



April 18, 2007

Ms. Sheila Gaston  
Colorado Department of Public Health and Environment  
Hazardous Materials and Waste Management Division  
4300 Cherry Creek Drive South  
Denver, Colorado 80246-1530

RE: Groundwater, Surface Water, and Soil Vapor Monitoring Report  
Post-Closure Monitoring - First Quarter 2007  
Operable Unit 2 (OU-2) Landfill Site  
Former Lowry Air Force Base  
Denver, Colorado

Dear Ms. Gaston:

LT Environmental, Inc. (LTE) has been retained by Lowry Assumption, LLC (LAC) to conduct quarterly groundwater, surface water, and soil vapor sampling events at the above-referenced site (Figure 1). In accordance with the requirements set forth in the Colorado Department of Public Health and Environment (CDPHE) - approved *Phase 2 Corrective Action Plan for the Operable Unit 2 Landfill Closure at Lowry (MACTEC, 2004) (Phase 2 CAP)*, LTE conducted the post-closure monitoring activities for OU-2 in February and March 2007. Ten monitoring wells (LZ-13, LFPOC07 through LFPOC13, BG-5 and BG-6) and three surface water samples (SW-1, SW-2, and SW-3) were sampled on February 7 and February 8, 2007. In addition to the standard analysis for groundwater and surface water sampling described in Table 3.1 of the *Phase 2 CAP*, radiological analytical samples were also collected and will be reported in a separate document. A total of 27 soil vapor points (GP-01 through GP-27) were field screened for the presence of methane on February 9, 2007 and again on March 9, 2007. The analytical results from the First Quarter 2007 groundwater, surface water, and the soil vapor monitoring activities are discussed below. Additionally, statistical evaluation of the groundwater results was performed to determine if there is a significant change in groundwater quality between upgradient and downgradient of the OU-2 Landfill site.

### **Groundwater Sampling**

Depth to groundwater was measured in each monitoring well prior to purging. All monitoring wells sampled were purged with a peristaltic pump using low-flow purge method. Measurements of temperature, pH, and electrical conductivity (EC) were collected and each monitoring well was sampled after the three parameters were determined to be stabilized (i.e., readings within +/- 10 percent of the previous reading). Field parameters were measured using a YSI 556<sup>®</sup> Multi-Probe Field Meter (YSI 556<sup>®</sup> Meter). Volatile organic compounds (VOCs) were screened in the headspace of each monitoring well, utilizing a Mini Rae 2000<sup>®</sup> photoionization detector (PID) prior to purging. Groundwater was inspected for odor and the



presence of phase-separated hydrocarbons (PSH). Field observations were recorded on monitoring well development/purging forms as well as in the field logbook. Copies of the monitoring well development/purge forms are included in Attachment 1.

Groundwater samples were collected in laboratory prepared hydrochloric acid (HCl) preserved 40-milliliter (ml) vials, nitric acid preserved 500-ml poly bottles, and sulfuric acid preserved 250-ml amber bottles. Samples were placed on ice and delivered with a completed chain-of-custody (COC) form to Paragon Analytics Laboratories (Paragon) located in Fort Collins, Colorado. In accordance with the Phase 2 CAP, groundwater samples were submitted for analysis of the following:

- Alkalinity, Carbonates, Bicarbonates by United States Environmental Protection Agency (EPA) Method 310.1;
- Gross Alpha and Gross Beta by EPA Method 9310;
- Ion Chromatography for Chloride, Nitrite, Nitrate and Sulfate by EPA Method 9056;
- Total Organic Carbon (TOC) by Method 9060;
- Total ICP Metals by Method 601; and
- Volatile Organic Compounds (VOCs) by EPA Method 8260B.

### **Surface Water Sampling**

Surface water samples were collected from three designated locations along Westerly Creek on February 8, 2007. The approximate surface water sample locations are shown on Figure 1. Prior to the collection of surface water samples, water parameters including pH, temperature, and EC were measured using a YSI 556<sup>®</sup> Meter and recorded on the field forms. In addition to water parameters, creek conditions including flow direction, estimated flow velocity, turbidity, and water depth were recorded. Every effort was made not to disturb creek sediment during the collection of water samples. In addition, surface water was collected in order of downstream to upstream to avoid cross contamination from any disturbed sediment load.

Surface water samples were collected in laboratory prepared HCl preserved 40-ml vials, nitric acid preserved 500-ml poly bottles, and sulfuric acid preserved 250-ml amber bottles. Samples were placed on ice and delivered with a completed COC form to Paragon. In accordance with the Phase 2 CAP, surface water samples were submitted for analysis of the following:

- Alkalinity, Carbonates, Bicarbonates by EPA Method 310.1;
- Gross Alpha and Gross Beta by EPA Method 9310;
- Ion Chromatography for Chloride, Nitrite, Nitrate and Sulfate by EPA Method 9056;
- TOC by Method 9060;
- Total ICP Metals by Method 6010; and



- VOCs by EPA Method 8260B.

### **Soil Vapor Point Monitoring**

Two post-closure soil vapor monitoring events were completed on February 9, 2007 and March 9 2007. A total of 27 soil vapor points (GP-01 though GP-27) were purged of three liters of gas with an electronic pump prior to collection of the soil vapor sample. The soil vapor point was field screened with a Mine Safety Appliances (MSA) Gasport<sup>®</sup> Gas Tester (Gasport<sup>®</sup>) to assess the presence of methane (CH<sub>4</sub>) and with a Mini Rae 2000<sup>®</sup> PID to screen for the presence of VOCs. Copies of the gas monitoring forms are included in Attachment 2.

The MSA Gasport<sup>®</sup> was used to measure methane in each soil vapor point. The MSA Gasport<sup>®</sup> reads up to 100 percent lower explosive limit (five percent by volume of methane) then converts to read percent by volume methane up to 100 percent methane. In the event the MSA Gasport<sup>®</sup> measured methane in a soil vapor point that equaled or exceeded one percent by volume of methane, a one liter Tedlar<sup>®</sup> bag containing the sample would be placed in a cooler, and delivered with a completed COC to Data Chem Analytical Laboratories, Inc. for analysis of methane by EPA Method GC FID.

### **Quality Assurance and Quality Control (QA/QC)**

Field quality control (QC) groundwater and surface water samples consisted of trip blanks and duplicate samples. One trip blank accompanied every shipment of samples to be analyzed for VOCs. Blind duplicate samples collected for groundwater sample (BG-6) and surface water sample (SW-1) were submitted for this sampling event and were analyzed for the same parameters as the routine environmental samples.

The laboratory general practices and analytical QC samples included a method blank and a matrix spike/matrix spike duplicate (MS/MSD) for each sample batch. QA/QC data are presented in Attachment 3.

To document that the water data quality meets the OU-2 work plan requirements, LTE retained Diane Short & Associates to validate the data. The EPA Laboratory *Data Validation Functional Guidelines* for evaluating inorganic and organic analyses were used to perform this data validation review. The review of the groundwater and surface water samples includes validation of all COC, calibrations and QC forms referencing the QC limits. In addition, the data are qualified referencing the EPA *Contract Laboratory Program (CLP) Data Validation Guidance* with the usability modifications defined by the data validator. Data validation qualification is noted by a “J” or “R” qualifier next to the reported data value. The “J” indicates that one or more of the method QC limits have been violated and/or the data may be an estimated value below the method reporting limit (MRL). The “R” qualifier indicates that the data are considered to be rejected due to significant deviations from the acceptance limits. In order for the qualifiers to be useful in determining the effect of the violation on the data, codes for the



violation(s) and a numeric value of the violation are appended to the qualifier in the reviewers report.

