only to the items tested.

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## Semi- Volatile Organic Compound Analysis

| Analyte                     | detection<br>limit | 101694-004         |     | 101694-005         |   | 101694-006         |   |
|-----------------------------|--------------------|--------------------|-----|--------------------|---|--------------------|---|
|                             |                    | Processed Gas 01   |     | Processed Gas 02   |   | Processed Gas 03   |   |
|                             |                    | 11/01/10 0957-1357 |     | 11/01/10 0957-1357 |   | 11/01/10 1410-1810 |   |
|                             |                    | Landfill #1        |     | Landfill #1        |   | Landfill #1        |   |
|                             |                    | ppbv               |     | ppbv               |   | ppbv               |   |
| Fluorene                    | 1                  | BDL                |     | BDL                |   | BDL                |   |
| 4-chlorophenyl phenyl ether | 1                  | BDL                |     | BDL                |   | BDL                |   |
| 4-Nitroaniline              | 1                  | BDL                |     | BDL                |   | BDL                |   |
| 4,6-dinitro-2-methylphenol  | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Diphenylamine               | 1                  | BDL                |     | BDL                |   | BDL                |   |
| n-Nitrosodiphenylamine      | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Azobenzene                  | 1                  | BDL                |     | BDL                |   | BDL                |   |
| 4-Bromophenyl phenyl ether  | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Hexachlorobenzene           | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Pentachlorophenol           | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Phenanthrene                | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Anthracene                  | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Carbazole                   | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Di-n-butyl phthalate        | 1                  | 2.3                | J,B | 1.2                | B | 3.1                | B |
| Fluoranthene                | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Pyrene                      | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Benzyl butyl phthalate      | 1                  | 0.3                | J   | BDL                |   | 0.3                | J |
| Bis(2-ethylhexyl)adipate    | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Benzo(a)anthracene          | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Chrysene                    | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Bis(2-ethylhexyl)phthalate  | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Di-n-octyl phthalate        | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Benzo(b)fluoranthene        | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Benzo(k)fluoranthene        | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Benzo(a)pyrene              | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Indeno(1,2,3-cd)pyrene      | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Dibenzo(a,h)anthracene      | 1                  | BDL                |     | BDL                |   | BDL                |   |
| Benzo[g,h,i]perylene        | 1                  | BDL                |     | BDL                |   | BDL                |   |

BDL - Below Detection Limit

B - Analyte detected in the Blank.

J - Estimated value; detected between the RL and DL.

D - Analyte reported from a diluted extract.

E - Estimate, result detected above calibration range.

I - Concentration/Peak ID uncertain due to potential interference.

DRAFT

## Semi- Volatile Organic Compound Analysis

| Analyte                       | detection<br>limit | 101786-004         | 101786-005         | 101786-006         |
|-------------------------------|--------------------|--------------------|--------------------|--------------------|
|                               |                    | Processed Gas 01   | Processed Gas 02   | Processed Gas 03   |
|                               |                    | 12/14/10 1004-1404 | 12/14/10 1004-1404 | 12/14/10 1423-1823 |
|                               |                    | Landfill #5        | Landfill #5        | Landfill #5        |
|                               |                    | ppbv               | ppbv               | ppbv               |
| N-nitrosodimethylamine        | 1                  | BDL                | BDL                | BDL                |
| Phenol                        | 1                  | BDL                | BDL                | BDL                |
| Aniline                       | 1                  | BDL                | BDL                | BDL                |
| Bis(2-Chloroethyl) ether      | 1                  | BDL                | BDL                | BDL                |
| 2-Chlorophenol                | 1                  | BDL                | BDL                | BDL                |
| Benzyl Alcohol                | 1                  | BDL                | BDL                | BDL                |
| 2-methylphenol                | 1                  | BDL                | BDL                | BDL                |
| bis(2-chloroisopropyl)ether   | 1                  | BDL                | BDL                | BDL                |
| N-Nitroso-di-n-propylamine    | 1                  | BDL                | BDL                | BDL                |
| 4-methylphenol/3-methylphenol | 1                  | BDL                | BDL                | BDL                |
| Isophorone                    | 1                  | BDL                | BDL                | BDL                |
| 2-nitrophenol                 | 1                  | BDL                | BDL                | BDL                |
| 2,4-dimethylphenol            | 1                  | BDL                | BDL                | BDL                |
| Bis(2-chloroethoxy)methane    | 1                  | BDL                | BDL                | BDL                |
| 2,4-dichlorophenol            | 1                  | BDL                | BDL                | BDL                |
| 4-Chloroaniline               | 1                  | BDL                | BDL                | BDL                |
| 4-chloro-3-methylphenol       | 1                  | BDL                | BDL                | BDL                |
| 2-methylnaphthalene           | 1                  | BDL                | BDL                | BDL                |
| 1-methylnaphthalene           | 1                  | BDL                | BDL                | BDL                |
| Hexachlorocyclopentadiene     | 1                  | BDL                | BDL                | BDL                |
| 2,4,6-trichlorophenol         | 1                  | BDL                | BDL                | BDL                |
| 2,4,5-trichlorophenol         | 1                  | BDL                | BDL                | BDL                |
| 2-chloronaphthalene           | 1                  | BDL                | BDL                | BDL                |
| 2-Nitroaniline                | 1                  | BDL                | BDL                | BDL                |
| 1,4-dinitrobenzene            | 1                  | BDL                | BDL                | BDL                |
| Dimethyl phthalate            | 1                  | BDL                | BDL                | BDL                |
| 1,3-dinitrobenzene            | 1                  | BDL                | BDL                | BDL                |
| 2,6-dinitrotoluene            | 1                  | BDL                | BDL                | BDL                |
| Acenaphthylene                | 1                  | BDL                | BDL                | BDL                |
| 1,2-Dinitrobenzene            | 1                  | BDL                | BDL                | BDL                |
| 3-Nitroaniline                | 1                  | BDL                | BDL                | BDL                |
| Acenaphthene                  | 1                  | BDL                | BDL                | BDL                |
| 2,4-dinitrophenol             | 1                  | BDL                | BDL                | BDL                |
| 4-nitrophenol                 | 1                  | BDL                | BDL                | BDL                |
| Dibenzofuran                  | 1                  | BDL                | BDL                | BDL                |
| 2,4-dinitrotoluene            | 1                  | BDL                | BDL                | BDL                |
| 2,3,4,6-Tetrachlorophenol     | 1                  | BDL                | BDL                | BDL                |
| 2,3,5,6-Tetrachlorophenol     | 1                  | BDL                | BDL                | BDL                |
| Diethyl Phthalate             | 1                  | BDL                | BDL                | BDL                |

The results within this report relate only to the items tested.

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## Semi- Volatile Organic Compound Analysis

| Analyte                     | detection<br>limit | 101786-004         | 101786-005         | 101786-006         |
|-----------------------------|--------------------|--------------------|--------------------|--------------------|
|                             |                    | Processed Gas 01   | Processed Gas 02   | Processed Gas 03   |
|                             |                    | 12/14/10 1004-1404 | 12/14/10 1004-1404 | 12/14/10 1423-1823 |
|                             |                    | Landfill #5        | Landfill #5        | Landfill #5        |
|                             |                    | ppbv               | ppbv               | ppbv               |
| Fluorene                    | 1                  | BDL                | BDL                | BDL                |
| 4-chlorophenyl phenyl ether | 1                  | BDL                | BDL                | BDL                |
| 4-Nitroaniline              | 1                  | BDL                | BDL                | BDL                |
| 4,6-dinitro-2-methylphenol  | 1                  | BDL                | BDL                | BDL                |
| Diphenylamine               | 1                  | BDL                | BDL                | BDL                |
| n-Nitrosodiphenylamine      | 1                  | BDL                | BDL                | BDL                |
| Azobenzene                  | 1                  | BDL                | BDL                | BDL                |
| 4-Bromophenyl phenyl ether  | 1                  | BDL                | BDL                | BDL                |
| Hexachlorobenzene           | 1                  | BDL                | BDL                | BDL                |
| Pentachlorophenol           | 1                  | BDL                | BDL                | BDL                |
| Phenanthrene                | 1                  | BDL                | BDL                | BDL                |
| Anthracene                  | 1                  | BDL                | BDL                | BDL                |
| Carbazole                   | 1                  | BDL                | BDL                | BDL                |
| Di-n-butyl phthalate        | 1                  | 2.5                | 1.9                | 3.3                |
| Fluoranthene                | 1                  | BDL                | BDL                | BDL                |
| Pyrene                      | 1                  | BDL                | BDL                | BDL                |
| Benzyl butyl phthalate      | 1                  | BDL                | BDL                | 0.3                |
| Bis(2-ethylhexyl)adipate    | 1                  | BDL                | BDL                | BDL                |
| Benzo(a)anthracene          | 1                  | BDL                | BDL                | BDL                |
| Chrysene                    | 1                  | BDL                | BDL                | BDL                |
| Bis(2-ethylhexyl)phthalate  | 1                  | 0.4                | 0.5                | 0.6                |
| Di-n-octyl phthalate        | 1                  | BDL                | BDL                | BDL                |
| Benzo(b)fluoranthene        | 1                  | BDL                | BDL                | BDL                |
| Benzo(k)fluoranthene        | 1                  | BDL                | BDL                | BDL                |
| Benzo(a)pyrene              | 1                  | BDL                | BDL                | BDL                |
| Indeno(1,2,3-cd)pyrene      | 1                  | BDL                | BDL                | BDL                |
| Dibenzo(a,h)anthracene      | 1                  | BDL                | BDL                | BDL                |
| Benzo[g,h,i]perylene        | 1                  | BDL                | BDL                | BDL                |

BDL - Below Detection Limit

B - Analyte detected in the Blank.

J - Estimated value; detected between the RL and DL.

D - Analyte reported from a diluted extract.

E - Estimate, result detected above calibration range.

I - Concentration/Peak ID uncertain due to potential interference.

DRAFT

## Semi- Volatile Organic Compound Analysis

| Analyte                       | detection<br>limit | 101788-004         | 101788-005         | 101788-006         |
|-------------------------------|--------------------|--------------------|--------------------|--------------------|
|                               |                    | Processed Gas 01   | Processed Gas 02   | Processed Gas 03   |
|                               |                    | 12/15/10 0915-1315 | 12/15/10 0915-1315 | 12/15/10 0915-1315 |
|                               |                    | Landfill #6        | Landfill #6        | Landfill #6        |
|                               |                    | ppbv               | ppbv               | ppbv               |
| N-nitrosodimethylamine        | 1                  | BDL                | BDL                | BDL                |
| Phenol                        | 1                  | BDL                | BDL                | BDL                |
| Aniline                       | 1                  | BDL                | BDL                | BDL                |
| Bis(2-Chloroethyl) ether      | 1                  | BDL                | BDL                | BDL                |
| 2-Chlorophenol                | 1                  | BDL                | BDL                | BDL                |
| Benzyl Alcohol                | 1                  | BDL                | BDL                | BDL                |
| 2-methylphenol                | 1                  | BDL                | BDL                | BDL                |
| bis(2-chloroisopropyl)ether   | 1                  | BDL                | BDL                | BDL                |
| N-Nitroso-di-n-propylamine    | 1                  | BDL                | BDL                | BDL                |
| 4-methylphenol/3-methylphenol | 1                  | BDL                | BDL                | BDL                |
| Isophorone                    | 1                  | BDL                | BDL                | BDL                |
| 2-nitrophenol                 | 1                  | BDL                | BDL                | BDL                |
| 2,4-dimethylphenol            | 1                  | BDL                | BDL                | BDL                |
| Bis(2-chloroethoxy)methane    | 1                  | BDL                | BDL                | BDL                |
| 2,4-dichlorophenol            | 1                  | BDL                | BDL                | BDL                |
| 4-Chloroaniline               | 1                  | BDL                | BDL                | BDL                |
| 4-chloro-3-methylphenol       | 1                  | BDL                | BDL                | BDL                |
| 2-methylnaphthalene           | 1                  | 0.3                | 0.4                | BDL                |
| 1-methylnaphthalene           | 1                  | BDL                | BDL                | BDL                |
| Hexachlorocyclopentadiene     | 1                  | BDL                | BDL                | BDL                |
| 2,4,6-trichlorophenol         | 1                  | BDL                | BDL                | BDL                |
| 2,4,5-trichlorophenol         | 1                  | BDL                | BDL                | BDL                |
| 2-chloronaphthalene           | 1                  | BDL                | BDL                | BDL                |
| 2-Nitroaniline                | 1                  | BDL                | BDL                | BDL                |
| 1,4-dinitrobenzene            | 1                  | BDL                | BDL                | BDL                |
| Dimethyl phthalate            | 1                  | BDL                | BDL                | BDL                |
| 1,3-dinitrobenzene            | 1                  | BDL                | BDL                | BDL                |
| 2,6-dinitrotoluene            | 1                  | BDL                | BDL                | BDL                |
| Acenaphthylene                | 1                  | BDL                | BDL                | BDL                |
| 1,2-Dinitrobenzene            | 1                  | BDL                | BDL                | BDL                |
| 3-Nitroaniline                | 1                  | BDL                | BDL                | BDL                |
| Acenaphthene                  | 1                  | BDL                | BDL                | BDL                |
| 2,4-dinitrophenol             | 1                  | BDL                | BDL                | BDL                |
| 4-nitrophenol                 | 1                  | BDL                | BDL                | BDL                |
| Dibenzofuran                  | 1                  | BDL                | BDL                | BDL                |
| 2,4-dinitrotoluene            | 1                  | BDL                | BDL                | BDL                |
| 2,3,4,6-Tetrachlorophenol     | 1                  | BDL                | BDL                | BDL                |
| 2,3,5,6-Tetrachlorophenol     | 1                  | BDL                | BDL                | BDL                |
| Diethyl Phthalate             | 1                  | BDL                | BDL                | BDL                |

The results within this report relate only to the items tested.

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## Semi- Volatile Organic Compound Analysis

| Analyte                     | detection<br>limit | 101788-004         | 101788-005         | 101788-006         |
|-----------------------------|--------------------|--------------------|--------------------|--------------------|
|                             |                    | Processed Gas 01   | Processed Gas 02   | Processed Gas 03   |
|                             |                    | 12/15/10 0915-1315 | 12/15/10 0915-1315 | 12/15/10 0915-1315 |
|                             |                    | Landfill #6        | Landfill #6        | Landfill #6        |
|                             |                    | ppbv               | ppbv               | ppbv               |
| Fluorene                    | 1                  | BDL                | BDL                | BDL                |
| 4-chlorophenyl phenyl ether | 1                  | BDL                | BDL                | BDL                |
| 4-Nitroaniline              | 1                  | BDL                | BDL                | BDL                |
| 4,6-dinitro-2-methylphenol  | 1                  | BDL                | BDL                | BDL                |
| Diphenylamine               | 1                  | BDL                | BDL                | BDL                |
| n-Nitrosodiphenylamine      | 1                  | BDL                | BDL                | BDL                |
| Azobenzene                  | 1                  | BDL                | BDL                | BDL                |
| 4-Bromophenyl phenyl ether  | 1                  | BDL                | BDL                | BDL                |
| Hexachlorobenzene           | 1                  | BDL                | BDL                | BDL                |
| Pentachlorophenol           | 1                  | BDL                | BDL                | BDL                |
| Phenanthrene                | 1                  | BDL                | BDL                | BDL                |
| Anthracene                  | 1                  | BDL                | BDL                | BDL                |
| Carbazole                   | 1                  | BDL                | BDL                | BDL                |
| Di-n-butyl phthalate        | 1                  | BDL                | B                  | 0.5                |
| Fluoranthene                | 1                  | BDL                | BDL                | BDL                |
| Pyrene                      | 1                  | BDL                | BDL                | BDL                |
| Benzyl butyl phthalate      | 1                  | BDL                | BDL                | BDL                |
| Bis(2-ethylhexyl)adipate    | 1                  | BDL                | BDL                | BDL                |
| Benzo(a)anthracene          | 1                  | BDL                | BDL                | BDL                |
| Chrysene                    | 1                  | BDL                | BDL                | BDL                |
| Bis(2-ethylhexyl)phthalate  | 1                  | BDL                | 0.3                | B                  |
| Di-n-octyl phthalate        | 1                  | BDL                | BDL                | BDL                |
| Benzo(b)fluoranthene        | 1                  | BDL                | BDL                | BDL                |
| Benzo(k)fluoranthene        | 1                  | BDL                | BDL                | BDL                |
| Benzo(a)pyrene              | 1                  | BDL                | BDL                | BDL                |
| Indeno(1,2,3-cd)pyrene      | 1                  | BDL                | BDL                | BDL                |
| Dibenzo(a,h)anthracene      | 1                  | BDL                | BDL                | BDL                |
| Benzo[g,h,i]perylene        | 1                  | BDL                | BDL                | BDL                |

BDL - Below Detection Limit

B - Analyte detected in the Blank.

J - Estimated value; detected between the RL and DL.

D - Analyte reported from a diluted extract.

E - Estimate, result detected above calibration range.

I - Concentration/Peak ID uncertain due to potential interference.

