FINAL
JUNE 2009 (N=18) GROUNDWATER AND METHANE MONITORING REPORT

FOR

THE LAMONT ROAD LCID AND C&D LANDFILLS
NCDENR LANDFILL PERMIT #26G AND #26-08

FORT BRAGG, NORTH CAROLINA

Prepared by:

US Army Corps of Engineers
Savannah District
Hazardous, Toxic & Radioactive Waste Section
CESAS-EN-GH
110 W. Oglethorpe Avenue
Savannah, GA 31401

October 2009

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SIGNATURE OF CERTIFIED PROFESSIONAL GEOLOGIST	
Kevin G. Haborak, P. G. Professional License Numbers: Georgia # 1683	Date

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LIST OF ACRONYMS

C&D	Construction and Demolition
COCs	Chemicals of Concern
DPW	Directorate of Public Works
IDW	Investigation Derived Waste
LCID	Land Clearing and Inert Debris
µg/L	Micrograms Per Liter
MSWLF	Municipal Solid Waste Landfill Facility
NC2L	North Carolina Administrative Code, Title 15A, Subchapter 2L
NCDENR	North Carolina Department of Environmental and Natural Resources
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
USACE	US Army Corps of Engineers
VOCs	Volatile Organic Compounds

FINAL
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1.0 INTRODUCTION

This is the Report for the June 2009 groundwater and methane monitoring at the Lamont Road Landfills (Figure 1) performed by the United States Army Corps of Engineers (USACE), Savannah District in June, 2009. The monitoring is required by the North Carolina Department of Environmental and Natural Resources (NCDENR) Solid Waste Management Division. This was the eighteenth (N=18) event performed for the Site. This report summarizes the methods used for the groundwater and methane monitoring and presents the results of the sampling event.

1.1 Project Background

The USACE was contracted by the Directorate of Public Works (DPW), Fort Bragg, North Carolina to perform groundwater sampling and methane monitoring. The original groundwater monitoring well network for the land clearing and inert debris (LCID) and construction and demolition (C&D) landfills consisted of 11 wells. Four of the original eleven monitoring wells have been permanently abandoned and replaced with new wells at different locations. An additional two wells have also been installed. The current Sampling and Analysis Plan (SAP), approved by NCDENR, includes sampling these 13 monitoring wells. The monitoring wells are LMW-3, LMW-3s, LMW-4, LMW-6, LMW-7, LMW-8, LMW-9, LMW-9s, LMW-9d, LMW-10, LMW-14R, LMW-15R, and LMW-16. Groundwater monitoring locations are shown on Figure 2. All sampling was conducted according to North Carolina Solid Waste Management Guidelines.

1.2 Project Scope

The scope for this project included collecting groundwater samples from 13

monitoring wells at the Lamont Road LCID and C&D Landfill for analyses of Appendix I constituents, sampling for methane at 13 selected methane monitoring wells and 6 buildings on site, evaluating the analytical results, and reporting the results of the investigation. The groundwater sampling and data analyses included obtaining field parameter measurements (i.e. pH, temperature, etc.), measuring water levels at the monitoring well locations, determining groundwater flow directions, validating laboratory analytical data, performing statistical analysis for each detected constituent as required by NC regulations, and determining the concentration changes of chemicals of concern (COCs) with time.

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2.0 PROJECT HISTORY

2.1 Site Description and History

The Lamont Road LCID and C&D Landfills are on the west side of Cooleyconch Mountain (Figure 2). The site was previously utilized as a maneuver training area (conducted continuously for 50 years), a borrow pit for sands and clays, and a repository for unclassified debris from land clearing and construction demolition. The LCID Landfill started as an uncontrolled dump site which was associated with reclaiming borrow excavation. Its initial operation pre-dated Federal and State regulations governing waste disposal. The LCID Landfill has been operated as a controlled repository for C&D debris as well as for land clearing and inert debris since its permitting under NCDENR Permit No. 26C on August 28, 1987. From February 1993 to date of closure, C&D debris was diverted to the Longstreet Road Sanitary Landfill, and only LCID has been accepted at the LCID Landfill site. It is presumed that asbestos materials are disposed of in this landfill.