The EPA CLP laboratories 'flag' data on Form I in the "Q" field. These 'flags' are not to be confused with the data validation qualifiers. 'Flags' are notations of laboratory procedures and/or QC alerts and are not necessarily indicative of data qualification. They are not to be used as qualifiers of data. The only code used by the laboratory that is transferred over with laboratory data is the "U", undetected, code indicating that the value reported is the project reporting limit and that the analyte was not detected in the sample above the MRL.

Validation results indicate that the laboratory has complied with the requested methods. Data are fully usable after consideration of qualifiers. General comments regarding the data/analytical quality are part of the review when raw data are submitted. Acetone and 2-Butanone were the only two analytes rejected from the February 2007 data set. The reviewer reports are included in Attachment 3.

### **Groundwater Analytical Results**

Table 1 summarizes VOC analytical results for the groundwater samples collected during the first quarter 2007 monitoring event. Total Metal analytical results for groundwater are summarized in Table 2. Table 3 summarizes water quality parameters in groundwater. Gross Alpha and Gross Beta results are summarized in Table 4. Groundwater analytical laboratory reports, laboratory QA/QC data, and COC documentation are presented in an electronic format as Attachment 4.

VOC concentrations in the groundwater samples were compared to the CDPHE groundwater standards and Federal Maximum Contaminant Levels (MCL) drinking water quality standards. The results indicate that all groundwater samples were non-detect or below the standards for VOCs. Total metals results indicate that there are no groundwater samples that exceeded Federal drinking water MCLs.

Analytical results indicated that Gross Alpha in groundwater was detected in two upgradient monitoring wells (BG-5 and LFPOC09) and six downgradient monitoring wells (LFPOC07, LFPOC08, LFPOC10, LFPOC11, LFPOC13, and LZ-13) above CDPHE groundwater standards.

### **Surface Water Analytical Results**

Table 1 includes VOC analytical results for the surface water samples collected during the first quarter 2007 monitoring event. Total Metals analytical results for surface water samples for this monitoring event are included in Table 2. Table 3 summarizes water quality parameters for surface water samples collected during the fourth quarter 2006 monitoring event. Gross Alpha and Gross Beta analytical results for surface water samples collected during this monitoring event are included Table 4. Surface water analytical laboratory reports, laboratory QA/QC data, and COC documentation are presented in an electronic format as Attachment 4.



VOC concentrations for the surface water samples were compared to the CDPHE groundwater standards and Federal MCL drinking water quality standards. The results indicate that all surface water samples were non-detect or below the standards for VOCs. Total metals results indicate that there are no surface water samples that exceeded Federal drinking water MCLs. Additionally, analytical results for chloride were above the CDPHE secondary drinking water standards for all surface water samples (SW-1, SW-2, and SW-3).

Analytical results indicated that Gross Alpha results were below the CDPHE standards for the surface water sampled during this quarterly monitoring event.

### **Soil Vapor Point Results**

Based on the field screening during the February 2007 and March 2007 monitoring event, there were no detections of methane above the soil gas action level of one percent in any of the 27 gas probes. Field screening measurements for the soil vapor sample collected during the two monthly monitoring events are presented in Table 5.

### **Statistical Evaluation of Post-Closure Detection Monitoring Data**

A statistical evaluation of the most recent two quarters of groundwater monitoring was carried out in accordance with the procedure described in the *Phase 2 CAP*. Statistics were calculated using the software ChemStat Version 6.0. The list of indicator parameters (IP) corresponds to the list presented in Table 3.1 of Appendix G of the OU-2 work plan. Two of the volatile organic compounds (VOCs) in this list, acrylonitrile and trans-1,4-dichloro-2-butene, were not reported by the laboratory.

The decision logic diagram shown in Figure 5.1 in Appendix G of the OU-2 work plan was followed for the statistical evaluation of upgradient groundwater analytical data using upper prediction limits (UPLs). The results of the statistical evaluation are shown on Table 6. A total of 75 parameters are listed on Table 6 including 19 Total Metals, 2 Radionuclides, 45 VOCs, and 9 Field and General Water Quality Parameters.

Historical upgradient data collected between 1988 and 1997, *LFSA-OU5 Remedial Investigation*, were incorporated into the analysis along with upgradient samples collected in the most recent two quarters of monitoring (November 2006 and February 2007). Upgradient data was analyzed to determine the relevant Upper Prediction Limit for comparison to the downgradient November 2006 and February 2007 data. Historic data documentation are presented in an electronic format as Attachment 5.

The first step in the decision logic required calculation of the percent non-detects (NDs) in the compiled upgradient data. Each parameters data set fell into one of three categories - >50% NDs, between 15% and 50% NDs, or <=15% NDs. The statistical test to be performed was chosen based on these categories.



### **Volatile Organic Compounds**

Forty one of the 45 VOCs were never detected in the upgradient wells. Thirty eight of these VOCs also were never detected in the downgradient wells. The UPL for these parameters was set at 1.3 times the MRL, as stipulated in the work plan. Three VOCs, Trichloroethene, Toluene, and cis-1,2-Dichloroethene, were detected in the downgradient wells, and the specified test is "Trend Analysis". All of these detections, however, were at levels below the MRL. Additionally, no meaningful trend analysis can be shown on the basis of two quarters of monitoring. These parameters will be reevaluated after future monitoring events. Four of the 45 VOCs were detected in the upgradient wells. These are Methylene Chloride (79% NDs), Carbon Disulfide (97% NDs), Benzene (95% NDs), and 1,2-Dichloroethane (95% NDs). Since each of these parameters was detected in less than 50% of the upgradient samples, the non parametric UPL was selected. In accordance with the work plan, this value was set equal to the maximum concentration observed in the compiled upgradient samples. None of these four parameters were detected in any of the downgradient wells.

### **Total Metals**

Eight of the 19 Total Metals were detected in less than 50% of the upgradient samples. An additional eight parameters were detected in more than 50% of the upgradient samples, but the distribution of the data was neither normal nor log-normal. The selected test for these 16 parameters was again the non-parametric UPL. Three of the Total Metals (Barium, Calcium, and Sodium) were not detected in less than 15% of the samples, and were log-normally distributed. The NDs in these data sets were replaced by a value equal to one half the MRL, and a parametric one-sided UPL was calculated for a probability level of 99 percent, and with the one future observation, in accordance with the work plan. Each of the downgradient observations during the two recent monitoring events was compared to the calculated UPL. None of the downgradient observations exceeded the UPL.

### **Field and General Water Quality Parameters**

Among the nine field and general water quality parameters, two (Nitrite as N and Carbonate as CaCO<sub>3</sub>), were not detected in more than 50% of the upgradient samples. Two additional parameters (Nitrate as N and Total Organic Carbon) were in more than 50% of the upgradient samples but are not normally or log-normally distributed. Non parametric methods were used to calculate the UPL for these four parameters. The standard for one parameter (pH) is stipulated in the work plan to be a range of 6.0 to 9.0. All upgradient and downgradient samples had pH values within the acceptable range. The remaining four parameters were detected in 100 percent of both the upgradient and downgradient samples. All of these were normally distributed, and a parametric method was used to calculate the UPL. None of the downgradient samples from any of the Field or General Water Quality parameters exceeded the UPLs.