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## Semi- Volatile Organic Compound Analysis

| Analyte                       | detection<br>limit | 101793-004         | 101793-005         | 101793-006         |
|-------------------------------|--------------------|--------------------|--------------------|--------------------|
|                               |                    | Processed Gas 01   | Processed Gas 02   | Processed Gas 03   |
|                               |                    | 12/17/10 0934-1334 | 12/17/10 0934-1334 | 12/17/10 0934-1334 |
|                               |                    | Landfill #7        | Landfill #7        | Landfill #7        |
|                               |                    | ppbv               | ppbv               | ppbv               |
| N-nitrosodimethylamine        | 1                  | BDL                | BDL                | BDL                |
| Phenol                        | 1                  | BDL                | BDL                | BDL                |
| Aniline                       | 1                  | BDL                | BDL                | BDL                |
| Bis(2-Chloroethyl) ether      | 1                  | BDL                | BDL                | BDL                |
| 2-Chlorophenol                | 1                  | BDL                | BDL                | BDL                |
| Benzyl Alcohol                | 1                  | BDL                | BDL                | BDL                |
| 2-methylphenol                | 1                  | BDL                | BDL                | BDL                |
| bis(2-chloroisopropyl)ether   | 1                  | BDL                | BDL                | BDL                |
| N-Nitroso-di-n-propylamine    | 1                  | BDL                | BDL                | BDL                |
| 4-methylphenol/3-methylphenol | 1                  | BDL                | BDL                | BDL                |
| Isophorone                    | 1                  | BDL                | BDL                | BDL                |
| 2-nitrophenol                 | 1                  | BDL                | BDL                | BDL                |
| 2,4-dimethylphenol            | 1                  | BDL                | BDL                | BDL                |
| Bis(2-chloroethoxy)methane    | 1                  | BDL                | BDL                | BDL                |
| 2,4-dichlorophenol            | 1                  | BDL                | BDL                | BDL                |
| 4-Chloroaniline               | 1                  | BDL                | BDL                | BDL                |
| 4-chloro-3-methylphenol       | 1                  | BDL                | BDL                | BDL                |
| 2-methylnaphthalene           | 1                  | BDL                | BDL                | BDL                |
| 1-methylnaphthalene           | 1                  | BDL                | BDL                | BDL                |
| Hexachlorocyclopentadiene     | 1                  | BDL                | BDL                | BDL                |
| 2,4,6-trichlorophenol         | 1                  | BDL                | BDL                | BDL                |
| 2,4,5-trichlorophenol         | 1                  | BDL                | BDL                | BDL                |
| 2-chloronaphthalene           | 1                  | BDL                | BDL                | BDL                |
| 2-Nitroaniline                | 1                  | BDL                | BDL                | BDL                |
| 1,4-dinitrobenzene            | 1                  | BDL                | BDL                | BDL                |
| Dimethyl phthalate            | 1                  | BDL                | BDL                | BDL                |
| 1,3-dinitrobenzene            | 1                  | BDL                | BDL                | BDL                |
| 2,6-dinitrotoluene            | 1                  | BDL                | BDL                | BDL                |
| Acenaphthylene                | 1                  | BDL                | BDL                | BDL                |
| 1,2-Dinitrobenzene            | 1                  | BDL                | BDL                | BDL                |
| 3-Nitroaniline                | 1                  | BDL                | BDL                | BDL                |
| Acenaphthene                  | 1                  | BDL                | BDL                | BDL                |
| 2,4-dinitrophenol             | 1                  | BDL                | BDL                | BDL                |
| 4-nitrophenol                 | 1                  | BDL                | BDL                | BDL                |
| Dibenzofuran                  | 1                  | BDL                | BDL                | BDL                |
| 2,4-dinitrotoluene            | 1                  | BDL                | BDL                | BDL                |
| 2,3,4,6-Tetrachlorophenol     | 1                  | BDL                | BDL                | BDL                |
| 2,3,5,6-Tetrachlorophenol     | 1                  | BDL                | BDL                | BDL                |
| Diethyl Phthalate             | 1                  | BDL                | BDL                | BDL                |

The results within this report relate only to the items tested.

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## Semi- Volatile Organic Compound Analysis

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| Analyte                     | detection<br>limit | 101793-004         | 101793-005         | 101793-006         |   |
|-----------------------------|--------------------|--------------------|--------------------|--------------------|---|
|                             |                    | Processed Gas 01   | Processed Gas 02   | Processed Gas 03   |   |
|                             |                    | 12/17/10 0934-1334 | 12/17/10 0934-1334 | 12/17/10 0934-1334 |   |
|                             |                    | Landfill #7        | Landfill #7        | Landfill #7        |   |
|                             |                    | ppbv               | ppbv               | ppbv               |   |
| Fluorene                    | 1                  | BDL                | BDL                | BDL                |   |
| 4-chlorophenyl phenyl ether | 1                  | BDL                | BDL                | BDL                |   |
| 4-Nitroaniline              | 1                  | BDL                | BDL                | BDL                |   |
| 4,6-dinitro-2-methylphenol  | 1                  | BDL                | BDL                | BDL                |   |
| Diphenylamine               | 1                  | BDL                | BDL                | BDL                |   |
| n-Nitrosodiphenylamine      | 1                  | BDL                | BDL                | BDL                |   |
| Azobenzene                  | 1                  | BDL                | BDL                | BDL                |   |
| 4-Bromophenyl phenyl ether  | 1                  | BDL                | BDL                | BDL                |   |
| Hexachlorobenzene           | 1                  | BDL                | BDL                | BDL                |   |
| Pentachlorophenol           | 1                  | BDL                | BDL                | BDL                |   |
| Phenanthrene                | 1                  | BDL                | BDL                | BDL                |   |
| Anthracene                  | 1                  | BDL                | BDL                | BDL                |   |
| Carbazole                   | 1                  | BDL                | BDL                | BDL                |   |
| Di-n-butyl phthalate        | 1                  | BDL                | B                  | BDL                | B |
| Fluoranthene                | 1                  | BDL                | BDL                | BDL                |   |
| Pyrene                      | 1                  | BDL                | BDL                | BDL                |   |
| Benzyl butyl phthalate      | 1                  | BDL                | BDL                | BDL                |   |
| Bis(2-ethylhexyl)adipate    | 1                  | BDL                | BDL                | BDL                |   |
| Benzo(a)anthracene          | 1                  | BDL                | BDL                | BDL                |   |
| Chrysene                    | 1                  | BDL                | BDL                | BDL                |   |
| Bis(2-ethylhexyl)phthalate  | 1                  | BDL                | B                  | BDL                | B |
| Di-n-octyl phthalate        | 1                  | BDL                | BDL                | BDL                |   |
| Benzo(b)fluoranthene        | 1                  | BDL                | BDL                | BDL                |   |
| Benzo(k)fluoranthene        | 1                  | BDL                | BDL                | BDL                |   |
| Benzo(a)pyrene              | 1                  | BDL                | BDL                | BDL                |   |
| Indeno(1,2,3-cd)pyrene      | 1                  | BDL                | BDL                | BDL                |   |
| Dibenzo(a,h)anthracene      | 1                  | BDL                | BDL                | BDL                |   |
| Benzo[g,h,i]perylene        | 1                  | BDL                | BDL                | BDL                |   |

BDL - Below Detection Limit

B - Analyte detected in the Blank.

J - Estimated value; detected between the RL and DL.

D - Analyte reported from a diluted extract.

E - Estimate, result detected above calibration range.

I - Concentration/Peak ID uncertain due to potential interference.

DRAFT

## Semi- Volatile Organic Compound Analysis

| Analyte                       | detection<br>limit | 111212-011        | 111212-012        | 111212-013        |
|-------------------------------|--------------------|-------------------|-------------------|-------------------|
|                               |                    | Processed Gas 01  | Processed Gas 02  | Processed Gas 03  |
|                               |                    | 3/28/11 0919-1320 | 3/28/11 0919-1320 | 3/28/11 0919-1320 |
|                               |                    | Landfill #8       | Landfill #8       | Landfill #8       |
|                               |                    | ppbv              | ppbv              | ppbv              |
| N-nitrosodimethylamine        | 1                  | BDL               | BDL               | BDL               |
| Phenol                        | 1                  | BDL               | BDL               | BDL               |
| Aniline                       | 1                  | BDL               | BDL               | BDL               |
| Bis(2-Chloroethyl) ether      | 1                  | BDL               | BDL               | BDL               |
| 2-Chlorophenol                | 1                  | BDL               | BDL               | BDL               |
| Benzyl Alcohol                | 1                  | BDL               | BDL               | BDL               |
| 2-methylphenol                | 1                  | BDL               | BDL               | BDL               |
| bis(2-chloroisopropyl)ether   | 1                  | BDL               | BDL               | BDL               |
| N-Nitroso-di-n-propylamine    | 1                  | BDL               | BDL               | BDL               |
| 4-methylphenol/3-methylphenol | 1                  | BDL               | BDL               | BDL               |
| Isophorone                    | 1                  | BDL               | BDL               | BDL               |
| 2-nitrophenol                 | 1                  | BDL               | BDL               | BDL               |
| 2,4-dimethylphenol            | 1                  | BDL               | BDL               | BDL               |
| Bis(2-chloroethoxy)methane    | 1                  | BDL               | BDL               | BDL               |
| 2,4-dichlorophenol            | 1                  | BDL               | BDL               | BDL               |
| 4-Chloroaniline               | 1                  | BDL               | BDL               | BDL               |
| 4-chloro-3-methylphenol       | 1                  | BDL               | BDL               | BDL               |
| 2-methylnaphthalene           | 1                  | BDL               | BDL               | BDL               |
| 1-methylnaphthalene           | 1                  | BDL               | BDL               | BDL               |
| Hexachlorocyclopentadiene     | 1                  | BDL               | BDL               | BDL               |
| 2,4,6-trichlorophenol         | 1                  | BDL               | BDL               | BDL               |
| 2,4,5-trichlorophenol         | 1                  | BDL               | BDL               | BDL               |
| 2-chloronaphthalene           | 1                  | BDL               | BDL               | BDL               |
| 2-Nitroaniline                | 1                  | BDL               | BDL               | BDL               |
| 1,4-dinitrobenzene            | 1                  | BDL               | BDL               | BDL               |
| Dimethyl phthalate            | 1                  | BDL               | BDL               | BDL               |
| 1,3-dinitrobenzene            | 1                  | BDL               | BDL               | BDL               |
| 2,6-dinitrotoluene            | 1                  | BDL               | BDL               | BDL               |
| Acenaphthylene                | 1                  | BDL               | BDL               | BDL               |
| 1,2-Dinitrobenzene            | 1                  | BDL               | BDL               | BDL               |
| 3-Nitroaniline                | 1                  | BDL               | BDL               | BDL               |
| Acenaphthene                  | 1                  | BDL               | BDL               | BDL               |
| 2,4-dinitrophenol             | 1                  | BDL               | BDL               | BDL               |
| 4-nitrophenol                 | 1                  | BDL               | BDL               | BDL               |
| Dibenzofuran                  | 1                  | BDL               | BDL               | BDL               |
| 2,4-dinitrotoluene            | 1                  | BDL               | BDL               | BDL               |
| 2,3,4,6-Tetrachlorophenol     | 1                  | BDL               | BDL               | BDL               |
| 2,3,5,6-Tetrachlorophenol     | 1                  | BDL               | BDL               | BDL               |
| Diethyl Phthalate             | 1                  | BDL               | BDL               | BDL               |

The results within this report relate only to the items tested.

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## Semi- Volatile Organic Compound Analysis

| Analyte                     | detection<br>limit | 111212-011        |     | 111212-012        |   | 111212-013        |     |
|-----------------------------|--------------------|-------------------|-----|-------------------|---|-------------------|-----|
|                             |                    | Processed Gas 01  |     | Processed Gas 02  |   | Processed Gas 03  |     |
|                             |                    | 3/28/11 0919-1320 |     | 3/28/11 0919-1320 |   | 3/28/11 0919-1320 |     |
|                             |                    | Landfill #8       |     | Landfill #8       |   | Landfill #8       |     |
|                             |                    | ppbv              |     | ppbv              |   | ppbv              |     |
| Fluorene                    | 1                  | BDL               |     | BDL               |   | BDL               |     |
| 4-chlorophenyl phenyl ether | 1                  | BDL               |     | BDL               |   | BDL               |     |
| 4-Nitroaniline              | 1                  | BDL               |     | BDL               |   | BDL               |     |
| 4,6-dinitro-2-methylphenol  | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Diphenylamine               | 1                  | BDL               |     | BDL               |   | BDL               |     |
| n-Nitrosodiphenylamine      | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Azobenzene                  | 1                  | BDL               |     | BDL               |   | BDL               |     |
| 4-Bromophenyl phenyl ether  | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Hexachlorobenzene           | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Pentachlorophenol           | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Phenanthrene                | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Anthracene                  | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Carbazole                   | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Di-n-butyl phthalate        | 1                  | 1.4               | B   | 1.0               | B | 1.0               | B   |
| Fluoranthene                | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Pyrene                      | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Benzyl butyl phthalate      | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Bis(2-ethylhexyl)adipate    | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Benzo(a)anthracene          | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Chrysene                    | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Bis(2-ethylhexyl)phthalate  | 1                  | 0.9               | J,B | 3.4               | B | 0.6               | J,B |
| Di-n-octyl phthalate        | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Benzo(b)fluoranthene        | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Benzo(k)fluoranthene        | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Benzo(a)pyrene              | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Indeno(1,2,3-cd)pyrene      | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Dibenzo(a,h)anthracene      | 1                  | BDL               |     | BDL               |   | BDL               |     |
| Benzo[g,h,i]perylene        | 1                  | BDL               |     | BDL               |   | BDL               |     |

BDL - Below Detection Limit

B - Analyte detected in the Blank.

J - Estimated value; detected between the RL and DL.

D - Analyte reported from a diluted extract.

E - Estimate, result detected above calibration range.

I - Concentration/Peak ID uncertain due to potential interference.

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## Semi- Volatile Organic Compound Analysis

| Analyte                       | detection<br>limit | 111220-011        | 111220-012        | 111220-013        |
|-------------------------------|--------------------|-------------------|-------------------|-------------------|
|                               |                    | Processed Gas 01  | Processed Gas 02  | Processed Gas 03  |
|                               |                    | 3/29/11 1043-1450 | 3/29/11 1043-1450 | 3/29/11 1043-1450 |
|                               |                    | Landfill #7       | Landfill #7       | Landfill #7       |
|                               |                    | ppbv              | ppbv              | ppbv              |
| N-nitrosodimethylamine        | 1                  | BDL               | BDL               | BDL               |
| Phenol                        | 1                  | BDL               | BDL               | BDL               |
| Aniline                       | 1                  | BDL               | BDL               | BDL               |
| Bis(2-Chloroethyl) ether      | 1                  | BDL               | BDL               | BDL               |
| 2-Chlorophenol                | 1                  | BDL               | BDL               | BDL               |
| Benzyl Alcohol                | 1                  | BDL               | BDL               | BDL               |
| 2-methylphenol                | 1                  | BDL               | BDL               | BDL               |
| bis(2-chloroisopropyl)ether   | 1                  | BDL               | BDL               | BDL               |
| N-Nitroso-di-n-propylamine    | 1                  | BDL               | BDL               | BDL               |
| 4-methylphenol/3-methylphenol | 1                  | BDL               | BDL               | BDL               |
| Isophorone                    | 1                  | BDL               | BDL               | BDL               |
| 2-nitrophenol                 | 1                  | BDL               | BDL               | BDL               |
| 2,4-dimethylphenol            | 1                  | BDL               | BDL               | BDL               |
| Bis(2-chloroethoxy)methane    | 1                  | BDL               | BDL               | BDL               |
| 2,4-dichlorophenol            | 1                  | BDL               | BDL               | BDL               |
| 4-Chloroaniline               | 1                  | BDL               | BDL               | BDL               |
| 4-chloro-3-methylphenol       | 1                  | BDL               | BDL               | BDL               |
| 2-methylnaphthalene           | 1                  | BDL               | BDL               | BDL               |
| 1-methylnaphthalene           | 1                  | BDL               | BDL               | BDL               |
| Hexachlorocyclopentadiene     | 1                  | BDL               | BDL               | BDL               |
| 2,4,6-trichlorophenol         | 1                  | BDL               | BDL               | BDL               |
| 2,4,5-trichlorophenol         | 1                  | BDL               | BDL               | BDL               |
| 2-chloronaphthalene           | 1                  | BDL               | BDL               | BDL               |
| 2-Nitroaniline                | 1                  | BDL               | BDL               | BDL               |
| 1,4-dinitrobenzene            | 1                  | BDL               | BDL               | BDL               |
| Dimethyl phthalate            | 1                  | BDL               | BDL               | BDL               |
| 1,3-dinitrobenzene            | 1                  | BDL               | BDL               | BDL               |
| 2,6-dinitrotoluene            | 1                  | BDL               | BDL               | BDL               |
| Acenaphthylene                | 1                  | BDL               | BDL               | BDL               |
| 1,2-Dinitrobenzene            | 1                  | BDL               | BDL               | BDL               |
| 3-Nitroaniline                | 1                  | BDL               | BDL               | BDL               |
| Acenaphthene                  | 1                  | BDL               | BDL               | BDL               |
| 2,4-dinitrophenol             | 1                  | BDL               | BDL               | BDL               |
| 4-nitrophenol                 | 1                  | BDL               | BDL               | BDL               |
| Dibenzofuran                  | 1                  | BDL               | BDL               | BDL               |
| 2,4-dinitrotoluene            | 1                  | BDL               | BDL               | BDL               |
| 2,3,4,6-Tetrachlorophenol     | 1                  | BDL               | BDL               | BDL               |
| 2,3,5,6-Tetrachlorophenol     | 1                  | BDL               | BDL               | BDL               |
| Diethyl Phthalate             | 1                  | BDL               | BDL               | BDL               |

The results within this report relate only to the items tested.