Cooleyconch Mountain is the prominent terrain feature west of the main post. The LCID Landfill site is 1.5 miles west of the Longstreet Road municipal solid waste landfill (MSWLF) (closed January 1, 1998) and 200 yards northwest of the Lamont Road C&D Landfill. The area adjacent and east of the LCID Landfill has been excavated to be used as a borrow pit for sandy fill material. To the south of the LCID Landfill, in the C&D Landfill site, petroleum contaminated soils have been spread, dried, and stored for subsequent removal. To the east of the LCID Landfill, petroleum contaminated sludge has been stored in earthen impoundments for subsequent removal. The LCID Landfill drains north to Cypress Creek, which intersects the Little River a mile upstream of the Fort Bragg Water Plant intake.

2.2 General Site Geology and Hydrology

Lithologic descriptions of soil borings and monitoring well borings from previous investigations at Fort Bragg indicate that in general Fort Bragg is underlain by alternating sands, silty sands, clayey sands, sandy clays, and clays, likely belonging to the

Middendorf Formation. The sands and silty sands range in thickness from approximately 2 to 22 ft and are coarse grained. The clay units range in thickness from approximately 2 to 7 ft and are typically plastic.

2.3 Previous Investigation and Results

Several sampling events have been conducted at the landfills. Initially, four monthly sampling events were conducted in July, August, September, and October 1996 by R,S & H Architect, Engineering, & Planning, Inc. Law & Company, Inc. conducted two sampling events in March and September, 1999 in conjunction with the installation of new wells. Then until 2005, sampling events were conducted by BPA Environmental & Engineering, Inc. The USACE has monitored the site since 2005.

The previous sampling event, held in November of 2008 for Lamont Landfill, was conducted by the USACE, Savannah District. There were low level concentrations of Appendix I volatile organic compounds (VOCs) and Appendix I metals. However, most of the detections were below the respective NC2L standard and none of the detections were determined to be statistically significant increases (SSIs) over background concentrations.

3.0 METHODS

3.1 Methane Monitoring

Methane monitoring was performed at 13 wells and 6 buildings. The monitoring included measuring levels of methane, carbon dioxide, and oxygen at each of the locations. The results of the monitoring are summarized in Table 1 and are also presented on Figure 3.

3.2 Water-Level Gauging

During this sampling event, USACE personnel measured the water levels in 13 monitoring wells. Measured water levels and calculated groundwater elevations are presented in Table 2. A potentiometric map was developed based on the groundwater elevations; the map is presented as Figure 4. The map shows that the general direction of the groundwater flow at the Lamont Landfill is towards the west-northwest.

3.3 Groundwater Sampling

The groundwater sampling was conducted in accordance with the SAP for the Lamont Road LCID and C&D Landfills (NCDENR Landfill Permits # 26G and #26-08 dated April 2005, which have been updated to reflect the most recent SAP). Groundwater samples were collected from 13 wells. Water quality parameters pH, specific conductivity, temperature, turbidity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) were measured during the purge cycle of each well. The measurements are summarized in Table 3.

Groundwater samples were collected using a low-flow purge method with a bladder pump. Immediately before purging a well, the static water level below the top of the well casing and the total depth of the well were measured to the nearest 0.01 foot and recorded in the field notebook. The volume of water in the well was calculated based on the static water level and the well construction information. Well volume calculations were placed in the field notebook. The inlet of the sampling pump was placed at the mid-point of the screened interval. This level was adjusted for wells where the static water

level is within the well screen. The monitoring wells were purged using a variable-flow bladder pump at a rate of 500 ml/min or less.

The wells were purged until the water quality had stabilized or five purge volumes were removed. The wells were considered stable when the following requirements were met for three consecutive readings: turbidity values within 10% or lower than 10 Nephelometric Turbidity Units (NTUs), temperature values within a range of 0.5 degrees Celcius, pH readings within 0.1 Standard Units (SU), ORP values within a range of 10 milivolts (mV), and conductivity values within 3%, and DO values within 10%.