### **Radionuclides**

Two radionuclides were tested (Gross Alpha and Gross Beta). Both parameters were detected in 100 percent of the upgradient and downgradient samples. Gross beta was determined to be normally distributed and the parametric method was used. None of the downgradient samples exceeded the calculated UPL. Upgradient Gross Alpha samples were not normally or log normally distributed. The UPL was set equal to the maximum value previously observed in the upgradient data, which is equal to 40.3 picoCuries per Liter (pCi/L). Four of the down gradient monitoring wells reported Gross Alpha concentrations above the specified UPL, as shown on Table 4, up to a maximum concentration of 77 pCi/L.

### **Summary of Statistical Analysis**

Out of the 75 parameters which were statistically analyzed, only one, Gross Alpha, had higher downgradient concentrations which were statistically significant. All parameters will continue to be monitored in future quarters.

### **Site Update**

The third of eight quarterly groundwater and surface water monitoring events is scheduled for April 18, 2007. Soil vapor monitoring will continue on a monthly schedule with monthly post-closure operation and maintenance activities. The next soil vapor event is scheduled for April 19, 2007. Please contact our office at 303-433-9788 if you have any questions about the data provided or need further information regarding the site.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink, appearing to read 'C Purcell', written in a cursive style.

Chris Purcell  
Staff Geologist

A handwritten signature in black ink, appearing to read 'Tom Murphy', written in a cursive style.

Tom Murphy, P.G.  
Project Manager

cc: Paul Carroll – AFRPA (2)  
Pat Smith – EPA Region 8  
Alioune Sogue – CCD DEH



Paul Weaverling - LAC  
John Yerton - LAC (2)

Attachments

**FIGURE AND TABLES**

SOURCE:  
MACTEC

FIGURE 1  
SITE PLAN  
FEBRUARY 7 & 8, 2007  
LANDFILL CLOSURE AT LOWRY  
DENVER, COLORADO  
LOWRY ASSUMPTION LLC.



**TABLE 1**  
**LABORATORY ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS**  
**LOWRY OU2 LANDFILL SITE**  
**FORMER LOWRY AIR FORCE BASE**  
**DENVER, COLORADO**

Sampling Location / Well ID	Sample Date	Analytical Method	Volatile Organic Compounds (ug/L)													
			Acetone	Benzene	Bromochloro methane	Bromodichloro methane	Bromoform	Carbon Disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Dibromochloro methane	1,2-Dibromo-3-chloropropane	1,2-Dibromo ethane	1,2-Dichloro benzene
<b>Upgradient</b>																
BG-5	11/13/2006	SW8260_25	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
BG-5	2/7/2007	SW8260_25	<10 (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
BG-6	11/13/2006	SW8260_25	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
BG-6	2/7/2007	SW8260_25	<10 (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
BG-6 (Dup)	2/7/2007	SW8260_25	<10 (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
LFPOC09	11/13/2006	SW8260_25	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
LFPOC09	2/8/2007	SW8260_25	<10 (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
<b>Downgradient</b>																
LFPOC07	11/13/2006	SW8260_25	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
LFPOC07	2/8/2007	SW8260_25	<10 (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
LFPOC08	11/13/2006	SW8260_25	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
LFPOC08	2/7/2007	SW8260_25	<10 (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
LFPOC10	11/13/2006	SW8260_25	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
LFPOC10	2/7/2007	SW8260_25	<10 (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
LFPOC11	11/13/2006	SW8260_25	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
LFPOC11	2/7/2007	SW8260_25	<10 (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
LFPOC12	11/13/2006	SW8260_25	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
LFPOC12	2/8/2007	SW8260_25	<10 (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
LFPOC13	11/13/2006	SW8260_25	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
LFPOC13	2/7/2007	SW8260_25	<10 (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
LZ-13	11/13/2006	SW8260_25	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
LZ-13	2/8/2007	SW8260_25	<10 (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
<b>Surface Water</b>																
SW-1	11/21/2006	SW8260_25	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
SW-1	2/8/2007	SW8260_25	<10 (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
SW-1 (Dup)	2/8/2007	SW8260_25	<10 (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
SW-2	11/21/2006	SW8260_25	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
SW-2 (Dup)	11/21/2006	SW8260_25	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
SW-2	2/8/2007	SW8260_25	<10 (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
SW-3	11/21/2006	SW8260_25	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
SW-3	2/8/2007	SW8260_25	4.1 (J)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1
<b>CDPHE Standards (March 2005):</b>			--	<b>5</b>	--	<b>0.56</b>	<b>4</b>	--	<b>5</b>	<b>100</b>	--	<b>3.5</b>	<b>14</b>	<b>0.2</b>		<b>75</b>
<b>Federal Drinking Water Standards (MCLs):</b>															<b>5</b>	

Notes: CDPHE - Colorado Department of Health and Environment  
ug/L - micrograms per Liter (Dup) - Duplicate sample  
MCLs - Maximum Contaminant Levels  
< - below the Reporting Limit (J) - Result is an estimated value. (R) - Result is a rejected value.

**TABLE 1**  
**LABORATORY ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS**  
**LOWRY OU2 LANDFILL SITE**  
**FORMER LOWRY AIR FORCE BASE**  
**DENVER, COLORADO**

Sampling Location / Well ID	Sample Date	Analytical Method	Volatile Organic Compounds (ug/L)														
			1,4-Dichloro benzene	1,1-Dichloro ethane	1,2-Dichloro ethane	1,1-Dichloro ethene	cis-1,2-dichloroethene	trans-1,2-dichloroethene	1,2-Dichloro propane	cis-1,3-di chloropropene	trans-1,3-di chloropropene	Ethylbenzene	2-Hexanone	Bromomethane	Chloro methane	Dibromo methane	
<b>Upgradient</b>																	
BG-5	11/13/2006	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
BG-5	2/7/2007	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
BG-6	11/13/2006	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
BG-6	2/7/2007	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
BG-6 (Dup)	2/7/2007	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
LFPOC09	11/13/2006	SW8260_25	<1	<1	0.23 (J)	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
LFPOC09	2/8/2007	SW8260_25	<1	<1	0.33 (J)	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
<b>Downgradient</b>																	
LFPOC07	11/13/2006	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
LFPOC07	2/8/2007	SW8260_25	<1	<1	<1	<1	0.25 (J)	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
LFPOC08	11/13/2006	SW8260_25	<1	<1	<1	<1	0.13 (J)	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
LFPOC08	2/7/2007	SW8260_25	<1	<1	<1	<1	0.21 (J)	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
LFPOC10	11/13/2006	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
LFPOC10	2/7/2007	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
LFPOC11	11/13/2006	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
LFPOC11	2/7/2007	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
LFPOC12	11/13/2006	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
LFPOC12	2/8/2007	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
LFPOC13	11/13/2006	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
LFPOC13	2/7/2007	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
LZ-13	11/13/2006	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
LZ-13	2/8/2007	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
<b>Surface Water</b>																	
SW-1	11/21/2006	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
SW-1	2/8/2007	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
SW-1 (Dup)	2/8/2007	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
SW-2	11/21/2006	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
SW-2 (Dup)	11/21/2006	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
SW-2	2/8/2007	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
SW-3	11/21/2006	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
SW-3	2/8/2007	SW8260_25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1
<b>CDPHE Standards (March 2005):</b>			<b>75</b>	<b>--</b>	<b>5.0</b>	<b>--</b>			<b>5</b>		<b>--</b>	<b>700</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<b>Federal Drinking Water Standards (MCLs):</b>							<b>7</b>	<b>100</b>		<b>5</b>							

Notes: CDPHE - Colorado Department of Health and Environment  
ug/L - micrograms per Liter (Dup) - Duplicate sample  
MCL - Maximum Contaminant Levels  
< - below the Reporting Limit (J) - Result is an estimated value. (R) - Result is a rejected value.