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## Semi- Volatile Organic Compound Analysis

| Analyte                     | detection<br>limit | 111220-011        |   | 111220-012        |   | 111220-013        |     |
|-----------------------------|--------------------|-------------------|---|-------------------|---|-------------------|-----|
|                             |                    | Processed Gas 01  |   | Processed Gas 02  |   | Processed Gas 03  |     |
|                             |                    | 3/29/11 1043-1450 |   | 3/29/11 1043-1450 |   | 3/29/11 1043-1450 |     |
|                             |                    | Landfill #7       |   | Landfill #7       |   | Landfill #7       |     |
|                             |                    | ppbv              |   | ppbv              |   | ppbv              |     |
| Fluorene                    | 1                  | BDL               |   | BDL               |   | BDL               |     |
| 4-chlorophenyl phenyl ether | 1                  | BDL               |   | BDL               |   | BDL               |     |
| 4-Nitroaniline              | 1                  | BDL               |   | BDL               |   | BDL               |     |
| 4,6-dinitro-2-methylphenol  | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Diphenylamine               | 1                  | BDL               |   | BDL               |   | BDL               |     |
| n-Nitrosodiphenylamine      | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Azobenzene                  | 1                  | BDL               |   | BDL               |   | BDL               |     |
| 4-Bromophenyl phenyl ether  | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Hexachlorobenzene           | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Pentachlorophenol           | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Phenanthrene                | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Anthracene                  | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Carbazole                   | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Di-n-butyl phthalate        | 1                  | 1.1               | B | 1.1               | B | 0.8               | J,B |
| Fluoranthene                | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Pyrene                      | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Benzyl butyl phthalate      | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Bis(2-ethylhexyl)adipate    | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Benzo(a)anthracene          | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Chrysene                    | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Bis(2-ethylhexyl)phthalate  | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Di-n-octyl phthalate        | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Benzo(b)fluoranthene        | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Benzo(k)fluoranthene        | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Benzo(a)pyrene              | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Indeno(1,2,3-cd)pyrene      | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Dibenzo(a,h)anthracene      | 1                  | BDL               |   | BDL               |   | BDL               |     |
| Benzo[g,h,i]perylene        | 1                  | BDL               |   | BDL               |   | BDL               |     |

BDL - Below Detection Limit

B - Analyte detected in the Blank.

J - Estimated value; detected between the RL and DL.

D - Analyte reported from a diluted extract.

E - Estimate, result detected above calibration range.

I - Concentration/Peak ID uncertain due to potential interference.

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## Semi- Volatile Organic Compound Analysis

| Analyte                       | detection<br>limit | 111221-012        | 111221-013        | 111221-014        |
|-------------------------------|--------------------|-------------------|-------------------|-------------------|
|                               |                    | Processed Gas 01  | Processed Gas 02  | Processed Gas 03  |
|                               |                    | 3/30/11 0911-1315 | 3/30/11 0911-1315 | 3/30/11 0911-1315 |
|                               |                    | Landfill #6       | Landfill #6       | Landfill #6       |
|                               |                    | ppbv              | ppbv              | ppbv              |
| N-nitrosodimethylamine        | 1                  | BDL               | BDL               | BDL               |
| Phenol                        | 1                  | BDL               | BDL               | BDL               |
| Aniline                       | 1                  | BDL               | BDL               | BDL               |
| Bis(2-Chloroethyl) ether      | 1                  | BDL               | BDL               | BDL               |
| 2-Chlorophenol                | 1                  | BDL               | BDL               | BDL               |
| Benzyl Alcohol                | 1                  | BDL               | BDL               | BDL               |
| 2-methylphenol                | 1                  | BDL               | BDL               | BDL               |
| bis(2-chloroisopropyl)ether   | 1                  | BDL               | BDL               | BDL               |
| N-Nitroso-di-n-propylamine    | 1                  | BDL               | BDL               | BDL               |
| 4-methylphenol/3-methylphenol | 1                  | BDL               | BDL               | BDL               |
| Isophorone                    | 1                  | BDL               | BDL               | BDL               |
| 2-nitrophenol                 | 1                  | BDL               | BDL               | BDL               |
| 2,4-dimethylphenol            | 1                  | BDL               | BDL               | BDL               |
| Bis(2-chloroethoxy)methane    | 1                  | BDL               | BDL               | BDL               |
| 2,4-dichlorophenol            | 1                  | BDL               | BDL               | BDL               |
| 4-Chloroaniline               | 1                  | BDL               | BDL               | BDL               |
| 4-chloro-3-methylphenol       | 1                  | BDL               | BDL               | BDL               |
| 2-methylnaphthalene           | 1                  | BDL               | BDL               | BDL               |
| 1-methylnaphthalene           | 1                  | BDL               | BDL               | BDL               |
| Hexachlorocyclopentadiene     | 1                  | BDL               | BDL               | BDL               |
| 2,4,6-trichlorophenol         | 1                  | BDL               | BDL               | BDL               |
| 2,4,5-trichlorophenol         | 1                  | BDL               | BDL               | BDL               |
| 2-chloronaphthalene           | 1                  | BDL               | BDL               | BDL               |
| 2-Nitroaniline                | 1                  | BDL               | BDL               | BDL               |
| 1,4-dinitrobenzene            | 1                  | BDL               | BDL               | BDL               |
| Dimethyl phthalate            | 1                  | BDL               | BDL               | BDL               |
| 1,3-dinitrobenzene            | 1                  | BDL               | BDL               | BDL               |
| 2,6-dinitrotoluene            | 1                  | BDL               | BDL               | BDL               |
| Acenaphthylene                | 1                  | BDL               | BDL               | BDL               |
| 1,2-Dinitrobenzene            | 1                  | BDL               | BDL               | BDL               |
| 3-Nitroaniline                | 1                  | BDL               | BDL               | BDL               |
| Acenaphthene                  | 1                  | BDL               | BDL               | BDL               |
| 2,4-dinitrophenol             | 1                  | BDL               | BDL               | BDL               |
| 4-nitrophenol                 | 1                  | BDL               | BDL               | BDL               |
| Dibenzofuran                  | 1                  | BDL               | BDL               | BDL               |
| 2,4-dinitrotoluene            | 1                  | BDL               | BDL               | BDL               |
| 2,3,4,6-Tetrachlorophenol     | 1                  | BDL               | BDL               | BDL               |
| 2,3,5,6-Tetrachlorophenol     | 1                  | BDL               | BDL               | BDL               |
| Diethyl Phthalate             | 1                  | BDL               | BDL               | BDL               |

The results within this report relate only to the items tested.

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## Semi- Volatile Organic Compound Analysis

| Analyte                     | detection<br>limit | 111221-012        | 111221-013        | 111221-014        |
|-----------------------------|--------------------|-------------------|-------------------|-------------------|
|                             |                    | Processed Gas 01  | Processed Gas 02  | Processed Gas 03  |
|                             |                    | 3/30/11 0911-1315 | 3/30/11 0911-1315 | 3/30/11 0911-1315 |
|                             |                    | Landfill #6       | Landfill #6       | Landfill #6       |
|                             |                    | ppbv              | ppbv              | ppbv              |
| Fluorene                    | 1                  | BDL               | BDL               | BDL               |
| 4-chlorophenyl phenyl ether | 1                  | BDL               | BDL               | BDL               |
| 4-Nitroaniline              | 1                  | BDL               | BDL               | BDL               |
| 4,6-dinitro-2-methylphenol  | 1                  | BDL               | BDL               | BDL               |
| Diphenylamine               | 1                  | BDL               | BDL               | BDL               |
| n-Nitrosodiphenylamine      | 1                  | BDL               | BDL               | BDL               |
| Azobenzene                  | 1                  | BDL               | BDL               | BDL               |
| 4-Bromophenyl phenyl ether  | 1                  | BDL               | BDL               | BDL               |
| Hexachlorobenzene           | 1                  | BDL               | BDL               | BDL               |
| Pentachlorophenol           | 1                  | BDL               | BDL               | BDL               |
| Phenanthrene                | 1                  | BDL               | BDL               | BDL               |
| Anthracene                  | 1                  | BDL               | BDL               | BDL               |
| Carbazole                   | 1                  | BDL               | BDL               | BDL               |
| Di-n-butyl phthalate        | 1                  | BDL               | BDL               | 0.5 J             |
| Fluoranthene                | 1                  | BDL               | BDL               | BDL               |
| Pyrene                      | 1                  | BDL               | BDL               | BDL               |
| Benzyl butyl phthalate      | 1                  | BDL               | BDL               | BDL               |
| Bis(2-ethylhexyl)adipate    | 1                  | BDL               | BDL               | BDL               |
| Benzo(a)anthracene          | 1                  | BDL               | BDL               | BDL               |
| Chrysene                    | 1                  | BDL               | BDL               | BDL               |
| Bis(2-ethylhexyl)phthalate  | 1                  | BDL               | BDL               | 1.1               |
| Di-n-octyl phthalate        | 1                  | BDL               | BDL               | BDL               |
| Benzo(b)fluoranthene        | 1                  | BDL               | BDL               | BDL               |
| Benzo(k)fluoranthene        | 1                  | BDL               | BDL               | BDL               |
| Benzo(a)pyrene              | 1                  | BDL               | BDL               | BDL               |
| Indeno(1,2,3-cd)pyrene      | 1                  | BDL               | BDL               | BDL               |
| Dibenzo(a,h)anthracene      | 1                  | BDL               | BDL               | BDL               |
| Benzo[g,h,i]perylene        | 1                  | BDL               | BDL               | BDL               |

BDL - Below Detection Limit

B - Analyte detected in the Blank.

J - Estimated value; detected between the RL and DL.

D - Analyte reported from a diluted extract.

E - Estimate, result detected above calibration range.

I - Concentration/Peak ID uncertain due to potential interference.

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## Semi- Volatile Organic Compound Analysis

| Analyte                       | detection<br>limit | 111225-007          | 111225-008          | 111225-009          |
|-------------------------------|--------------------|---------------------|---------------------|---------------------|
|                               |                    | Processed Gas 01    | Processed Gas 02    | Processed Gas 03    |
|                               |                    | 3/31/2011 1020-1422 | 3/31/2011 1020-1422 | 3/31/2011 1020-1422 |
|                               |                    | Landfill #9         | Landfill #9         | Landfill #9         |
|                               |                    | ppbv                | ppbv                | ppbv                |
| N-nitrosodimethylamine        | 1                  | BDL                 | BDL                 | BDL                 |
| Phenol                        | 1                  | BDL                 | BDL                 | BDL                 |
| Aniline                       | 1                  | BDL                 | BDL                 | BDL                 |
| Bis(2-Chloroethyl) ether      | 1                  | BDL                 | BDL                 | BDL                 |
| 2-Chlorophenol                | 1                  | BDL                 | BDL                 | BDL                 |
| Benzyl Alcohol                | 1                  | BDL                 | BDL                 | BDL                 |
| 2-methylphenol                | 1                  | BDL                 | BDL                 | BDL                 |
| bis(2-chloroisopropyl)ether   | 1                  | BDL                 | BDL                 | BDL                 |
| N-Nitroso-di-n-propylamine    | 1                  | BDL                 | BDL                 | BDL                 |
| 4-methylphenol/3-methylphenol | 1                  | BDL                 | BDL                 | BDL                 |
| Isophorone                    | 1                  | BDL                 | BDL                 | BDL                 |
| 2-nitrophenol                 | 1                  | BDL                 | BDL                 | BDL                 |
| 2,4-dimethylphenol            | 1                  | BDL                 | BDL                 | BDL                 |
| Bis(2-chloroethoxy)methane    | 1                  | BDL                 | BDL                 | BDL                 |
| 2,4-dichlorophenol            | 1                  | BDL                 | BDL                 | BDL                 |
| 4-Chloroaniline               | 1                  | BDL                 | BDL                 | BDL                 |
| 4-chloro-3-methylphenol       | 1                  | BDL                 | BDL                 | BDL                 |
| 2-methylnaphthalene           | 1                  | BDL                 | BDL                 | BDL                 |
| 1-methylnaphthalene           | 1                  | BDL                 | BDL                 | BDL                 |
| Hexachlorocyclopentadiene     | 1                  | BDL                 | BDL                 | BDL                 |
| 2,4,6-trichlorophenol         | 1                  | BDL                 | BDL                 | BDL                 |
| 2,4,5-trichlorophenol         | 1                  | BDL                 | BDL                 | BDL                 |
| 2-chloronaphthalene           | 1                  | BDL                 | BDL                 | BDL                 |
| 2-Nitroaniline                | 1                  | BDL                 | BDL                 | BDL                 |
| 1,4-dinitrobenzene            | 1                  | BDL                 | BDL                 | BDL                 |
| Dimethyl phthalate            | 1                  | BDL                 | BDL                 | BDL                 |
| 1,3-dinitrobenzene            | 1                  | BDL                 | BDL                 | BDL                 |
| 2,6-dinitrotoluene            | 1                  | BDL                 | BDL                 | BDL                 |
| Acenaphthylene                | 1                  | BDL                 | BDL                 | BDL                 |
| 1,2-Dinitrobenzene            | 1                  | BDL                 | BDL                 | BDL                 |
| 3-Nitroaniline                | 1                  | BDL                 | BDL                 | BDL                 |
| Acenaphthene                  | 1                  | BDL                 | BDL                 | BDL                 |
| 2,4-dinitrophenol             | 1                  | BDL                 | BDL                 | BDL                 |
| 4-nitrophenol                 | 1                  | BDL                 | BDL                 | BDL                 |
| Dibenzofuran                  | 1                  | BDL                 | BDL                 | BDL                 |
| 2,4-dinitrotoluene            | 1                  | BDL                 | BDL                 | BDL                 |
| 2,3,4,6-Tetrachlorophenol     | 1                  | BDL                 | BDL                 | BDL                 |
| 2,3,5,6-Tetrachlorophenol     | 1                  | BDL                 | BDL                 | BDL                 |
| Diethyl Phthalate             | 1                  | BDL                 | BDL                 | BDL                 |

The results within this report relate only to the items tested.

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## Semi- Volatile Organic Compound Analysis

| Analyte                     | detection<br>limit | 111225-007          | 111225-008          | 111225-009          |
|-----------------------------|--------------------|---------------------|---------------------|---------------------|
|                             |                    | Processed Gas 01    | Processed Gas 02    | Processed Gas 03    |
|                             |                    | 3/31/2011 1020-1422 | 3/31/2011 1020-1422 | 3/31/2011 1020-1422 |
|                             |                    | Landfill #9         | Landfill #9         | Landfill #9         |
|                             |                    | ppbv                | ppbv                | ppbv                |
| Fluorene                    | 1                  | BDL                 | BDL                 | BDL                 |
| 4-chlorophenyl phenyl ether | 1                  | BDL                 | BDL                 | BDL                 |
| 4-Nitroaniline              | 1                  | BDL                 | BDL                 | BDL                 |
| 4,6-dinitro-2-methylphenol  | 1                  | BDL                 | BDL                 | BDL                 |
| Diphenylamine               | 1                  | BDL                 | BDL                 | BDL                 |
| n-Nitrosodiphenylamine      | 1                  | BDL                 | BDL                 | BDL                 |
| Azobenzene                  | 1                  | BDL                 | BDL                 | BDL                 |
| 4-Bromophenyl phenyl ether  | 1                  | BDL                 | BDL                 | BDL                 |
| Hexachlorobenzene           | 1                  | BDL                 | BDL                 | BDL                 |
| Pentachlorophenol           | 1                  | BDL                 | BDL                 | BDL                 |
| Phenanthrene                | 1                  | BDL                 | BDL                 | BDL                 |
| Anthracene                  | 1                  | BDL                 | BDL                 | BDL                 |
| Carbazole                   | 1                  | BDL                 | BDL                 | BDL                 |
| Di-n-butyl phthalate        | 1                  | 0.9                 | 1.3                 | 0.8                 |
| Fluoranthene                | 1                  | BDL                 | BDL                 | BDL                 |
| Pyrene                      | 1                  | BDL                 | BDL                 | BDL                 |
| Benzyl butyl phthalate      | 1                  | BDL                 | BDL                 | BDL                 |
| Bis(2-ethylhexyl)adipate    | 1                  | BDL                 | BDL                 | BDL                 |
| Benzo(a)anthracene          | 1                  | BDL                 | BDL                 | BDL                 |
| Chrysene                    | 1                  | BDL                 | BDL                 | BDL                 |
| Bis(2-ethylhexyl)phthalate  | 1                  | BDL                 | B                   | BDL                 |
| Di-n-octyl phthalate        | 1                  | BDL                 | BDL                 | BDL                 |
| Benzo(b)fluoranthene        | 1                  | BDL                 | BDL                 | BDL                 |
| Benzo(k)fluoranthene        | 1                  | BDL                 | BDL                 | BDL                 |
| Benzo(a)pyrene              | 1                  | BDL                 | BDL                 | BDL                 |
| Indeno(1,2,3-cd)pyrene      | 1                  | BDL                 | BDL                 | BDL                 |
| Dibenzo(a,h)anthracene      | 1                  | BDL                 | BDL                 | BDL                 |
| Benzo[g,h,i]perylene        | 1                  | BDL                 | BDL                 | BDL                 |

BDL - Below Detection Limit

B - Analyte detected in the Blank.