The rate of pumping was determined and noted in the field notebook. The purge rate was adjusted, as necessary, to avoid purging any well to dryness and to equal the recharge of the aquifer. All sampling equipment was protected from contaminated soil surfaces to prevent contamination of the samples (e.g., equipment may be placed on disposable polyethylene plastic sheeting). Groundwater samples were collected after purging was complete. The tubing was disconnected from the flow through cell, and the samples were collected from the pump outlet. The samples were labeled and placed into an ice-filled cooler for preservation.

Groundwater sampling data (including sample number, location, quantity of water purged, field parameters, site conditions, etc.) were documented in the field notebook. Water samples for Resource Conservation and Recovery Act (RCRA) metal analyses were un-filtered. The results of the groundwater sampling are presented in Table 4 and on Figure 5. The groundwater sampling field data logs are presented in Appendix A.

3.4 Investigation Derived Wastes Handling

The investigation derived wastes (IDW), including the waste water from well purging and decontamination water, were containerized in 55-gallon drums. Those drums were appropriately labeled, sealed, and staged within designated areas until analytical results had been received and reviewed. Based on the analytical results of the groundwater samples, the IDW was classified as non-hazardous. With the concurrence of

the Fort Bragg Installation Restoration Program Manager, the IDW was disposed of at an appropriate disposal facility.

4.0 ANALYTICAL RESULTS AND STATISTICAL ANALYSIS

4.1 Analytical Data Summary

Groundwater samples collected in June 2009 were analyzed for Appendix I VOCs and metals. The summary of detections of the COCs is presented in Table 4. Figure 5 shows the distribution of the detections and their concentrations from this sampling event. The reports of chemical data quality assessment prepared by the Project Chemist are included as Appendix B. The laboratory reports of analytical results are included as Appendix C. For comparison, the analytical results of previous investigations are also presented in the Statistical Analyses Summary Report included in Appendix D.

In accordance with North Carolina guidance, analytical results are compared to North Carolina Groundwater 2L Standards (NC2L standards). The analytical data of the first 2009 sampling event indicated that some VOCs and inorganics were detected at low levels, and most detections were below NC2L standards (Table 4). One well had a detection exceeding the NC2L standard as follows:

- <u>Well LMW-8</u>
  Chloromethane was detected at a concentration of 3.3 µg/L. This exceeds the NC2L standard of 2.6 µg/L.

Though other wells had constituent detections above method detection limits, all are below the respective NC2L standard and most are estimated values that were detected above the method detection limits but below the reporting limit (Table 4).

4.2 Statistical Analysis Results

A statistical test predicts the average behavior (distribution) of a random variable by comparing the means (normal distribution) or medians (lognormal and non-parametric distributions) of the compliance well data to background well data. Different statistical tests were used as appropriate for the different distributional patterns that occur within the data. Prior to testing for statistical significance, the distribution of each parameter

was determined to be normal, lognormal, or non-normal.

If the data were non-normally distributed, or the fraction of nondetects exceeded 15% but were less than 90%, then the Kruskal-Wallis Test was applied. If the fraction of non-detects exceeded 90%, then the Non-Parametric Prediction Limit was applied. For these tests to be sufficiently sensitive, the sample size for any group must be at least 4. A Kruskal-Wallis Test can be used in any situation that the parametric analysis of variance can be used. This test computes the H-statistic, adjusts it for ties, and compares it to the appropriate chi-square critical value. If the H-statistic is less than the critical value, the null-hypothesis is accepted, and it is concluded that there are no differences between median background and compliance well concentrations. If the H-statistic is greater than the critical value, it is concluded that at least one pair of well groups is statistically different. However, the Kruskal-Wallis test is prone to false positives. Therefore, additional statistical analyses were used to determine the validity of the positive results. Intra-well comparisons of data from a single well to previous data from the same well were performed to determine if a trend of increasing concentration is occurring. The Mann-Kendall Trend Analysis and the Shewhart-CUSUM Control Chart statistical tests were selected for these additional analyses.

A detailed discussion of the statistical methods is presented in Appendix D. The results of the statistical analysis indicate that there are no SSIs in the concentrations of the detected constituents.

4.3 Methane Monitoring Results

The methane levels were measured at 19 locations at Lamont Landfill. The results of the monitoring are summarized in Table 1 and are also presented on Figure 3. Two methane monitoring wells were above 1 % by volume methane, while the rest of the wells were below 1 %.