**TABLE 1  
LABORATORY ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS  
LOWRY OU2 LANDFILL SITE  
FORMER LOWRY AIR FORCE BASE  
DENVER, COLORADO**

Sampling Location / Well ID	Sample Date	Analytical Method	Volatile Organic Compounds (ug/L)													
			Methylene chloride	2-Butanone	Iodomethane	4-methyl-2-pentanone	Styrene	1,1,1,2-tetra chloroethane	1,1,2,2-tetra chloroethane	Tetrachloro ethene	Toluene	1,1,1-Tri chloroethane	1,1,2-Tri chloroethane	Trichloro ethene	Trichlorofluoro methane	1,2,3-Tri chloropropane
<b>Upgradient</b>																
BG-5	11/13/2006	SW8260_25	<1	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BG-5	2/7/2007	SW8260_25	<1	<10 (R)	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BG-6	11/13/2006	SW8260_25	<1	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BG-6	2/7/2007	SW8260_25	<1	<10 (R)	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BG-6 (Dup)	2/7/2007	SW8260_25	<1	<10 (R)	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
LFPOC09	11/13/2006	SW8260_25	<1	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
LFPOC09	2/8/2007	SW8260_25	<1	<10 (R)	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
<b>Downgradient</b>																
LFPOC07	11/13/2006	SW8260_25	<1	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	0.43 (J)	<1	<1
LFPOC07	2/8/2007	SW8260_25	<1	<10 (R)	<1	<10	<1	<1	<1	<1	<1	<1	<1	0.6 (J)	<1	<1
LFPOC08	11/13/2006	SW8260_25	<1	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	0.13 (J)	<1	<1
LFPOC08	2/7/2007	SW8260_25	<1	<10 (R)	<1	<10	<1	<1	<1	<1	<1	<1	<1	0.21 (J)	<1	<1
LFPOC10	11/13/2006	SW8260_25	<1	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
LFPOC10	2/7/2007	SW8260_25	<1	<10 (R)	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
LFPOC11	11/13/2006	SW8260_25	<1	<10	<1	<10	<1	<1	<1	<1	0.099 (J)	<1	<1	<1	<1	<1
LFPOC11	2/7/2007	SW8260_25	<1	<10 (R)	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
LFPOC12	11/13/2006	SW8260_25	<1	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
LFPOC12	2/8/2007	SW8260_25	<1	<10 (R)	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
LFPOC13	11/13/2006	SW8260_25	<1	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
LFPOC13	2/7/2007	SW8260_25	<1	<10 (R)	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
LZ-13	11/13/2006	SW8260_25	<1	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
LZ-13	2/8/2007	SW8260_25	<1	<10 (R)	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
<b>Surface Water</b>																
SW-1	11/21/2006	SW8260_25	<1	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SW-1	2/8/2007	SW8260_25	<1	<10 (R)	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SW-1 (Dup)	2/8/2007	SW8260_25	<1	<10 (R)	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SW-2	11/21/2006	SW8260_25	<1	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SW-2 (Dup)	11/21/2006	SW8260_25	<1	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SW-2	2/8/2007	SW8260_25	<1	<10 (R)	<1	<10	<1	<1	<1	<1	0.26 (J)	<1	<1	<1	<1	<1
SW-3	11/21/2006	SW8260_25	<1	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SW-3	2/8/2007	SW8260_25	<1	<10 (R)	<1	<10	<1	<1	<1	<1	0.25 (J)	<1	<1	<1	<1	<1
<b>CDPHE Standards (March 2005):</b>			<b>5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>100</b>	<b>--</b>	<b>0.18</b>	<b>5</b>	<b>1000</b>	<b>200</b>	<b>5</b>	<b>--</b>	<b>--</b>	
<b>Federal Drinking Water Standards (MCLs):</b>														<b>5</b>		

Notes: CDPHE - Colorado Department of Health and Environment  
 ug/L - micrograms per Liter (Dup) - Duplicate sample  
 MCL - Maximum Contaminant Levels  
 < - below the Reporting Limit (J) - Result is an estimated value. (R) - Result is a rejected value.

**TABLE 1**  
**LABORATORY ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS**  
**LOWRY OU2 LANDFILL SITE**  
**FORMER LOWRY AIR FORCE BASE**  
**DENVER, COLORADO**

Sampling Location / Well ID	Sample Date	Analytical Method	Volatile Organic Compounds (ug/L)				
			Vinyl acetate	Vinyl chloride	Total xylenes	Xylenes, m and p	Xylenes, o
<b>Upgradient</b>							
BG-5	11/13/2006	SW8260_25	<1	<1	<2	<1	<1
BG-5	2/7/2007	SW8260_25	<2	<1	<2	<1	<1
BG-6	11/13/2006	SW8260_25	<1	<1	<2	<1	<1
BG-6	2/7/2007	SW8260_25	<2	<1	<2	<1	<1
BG-6 (Dup)	2/7/2007	SW8260_25	<2	<1	<2	<1	<1
LFPOC09	11/13/2006	SW8260_25	<1	<1	<2	<1	<1
LFPOC09	2/8/2007	SW8260_25	<2	<1	<2	<1	<1
<b>Downgradient</b>							
LFPOC07	11/13/2006	SW8260_25	<1	<1	<2	<1	<1
LFPOC07	2/8/2007	SW8260_25	<2	<1	<2	<1	<1
LFPOC08	11/13/2006	SW8260_25	<1	<1	<2	<1	<1
LFPOC08	2/7/2007	SW8260_25	<2	<1	<2	<1	<1
LFPOC10	11/13/2006	SW8260_25	<1	<1	<2	<1	<1
LFPOC10	2/7/2007	SW8260_25	<2	<1	<2	<1	<1
LFPOC11	11/13/2006	SW8260_25	<1	<1	<2	<1	<1
LFPOC11	2/7/2007	SW8260_25	<2	<1	<2	<1	<1
LFPOC12	11/13/2006	SW8260_25	<1	<1	<2	<1	<1
LFPOC12	2/8/2007	SW8260_25	<2	<1	<2	<1	<1
LFPOC13	11/13/2006	SW8260_25	<1	<1	<2	<1	<1
LFPOC13	2/7/2007	SW8260_25	<2	<1	<2	<1	<1
LZ-13	11/13/2006	SW8260_25	<1	<1	<2	<1	<1
LZ-13	2/8/2007	SW8260_25	<2	<1	<2	<1	<1
<b>Surface Water</b>							
SW-1	11/21/2006	SW8260_25	<1	<1	<2	<1	<1
SW-1	2/8/2007	SW8260_25	<2	<1	<2	<1	<1
SW-1 (Dup)	2/8/2007	SW8260_25	<2	<1	<2	<1	<1
SW-2	11/21/2006	SW8260_25	<1	<1	<2	<1	<1
SW-2 (Dup)	11/21/2006	SW8260_25	<1	<1	<2	<1	<1
SW-2	2/8/2007	SW8260_25	<2	<1	<2	<1	<1
SW-3	11/21/2006	SW8260_25	<1	<1	<2	<1	<1
SW-3	2/8/2007	SW8260_25	<2	<1	<2	<1	<1
<b>CDPHE Standards (March 2005):</b>			--	<b>2</b>	<b>10000</b>	--	--
<b>Federal Drinking Water Standards (MCLs):</b>							