J - Estimated value; detected between the RL and DL.

D - Analyte reported from a diluted extract.

E - Estimate, result detected above calibration range.

I - Concentration/Peak ID uncertain due to potential interference.

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## Aldehyde and Ketone Compounds

| Analyte                   | detection<br>limit | 101694-007         | 101694-008         | 101694-009         |
|---------------------------|--------------------|--------------------|--------------------|--------------------|
|                           |                    | Processed Gas 01   | Processed Gas 02   | Processed Gas 03   |
|                           |                    | 11/01/10 0957-1357 | 11/01/10 0957-1357 | 11/01/10 1402-1802 |
|                           |                    | Landfill #1        | Landfill #1        | Landfill #1        |
|                           |                    | ppbv               | ppbv               | ppbv               |
| Formaldehyde              | 10                 | 1                  | 1                  | 1                  |
| Acetaldehyde              | 7                  | BDL                | BDL                | BDL                |
| Acetone                   | 5                  | BDL                | BDL                | BDL                |
| Acrolein (2-propenal)     | 6                  | BDL                | BDL                | BDL                |
| Propionaldehyde           | 5                  | BDL                | BDL                | BDL                |
| Crotonaldehyde            | 5                  | BDL                | BDL                | BDL                |
| 2-Butanone (MEK)          | 5                  | BDL *              | BDL *              | BDL *              |
| Methacrolein (Isobutenal) | 5                  | BDL                | BDL                | BDL                |
| Butanal                   | 5                  | BDL                | BDL                | BDL                |
| Benzaldehyde              | 5                  | BDL                | BDL                | BDL                |
| Pentanal                  | 5                  | BDL                | BDL                | BDL                |
| p-Tolualdehyde            | 5                  | BDL                | BDL                | BDL                |
| Hexanal                   | 5                  | BDL                | BDL                | BDL                |

\* Detection limit for MEK for this sample set is 30 ppbv

| Analyte                   |    | 101786-008         | 101786-009         | 101786-010         |
|---------------------------|----|--------------------|--------------------|--------------------|
|                           |    | Processed Gas 01   | Processed Gas 02   | Processed Gas 03   |
|                           |    | 12/14/10 1004-1404 | 12/14/10 1004-1404 | 12/14/10 1004-1404 |
|                           |    | Landfill #5        | Landfill #5        | Landfill #5        |
|                           |    | ppbv               | ppbv               | ppbv               |
| Formaldehyde              | 10 | BDL                | BDL                | BDL                |
| Acetaldehyde              | 7  | 14                 | 10                 | BDL                |
| Acetone                   | 5  | 96                 | 54                 | 39                 |
| Acrolein (2-propenal)     | 6  | BDL                | BDL                | BDL                |
| Propionaldehyde           | 5  | BDL                | BDL                | BDL                |
| Crotonaldehyde            | 5  | BDL                | BDL                | BDL                |
| 2-Butanone (MEK)          | 5  | 18                 | 11                 | 7                  |
| Methacrolein (Isobutenal) | 5  | BDL                | BDL                | BDL                |
| Butanal                   | 5  | BDL                | BDL                | BDL                |
| Benzaldehyde              | 5  | BDL                | BDL                | BDL                |
| Pentanal                  | 5  | BDL                | BDL                | BDL                |
| p-Tolualdehyde            | 5  | BDL                | BDL                | BDL                |
| Hexanal                   | 5  | BDL                | BDL                | BDL                |

BDL - Below Detection Limit

The results within this report relate only to the items tested.

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## Aldehyde and Ketone Compounds

| Analyte                   | detection<br>limit | 101788-008         | 101788-009         | 101788-010         |
|---------------------------|--------------------|--------------------|--------------------|--------------------|
|                           |                    | Processed Gas 01   | Processed Gas 02   | Processed Gas 03   |
|                           |                    | 12/15/10 1351-1751 | 12/15/10 1351-1751 | 12/15/10 1351-1751 |
|                           |                    | Landfill #6        | Landfill #6        | Landfill #6        |
|                           |                    | ppbv               | ppbv               | ppbv               |
| Formaldehyde              | 10                 | BDL                | BDL                | BDL                |
| Acetaldehyde              | 7                  | 15                 | 14                 | 11                 |
| Acetone                   | 5                  | 22                 | 23                 | 16                 |
| Acrolein (2-propenal)     | 6                  | BDL                | BDL                | BDL                |
| Propionaldehyde           | 5                  | BDL                | BDL                | BDL                |
| Crotonaldehyde            | 5                  | BDL                | BDL                | BDL                |
| 2-Butanone (MEK)          | 5                  | 15                 | 15                 | 12                 |
| Methacrolein (Isobutenal) | 5                  | BDL                | BDL                | BDL                |
| Butanal                   | 5                  | BDL                | BDL                | BDL                |
| Benzaldehyde              | 5                  | BDL                | BDL                | BDL                |
| Pentanal                  | 5                  | BDL                | BDL                | BDL                |
| p-Tolualdehyde            | 5                  | BDL                | BDL                | BDL                |
| Hexanal                   | 5                  | BDL                | BDL                | BDL                |

| Analyte                   |    | 101793-008         | 101793-009         | 101793-010         |
|---------------------------|----|--------------------|--------------------|--------------------|
|                           |    | Processed Gas 01   | Processed Gas 02   | Processed Gas 03   |
|                           |    | 12/17/10 0934-1334 | 12/17/10 0934-1334 | 12/17/10 0934-1334 |
|                           |    | Landfill #7        | Landfill #7        | Landfill #7        |
|                           |    | ppbv               | ppbv               | ppbv               |
| Formaldehyde              | 10 | BDL                | BDL                | BDL                |
| Acetaldehyde              | 7  | 22                 | 31                 | 32                 |
| Acetone                   | 5  | 41                 | 60                 | 49                 |
| Acrolein (2-propenal)     | 6  | BDL                | BDL                | BDL                |
| Propionaldehyde           | 5  | BDL                | BDL                | BDL                |
| Crotonaldehyde            | 5  | BDL                | BDL                | BDL                |
| 2-Butanone (MEK)          | 5  | 17                 | 32                 | 28                 |
| Methacrolein (Isobutenal) | 5  | BDL                | BDL                | BDL                |
| Butanal                   | 5  | BDL                | BDL                | BDL                |
| Benzaldehyde              | 5  | BDL                | BDL                | BDL                |
| Pentanal                  | 5  | BDL                | BDL                | BDL                |
| p-Tolualdehyde            | 5  | BDL                | BDL                | BDL                |
| Hexanal                   | 5  | BDL                | BDL                | BDL                |

BDL - Below Detection Limit

The results within this report relate only to the items tested.

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## Aldehyde and Ketone Compounds

| Analyte                   | detection<br>limit | 111212-015        | 111212-016        | 111212-017        |
|---------------------------|--------------------|-------------------|-------------------|-------------------|
|                           |                    | Processed Gas 01  | Processed Gas 02  | Processed Gas 03  |
|                           |                    | 3/28/11 0920-1320 | 3/28/11 0920-1320 | 3/28/11 0920-1320 |
|                           |                    | Landfill #8       | Landfill #8       | Landfill #8       |
|                           |                    | ppbv              | ppbv              | ppbv              |
| Formaldehyde              | 10                 | 33                | BDL               | 19                |
| Acetaldehyde              | 7                  | BDL               | 11                | 8                 |
| Acetone                   | 5                  | 14                | 9                 | 11                |
| Acrolein (2-propenal)     | 6                  | BDL               | BDL               | BDL               |
| Propionaldehyde           | 5                  | 10                | BDL               | BDL               |
| Crotonaldehyde            | 5                  | BDL               | BDL               | BDL               |
| 2-Butanone (MEK)          | 5                  | BDL               | BDL               | 96                |
| Methacrolein (Isobutenal) | 5                  | BDL               | BDL               | BDL               |
| Butanal                   | 5                  | BDL               | BDL               | BDL               |
| Benzaldehyde              | 5                  | BDL               | BDL               | BDL               |
| Pentanal                  | 5                  | 10                | 4                 | BDL               |
| p-Tolualdehyde            | 5                  | BDL               | BDL               | BDL               |
| Hexanal                   | 5                  | BDL               | BDL               | BDL               |

| Analyte                   |    | 111220-015        | 111220-016        | 111220-017        |
|---------------------------|----|-------------------|-------------------|-------------------|
|                           |    | Processed Gas 01  | Processed Gas 02  | Processed Gas 03  |
|                           |    | 3/29/11 1043-1450 | 3/29/11 1043-1450 | 3/29/11 1043-1450 |
|                           |    | Landfill #7       | Landfill #7       | Landfill #7       |
|                           |    | ppbv              | ppbv              | ppbv              |
| Formaldehyde              | 10 | 12                | BDL               | 57                |
| Acetaldehyde              | 7  | 35                | BDL               | 147               |
| Acetone                   | 5  | 177               | 26                | 180               |
| Acrolein (2-propenal)     | 6  | BDL               | BDL               | BDL               |
| Propionaldehyde           | 5  | BDL               | BDL               | BDL               |
| Crotonaldehyde            | 5  | 26                | 4                 | 54                |
| 2-Butanone (MEK)          | 5  | 95                | 9                 | 81                |
| Methacrolein (Isobutenal) | 5  | BDL               | BDL               | BDL               |
| Butanal                   | 5  | BDL               | BDL               | BDL               |
| Benzaldehyde              | 5  | BDL               | BDL               | BDL               |
| Pentanal                  | 5  | BDL               | BDL               | 107               |
| p-Tolualdehyde            | 5  | BDL               | BDL               | BDL               |
| Hexanal                   | 5  | 36                | BDL               | 250               |

BDL - Below Detection Limit

highlighted cells are for data outside the calibration range  
 results are estimated

The results within this report relate only to the items tested.

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## Aldehyde and Ketone Compounds

| Analyte                   | detection<br>limit | 111221-016        | 111221-017        | 111221-018        |
|---------------------------|--------------------|-------------------|-------------------|-------------------|
|                           |                    | Processed Gas 01  | Processed Gas 02  | Processed Gas 03  |
|                           |                    | 3/30/11 0911-1315 | 3/30/11 0911-1315 | 3/30/11 0911-1315 |
|                           |                    | Landfill #6       | Landfill #6       | Landfill #6       |
|                           |                    | ppbv              | ppbv              | ppbv              |
| Formaldehyde              | 10                 | BDL               | 23                | 18                |
| Acetaldehyde              | 7                  | 7                 | 20                | 11                |
| Acetone                   | 5                  | 22                | 52                | 31                |
| Acrolein (2-propenal)     | 6                  | BDL               | BDL               | BDL               |
| Propionaldehyde           | 5                  | BDL               | BDL               | BDL               |
| Crotonaldehyde            | 5                  | 6                 | 10                | 8                 |
| 2-Butanone (MEK)          | 5                  | 8                 | 16                | 19                |
| Methacrolein (Isobutenal) | 5                  | BDL               | BDL               | BDL               |
| Butanal                   | 5                  | BDL               | BDL               | 69                |
| Benzaldehyde              | 5                  | BDL               | BDL               | BDL               |
| Pentanal                  | 5                  | BDL               | BDL               | BDL               |
| p-Tolualdehyde            | 5                  | 5                 | 11                | 8                 |
| Hexanal                   | 5                  | BDL               | BDL               | BDL               |

| Analyte                   |    | 111225-011          | 111225-012          | 111225-013          |
|---------------------------|----|---------------------|---------------------|---------------------|
|                           |    | Processed Gas 01    | Processed Gas 02    | Processed Gas 03    |
|                           |    | 3/31/2011 1020-1422 | 3/31/2011 1020-1422 | 3/31/2011 1020-1422 |
|                           |    | Landfill #9         | Landfill #9         | Landfill #9         |
|                           |    | ppbv                | ppbv                | ppbv                |
| Formaldehyde              | 10 | 17                  | 14                  | 15                  |
| Acetaldehyde              | 7  | 70                  | 68                  | 66                  |
| Acetone                   | 5  | 461                 | 444                 | 522                 |
| Acrolein (2-propenal)     | 6  | BDL                 | BDL                 | BDL                 |
| Propionaldehyde           | 5  | BDL                 | BDL                 | BDL                 |
| Crotonaldehyde            | 5  | BDL                 | BDL                 | BDL                 |
| 2-Butanone (MEK)          | 5  | BDL                 | BDL                 | BDL                 |
| Methacrolein (Isobutenal) | 5  | BDL                 | BDL                 | BDL                 |
| Butanal                   | 5  | BDL                 | BDL                 | BDL                 |
| Benzaldehyde              | 5  | BDL                 | BDL                 | BDL                 |
| Pentanal                  | 5  | BDL                 | BDL                 | BDL                 |
| p-Tolualdehyde            | 5  | BDL                 | BDL                 | BDL                 |
| Hexanal                   | 5  | BDL                 | BDL                 | BDL                 |

BDL - Below Detection Limit

highlighted cells are for data outside the calibration range  
 results are estimated

The results within this report relate only to the items tested.

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## Total Organic Silicon, including Siloxanes

|                                      | Detection<br>Limit | 101694-001             | 101694-002             | 101694-003             |
|--------------------------------------|--------------------|------------------------|------------------------|------------------------|
|                                      |                    | Processed Gas 01       | Processed Gas 02       | Processed Gas 03       |
|                                      |                    | 11/01/10 1834          | 11/01/10 1829          | 11/01/10 1823          |
|                                      |                    | Landfill #1            | Landfill #1            | Landfill #1            |
|                                      |                    | mg Si / M <sup>3</sup> | mg Si / M <sup>3</sup> | mg Si / M <sup>3</sup> |
| 1,1,3,3-Tetramethyldisiloxane        | 0.1                | BDL                    | BDL                    | BDL                    |
| Pentamethyldisiloxane                | 0.1                | BDL                    | BDL                    | BDL                    |
| Hexamethyldisilane                   | 0.1                | BDL                    | BDL                    | BDL                    |
| Hexamethyldisiloxane (L2, MM)        | 0.1                | BDL                    | BDL                    | BDL                    |
| Octamethyltrisiloxane (L3, MDM)      | 0.1                | BDL                    | BDL                    | BDL                    |
| Octamethylcyclotetrasiloxane (D4)    | 0.1                | BDL                    | BDL                    | BDL                    |
| Decamethyltetrasiloxane (L4, MD2M)   | 0.1                | BDL                    | BDL                    | BDL                    |
| Decamethylcyclopentasiloxane (D5)    | 0.1                | BDL                    | BDL                    | BDL                    |
| Dodecamethylpentasiloxane (L5, MD3M) | 0.1                | BDL                    | BDL                    | BDL                    |
| Dodecamethylcyclohexasiloxane (D6)   | 0.1                | BDL                    | BDL                    | BDL                    |

BDL = Below Detection Limit

|                                      |     | 101786-001             | 101786-002             | 101786-003             |
|--------------------------------------|-----|------------------------|------------------------|------------------------|
|                                      |     | Processed Gas 01       | Processed Gas 02       | Processed Gas 03       |
|                                      |     | 12/13/10 1542          | 12/13/10 1548          | 12/13/10 1552          |
|                                      |     | Landfill #5            | Landfill #5            | Landfill #5            |
|                                      |     | mg Si / M <sup>3</sup> | mg Si / M <sup>3</sup> | mg Si / M <sup>3</sup> |
| 1,1,3,3-Tetramethyldisiloxane        | 0.1 | BDL                    | BDL                    | BDL                    |
| Pentamethyldisiloxane                | 0.1 | BDL                    | BDL                    | BDL                    |
| Hexamethyldisilane                   | 0.1 | BDL                    | BDL                    | BDL                    |
| Hexamethyldisiloxane (L2, MM)        | 0.1 | BDL                    | BDL                    | BDL                    |
| Octamethyltrisiloxane (L3, MDM)      | 0.1 | BDL                    | BDL                    | BDL                    |
| Octamethylcyclotetrasiloxane (D4)    | 0.1 | 0.4                    | 0.3                    | 0.3                    |
| Decamethyltetrasiloxane (L4, MD2M)   | 0.1 | BDL                    | BDL                    | BDL                    |
| Decamethylcyclopentasiloxane (D5)    | 0.1 | BDL                    | BDL                    | BDL                    |
| Dodecamethylpentasiloxane (L5, MD3M) | 0.1 | BDL                    | BDL                    | BDL                    |
| Dodecamethylcyclohexasiloxane (D6)   | 0.1 | BDL                    | BDL                    | BDL                    |

BDL = Below Detection Limit

DRAFT

## Total Organic Silicon, including Siloxanes

|                                      | Detection<br>Limit | 101788-001             | 101788-002             | 101788-003             |
|--------------------------------------|--------------------|------------------------|------------------------|------------------------|
|                                      |                    | Processed Gas 01       | Processed Gas 02       | Processed Gas 03       |
|                                      |                    | 12/15/10 1230          | 12/15/10 1233          | 12/15/10 1237          |
|                                      |                    | Landfill #6            | Landfill #6            | Landfill #6            |
|                                      |                    | mg Si / M <sup>3</sup> | mg Si / M <sup>3</sup> | mg Si / M <sup>3</sup> |
| 1,1,3,3-Tetramethyldisiloxane        | 0.1                | BDL                    | BDL                    | BDL                    |
| Pentamethyldisiloxane                | 0.1                | BDL                    | BDL                    | BDL                    |
| Hexamethyldisilane                   | 0.1                | BDL                    | BDL                    | BDL                    |
| Hexamethyldisiloxane (L2, MM)        | 0.1                | BDL                    | BDL                    | BDL                    |
| Octamethyltrisiloxane (L3, MDM)      | 0.1                | BDL                    | BDL                    | BDL                    |
| Octamethylcyclotetrasiloxane (D4)    | 0.1                | BDL                    | BDL                    | BDL                    |
| Decamethyltetrasiloxane (L4, MD2M)   | 0.1                | BDL                    | BDL                    | BDL                    |
| Decamethylcyclopentasiloxane (D5)    | 0.1                | BDL                    | BDL                    | BDL                    |
| Dodecamethylpentasiloxane (L5, MD3M) | 0.1                | BDL                    | BDL                    | BDL                    |
| Dodecamethylcyclohexasiloxane (D6)   | 0.1                | BDL                    | BDL                    | BDL                    |