5.0 CONCLUSIONS AND RECOMMENATIONS

The annual monitoring program consists of two sampling events conducted six months apart. This was the June 2009 sampling event for groundwater and methane monitoring performed by the USACE, Savannah District. It was the N=18 sampling event for the Lamont Road Landfills. Low levels of Appendix I VOCs and metals were detected, but most of the detections were at estimated levels. Chloromethane exceeded the respective NC2L standard in LMW-8. The exceedance was not indicated to be a statistically significant increase. The exceedance is considered to be suspect and will be evaluated further during the second 2009 sampling event.

According to the Statistical Analysis of groundwater Data (Appendix D), there is no evidence of an upward trend in constituent concentrations. The statistical findings at the Lamont Road Landfill demonstrated that any statistical abnormalities were due to natural variation in the results. Long-term monitoring should continue at the Lamont Road Landfill because it is still an active site and NC Solid Waste Regulations require it.

6.0 REFERENCES

North Carolina Administrative Code, Title 15A, Department of Environment, Health, and Natural Resources, Division of Solid Waste, Management, Subchapter 13B, Solid Waste Management, Section .1600 (January 4, 1994).

North Carolina Administrative Code, Title 15A, Department of Environment, Health, and Natural Resources, Division of Solid Waste, Management, SubchapterNC2L, Classifications and Water Quality Standards Applicable to the Ground Waters of North Carolina, Sections .0100, .0200, and .0300 (November 8, 1993): from the Environmental Management Commission, Raleigh, North Carolina.