Notes: CDPHE - Colorado Department of Health and Environment  
(J) - Result is an estimated value. (R) - Result is a rejected value.  
(Dup) - Duplicate sample < - below the Reporting Limit  
MCLs - Maximum Contaminant Levels  
ug/L - micrograms per Liter

**TABLE 2  
LABORATORY ANALYTICAL RESULTS - TOTAL METALS  
LOWRY OU2 LANDFILL SITE  
FORMER LOWRY AIR FORCE BASE  
DENVER, COLORADO**

Sampling Location / Well ID	Sample Date	Analytical Method	Total Metals (mg/L)																		
			Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
<b>Upgradient</b>																					
BG-5	11/13/2006	SW6010	<0.02	<0.01	0.21	<0.005	<0.005	170	<0.01	0.012	<0.01	<0.003	44	0.027	8.1	<0.005	<0.01	81	<0.01	0.01	<0.02
BG-5	2/7/2007	SW6010	<0.02	<0.01	0.13	<0.005	<0.005	150	<0.01	<0.01	<0.01	<0.003	36	<0.02	7.2	<0.005	<0.01	130	<0.01	<0.01	<0.02
BG-6	11/13/2006	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	58	<0.01	<0.01	<0.01	<0.003	9.9	<0.02	1.4	<0.005	<0.01	66	<0.01	<0.01	<0.02
BG-6	2/7/2007	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	58	<0.01	<0.01	<0.01	<0.003	10	<0.02	1.5	<0.005	<0.01	67	<0.01	<0.01	<0.02
BG-6 (Dup)	2/7/2007	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	58	<0.01	<0.01	<0.01	<0.003	10	<0.02	1.5	<0.005	<0.01	66	<0.01	<0.01	<0.02
LFPOC09	11/13/2006	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	94	<0.01	<0.01	<0.01	<0.003	14	<0.02	1.6	<0.005	<0.01	99	<0.01	<0.01	<0.02
LFPOC09	2/8/2007	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	93	<0.01	<0.01	<0.01	<0.003	14	<0.02	1.5	<0.005	<0.01	100	<0.01	<0.01	0.044
<b>Downgradient</b>																					
LFPOC07	11/13/2006	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	65	<0.01	<0.01	<0.01	<0.003	12	<0.02	1.9	<0.005	<0.01	110	<0.01	<0.01	<0.02
LFPOC07	2/8/2007	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	67	<0.01	<0.01	<0.01	<0.003	12	<0.02	1.5	<0.005	<0.01	110	<0.01	<0.01	<0.02
LFPOC08	11/13/2006	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	120	<0.01	<0.01	<0.01	<0.003	18	<0.02	1.6	<0.005	<0.01	110	<0.01	<0.01	<0.02
LFPOC08	2/7/2007	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	120	<0.01	<0.01	<0.01	<0.003	18	<0.02	1.4	<0.005	<0.01	110	<0.01	<0.01	<0.02
LFPOC10	11/13/2006	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	98	<0.01	<0.01	<0.01	<0.003	15	<0.02	1.5	<0.005	<0.01	99	<0.01	<0.01	<0.02
LFPOC10	2/7/2007	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	100	<0.01	<0.01	<0.01	<0.003	16	<0.02	1.3	<0.005	<0.01	100	<0.01	<0.01	<0.02
LFPOC11	11/13/2006	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	120	<0.01	<0.01	<0.01	<0.003	25	<0.02	3.9	<0.005	<0.01	140	<0.01	<0.01	<0.02
LFPOC11	2/7/2007	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	120	<0.01	<0.01	<0.01	<0.003	25	<0.02	3.4	<0.005	<0.01	140	<0.01	<0.01	<0.02
LFPOC12	11/13/2006	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	100	<0.01	<0.01	<0.01	<0.003	27	<0.02	4	<0.005	<0.01	170	<0.01	<0.01	<0.02
LFPOC12	2/8/2007	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	100	<0.01	<0.01	<0.01	<0.003	27	<0.02	3.6	<0.005	<0.01	160	<0.01	<0.01	0.027
LFPOC13	11/13/2006	SW6010	<0.02	<0.01	0.15	<0.005	<0.005	120	0.01	<0.01	<0.01	0.0085	22	<0.02	5.2	<0.005	<0.01	100	<0.01	0.027	0.033
LFPOC13	2/7/2007	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	100	<0.01	<0.01	<0.01	<0.003	18	<0.02	2.5	<0.005	<0.01	110	<0.01	<0.01	<0.02
LZ-13	11/13/2006	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	66	<0.01	<0.01	<0.01	<0.003	21	<0.02	2.2	<0.005	<0.01	100	<0.01	<0.01	<0.02
LZ-13	2/8/2007	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	67	<0.01	<0.01	<0.01	<0.003	22	<0.02	1.8	<0.005	<0.01	100	<0.01	<0.01	0.063
<b>Surface Water</b>																					
SW-1	11/21/2006	SW6010	<0.02	<0.01	0.14	<0.005	<0.005	110	<0.01	<0.01	<0.01	<0.003	25	<0.02	3.6	<0.005	<0.01	61	<0.01	<0.01	<0.02
SW-1	2/8/2007	SW6010	<0.02	<0.01	0.11	<0.005	<0.005	75	<0.01	<0.01	<0.01	0.0045	19	<0.02	6.6	<0.005	<0.01	130	<0.01	<0.01	0.083
SW-1 (Dup)	2/8/2007	SW6010	<0.02	<0.01	0.1	<0.005	<0.005	73	<0.01	<0.01	0.01	0.0064	19	<0.02	6.8	<0.005	<0.01	130	<0.01	<0.01	0.08
SW-2	11/21/2006	SW6010	<0.02	<0.01	0.11	<0.005	<0.005	130	<0.01	<0.01	<0.01	<0.003	30	<0.02	5.8	<0.005	<0.01	99	<0.01	<0.01	<0.02
SW-2 (Dup)	11/21/2006	SW6010	<0.02	<0.01	0.11	<0.005	<0.005	130	<0.01	<0.01	<0.01	<0.003	30	<0.02	5.8	<0.005	<0.01	98	<0.01	<0.01	<0.02
SW-2	2/8/2007	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	61	<0.01	<0.01	<0.01	0.0043	22	<0.02	8.8	<0.005	<0.01	190	<0.01	<0.01	0.043
SW-3	11/21/2006	SW6010	<0.02	<0.01	0.11	<0.005	<0.005	120	<0.01	<0.01	<0.01	<0.003	30	<0.02	5.7	<0.005	<0.01	99	<0.01	<0.01	<0.02
SW-3	2/8/2007	SW6010	<0.02	<0.01	<0.1	<0.005	<0.005	62	<0.01	<0.01	<0.01	<0.003	22	<0.02	8.6	<0.005	<0.01	180	<0.01	<0.01	0.04
<b>CDPHE Standards (March 2005):</b>																					
<b>Federal Drinking Water Standards (MCLs):</b>				<b>0.006</b>	<b>0.010</b>	<b>2</b>	<b>0.004</b>	<b>0.005</b>	<b>--</b>	<b>0.1</b>	<b>--</b>	<b>1.3</b>	<b>0.015</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>0.05</b>	<b>--</b>	<b>0.002</b>	<b>--</b>	<b>5</b>
<b>Federal Secondary Drinking Water Standards:</b>																	<b>0.10</b>				