BDL = Below Detection Limit

|                                      |     | 101793-001             | 101793-002             | 101793-003             |
|--------------------------------------|-----|------------------------|------------------------|------------------------|
|                                      |     | Processed Gas 01       | Processed Gas 02       | Processed Gas 03       |
|                                      |     | 12/16/10 1702          | 12/16/10 1707          | 12/16/10 1713          |
|                                      |     | Landfill #7            | Landfill #7            | Landfill #7            |
|                                      |     | mg Si / M <sup>3</sup> | mg Si / M <sup>3</sup> | mg Si / M <sup>3</sup> |
| 1,1,3,3-Tetramethyldisiloxane        | 0.1 | BDL                    | BDL                    | BDL                    |
| Pentamethyldisiloxane                | 0.1 | BDL                    | BDL                    | BDL                    |
| Hexamethyldisilane                   | 0.1 | BDL                    | BDL                    | BDL                    |
| Hexamethyldisiloxane (L2, MM)        | 0.1 | BDL                    | BDL                    | BDL                    |
| Octamethyltrisiloxane (L3, MDM)      | 0.1 | BDL                    | BDL                    | BDL                    |
| Octamethylcyclotetrasiloxane (D4)    | 0.1 | BDL                    | 0.1                    | 0.1                    |
| Decamethyltetrasiloxane (L4, MD2M)   | 0.1 | BDL                    | BDL                    | BDL                    |
| Decamethylcyclopentasiloxane (D5)    | 0.1 | BDL                    | BDL                    | BDL                    |
| Dodecamethylpentasiloxane (L5, MD3M) | 0.1 | BDL                    | BDL                    | BDL                    |
| Dodecamethylcyclohexasiloxane (D6)   | 0.1 | BDL                    | BDL                    | BDL                    |

BDL = Below Detection Limit

DRAFT

## Total Organic Silicon, including Siloxanes

|                                      | Detection<br>Limit | 111212-001             | 111212-002             | 111212-003             |
|--------------------------------------|--------------------|------------------------|------------------------|------------------------|
|                                      |                    | Processed Gas 01       | Processed Gas 02       | Processed Gas 03       |
|                                      |                    | 3/28/11 1633           | 3/28/11 1635           | 3/28/11 1637           |
|                                      |                    | Landfill #8            | Landfill #8            | Landfill #8            |
|                                      |                    | mg Si / M <sup>3</sup> | mg Si / M <sup>3</sup> | mg Si / M <sup>3</sup> |
| 1,1,3,3-Tetramethyldisiloxane        | 0.1                | BDL                    | BDL                    | BDL                    |
| Pentamethyldisiloxane                | 0.1                | BDL                    | BDL                    | BDL                    |
| Hexamethyldisilane                   | 0.1                | BDL                    | BDL                    | BDL                    |
| Hexamethyldisiloxane (L2, MM)        | 0.1                | BDL                    | BDL                    | BDL                    |
| Octamethyltrisiloxane (L3, MDM)      | 0.1                | BDL                    | BDL                    | BDL                    |
| Octamethylcyclotetrasiloxane (D4)    | 0.1                | BDL                    | BDL                    | BDL                    |
| Decamethyltetrasiloxane (L4, MD2M)   | 0.1                | BDL                    | BDL                    | BDL                    |
| Decamethylcyclopentasiloxane (D5)    | 0.1                | BDL                    | BDL                    | BDL                    |
| Dodecamethylpentasiloxane (L5, MD3M) | 0.1                | BDL                    | BDL                    | BDL                    |
| Dodecamethylcyclohexasiloxane (D6)   | 0.1                | BDL                    | BDL                    | BDL                    |

BDL = Below Detection Limit

|                                      |     | 111220-001             | 111220-002             | 111220-003             |
|--------------------------------------|-----|------------------------|------------------------|------------------------|
|                                      |     | Processed Gas 01       | Processed Gas 02       | Processed Gas 03       |
|                                      |     | 3/29/11 1650           | 3/29/11 1653           | 3/29/11 1656           |
|                                      |     | Landfill #7            | Landfill #7            | Landfill #7            |
|                                      |     | mg Si / M <sup>3</sup> | mg Si / M <sup>3</sup> | mg Si / M <sup>3</sup> |
| 1,1,3,3-Tetramethyldisiloxane        | 0.1 | BDL                    | BDL                    | BDL                    |
| Pentamethyldisiloxane                | 0.1 | BDL                    | BDL                    | BDL                    |
| Hexamethyldisilane                   | 0.1 | BDL                    | BDL                    | BDL                    |
| Hexamethyldisiloxane (L2, MM)        | 0.1 | BDL                    | BDL                    | BDL                    |
| Octamethyltrisiloxane (L3, MDM)      | 0.1 | BDL                    | BDL                    | BDL                    |
| Octamethylcyclotetrasiloxane (D4)    | 0.1 | BDL                    | BDL                    | BDL                    |
| Decamethyltetrasiloxane (L4, MD2M)   | 0.1 | BDL                    | BDL                    | BDL                    |
| Decamethylcyclopentasiloxane (D5)    | 0.1 | BDL                    | BDL                    | BDL                    |
| Dodecamethylpentasiloxane (L5, MD3M) | 0.1 | BDL                    | BDL                    | BDL                    |
| Dodecamethylcyclohexasiloxane (D6)   | 0.1 | BDL                    | BDL                    | BDL                    |

BDL = Below Detection Limit

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## Total Organic Silicon, including Siloxanes

|                                      | Detection<br>Limit | 111221-001             | 111221-002             | 111221-003             |
|--------------------------------------|--------------------|------------------------|------------------------|------------------------|
|                                      |                    | Processed Gas 01       | Processed Gas 02       | Processed Gas 03       |
|                                      |                    | 3/30/11 1345           | 3/30/11 1348           | 3/30/11 1357           |
|                                      |                    | Landfill #6            | Landfill #6            | Landfill #6            |
|                                      |                    | mg Si / M <sup>3</sup> | mg Si / M <sup>3</sup> | mg Si / M <sup>3</sup> |
| 1,1,3,3-Tetramethyldisiloxane        | 0.1                | BDL                    | BDL                    | BDL                    |
| Pentamethyldisiloxane                | 0.1                | BDL                    | BDL                    | BDL                    |
| Hexamethyldisilane                   | 0.1                | BDL                    | BDL                    | BDL                    |
| Hexamethyldisiloxane (L2, MM)        | 0.1                | BDL                    | BDL                    | BDL                    |
| Octamethyltrisiloxane (L3, MDM)      | 0.1                | BDL                    | BDL                    | BDL                    |
| Octamethylcyclotetrasiloxane (D4)    | 0.1                | BDL                    | BDL                    | BDL                    |
| Decamethyltetrasiloxane (L4, MD2M)   | 0.1                | BDL                    | BDL                    | BDL                    |
| Decamethylcyclopentasiloxane (D5)    | 0.1                | BDL                    | BDL                    | BDL                    |
| Dodecamethylpentasiloxane (L5, MD3M) | 0.1                | BDL                    | BDL                    | BDL                    |
| Dodecamethylcyclohexasiloxane (D6)   | 0.1                | BDL                    | BDL                    | BDL                    |

BDL = Below Detection Limit

|                                      |     | 111225-001             | 111225-002             | 111225-003             |
|--------------------------------------|-----|------------------------|------------------------|------------------------|
|                                      |     | Processed Gas 01       | Processed Gas 02       | Processed Gas 03       |
|                                      |     | 3/31/11 1635           | 3/31/11 1637           | 3/31/11 1639           |
|                                      |     | Landfill #9            | Landfill #9            | Landfill #9            |
|                                      |     | mg Si / M <sup>3</sup> | mg Si / M <sup>3</sup> | mg Si / M <sup>3</sup> |
| 1,1,3,3-Tetramethyldisiloxane        | 0.1 | BDL                    | BDL                    | BDL                    |
| Pentamethyldisiloxane                | 0.1 | BDL                    | BDL                    | BDL                    |
| Hexamethyldisilane                   | 0.1 | BDL                    | BDL                    | BDL                    |
| Hexamethyldisiloxane (L2, MM)        | 0.1 | BDL                    | BDL                    | BDL                    |
| Octamethyltrisiloxane (L3, MDM)      | 0.1 | BDL                    | BDL                    | BDL                    |
| Octamethylcyclotetrasiloxane (D4)    | 0.1 | BDL                    | BDL                    | BDL                    |
| Decamethyltetrasiloxane (L4, MD2M)   | 0.1 | BDL                    | BDL                    | BDL                    |
| Decamethylcyclopentasiloxane (D5)    | 0.1 | BDL                    | BDL                    | BDL                    |
| Dodecamethylpentasiloxane (L5, MD3M) | 0.1 | BDL                    | BDL                    | BDL                    |
| Dodecamethylcyclohexasiloxane (D6)   | 0.1 | BDL                    | BDL                    | BDL                    |

BDL = Below Detection Limit

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## Volatile Metals Analysis

| Component | Detection Limit, $\mu\text{g}/\text{M}^3$ | 101694-010<br>HG Tube 1<br>11/01/10 1018-1318 | 101694-011<br>HG Tube 2<br>11/01/10 1325-1625 | 101694-012<br>HG Tube 3<br>11/01/10 1415-1715 |
|-----------|-------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
|           |                                           | Landfill #1<br>$\mu\text{g}/\text{M}^3$       | Landfill #1<br>$\mu\text{g}/\text{M}^3$       | Landfill #1<br>$\mu\text{g}/\text{M}^3$       |
| Mercury   | 0.01                                      | BDL                                           | BDL                                           | BDL                                           |

| Component  | Detection Limit, $\mu\text{g}/\text{M}^3$ | 101694-017<br>Impinger 1<br>11/30/10 1524-1826 | 101694-018<br>Impinger 2<br>11/30/10 1524-1826 | 101694-020<br>Impinger 3<br>12/1/10 0746-1050 |
|------------|-------------------------------------------|------------------------------------------------|------------------------------------------------|-----------------------------------------------|
|            |                                           | Landfill #1<br>$\mu\text{g}/\text{M}^3$        | Landfill #1<br>$\mu\text{g}/\text{M}^3$        | Landfill #1<br>$\mu\text{g}/\text{M}^3$       |
| Arsenic    | 30                                        | BDL                                            | BDL                                            | BDL                                           |
| Barium     | 30                                        | BDL                                            | BDL                                            | BDL                                           |
| Beryllium  | 30                                        | BDL                                            | BDL                                            | BDL                                           |
| Cadmium    | 30                                        | BDL                                            | BDL                                            | BDL                                           |
| Cobalt     | 30                                        | BDL                                            | BDL                                            | BDL                                           |
| Chromium   | 30                                        | BDL                                            | BDL                                            | 175                                           |
| Copper *   | 30                                        | BDL                                            | 118                                            | BDL                                           |
| Manganese  | 30                                        | BDL                                            | BDL                                            | BDL                                           |
| Molybdenum | 30                                        | BDL                                            | BDL                                            | BDL                                           |
| Nickel     | 30                                        | BDL                                            | BDL                                            | BDL                                           |
| Lead       | 30                                        | BDL                                            | BDL                                            | BDL                                           |
| Antimony   | 30                                        | BDL                                            | BDL                                            | BDL                                           |
| Selenium   | 30                                        | BDL                                            | BDL                                            | BDL                                           |
| Strontium  | 30                                        | BDL                                            | BDL                                            | BDL                                           |
| Thallium   | 30                                        | BDL                                            | BDL                                            | BDL                                           |
| Zinc *     | 30                                        | 219                                            | 253                                            | BDL                                           |

\* Zinc and copper found in field blanks.

Inconsistent metals data is likely due to particulate contamination from the gas stream, especially those metals that are part of the pipeline construction materials.

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## Volatile Metals Analysis

| Component | Detection<br>Limit, $\mu\text{g}/\text{M}^3$ | 101786-015<br>HG Tube 1<br>12/14/10 1456-1656<br>Landfill #5 | 101786-016<br>HG Tube 2<br>12/14/10 1456-1656<br>Landfill #5 | 101786-017<br>HG Tube 3<br>12/14/10 1456-1656<br>Landfill #5 |
|-----------|----------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
|           |                                              | $\mu\text{g}/\text{M}^3$                                     | $\mu\text{g}/\text{M}^3$                                     | $\mu\text{g}/\text{M}^3$                                     |
| Mercury   | 0.01                                         | BDL                                                          | BDL                                                          | BDL                                                          |

| Component  | Detection<br>Limit, $\mu\text{g}/\text{M}^3$ | 101786-019<br>Impinger 1<br>12/14/10 0912-1236<br>Landfill #5 | 101786-020<br>Impinger 2<br>12/14/10 0912-1236<br>Landfill #5 | 101786-021<br>Impinger 3<br>12/14/10 1257-1603<br>Landfill #5 |
|------------|----------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
|            |                                              | $\mu\text{g}/\text{M}^3$                                      | $\mu\text{g}/\text{M}^3$                                      | $\mu\text{g}/\text{M}^3$                                      |
| Arsenic    | 30                                           | BDL                                                           | BDL                                                           | BDL                                                           |
| Barium     | 30                                           | BDL                                                           | BDL                                                           | BDL                                                           |
| Beryllium  | 30                                           | BDL                                                           | BDL                                                           | BDL                                                           |
| Cadmium    | 30                                           | BDL                                                           | BDL                                                           | BDL                                                           |
| Cobalt     | 30                                           | BDL                                                           | BDL                                                           | BDL                                                           |
| Chromium   | 30                                           | BDL                                                           | BDL                                                           | BDL                                                           |
| Copper *   | 30                                           | BDL                                                           | BDL                                                           | 38                                                            |
| Manganese  | 30                                           | BDL                                                           | BDL                                                           | BDL                                                           |
| Molybdenum | 30                                           | BDL                                                           | BDL                                                           | BDL                                                           |
| Nickel     | 30                                           | BDL                                                           | BDL                                                           | BDL                                                           |
| Lead       | 30                                           | BDL                                                           | BDL                                                           | BDL                                                           |
| Antimony   | 30                                           | BDL                                                           | BDL                                                           | BDL                                                           |
| Selenium   | 30                                           | BDL                                                           | BDL                                                           | BDL                                                           |
| Strontium  | 30                                           | BDL                                                           | BDL                                                           | BDL                                                           |
| Thallium   | 30                                           | BDL                                                           | BDL                                                           | BDL                                                           |
| Zinc *     | 30                                           | BDL                                                           | BDL                                                           | BDL                                                           |

\* Zinc and copper found in field blanks.

Inconsistent metals data is likely due to particulate contamination from the gas stream, especially those metals that are part of the pipeline construction materials.

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## Volatile Metals Analysis

| Component | Detection Limit, $\mu\text{g}/\text{M}^3$ | 101788-015<br>HG Tube 1<br>12/15/10 0915-1115<br>Landfill #6 | 101788-016<br>HG Tube 2<br>12/15/10 1355-1555<br>Landfill #6 | 101788-017<br>HG Tube 3<br>12/15/10 1510-1710<br>Landfill #6 |
|-----------|-------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
|           |                                           | $\mu\text{g}/\text{M}^3$                                     | $\mu\text{g}/\text{M}^3$                                     | $\mu\text{g}/\text{M}^3$                                     |
| Mercury   | 0.01                                      | 0.02                                                         | BDL                                                          | BDL                                                          |

| Component  | Detection Limit, $\mu\text{g}/\text{M}^3$ | 101788-019<br>Impinger 1<br>12/15/10 0954-1308<br>Landfill #6 | 101788-020<br>Impinger 2<br>12/15/10 0954-1308<br>Landfill #6 | 101788-021<br>Impinger 3<br>12/15/10 1333-1635<br>Landfill #6 |
|------------|-------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
|            |                                           | $\mu\text{g}/\text{M}^3$                                      | $\mu\text{g}/\text{M}^3$                                      | $\mu\text{g}/\text{M}^3$                                      |
| Arsenic    | 30                                        | BDL                                                           | BDL                                                           | BDL                                                           |
| Barium     | 30                                        | BDL                                                           | BDL                                                           | BDL                                                           |
| Beryllium  | 30                                        | BDL                                                           | BDL                                                           | BDL                                                           |
| Cadmium    | 30                                        | BDL                                                           | BDL                                                           | BDL                                                           |
| Cobalt     | 30                                        | BDL                                                           | BDL                                                           | BDL                                                           |
| Chromium   | 30                                        | BDL                                                           | BDL                                                           | BDL                                                           |
| Copper *   | 30                                        | BDL                                                           | BDL                                                           | BDL                                                           |
| Manganese  | 30                                        | BDL                                                           | BDL                                                           | 65                                                            |
| Molybdenum | 30                                        | BDL                                                           | BDL                                                           | BDL                                                           |
| Nickel     | 30                                        | BDL                                                           | BDL                                                           | BDL                                                           |
| Lead       | 30                                        | BDL                                                           | BDL                                                           | BDL                                                           |
| Antimony   | 30                                        | BDL                                                           | BDL                                                           | BDL                                                           |
| Selenium   | 30                                        | BDL                                                           | BDL                                                           | BDL                                                           |
| Strontium  | 30                                        | BDL                                                           | BDL                                                           | BDL                                                           |
| Thallium   | 30                                        | BDL                                                           | BDL                                                           | BDL                                                           |
| Zinc *     | 30                                        | BDL                                                           | 31                                                            | BDL                                                           |

\* Zinc and copper found in field blanks.