FIGURES

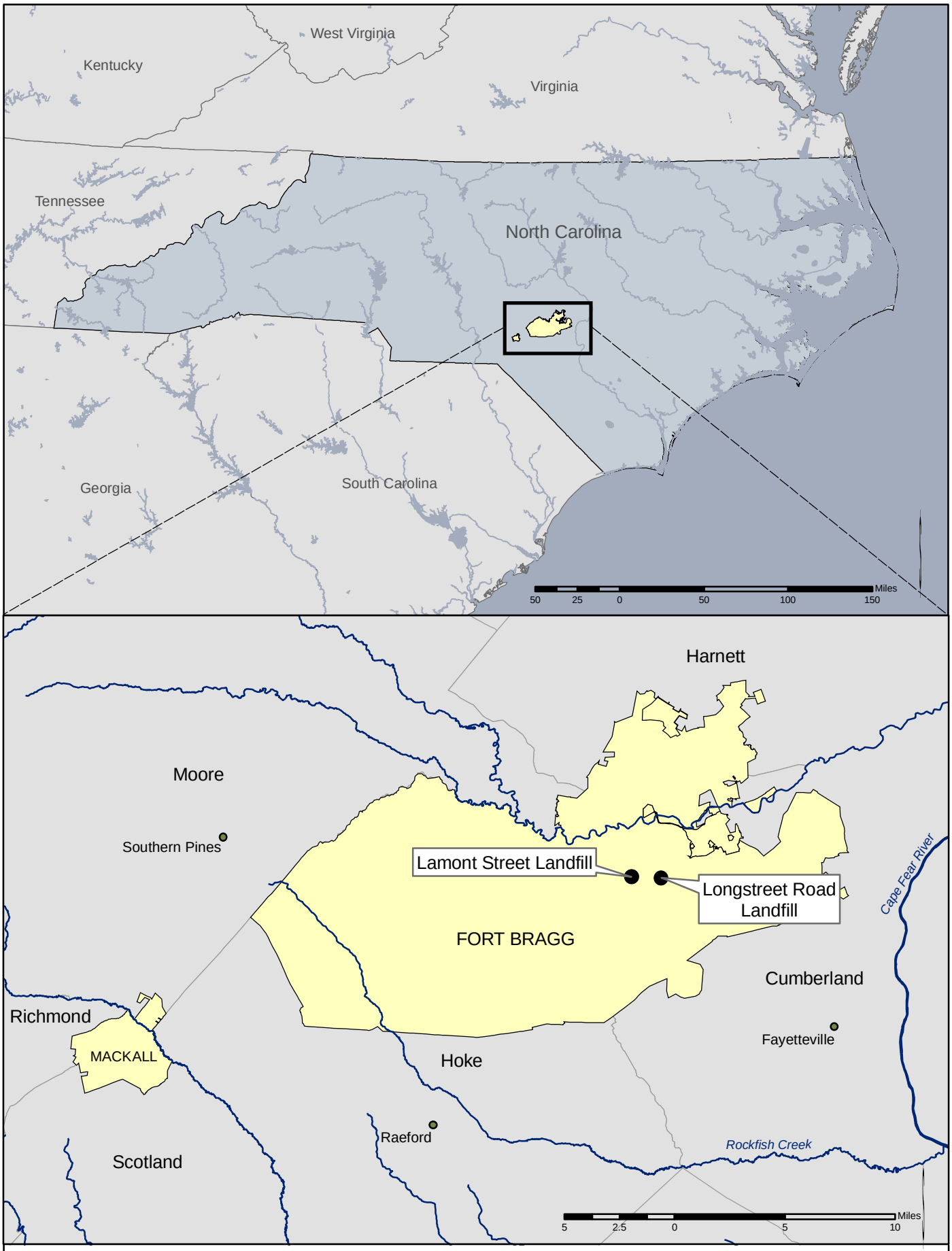

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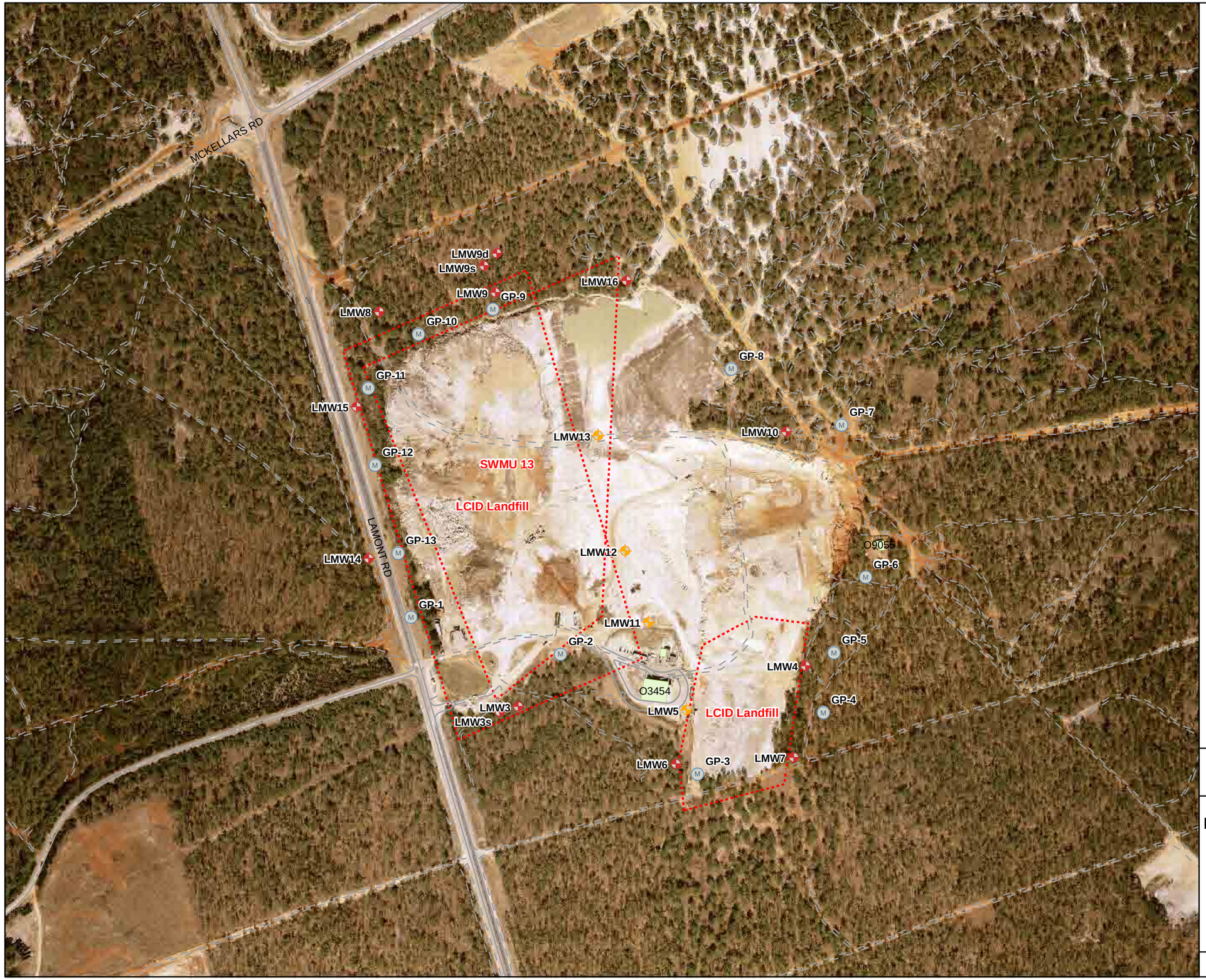
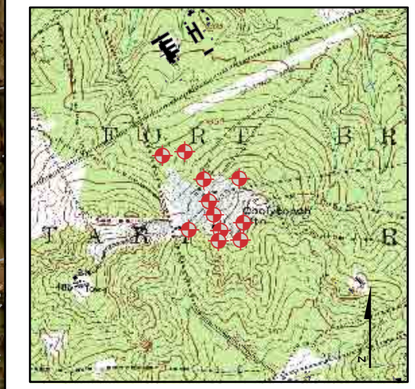
Figure 1