Notes: CDPHE - Colorado Department of Health and Environment  
mg/L - milligrams per Liter (Dup) - Duplicate sample  
MCLs - Maximum Contaminant Levels  
< - below the Reporting Limit

**TABLE 3  
LABORATORY ANALYTICAL RESULTS - ANIONS, FIELD PARAMETERS, AND TOTAL ORGANIC CARBON  
LOWRY OU2 LANDFILL SITE  
FORMER LOWRY AIR FORCE BASE  
DENVER, COLORADO**

Sampling Location / Well ID	Sample Date	ANIONS						FIELD PARAMETERS			Total Organic Carbon (mg/L)
		Carbonate as CaCO3 (mg/L)	Bicarbonate as CaCO3 (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrite as N (mg/L)	Nitrate as N (mg/L)	pH, Field (su)	Conductivity, Field (u-S)	Temperature, Field (Deg C)	
<b>Upgradient</b>											
BG-5	11/13/2006	<20	390	180	120	<0.2	3.9	7.07	1270	18.3	2.9
BG-5	2/7/2007	<20	400	220	120	0.52	3	7.05	1396	14.66	3.1
BG-6	11/13/2006	<20	230	180	53	<0.1	<0.2	7.55	640	16.76	1.1
BG-6	2/7/2007	<20	230	45	52	<0.1	<0.2	7.46	624	13.56	1.2
BG-6 (Dup)	2/7/2007	<20	230	44	51	0.1	<0.2				1.3
LFPOC09	11/13/2006	<20	310	60	97	<0.1	7	7.33	939	17.78	1.2
LFPOC09	2/8/2007	<20	300	63	99	<0.1	6.9	7.27	921	16.35	1.3
<b>Downgradient</b>											
LFPOC07	11/13/2006	<20	320	57	76	<0.1	<0.2	7.56	865	11.43	1.5
LFPOC07	2/8/2007	<20	320	60	74	<0.1	<0.2	7.59	849	6.59	1.4
LFPOC08	11/13/2006	<20	390	98	98	<0.1	0.97	7.11	1103	12.53	1.8
LFPOC08	2/7/2007	<20	400	100	100	0.26	0.67	6.8	1111	10.75	1.8
LFPOC10	11/13/2006	<10	340	85	76	<0.1	0.67	7.08	963	13.51	1.6
LFPOC10	2/7/2007	<20	350	87	73	0.23	<0.2	6.97	968	13.28	1.5
LFPOC11	11/13/2006	<20	490	110	84	<0.2	<0.4	6.9	1252	13.73	1.8
LFPOC11	2/7/2007	<20	490	110	77	0.28	<0.2	7.55	1248	13.44	1.7
LFPOC12	11/13/2006	<20	430	89	180	<0.2	<0.4	6.97	1289	13.85	1.8
LFPOC12	2/8/2007	<50	430	92	180	<0.2	<0.4	7.1	1260	12.73	1.9
LFPOC13	11/13/2006	<20	330	98	120	<0.1	1.4	7.28	1051	15.41	1.6
LFPOC13	2/7/2007	<10	330	88	120	0.24	1.7	6.27	1021	13.51	1.3
LZ-13	11/13/2006	<20	330	63	75	<0.1	1.3	7.29	885	10.44	1.6
LZ-13	2/8/2007	<50	330	67	77	<0.1	0.73	7.42	875	4.99	1.4
<b>Surface Water</b>											
SW-1	11/21/2006	<20	290	41	52	<0.1	7.6	8.36	794	14.46	2.3
SW-1	2/8/2007	<20	170	<b>260</b>	60	<0.1	4.1	7.75	1113	7.4	5.7
SW-1 (Dup)	2/8/2007	<20	160	<b>270</b>	56	<0.1	3.9				5.4
SW-2	11/21/2006	<20	270	<b>250</b>	<b>490</b>	<0.2	3.7	8.4	946	10.91	5.2
SW-2 (Dup)	11/21/2006	<20	270	<b>250</b>	<b>490</b>	<0.2	3.7				5.2
SW-2	2/8/2007	<20	120	<b>370</b>	100	<0.2	1.7	7.86	1430	4.39	6.3
SW-3	11/21/2006	<10	260	<b>250</b>	<b>490</b>	<0.2	3.6	8.46	932	10.55	5.3
SW-3	2/8/2007	<20	120	<b>360</b>	99	<0.2	1.7	7.93	1423	3.98	6.5
<b>CDPHE Standards (March 2005):</b>		--	--			<b>1.0</b>	<b>10</b>	--	--	--	--
<b>CDPHE Secondary Drinking Water Standards (March 2005):</b>				<b>250</b>	<b>250</b>						

Notes: CDPHE - Colorado Department of Health and Environment  
mg/L - milligrams per Liter (Dup) - Duplicate sample

su - standard units  
< - below the Reporting Limit

Deg C - Degrees Centigrade

u-S - microSiemens/cm

**TABLE 4  
LABORATORY ANALYTICAL RESULTS  
GROSS ALPHA AND GROSS BETA  
LOWRY OU2 LANDFILL SITE  
FORMER LOWRY AIR FORCE BASE  
DENVER, COLORADO**

Sampling Location / Well ID	Sample Date	Analytical Method	Gross Alpha (pCi/L)	Gross Beta (pCi/L)
<b>Upgradient</b>				
BG-5	11/13/2006	724R9	<b>40.3</b>	26.2
BG-5	2/7/2007	724R9	<b>32.2</b>	18.1
BG-6	11/13/2006	724R9	11.8	5.6
BG-6	2/7/2007	724R9	11.2	4.4
BG-6 (Dup)	2/7/2007	724R9	11.2	5.5
LFPOC09	11/13/2006	724R9	<b>35.3</b>	12
LFPOC09	2/8/2007	724R9	<b>37.1</b>	14.9
<b>Downgradient</b>				
LFPOC07	11/13/2006	724R9	<b>23</b>	9.2
LFPOC07	2/8/2007	724R9	<b>21</b>	7.5
LFPOC08	11/13/2006	724R9	<b>53.6</b>	21
LFPOC08	2/7/2007	724R9	<b>49.5</b>	15.3
LFPOC10	11/13/2006	724R9	<b>47.3</b>	14.3
LFPOC10	2/7/2007	724R9	<b>52</b>	22.9
LFPOC11	11/13/2006	724R9	<b>42.1</b>	25
LFPOC11	2/7/2007	724R9	<b>51.5</b>	19.2
LFPOC12	11/13/2006	724R9	13.4	8.4
LFPOC12	2/8/2007	724R9	9.3	7.3
LFPOC13	11/13/2006	724R9	<b>66</b>	40.5
LFPOC13	2/7/2007	724R9	<b>77</b>	22.5
LZ-13	11/13/2006	724R9	<b>17.6</b>	9
LZ-13	2/8/2007	724R9	<b>20.2</b>	7.6
<b>Surface Water</b>				
SW-1	11/21/2006	724R9	7.4	4.3
SW-1	2/8/2007	724R9	5.2	8.5
SW-1 (Dup)	2/8/2007	724R9	4	5.9
SW-2	11/21/2006	724R9	<b>15.3</b>	6.2
SW-2 (Dup)	11/21/2006	724R9	11.1	6.7
SW-2	2/8/2007	724R9	6.9	9.8
SW-3	11/21/2006	724R9	<b>16.4</b>	7.8
SW-3	2/8/2007	724R9	6.3	10.7
<b>CDPHE Standards (March 2005):</b>			<b>15</b>	<b>--</b>