Inconsistent metals data is likely due to particulate contamination from the gas stream, especially those metals that are part of the pipeline construction materials.

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## Volatile Metals Analysis

| Component | Detection<br>Limit, $\mu\text{g}/\text{M}^3$ | 101793-015<br>HG Tube 1<br>12/17/10 1425-1625 | 101793-016<br>HG Tube 2<br>12/17/10 1425-1625 | 101793-017<br>HG Tube 3<br>12/17/10 1425-1625 |
|-----------|----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
|           |                                              | Landfill #7<br>$\mu\text{g}/\text{M}^3$       | Landfill #7<br>$\mu\text{g}/\text{M}^3$       | Landfill #7<br>$\mu\text{g}/\text{M}^3$       |
| Mercury   | 0.01                                         | BDL                                           | BDL                                           | BDL                                           |

| Component  | Detection<br>Limit, $\mu\text{g}/\text{M}^3$ | 101793-019<br>Impinger 1<br>12/17/10 1341-1642 | 101793-020<br>Impinger 2<br>12/17/10 1341-1642 | 101793-021<br>Impinger 3<br>12/17/10 1341-1644 |
|------------|----------------------------------------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|
|            |                                              | Landfill #7<br>$\mu\text{g}/\text{M}^3$        | Landfill #7<br>$\mu\text{g}/\text{M}^3$        | Landfill #7<br>$\mu\text{g}/\text{M}^3$        |
| Arsenic    | 30                                           | BDL                                            | BDL                                            | BDL                                            |
| Barium     | 30                                           | BDL                                            | BDL                                            | BDL                                            |
| Beryllium  | 30                                           | BDL                                            | BDL                                            | BDL                                            |
| Cadmium    | 30                                           | BDL                                            | BDL                                            | BDL                                            |
| Cobalt     | 30                                           | BDL                                            | BDL                                            | BDL                                            |
| Chromium   | 30                                           | BDL                                            | BDL                                            | BDL                                            |
| Copper *   | 30                                           | BDL                                            | BDL                                            | BDL                                            |
| Manganese  | 30                                           | BDL                                            | BDL                                            | BDL                                            |
| Molybdenum | 30                                           | BDL                                            | BDL                                            | BDL                                            |
| Nickel     | 30                                           | BDL                                            | BDL                                            | BDL                                            |
| Lead       | 30                                           | 155                                            | BDL                                            | 39                                             |
| Antimony   | 30                                           | BDL                                            | BDL                                            | BDL                                            |
| Selenium   | 30                                           | BDL                                            | BDL                                            | BDL                                            |
| Strontium  | 30                                           | BDL                                            | BDL                                            | BDL                                            |
| Thallium   | 30                                           | BDL                                            | BDL                                            | BDL                                            |
| Zinc *     | 30                                           | BDL                                            | BDL                                            | BDL                                            |

\* Zinc and copper found in field blanks.

Inconsistent metals data is likely due to particulate contamination from the gas stream, especially those metals that are part of the pipeline construction materials.

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## Volatile Metals Analysis

| Component | Detection<br>Limit, $\mu\text{g}/\text{M}^3$ | 111212-019<br>HG Tube 1<br>3/28/11 0921-1239<br>Landfill #8 | 111212-020<br>HG Tube 2<br>3/28/11 0921-1239<br>Landfill #8 | 111212-021<br>HG Tube 3<br>3/28/11 0921-1239<br>Landfill #8 |
|-----------|----------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|
|           |                                              | $\mu\text{g}/\text{M}^3$                                    | $\mu\text{g}/\text{M}^3$                                    | $\mu\text{g}/\text{M}^3$                                    |
| Mercury   | 0.01                                         | 0.04                                                        | 0.05                                                        | 0.04                                                        |

| Component  | Detection<br>Limit, $\mu\text{g}/\text{M}^3$ | 111212-008<br>Impinger 1<br>3/28/11 1347-1550<br>Landfill #8 | 111212-009<br>Impinger 2<br>3/28/11 1347-1550<br>Landfill #8 | 111212-010<br>Impinger 3<br>3/28/11 1347-1550<br>Landfill #8 |
|------------|----------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
|            |                                              | $\mu\text{g}/\text{M}^3$                                     | $\mu\text{g}/\text{M}^3$                                     | $\mu\text{g}/\text{M}^3$                                     |
| Arsenic    | 30                                           | BDL                                                          | BDL                                                          | BDL                                                          |
| Barium     | 30                                           | BDL                                                          | BDL                                                          | BDL                                                          |
| Beryllium  | 30                                           | BDL                                                          | BDL                                                          | BDL                                                          |
| Cadmium    | 30                                           | BDL                                                          | BDL                                                          | BDL                                                          |
| Cobalt     | 30                                           | BDL                                                          | BDL                                                          | BDL                                                          |
| Chromium   | 30                                           | BDL                                                          | BDL                                                          | BDL                                                          |
| Copper *   | 30                                           | 45                                                           | BDL                                                          | BDL                                                          |
| Manganese  | 30                                           | BDL                                                          | BDL                                                          | BDL                                                          |
| Molybdenum | 30                                           | BDL                                                          | BDL                                                          | BDL                                                          |
| Nickel     | 30                                           | BDL                                                          | BDL                                                          | BDL                                                          |
| Lead       | 30                                           | BDL                                                          | 18                                                           | BDL                                                          |
| Antimony   | 30                                           | BDL                                                          | BDL                                                          | BDL                                                          |
| Selenium   | 30                                           | BDL                                                          | BDL                                                          | BDL                                                          |
| Strontium  | 30                                           | BDL                                                          | BDL                                                          | BDL                                                          |
| Thallium   | 30                                           | BDL                                                          | BDL                                                          | BDL                                                          |
| Zinc *     | 30                                           | 23                                                           | BDL                                                          | BDL                                                          |

\* Zinc and copper found in field blanks.

Inconsistent metals data is likely due to particulate contamination from the gas stream, especially those metals that are part of the pipeline construction materials.

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## Volatile Metals Analysis

| Component | Detection Limit, $\mu\text{g}/\text{M}^3$ | 111220-019<br>HG Tube 1<br>3/29/11 1043-1412<br>Landfill #7 | 111220-020<br>HG Tube 2<br>3/29/11 1043-1412<br>Landfill #7 | 111220-021<br>HG Tube 3<br>3/29/11 1043-1412<br>Landfill #7 |
|-----------|-------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|
|           |                                           | $\mu\text{g}/\text{M}^3$                                    | $\mu\text{g}/\text{M}^3$                                    | $\mu\text{g}/\text{M}^3$                                    |
| Mercury   | 0.01                                      | sorbent blown out during sampling                           | BDL                                                         | BDL                                                         |

| Component  | Detection Limit, $\mu\text{g}/\text{M}^3$ | 111220-005<br>Impinger 1<br>3/29/11 1429-1640<br>Landfill #7 | 111220-006<br>Impinger 2<br>3/29/11 1429-1640<br>Landfill #7 | 111220-007<br>Impinger 3<br>3/29/11 1429-1640<br>Landfill #7 |
|------------|-------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
|            |                                           | $\mu\text{g}/\text{M}^3$                                     | $\mu\text{g}/\text{M}^3$                                     | $\mu\text{g}/\text{M}^3$                                     |
| Arsenic    | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Barium     | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Beryllium  | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Cadmium    | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Cobalt     | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Chromium   | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Copper *   | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Manganese  | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Molybdenum | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Nickel     | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Lead       | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Antimony   | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Selenium   | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Strontium  | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Thallium   | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Zinc *     | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |

\* Zinc and copper found in field blanks.

Inconsistent metals data is likely due to particulate contamination from the gas stream, especially those metals that are part of the pipeline construction materials.

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## Volatile Metals Analysis

| Component | Detection Limit, $\mu\text{g}/\text{M}^3$ | 111221-020<br>HG Tube 1<br>3/30/11 0911-1214<br>Landfill #6 | 111221-021<br>HG Tube 2<br>3/30/11 0911-1214<br>Landfill #6 | 111221-022<br>HG Tube 3<br>3/30/11 0911-1214<br>Landfill #6 |
|-----------|-------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|
|           |                                           | $\mu\text{g}/\text{M}^3$                                    | $\mu\text{g}/\text{M}^3$                                    | $\mu\text{g}/\text{M}^3$                                    |
| Mercury   | 0.01                                      | BDL                                                         | BDL                                                         | bad sample collected                                        |

| Component  | Detection Limit, $\mu\text{g}/\text{M}^3$ | 111221-005<br>Impinger 1<br>3/30/11 1403-1612<br>Landfill #6 | 111221-006<br>Impinger 2<br>3/30/11 1403-1612<br>Landfill #6 | 111221-007<br>Impinger 3<br>3/30/11 1403-1612<br>Landfill #6 |
|------------|-------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
|            |                                           | $\mu\text{g}/\text{M}^3$                                     | $\mu\text{g}/\text{M}^3$                                     | $\mu\text{g}/\text{M}^3$                                     |
| Arsenic    | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Barium     | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Beryllium  | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Cadmium    | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Cobalt     | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Chromium   | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Copper *   | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Manganese  | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Molybdenum | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Nickel     | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Lead       | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Antimony   | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Selenium   | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Strontium  | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Thallium   | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |
| Zinc *     | 30                                        | BDL                                                          | BDL                                                          | BDL                                                          |

\* Zinc and copper found in field blanks.

Inconsistent metals data is likely due to particulate contamination from the gas stream, especially those metals that are part of the pipeline construction materials.

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## Volatile Metals Analysis

| Component | Detection<br>Limit, $\mu\text{g}/\text{M}^3$ | 111225-015<br>HG Tube 1<br>3/31/2011 1020-1405 | 111225-016<br>HG Tube 2<br>3/31/2011 1020-1405 | 111225-017<br>HG Tube 3<br>3/31/2011 1020-1405 |
|-----------|----------------------------------------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|
|           |                                              | Landfill #9<br>$\mu\text{g}/\text{M}^3$        | Landfill #9<br>$\mu\text{g}/\text{M}^3$        | Landfill #9<br>$\mu\text{g}/\text{M}^3$        |
| Mercury   | 0.01                                         | BDL                                            | 0.01                                           | BDL                                            |

| Component  | Detection<br>Limit, $\mu\text{g}/\text{M}^3$ | 111225-004<br>Impinger 1<br>3/31/2011 1435-1640 | 111225-005<br>Impinger 2<br>3/31/2011 1435-1640 | 111225-006<br>Impinger 3<br>3/31/2011 1435-1640 |
|------------|----------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
|            |                                              | Landfill #9<br>$\mu\text{g}/\text{M}^3$         | Landfill #9<br>$\mu\text{g}/\text{M}^3$         | Landfill #9<br>$\mu\text{g}/\text{M}^3$         |
| Arsenic    | 30                                           | BDL                                             | BDL                                             | BDL                                             |
| Barium     | 30                                           | BDL                                             | BDL                                             | BDL                                             |
| Beryllium  | 30                                           | BDL                                             | BDL                                             | BDL                                             |
| Cadmium    | 30                                           | BDL                                             | BDL                                             | BDL                                             |
| Cobalt     | 30                                           | BDL                                             | BDL                                             | BDL                                             |
| Chromium   | 30                                           | BDL                                             | BDL                                             | BDL                                             |
| Copper *   | 30                                           | BDL                                             | BDL                                             | BDL                                             |
| Manganese  | 30                                           | BDL                                             | BDL                                             | BDL                                             |
| Molybdenum | 30                                           | BDL                                             | BDL                                             | BDL                                             |
| Nickel     | 30                                           | BDL                                             | BDL                                             | BDL                                             |
| Lead       | 30                                           | BDL                                             | BDL                                             | BDL                                             |
| Antimony   | 30                                           | BDL                                             | BDL                                             | 32                                              |
| Selenium   | 30                                           | BDL                                             | BDL                                             | BDL                                             |
| Strontium  | 30                                           | BDL                                             | BDL                                             | BDL                                             |
| Thallium   | 30                                           | BDL                                             | BDL                                             | BDL                                             |
| Zinc *     | 30                                           | BDL                                             | BDL                                             | BDL                                             |

\* Zinc and copper found in field blanks.

Inconsistent metals data is likely due to particulate contamination from the gas stream, especially those metals that are part of the pipeline construction materials.

DRAFT

## qPCR and Bacteria/Spore Biological Analysis

|                                       | 101694-013<br>Filter 1<br>11/01/10 1334-1415<br>Landfill #1<br># per 100 scf | 101694-014<br>Filter 2<br>11/01/10 1129-1209<br>Landfill #1<br># per 100 scf | 101694-015<br>Filter 3<br>11/01/10 1034-1100<br>Landfill #1<br># per 100 scf |
|---------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| <b>qPCR Biological Analysis</b>       |                                                                              |                                                                              |                                                                              |
| Total Bacteria                        | 4.80E+06                                                                     | 4.16E+06                                                                     | 3.17E+06                                                                     |
| Total acid-producing bacteria (APB)   | 5.13E+04                                                                     | 5.85E+04                                                                     | 1.59E+04                                                                     |
| Total iron-oxidizing bacteria (IOB)   | ND                                                                           | ND                                                                           | ND                                                                           |
| Total sulfate-reducing bacteria (SRB) | ND                                                                           | ND                                                                           | ND                                                                           |
| <b>Live Bacteria</b>                  |                                                                              |                                                                              |                                                                              |
| Anaerobic                             | <130                                                                         | <172                                                                         | <133                                                                         |
| Aerobic                               | <130                                                                         | <172                                                                         | <133                                                                         |
| Total                                 | <260                                                                         | <344                                                                         | <266                                                                         |
| <b>Spores</b>                         |                                                                              |                                                                              |                                                                              |
| Anaerobic                             | 217                                                                          | ND                                                                           | ND                                                                           |
| Aerobic                               | ND                                                                           | ND                                                                           | ND                                                                           |
| Total                                 | 217                                                                          | ND                                                                           | ND                                                                           |

ND=Not Detected

|                                       | 101786-012<br>Filter 1<br>12/14/10 1505-1525<br>Landfill #5<br># per 100 scf | 101786-013<br>Filter 2<br>12/14/10 1532-1552<br>Landfill #5<br># per 100 scf | 101786-014<br>Filter 3<br>12/14/10 1558-1618<br>Landfill #5<br># per 100 scf |
|---------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| <b>qPCR Biological Analysis</b>       |                                                                              |                                                                              |                                                                              |
| Total Bacteria                        | 1.48E+06                                                                     | 6.39E+06                                                                     | 5.13E+05                                                                     |
| Total acid-producing bacteria (APB)   | 1.42E+05                                                                     | 6.94E+04                                                                     | 7.98E+04                                                                     |
| Total iron-oxidizing bacteria (IOB)   | BDL                                                                          | 1.27E+04                                                                     | 2.23E+04                                                                     |
| Total sulfate-reducing bacteria (SRB) | BDL                                                                          | BDL                                                                          | BDL                                                                          |
| <b>Live Bacteria</b>                  |                                                                              |                                                                              |                                                                              |
| Anaerobic                             | <158                                                                         | <152                                                                         | <172                                                                         |
| Aerobic                               | <158                                                                         | <152                                                                         | <172                                                                         |
| Total                                 | <316                                                                         | <304                                                                         | <344                                                                         |
| <b>Spores</b>                         |                                                                              |                                                                              |                                                                              |
| Anaerobic                             | ND                                                                           | ND                                                                           | ND                                                                           |
| Aerobic                               | ND                                                                           | ND                                                                           | ND                                                                           |
| Total                                 | ND                                                                           | ND                                                                           | ND                                                                           |

ND=Not Detected

The results within this report relate only to the items tested.

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## qPCR and Bacteria/Spore Biological Analysis

|                                       | 101788-012<br>Filter 1<br>12/15/10 1707-1727<br>Landfill #6<br># per 100 scf | 101788-013<br>Filter 2<br>12/15/10 1737-1758<br>Landfill #6<br># per 100 scf | 101788-014<br>Filter 3<br>12/15/10 1737-1758<br>Landfill #6<br># per 100 scf |
|---------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| <b>qPCR Biological Analysis</b>       |                                                                              |                                                                              |                                                                              |
| Total Bacteria                        | 7.09E+05                                                                     | 5.28E+05                                                                     | 7.52E+05                                                                     |
| Total acid-producing bacteria (APB)   | 9.41E+04                                                                     | 6.20E+04                                                                     | 5.39E+04                                                                     |
| Total iron-oxidizing bacteria (IOB)   | BDL                                                                          | BDL                                                                          | BDL                                                                          |
| Total sulfate-reducing bacteria (SRB) | BDL                                                                          | BDL                                                                          | BDL                                                                          |
| <b>Live Bacteria</b>                  |                                                                              |                                                                              |                                                                              |
| Anaerobic                             | <165                                                                         | <130                                                                         | <140                                                                         |
| Aerobic                               | <165                                                                         | <130                                                                         | <140                                                                         |
| Total                                 | <330                                                                         | <260                                                                         | <280                                                                         |
| <b>Spores</b>                         |                                                                              |                                                                              |                                                                              |
| Anaerobic                             | ND                                                                           | ND                                                                           | ND                                                                           |
| Aerobic                               | ND                                                                           | ND                                                                           | ND                                                                           |
| Total                                 | ND                                                                           | ND                                                                           | ND                                                                           |

ND=Not Detected

|                                       | 101793-012<br>Filter 1<br>12/17/10 1004-1025<br>Landfill #7<br># per 100 scf | 101793-013<br>Filter 2<br>12/17/10 1035-1056<br>Landfill #7<br># per 100 scf | 101793-014<br>Filter 3<br>12/17/10 1035-1055<br>Landfill #7<br># per 100 scf |
|---------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| <b>qPCR Biological Analysis</b>       |                                                                              |                                                                              |                                                                              |
| Total Bacteria                        | 5.24E+05                                                                     | 6.93E+05                                                                     | 7.60E+05                                                                     |
| Total acid-producing bacteria (APB)   | 8.83E+04                                                                     | 1.35E+05                                                                     | 6.81E+04                                                                     |
| Total iron-oxidizing bacteria (IOB)   | BDL                                                                          | 1.43E+04                                                                     | BDL                                                                          |
| Total sulfate-reducing bacteria (SRB) | BDL                                                                          | BDL                                                                          | BDL                                                                          |
| <b>Live Bacteria</b>                  |                                                                              |                                                                              |                                                                              |
| Anaerobic                             | <165                                                                         | <166                                                                         | <163                                                                         |
| Aerobic                               | 220                                                                          | <166                                                                         | <163                                                                         |
| Total                                 | 220                                                                          | <332                                                                         | <326                                                                         |
| <b>Spores</b>                         |                                                                              |                                                                              |                                                                              |
| Anaerobic                             | ND                                                                           | ND                                                                           | ND                                                                           |
| Aerobic                               | ND                                                                           | ND                                                                           | ND                                                                           |
| Total                                 | ND                                                                           | ND                                                                           | ND                                                                           |

ND=Not Detected

The results within this report relate only to the items tested.

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## qPCR and Bacteria/Spore Biological Analysis

|                                       | 111212-004<br>Filter 1<br>3/28/11 1415-1446<br>Landfill #8<br># per 100 scf | 111212-005<br>Filter 2<br>3/28/11 1443-1527<br>Landfill #8<br># per 100 scf | 111212-006<br>Filter 3<br>3/28/11 1530-1602<br>Landfill #8<br># per 100 scf |
|---------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| <b>qPCR Biological Analysis</b>       |                                                                             |                                                                             |                                                                             |
| Total Bacteria                        | 2.37E+06                                                                    | 9.11E+05                                                                    | 6.67E+06                                                                    |
| Total acid-producing bacteria (APB)   | BDL                                                                         | BDL                                                                         | 3.01E+04                                                                    |
| Total iron-oxidizing bacteria (IOB)   | 4.29E+04                                                                    | BDL                                                                         | 4.14E+04                                                                    |
| Total sulfate-reducing bacteria (SRB) | BDL                                                                         | BDL                                                                         | 2.27E+03                                                                    |
| <b>Live Bacteria</b>                  |                                                                             |                                                                             |                                                                             |
| Anaerobic                             | <126                                                                        | 960                                                                         | 1020                                                                        |
| Aerobic                               | <126                                                                        | <115                                                                        | <122                                                                        |
| Total                                 | <252                                                                        | 960                                                                         | 1020                                                                        |
| <b>Spores</b>                         |                                                                             |                                                                             |                                                                             |
| Anaerobic                             | ND                                                                          | ND                                                                          | ND                                                                          |
| Aerobic                               | ND                                                                          | ND                                                                          | ND                                                                          |
| Total                                 | ND                                                                          | ND                                                                          | ND                                                                          |

ND=Not Detected

|                                       | 111220-008<br>Filter 1<br>3/29/11 1533-1605<br>Landfill #7<br># per 100 scf | 111220-009<br>Filter 2<br>3/29/11 1533-1605<br>Landfill #7<br># per 100 scf | 111220-010<br>Filter 3<br>3/29/11 1533-1605<br>Landfill #7<br># per 100 scf |
|---------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| <b>qPCR Biological Analysis</b>       |                                                                             |                                                                             |                                                                             |
| Total Bacteria                        | 1.07E+06                                                                    | 1.61E+06                                                                    | 2.00E+06                                                                    |
| Total acid-producing bacteria (APB)   | 1.93E+05                                                                    | 2.93E+04                                                                    | 8.27E+04                                                                    |
| Total iron-oxidizing bacteria (IOB)   | 7.02E+04                                                                    | 5.49E+04                                                                    | BDL                                                                         |
| Total sulfate-reducing bacteria (SRB) | BDL                                                                         | BDL                                                                         | BDL                                                                         |
| <b>Live Bacteria</b>                  |                                                                             |                                                                             |                                                                             |
| Anaerobic                             | <128                                                                        | <128                                                                        | <128                                                                        |
| Aerobic                               | <128                                                                        | <128                                                                        | <128                                                                        |
| Total                                 | <256                                                                        | <256                                                                        | <256                                                                        |
| <b>Spores</b>                         |                                                                             |                                                                             |                                                                             |
| Anaerobic                             | ND                                                                          | ND                                                                          | ND                                                                          |
| Aerobic                               | ND                                                                          | ND                                                                          | ND                                                                          |
| Total                                 | ND                                                                          | ND                                                                          | ND                                                                          |

ND=Not Detected

The results within this report relate only to the items tested.

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## qPCR and Bacteria/Spore Biological Analysis

|                                       | 111221-008<br>Filter 1<br>3/30/11 1740-1810<br>Landfill #6<br># per 100 scf | 111221-009<br>Filter 2<br>3/30/11 1740-1810<br>Landfill #6<br># per 100 scf | 111221-010<br>Filter 3<br>3/30/11 1740-1810<br>Landfill #6<br># per 100 scf |
|---------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| <b>qPCR Biological Analysis</b>       |                                                                             |                                                                             |                                                                             |
| Total Bacteria                        | 2.38E+06                                                                    | 2.95E+06                                                                    | 1.82E+07                                                                    |
| Total acid-producing bacteria (APB)   | 7.95E+04                                                                    | 2.02E+05                                                                    | 1.81E+05                                                                    |
| Total iron-oxidizing bacteria (IOB)   | 5.59E+04                                                                    | 6.25E+04                                                                    | BDL                                                                         |
| Total sulfate-reducing bacteria (SRB) | BDL                                                                         | BDL                                                                         | BDL                                                                         |
| <b>Live Bacteria</b>                  |                                                                             |                                                                             |                                                                             |
| Anaerobic                             | <180                                                                        | <180                                                                        | <180                                                                        |
| Aerobic                               | <180                                                                        | <180                                                                        | <180                                                                        |
| Total                                 | <360                                                                        | <360                                                                        | <360                                                                        |
| <b>Spores</b>                         |                                                                             |                                                                             |                                                                             |
| Anaerobic                             | ND                                                                          | ND                                                                          | ND                                                                          |
| Aerobic                               | ND                                                                          | ND                                                                          | ND                                                                          |
| Total                                 | ND                                                                          | ND                                                                          | ND                                                                          |

ND=Not Detected

|                                       | 111225-019<br>Filter 1<br>3/31/11 1545-1639<br>Landfill #9<br># per 100 scf | 111225-020<br>Filter 2<br>3/31/11 1545-1639<br>Landfill #9<br># per 100 scf | 111225-021<br>Filter 3<br>3/31/11 1545-1639<br>Landfill #9<br># per 100 scf |
|---------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| <b>qPCR Biological Analysis</b>       |                                                                             |                                                                             |                                                                             |
| Total Bacteria                        | 3.54E+06                                                                    | 2.22E+06                                                                    | 2.76E+06                                                                    |
| Total acid-producing bacteria (APB)   | BDL                                                                         | 7.57E+04                                                                    | 1.10E+05                                                                    |
| Total iron-oxidizing bacteria (IOB)   | 7.61E+04                                                                    | 6.26E+04                                                                    | 7.67E+04                                                                    |
| Total sulfate-reducing bacteria (SRB) | BDL                                                                         | BDL                                                                         | BDL                                                                         |
| <b>Live Bacteria</b>                  |                                                                             |                                                                             |                                                                             |
| Anaerobic                             | <170                                                                        | 228                                                                         | <171                                                                        |
| Aerobic                               | <170                                                                        | <171                                                                        | <171                                                                        |
| Total                                 | <340                                                                        | 228                                                                         | <342                                                                        |
| <b>Spores</b>                         |                                                                             |                                                                             |                                                                             |
| Anaerobic                             | ND                                                                          | ND                                                                          | ND                                                                          |
| Aerobic                               | ND                                                                          | ND                                                                          | ND                                                                          |
| Total                                 | ND                                                                          | ND                                                                          | ND                                                                          |

ND=Not Detected

The results within this report relate only to the items tested.

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## Analysis by ASTM D1945 / D1946

### Summary Statistics

| Component        | total # of samples | total # of hits | Average | Median | Max value | Min value | 0.90 Percentile |
|------------------|--------------------|-----------------|---------|--------|-----------|-----------|-----------------|
| ----- mol% ----- |                    |                 |         |        |           |           |                 |
| Helium           | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Hydrogen         | 24                 | 21              | 0.36    | 0.36   | 0.87      | BDL       | 0.68            |
| Carbon Dioxide   | 24                 | 24              | 1.74    | 1.74   | 2.21      | 1.24      | 2.10            |
| Oxygen/Argon     | 24                 | 24              | 0.25    | 0.19   | 0.90      | 0.08      | 0.42            |
| Nitrogen         | 24                 | 24              | 2.97    | 2.51   | 6.03      | 1.16      | 5.47            |
| Carbon Monoxide  | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Methane          | 24                 | 24              | 94.68   | 95.22  | 96.60     | 91.48     | 95.89           |
| Ethane           | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Ethene           | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Ethyne           | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Propane          | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Propene          | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Propadiene       | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Propyne          | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| i-Butane         | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| n-Butane         | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 1-Butene         | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| i-Butene         | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| trans-2-Butene   | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| cis-2-Butene     | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 1,3-Butadiene    | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| i-Pentane        | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| n-Pentane        | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| neo-Pentane      | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Pentenenes       | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Hexane Plus      | 24                 | 18              | 0.0003  | 0.0002 | 0.0013    | BDL       | 0.0010          |
| Ammonia          | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |

#### Calculated Real Gas Properties

|                                            |    |    |         |         |         |         |         |
|--------------------------------------------|----|----|---------|---------|---------|---------|---------|
| Compressibility Factor [z] (Di             | 24 | 24 | 0.99806 | 0.99805 | 0.99814 | 0.99801 | 0.99814 |
| Compressibility Factor [z] (S <sub>c</sub> | 24 | 24 | 0.99775 | 0.99774 | 0.99784 | 0.99770 | 0.99783 |
| Relative Density (Specific Gra             | 24 | 24 | 0.5836  | 0.5837  | 0.5956  | 0.5742  | 0.5917  |
| Gross HV (Dry) (Btu/ft <sup>3</sup> )      | 24 | 24 | 961.5   | 966.9   | 980.9   | 929.4   | 974.0   |
| Gross HV (Sat.) (Btu/ft <sup>3</sup> )     | 24 | 24 | 945.1   | 950.4   | 964.1   | 913.5   | 957.4   |
| Wobbe Index                                | 24 | 24 | 1258.8  | 1267.1  | 1292.2  | 1204.3  | 1283.1  |
| Net HV (Dry) (Btu/ft <sup>3</sup> )        | 24 | 24 | 865.7   | 870.5   | 883.1   | 836.8   | 876.9   |
| Net HV (Sat.) (Btu/ft <sup>3</sup> )       | 24 | 24 | 850.9   | 855.7   | 868.0   | 822.5   | 861.9   |
| Real Gas Density (lbs/ft <sup>3</sup> )    | 24 | 24 | 0.0447  | 0.0447  | 0.0456  | 0.0439  | 0.0453  |

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Extended Hydrocarbon Analysis by GC/FID Summary Statistics

| Component Name         | Detection<br>Limit | total # of<br>samples | total #<br>of hits | Average | Median | Max<br>Value<br>-----<br>ppmv | Min<br>Value | 0.90<br>Percentile |
|------------------------|--------------------|-----------------------|--------------------|---------|--------|-------------------------------|--------------|--------------------|
| <b>Cycloalkanes</b>    |                    |                       |                    |         |        |                               |              |                    |
| Cyclopentane           | 1                  | 24                    | 3                  | BDL     | BDL    | 1                             | BDL          | BDL                |
| Methylcyclopentane     | 1                  | 24                    | 1                  | BDL     | BDL    | 1                             | BDL          | BDL                |
| Cyclohexane            | 1                  | 24                    | 2                  | BDL     | BDL    | 1                             | BDL          | BDL                |
| Methylcyclohexane      | 1                  | 24                    | 1                  | BDL     | BDL    | 1                             | BDL          | BDL                |
| <b>Aromatics</b>       |                    |                       |                    |         |        |                               |              |                    |
| Benzene                | 1                  | 24                    | 1                  | BDL     | BDL    | 1                             | BDL          | BDL                |
| Toluene                | 1                  | 24                    | 3                  | BDL     | BDL    | 1                             | BDL          | BDL                |
| Ethylbenzene           | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                           | BDL          | BDL                |
| m,p-Xylene             | 1                  | 24                    | 4                  | BDL     | BDL    | 1                             | BDL          | 1                  |
| Styrene                | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                           | BDL          | BDL                |
| o-Xylene               | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                           | BDL          | BDL                |
| C3 Benzenes            | 1                  | 24                    | 3                  | BDL     | BDL    | 1                             | BDL          | BDL                |
| Naphthalene            | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                           | BDL          | BDL                |
| C1 Naphthalenes        | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                           | BDL          | BDL                |
| C2 Naphthalenes        | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                           | BDL          | BDL                |
| <b>Paraffins</b>       |                    |                       |                    |         |        |                               |              |                    |
| Hexanes                | 1                  | 24                    | 8                  | 1       | BDL    | 4                             | BDL          | 2                  |
| Heptanes               | 1                  | 24                    | 3                  | BDL     | BDL    | 2                             | BDL          | BDL                |
| 2,2,4-Trimethylpentane | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                           | BDL          | BDL                |
| Octanes                | 1                  | 24                    | 4                  | BDL     | BDL    | 1                             | BDL          | 1                  |
| Nonanes                | 1                  | 24                    | 3                  | BDL     | BDL    | 2                             | BDL          | BDL                |
| Decanes                | 1                  | 24                    | 13                 | 1       | 1      | 4                             | BDL          | 3                  |
| Undecanes              | 1                  | 24                    | 7                  | BDL     | BDL    | 2                             | BDL          | 1                  |
| Dodecanes              | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                           | BDL          | BDL                |
| Tridecanes             | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                           | BDL          | BDL                |
| Tetradecanes           | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                           | BDL          | BDL                |
| Pentadecanes           | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                           | BDL          | BDL                |
| Hexadecanes            | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                           | BDL          | BDL                |
| Heptadecanes           | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                           | BDL          | BDL                |
| Octadecanes            | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                           | BDL          | BDL                |
| Nonadecanes            | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                           | BDL          | BDL                |
| Eicosanes +            | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                           | BDL          | BDL                |

Total from Cyclopentane  
to Eicosanes +

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## Trace Sulfur Analysis by ASTM D6228

### Summary Statistics

| Component Name                       | total # of samples | total # of hits | Average | Median | Max Value | Min Value | 0.90 Percentile |
|--------------------------------------|--------------------|-----------------|---------|--------|-----------|-----------|-----------------|
|                                      |                    |                 |         |        | ppmv      |           |                 |
| Hydrogen Sulfide                     | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Sulfur Dioxide                       | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Carbonyl Sulfide                     | 24                 | 3               | 0.01    | BDL    | 0.08      | BDL       | 0.05            |
| Carbon Disulfide                     | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Methyl Mercaptan                     | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Ethyl Mercaptan                      | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| i-Propyl Mercaptan                   | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| n-Propyl Mercaptan                   | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| t-Butyl Mercaptan                    | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Dimethyl Sulfide                     | 24                 | 9               | 0.80    | BDL    | 5.45      | BDL       | 4.00            |
| Methyl Ethyl Sulfide                 | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Diethyl Sulfide                      | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Di-t-Butyl Sulfide                   | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Dimethyl Disulfide                   | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Methyl Ethyl Disulfide               | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Methyl i-Propyl Disulfide            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Diethyl Disulfide                    | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Methyl n-Propyl Disulfide            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Methyl t-Butyl Disulfide             | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Ethyl i-Propyl Disulfide             | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Ethyl n-Propyl Disulfide             | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Ethyl t-Butyl Disulfide              | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Di-i-Propyl Disulfide                | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| i-Propyl n-Propyl Disulfide          | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Di-n-Propyl Disulfide                | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| i-Propyl t-Butyl Disulfide           | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| n-Propyl t-Butyl Disulfide           | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Di-t-Butyl Disulfide                 | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Dimethyl Trisulfide                  | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Diethyl Trisulfide                   | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Di-t-Butyl Trisulfide                | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Thiophene                            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| C1-Thiophenes                        | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| C2-Thiophenes                        | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| C3-Thiophenes                        | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Benzothiophene                       | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| C1-Benzothiophenes                   | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| C2-Benzothiophenes                   | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Thiophane                            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Thiophenol                           | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Total Sulfur                         |                    |                 |         |        |           |           |                 |
| As molar PPM S                       | 24                 | 12              | 0.81    | 0.04   | 5.45      | BDL       | 4.00            |
| As Grains/100 SCF @ 14.73 psia, 60°F | 24                 | 12              | 0.048   | 0.002  | 0.323     | BDL       | 0.237           |