Notes: CDPHE - Colorado Department of Health and Environment  
pCi/L - picoCuries per Liter (Dup) - Duplicate sample  
< - less than Reporting Limit

**TABLE 5**  
**SOIL VAPOR RESULTS**  
**LOWRY OU-2 LANDFILL SITE**  
**FORMER LOWRY AIR FORCE BASE**  
**DENVER, COLORADO**

Vapor Point ID	Date	CH <sub>4</sub> (%)
GP-01	11/20/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-02	11/20/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-03	11/20/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-04	11/20/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-05	11/20/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-06	11/20/2006	0
	1/10/2007	0
	2/9/2007	0.05
	3/9/2007	0
GP-07	11/20/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-08	11/20/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-09	11/20/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0

**TABLE 5**  
**SOIL VAPOR RESULTS**  
**LOWRY OU-2 LANDFILL SITE**  
**FORMER LOWRY AIR FORCE BASE**  
**DENVER, COLORADO**

<b>Vapor Point ID</b>	<b>Date</b>	<b>CH<sub>4</sub>(%)</b>
GP-10	11/20/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-11	11/20/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-12	11/20/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-13	11/20/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-14	11/20/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-15	11/20/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-16	11/20/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-17	11/20/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-18	11/20/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0

**TABLE 5**  
**SOIL VAPOR RESULTS**  
**LOWRY OU-2 LANDFILL SITE**  
**FORMER LOWRY AIR FORCE BASE**  
**DENVER, COLORADO**

Vapor Point ID	Date	CH <sub>4</sub> (%)
GP-19	11/20/2006	0
	1/10/2007	0
	2/9/2007	NS
	3/9/2007	NS
GP-20	11/21/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-21	11/21/2006	0
	1/10/2007	0.05
	2/9/2007	0.05
	3/9/2007	0
GP-22	11/21/2006	0
	1/10/2007	0.35
	2/9/2007	0.7
	3/9/2007	0.95
GP-23	11/21/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-24	11/21/2006	0.1*
	1/10/2007	0.05
	2/9/2007	0
	3/9/2007	0
GP-25	11/21/2006	0
	1/10/2007	0.1
	2/9/2007	0
	3/9/2007	0
GP-26	11/21/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0
GP-27	11/21/2006	0
	1/10/2007	0
	2/9/2007	0
	3/9/2007	0

Notes:

% - percent by volume

CH<sub>4</sub> - methane

\* Laboratory analytical result conducted 11/21/06, less than five parts per million by volume (ppm) or less than 0.0005% CH<sub>4</sub>

NS - Not Sampled

**TABLE 6**  
**STATISTICAL EVALUATION OF ANALYTICAL RESULTS**  
**LOWRY OU2 LANDFILL SITE**  
**FORMER LOWRY AIR FORCE BASE**  
**DENVER, COLORADO**

Parameter	Units	Upgradient, all samples						Upgradient Statistics						Downgradient samples collected Nov-06 and Feb-07.					
		Num Samp	Num ND	% ND	>50% ND	>15% ND	<=15% ND	Statistical Test	Distribution	Max Conc	Mean	Std Dev	UPL	MRL	Num Samp	Num ND	% ND	Max Conc	99% one-sided test result
<b>Total Metals</b>																			
Antimony, Total	mg/L	38	30	79%	X			Non Para UPL	Unknown	0.026			0.026	0.02	14	14	100%	ND	FALSE
Arsenic, Total	mg/L	38	18	47%		X		Non Para UPL	Unknown	0.21	0.049		0.21	0.01	14	14	100%	ND	FALSE
Barium, Total	mg/L	36	5	14%			X	Shapiro-Wilks, 1/2 MRL	LogNormal	2.6	0.41		18.7	0.1	14	13	93%	0.15	FALSE
Beryllium, Total	mg/L	38	25	66%	X			Non Para UPL	Unknown	0.01			0.01	0.005	14	14	100%	ND	FALSE
Cadmium, Total	mg/L	38	34	89%	X			Non Para UPL	Unknown	0.01			0.01	0.005	14	14	100%	ND	FALSE
Calcium, Total	mg/L	36	0	0%			X	Shapiro-Wilks, 1/2 MRL	LogNormal	230	108		526	1	14	0	0%	120	FALSE
Chromium, Total	mg/L	38	11	29%		X		Non Para UPL	Unknown	0.2	0.043		0.2	0.01	14	13	93%	0.01	FALSE
Cobalt, Total	mg/L	36	23	64%	X			Non Para UPL	Unknown	0.086			0.086	0.01	14	14	100%	ND	FALSE
Copper, Total	mg/L	38	16	42%		X		Non Para UPL	Unknown	0.16	0.044		0.16	0.01	14	14	100%	ND	FALSE
Lead, Total	mg/L	38	11	29%		X		Non Para UPL	Unknown	0.35	0.049		0.35	0.003	14	13	93%	0.0085	FALSE
Magnesium, Total	mg/L	36	0	0%			X	Non Para UPL	Unknown	94	34.5		94	1	14	0	0%	27	FALSE
Nickel, Total	mg/L	38	27	71%	X			Non Para UPL	Unknown	0.12			0.12	0.02	14	14	100%	ND	FALSE
Potassium, Total	mg/L	36	6	17%		X		Non Para UPL	Unknown	31	9.19		31	1	14	0	0%	5.2	FALSE
Selenium, Total	mg/L	38	25	66%	X			Non Para UPL	Unknown	0.066			0.066	0.005	14	14	100%	ND	FALSE
Silver, Total	mg/L	38	37	97%	X			Non Para UPL	Unknown	0.0051			0.0051	0.01	14	14	100%	ND	FALSE
Sodium, Total	mg/L	36	0	0%			X	Shapiro-Wilks, 1/2 MRL	LogNormal	130	83.8		178.9	1	14	0	0%	170	FALSE
Thallium, Total	mg/L	38	36	95%	X			Non Para UPL	Unknown	0.002			0.002	0.01	14	14	100%	ND	FALSE
Vanadium, Total	mg/L	36	15	42%		X		Non Para UPL	Unknown	0.31	0.089		0.31	0.01	14	13	93%	0.027	FALSE
Zinc, Total	mg/L	38	6	16%		X		Non Para UPL	Unknown	0.48	0.13		0.48	0.02	14	11	79%	0.063	FALSE
<b>Radionuclides</b>																			
Gross alpha	pCi/L	7	0	0%			X	Non Para UPL	Unknown	40.3	25.6		40.3		14	0	0%	77	TRUE
Gross beta	pCi/L	7	0	0%			X	Shapiro-Wilks, 1/2 MRL	Normal	26.2	12.4	8	55.7		14	0	0%	40.5	FALSE
<b>Volatile Organic Compounds</b>																			
1,1,1,2-tetrachloroethane	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE
1,1,1-Trichloroethane	ug/L	39	39	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE
1,1,2,2-tetrachloroethane	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE
1,1,2-Trichloroethane	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE
1,1-Dichloroethane	ug/L	39	39	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE
1,1-Dichloroethene	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			2.6	2	14	14	100%	ND	FALSE
1,2,3-Trichloropropane	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE
1,2-Dibromo-3-chloropropane	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE
1,2-Dibromoethane	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE
1,2-Dichlorobenzene	ug/L	23	23	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE
1,2-Dichloroethane	ug/L	39	37	95%	X			Non Para UPL	Unknown	0.33			0.33	1	14	14	100%	ND	FALSE
1,2-Dichloropropane	ug/L	39	39	100%	X			99% UPL is 1.3xMRL	Unknown	ND			13	10	14	14	100%	ND	FALSE
1,4-Dichlorobenzene	ug/L	23	23	100%	X			99% UPL is 1.3xMRL	Unknown	ND			13	10	14	14	100%	ND	FALSE
2-Butanone	ug/L	3	3	100%	X			99% UPL is 1.3xMRL	Unknown	ND			13	10	7	7	100%	ND	FALSE
2-Hexanone	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			13	10	14	14	100%	ND	FALSE
4-methyl-2-pentanone	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE
Acetone	ug/L	28	28	100%	X			99% UPL is 1.3xMRL	Unknown	7			1.3	1	7	7	100%	ND	FALSE
Benzene	ug/L	39	37	95%	X			Non Para UPL	Unknown	15			15	1	14	14	100%	ND	FALSE

**TABLE 6**  
**STATISTICAL EVALUATION OF ANALYTICAL RESULTS**  
**LOWRY OU2 LANDFILL SITE**  
**FORMER LOWRY AIR FORCE BASE**  
**DENVER, COLORADO**

Parameter	Units	Upgradient, all samples							Upgradient Statistics						Downgradient samples collected Nov-06 and Feb-07.					
		Num Samp	Num ND	% ND	>50% ND	>15% ND	<=15% ND	Statistical Test	Distribution	Max Conc	Mean	Std Dev	UPL	MRL	Num Samp	Num ND	% ND	Max Conc	99% one-sided test result	
Bromochloromethane	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
Bromodichloromethane	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
Bromoform	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
Bromomethane	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
Carbon Disulfide	ug/L	37	36	97%	X			Non Para UPL	Unknown	5.7			5.7	1	14	14	100%	ND	FALSE	
Carbon tetrachloride	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
Chlorobenzene	ug/L	39	39	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
Chloroethane	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
Chloroform	ug/L	38	38	100%	X			99% UPL is 1.3xMRL	Unknown	1.2			1.3	1	14	14	100%	ND	FALSE	
Chloromethane	ug/L	39	39	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
cis-1,2-dichloroethene	ug/L	37	37	100%	X			Trend Analysis	Unknown	ND				1	14	11	79%	0.25	<MRL	
cis-1,3-dichloropropene	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
Dibromochloromethane	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
Dibromomethane	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
Ethylbenzene	ug/L	39	39	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
Iodomethane	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
Methylene chloride	ug/L	33	26	79%	X			Non Para UPL	Unknown	5.9			5.9	1	14	14	100%	ND	FALSE	
Styrene	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
Tetrachloroethene	ug/L	39	39	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
Toluene	ug/L	39	39	100%	X			Trend Analysis	Unknown	ND				1	14	13	93%	0.099	<MRL	
Total xylenes	ug/L	39	39	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
trans-1,2-dichloroethene	ug/L	39	39	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
trans-1,3-dichloropropene	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
Trichloroethene	ug/L	7	7	100%	X			Trend Analysis	Unknown	ND				1	14	10	71%	0.6	<MRL	
Trichlorofluoromethane	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
Vinyl acetate	ug/L	7	7	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.95	1.5	14	14	100%	ND	FALSE	
Vinyl chloride	ug/L	39	39	100%	X			99% UPL is 1.3xMRL	Unknown	ND			1.3	1	14	14	100%	ND	FALSE	
<b>Field and General Water Quality Parameters</b>																				
Bicarbonate as cacO3	mg/L	7	0	0%				X	Shapiro-Wilks, 1/2 MRL	Normal	400	299	74	698	*22	14	0	0%	490	FALSE
Carbonate as cacO3	mg/L	7	7	100%	X				99% UPL is 1.3xMRL	Unknown	ND			0.286	0.22	14	14	100%	ND	FALSE
Chloride	mg/L	11	0	0%				X	Shapiro-Wilks, 1/2 MRL	Normal	220	103	64	374	*2.3	14	0	0%	110	FALSE
Cond, field	u-S	6	0	0%				X	Shapiro-Wilks, 1/2 MRL	Normal	1396	965	317	2916		14	0	0%	1289	FALSE
Nitrate as n	mg/L	18	4	22%		X			Non Para UPL	Unknown	7	2.69		7	1.7*	14	7	50%	1.7	FALSE
Nitrite as n	mg/L	18	16	89%	X				Non Para UPL	Unknown	0.52			0.52	0.1	14	10	71%	0.28	FALSE
pH, field	su	6	0	0%				X	Range - 6.0-9.0	Normal	7.05-7.55	7.29	0.2	6.0-9.0		14	0	0%	6.27-7.59	Within Range
Sulfate	mg/L	8	0	0%				X	Shapiro-Wilks, 1/2 MRL	Normal	120	87.8	30.8	239	*2.1	14	0	0%	180	FALSE
Total organic carbon	mg/L	7	0	0%				X	Non Para UPL	Unknown	3.1	1.73		3.1		14	0	0%	1.9	FALSE

Type: m - metals    r - radionuclides    voc - volatile organic compounds    wq - water quality parameter  
Units: mg/L - milligrams per Liter    ug/L - micrograms per Liter    su - standard units    u-S - microSiemens/cm    DegC - Degrees Centigrade  
Num Samp: Number of samples    Num ND: Number of samples with non-detects    % ND: Num ND/Num Samp, expressed as a percentage.  
>50%ND / >15%ND / <=15% ND: X indicates that % ND falls into the indicated range.  
Statistical test: Selected test    UPL - Upper Prediction Limit    MRL - Method Reporting Limit  
Max Conc - maximum reported concentration. Range of reported values is given for pH.  
Mean - arithmetic average of non-transformed data from upgradient samples. Mean was not calculated for parameters with >50% NDs in upgradient samples.  
Std Dev - standard deviation of non-transformed data from upgradient samples. Standard deviation is shown only for normally distributed upgradient data.

**ATTACHMENT 1**  
**MONITORING WELL DEVELOPMENT / PURGE FORMS**



**ATTACHMENT 2**  
**SOIL VAPOR MONITORING FORMS**



**ATTACHMENT 3**  
**VALIDATION REPORTS**



**ATTACHMENT 4**  
**GROUNDWATER AND SURFACE WATER ANALYTICAL RESULTS**



**ATTACHMENT 5**  
**HISTORICAL DATA**