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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## TO-14 Halocarbon and Volatile Organic Compound Analysis Summary Statistics

| Component Name                                  | Detection Limit | total # of samples | total # of hits | Average | Median | Max Value | Min Value | 0.90 Percentile |
|-------------------------------------------------|-----------------|--------------------|-----------------|---------|--------|-----------|-----------|-----------------|
|                                                 |                 |                    |                 | -----   | -----  | ppmv      | -----     | -----           |
| Dichlorodifluoromethane (CFC-12)                | 0.10            | 24                 | 6               | 0.3     | BDL    | 2.3       | BDL       | 1.6             |
| 1,2-Dichlorotetrafluoroethane (CFC-114)         | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113) | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Trichlorofluoromethane (CFC-11)                 | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Chloromethane                                   | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Dichloromethane (Methylene Chloride)            | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Chloroform                                      | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Carbon Tetrachloride                            | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Chloroethane                                    | 0.10            | 24                 | 3               | BDL     | BDL    | 0.3       | BDL       | 0.2             |
| 1,1-Dichloroethane                              | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 1,2-Dichloroethane                              | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 1,1,1-Trichloroethane                           | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 1,1,2-Trichloroethane                           | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 1,1,1,2-Tetrachloroethane                       | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 1,1,2,2-Tetrachloroethane                       | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Hexachloroethane                                | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Chloroethene (Vinyl Chloride)                   | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 1,1-Dichloroethene                              | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| cis-1,2-Dichloroethene                          | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| trans-1,2-Dichloroethene                        | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Trichloroethene                                 | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Tetrachloroethene                               | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 1,2-Dichloropropane                             | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 2,2-Dichloropropane                             | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 1,2,3-Trichloropropane                          | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 3-Chloropropene                                 | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 1,1-Dichloropropene                             | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| cis-1,3-Dichloropropene                         | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| trans-1,3-Dichloropropene                       | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Bromomethane                                    | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Dibromomethane                                  | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Bromoform                                       | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 1,2-Dibromoethane                               | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Bromochloromethane                              | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Bromodichloromethane                            | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Dibromochloromethane                            | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| Chlorobenzene                                   | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 1,2-Dichlorobenzene                             | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 1,3-Dichlorobenzene                             | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |
| 1,4-Dichlorobenzene                             | 0.10            | 24                 | 0               | BDL     | BDL    | BDL       | BDL       | BDL             |

The results within this report relate only to the items tested.

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## TO-14 Halocarbon and Volatile Organic Compound Analysis Summary Statistics

| Component Name              | Detection Limit | total # of samples | total # of hits | Average        | Median | Max Value | Min Value | 0.90 Percentile |
|-----------------------------|-----------------|--------------------|-----------------|----------------|--------|-----------|-----------|-----------------|
|                             |                 |                    |                 | -----ppmv----- |        |           |           |                 |
| 1,2,3-Trichlorobenzene      | 0.10            | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| 1,2,4-Trichlorobenzene      | 0.10            | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| Bromobenzene                | 0.10            | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| 2-Chlorotoluene             | 0.10            | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| 4-Chlorotoluene             | 0.10            | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| 1,2-Dibromo-3-chloropropene | 0.10            | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| Hexachloro-1,3-butadiene    | 0.10            | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| 1,3-Butadiene               | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| Acrylonitrile               | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| Benzene                     | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| Toluene                     | 1.0             | 24                 | 3               | BDL            | BDL    | 1.4       | BDL       | BDL             |
| Ethylbenzene                | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| m,p-Xylene                  | 1.0             | 24                 | 2               | BDL            | BDL    | 1.0       | BDL       | BDL             |
| o-Xylene                    | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| Styrene                     | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| i-Propylbenzene             | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| 4-Ethyltoluene              | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| n-Propylbenzene             | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| 1,3,5-Trimethylbenzene      | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| t-Butylbenzene              | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| 1,2,4-Trimethylbenzene      | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| s-Butylbenzene              | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| p-Isopropyltoluene          | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| n-Butylbenzene              | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| Naphthalene                 | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| Pyridine                    | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |
| Nitrobenzene                | 1.0             | 24                 | 0               | BDL            | BDL    | BDL       | BDL       | BDL             |

BDL = Below Detection Limit

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## Semi- Volatile Organic Compound Analysis Summary Statistics

| Analyte                       | detection<br>limit | total # of<br>samples | total #<br>of hits | Average | Median | Max<br>Value<br>ppbv | Min<br>Value | 0.90<br>Percentile |
|-------------------------------|--------------------|-----------------------|--------------------|---------|--------|----------------------|--------------|--------------------|
| N-nitrosodimethylamine        | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Phenol                        | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Aniline                       | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Bis(2-Chloroethyl) ether      | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 2-Chlorophenol                | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Benzyl Alcohol                | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 2-methylphenol                | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| bis(2-chloroisopropyl)ether   | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| N-Nitroso-di-n-propylamine    | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 4-methylphenol/3-methylphenol | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Isophorone                    | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 2-nitrophenol                 | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 2,4-dimethylphenol            | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Bis(2-chloroethoxy)methane    | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 2,4-dichlorophenol            | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 4-Chloroaniline               | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 4-chloro-3-methylphenol       | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 2-methylnaphthalene           | 1                  | 24                    | 2                  | BDL     | BDL    | 0.4                  | BDL          | BDL                |
| 1-methylnaphthalene           | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Hexachlorocyclopentadiene     | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 2,4,6-trichlorophenol         | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 2,4,5-trichlorophenol         | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 2-chloronaphthalene           | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 2-Nitroaniline                | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 1,4-dinitrobenzene            | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Dimethyl phthalate            | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 1,3-dinitrobenzene            | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 2,6-dinitrotoluene            | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Acenaphthylene                | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 1,2-Dinitrobenzene            | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 3-Nitroaniline                | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Acenaphthene                  | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 2,4-dinitrophenol             | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 4-nitrophenol                 | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Dibenzofuran                  | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 2,4-dinitrotoluene            | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 2,3,4,6-Tetrachlorophenol     | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 2,3,5,6-Tetrachlorophenol     | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Diethyl Phthalate             | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |

The results within this report relate only to the items tested.

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## Semi- Volatile Organic Compound Analysis Summary Statistics

| Analyte                     | detection<br>limit | total # of<br>samples | total #<br>of hits | Average | Median | Max<br>Value<br>ppbv | Min<br>Value | 0.90<br>Percentile |
|-----------------------------|--------------------|-----------------------|--------------------|---------|--------|----------------------|--------------|--------------------|
| Fluorene                    | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 4-chlorophenyl phenyl ether | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 4-Nitroaniline              | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 4,6-dinitro-2-methylphenol  | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Diphenylamine               | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| n-Nitrosodiphenylamine      | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Azobenzene                  | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| 4-Bromophenyl phenyl ether  | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Hexachlorobenzene           | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Pentachlorophenol           | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Phenanthrene                | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Anthracene                  | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Carbazole                   | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Di-n-butyl phthalate        | 1                  | 24                    | 17                 | 1.0     | 1.0    | 3.3                  | BDL          | 2.5                |
| Fluoranthene                | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Pyrene                      | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Benzyl butyl phthalate      | 1                  | 24                    | 3                  | BDL     | BDL    | 0.3                  | BDL          | BDL                |
| Bis(2-ethylhexyl)adipate    | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Benzo(a)anthracene          | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Chrysene                    | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Bis(2-ethylhexyl)phthalate  | 1                  | 24                    | 8                  | 0.3     | BDL    | 3.4                  | BDL          | 0.8                |
| Di-n-octyl phthalate        | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Benzo(b)fluoranthene        | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Benzo(k)fluoranthene        | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Benzo(a)pyrene              | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Indeno(1,2,3-cd)pyrene      | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Dibenzo(a,h)anthracene      | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |
| Benzo[g,h,i]perylene        | 1                  | 24                    | 0                  | BDL     | BDL    | BDL                  | BDL          | BDL                |

BDL = Below Detection Limit

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## Aldehyde and Ketone Compounds Summary Statistics

| Analyte                   | detection<br>limit | total # of<br>samples | total #<br>of hits | Average | Median | Max<br>Value | Min<br>Value | 0.90<br>Percentile |
|---------------------------|--------------------|-----------------------|--------------------|---------|--------|--------------|--------------|--------------------|
|                           |                    |                       |                    | -----   |        | ppbv         | -----        |                    |
| Formaldehyde              | 10                 | 24                    | 12                 | BDL     | BDL    | 57           | BDL          | 22                 |
| Acetaldehyde              | 7                  | 24                    | 18                 | 25      | 12     | 147          | BDL          | 67                 |
| Acetone                   | 5                  | 24                    | 21                 | 98      | 35     | 522          | BDL          | 364                |
| Acrolein (2-propenal)     | 6                  | 24                    | 0                  | BDL     | BDL    | BDL          | BDL          | BDL                |
| Propionaldehyde           | 5                  | 24                    | 1                  | BDL     | BDL    | 10           | BDL          | BDL                |
| Crotonaldehyde            | 5                  | 24                    | 6                  | 5       | BDL    | 54           | BDL          | 9                  |
| 2-Butanone (MEK)          | 5                  | 24                    | 16                 | 23      | 15     | 96           | BDL          | 81                 |
| Methacrolein (Isobutenal) | 5                  | 24                    | 0                  | BDL     | BDL    | BDL          | BDL          | BDL                |
| Butanal                   | 5                  | 24                    | 1                  | BDL     | BDL    | 69           | BDL          | BDL                |
| Benzaldehyde              | 5                  | 24                    | 0                  | BDL     | BDL    | BDL          | BDL          | BDL                |
| Pentanal                  | 5                  | 24                    | 3                  | 5       | BDL    | 107          | BDL          | BDL                |
| p-Tolualdehyde            | 5                  | 24                    | 3                  | BDL     | BDL    | 11           | BDL          | BDL                |
| Hexanal                   | 5                  | 24                    | 2                  | 12      | BDL    | 250          | BDL          | BDL                |

BDL = Below Detection Limit

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## Total Organic Silicon, including Siloxanes Summary Statistics

|                                      | Detection<br>Limit | total # of<br>samples | total #<br>of hits | Average | Median | Max<br>Value<br>----- mg Si / M3 ----- | Min<br>Value | 0.90<br>Percentile |
|--------------------------------------|--------------------|-----------------------|--------------------|---------|--------|----------------------------------------|--------------|--------------------|
| 1,1,3,3-Tetramethyldisiloxane        | 0.1                | 24                    | 0                  | BDL     | BDL    | BDL                                    | BDL          | BDL                |
| Pentamethyldisiloxane                | 0.1                | 24                    | 0                  | BDL     | BDL    | BDL                                    | BDL          | BDL                |
| Hexamethyldisilane                   | 0.1                | 24                    | 0                  | BDL     | BDL    | BDL                                    | BDL          | BDL                |
| Hexamethyldisiloxane (L2, MM)        | 0.1                | 24                    | 0                  | BDL     | BDL    | BDL                                    | BDL          | BDL                |
| Octamethyltrisiloxane (L3, MDM)      | 0.1                | 24                    | 0                  | BDL     | BDL    | BDL                                    | BDL          | BDL                |
| Octamethylcyclotetrasiloxane (D4)    | 0.1                | 24                    | 5                  | BDL     | BDL    | 0.3                                    | BDL          | 0.2                |
| Decamethyltetrasiloxane (L4, MD2M)   | 0.1                | 24                    | 0                  | BDL     | BDL    | BDL                                    | BDL          | BDL                |
| Decamethylcyclopentasiloxane (D5)    | 0.1                | 24                    | 0                  | BDL     | BDL    | BDL                                    | BDL          | BDL                |
| Dodecamethylpentasiloxane (L5, MD3M) | 0.1                | 24                    | 0                  | BDL     | BDL    | BDL                                    | BDL          | BDL                |
| Dodecamethylcyclohexasiloxane (D6)   | 0.1                | 24                    | 0                  | BDL     | BDL    | BDL                                    | BDL          | BDL                |

0 = Below Detection Limit

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## Volatile Metals Analysis Summary Statistics

| Component | Detection<br>Limit, µg/M <sup>3</sup> | total # of<br>samples | total #<br>of hits | Average | Median | Max<br>Value<br>µg/M3 | Min<br>Value | 0.90<br>Percentile |
|-----------|---------------------------------------|-----------------------|--------------------|---------|--------|-----------------------|--------------|--------------------|
| Mercury   | 0.01                                  | 22                    | 5                  | BDL     | BDL    | 0.05                  | BDL          | 0.04               |

| Component  | Detection<br>Limit, µg/M <sup>3</sup> | total # of<br>samples | total #<br>of hits | Average | Median | Max<br>Value<br>µg/M3 | Min<br>Value | 0.90<br>Percentile |
|------------|---------------------------------------|-----------------------|--------------------|---------|--------|-----------------------|--------------|--------------------|
| Arsenic    | 30                                    | 24                    | 0                  | BDL     | BDL    | BDL                   | BDL          | BDL                |
| Barium     | 30                                    | 24                    | 0                  | BDL     | BDL    | BDL                   | BDL          | BDL                |
| Beryllium  | 30                                    | 24                    | 0                  | BDL     | BDL    | BDL                   | BDL          | BDL                |
| Cadmium    | 30                                    | 24                    | 0                  | BDL     | BDL    | BDL                   | BDL          | BDL                |
| Cobalt     | 30                                    | 24                    | 0                  | BDL     | BDL    | BDL                   | BDL          | BDL                |
| Chromium   | 30                                    | 24                    | 1                  | BDL     | BDL    | 175                   | BDL          | BDL                |
| Copper *   | 30                                    | 24                    | 3                  | BDL     | BDL    | 118                   | BDL          | 27                 |
| Manganese  | 30                                    | 24                    | 1                  | BDL     | BDL    | 65                    | BDL          | BDL                |
| Molybdenum | 30                                    | 24                    | 0                  | BDL     | BDL    | BDL                   | BDL          | BDL                |
| Nickel     | 30                                    | 24                    | 0                  | BDL     | BDL    | BDL                   | BDL          | BDL                |
| Lead       | 30                                    | 24                    | 3                  | BDL     | BDL    | 155                   | BDL          | BDL                |
| Antimony   | 30                                    | 24                    | 1                  | BDL     | BDL    | 32                    | BDL          | BDL                |
| Selenium   | 30                                    | 24                    | 0                  | BDL     | BDL    | BDL                   | BDL          | BDL                |
| Strontium  | 30                                    | 24                    | 0                  | BDL     | BDL    | BDL                   | BDL          | BDL                |
| Thallium   | 30                                    | 24                    | 0                  | BDL     | BDL    | BDL                   | BDL          | BDL                |
| Zinc *     | 30                                    | 24                    | 4                  | BDL     | BDL    | 253                   | BDL          | 29                 |

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## qPCR and Bacteria/Spore Biological Analysis Summary Statistics

|                                       | total # of<br>samples     | total #<br>of hits | Average  | Median   | Max<br>Value | Min<br>Value | 0.90<br>Percentile |
|---------------------------------------|---------------------------|--------------------|----------|----------|--------------|--------------|--------------------|
|                                       | ----- # per 100 scf ----- |                    |          |          |              |              |                    |
| qPCR Biological Analysis              |                           |                    |          |          |              |              |                    |
| Total Bacteria                        | 24                        | 24                 | 2.97E+06 | 2.11E+06 | 1.82E+07     | 5.13E+05     | 5.91E+06           |
| Total acid-producing bacteria (APB)   | 24                        | 21                 | 7.92E+04 | 7.26E+04 | 2.02E+05     | ND           | 1.69E+05           |
| Total iron-oxidizing bacteria (IOB)   | 24                        | 12                 | 2.47E+04 | 6.37E+03 | 7.67E+04     | ND           | 6.79E+04           |
| Total sulfate-reducing bacteria (SRB) | 24                        | 1                  | 9.48E+01 | ND       | 2.27E+03     | ND           | ND                 |
| Live Bacteria                         |                           |                    |          |          |              |              |                    |
| Anaerobic                             | 24                        | 3                  | 9.20E+01 | ND       | 1.02E+03     | ND           | 1.60E+02           |
| Aerobic                               | 24                        | 1                  | 9.17E+00 | ND       | 2.20E+02     | ND           | ND                 |
| Total                                 | 24                        | 4                  | 1.01E+02 | ND       | 1.02E+03     | ND           | 2.26E+02           |
| Spores                                |                           |                    |          |          |              |              |                    |
| Anaerobic                             | 24                        | 1                  | ND       | ND       | 2.17E+02     | ND           | ND                 |
| Aerobic                               | 24                        | 0                  | ND       | ND       | ND           | ND           | ND                 |
| Total                                 | 24                        | 1                  | ND       | ND       | 2.17E+02     | ND           | ND                 |

ND=Not Detected