Site Map -- Ft. Bragg, NC





LEGEND

- METHANE SAMPLE
- MONITORING WELL
- MONITORING WELL (REMOVED)
- STREAM
- PAVED ROAD
- DIRT ROAD
- BUILDING
- SWMU AREA

1 inch = 401 feet

0 200 400 800'

N

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LOCATION MAP- LAMONT STREET LANDFILL

FT. BRAGG, NC

DATE: APR 2009

FIGURE 2

McKELLAR ROAD

LAMONT STREET

SWMU 13

LCID LANDFILL

LCID LANDFILL

GP-9: 0.2% Methane, 12.9% Oxygen

GP-10: 1.9% Methane, 0.3% Oxygen*

GP-11: 0.2% Methane, 19.4% Oxygen

GP-12: 0.2% Methane, 13.6% Oxygen

GP-13: 6.7% Methane, 16.5% Oxygen

GP-1: 0.2% Methane, 14.4% Oxygen

GP-2: 0.2% Methane, 19.5% Oxygen

GP-3: 0.2% Methane, 19.1% Oxygen

GP-4: 0.2% Methane, 20.4% Oxygen

GP-5: 0.2% Methane, 17.9% Oxygen

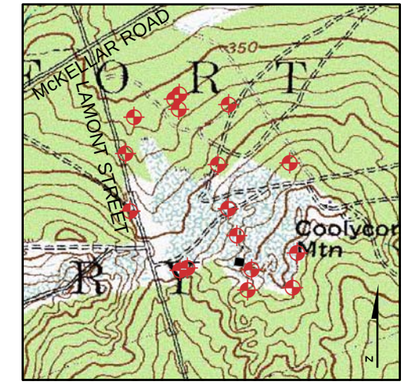
GP-6: 0.2% Methane, 20.1% Oxygen

GP-7: 0.2% Methane, 17.6% Oxygen

GP-8: 0.2% Methane, 18.8% Oxygen

Note:
TOC – Top of casing
btoc – Below top of casing
NA – Not Available
bgs – Below ground surface
amsl – Above mean sea level
D --- Selected Well for Long Term Monitoring
TOC elevation is based on vertical datum NGVD29 (source: USGS RFI, Aug. 1999)

FACILITY	%METHANE	%OXYGEN
Workshop	0.1	20.7
Equipment Shed	0.1	20.7
Office	0.2	20.2
Gear House	0.2	20.2
Trailer	0.2	20.3



LEGEND

- METHANE SAMPLE
- STREAM
- BUILDING
- SWMU AREA
- ROAD
- TRAIL

1 inch = 399 feet

0 200 400 800'

N

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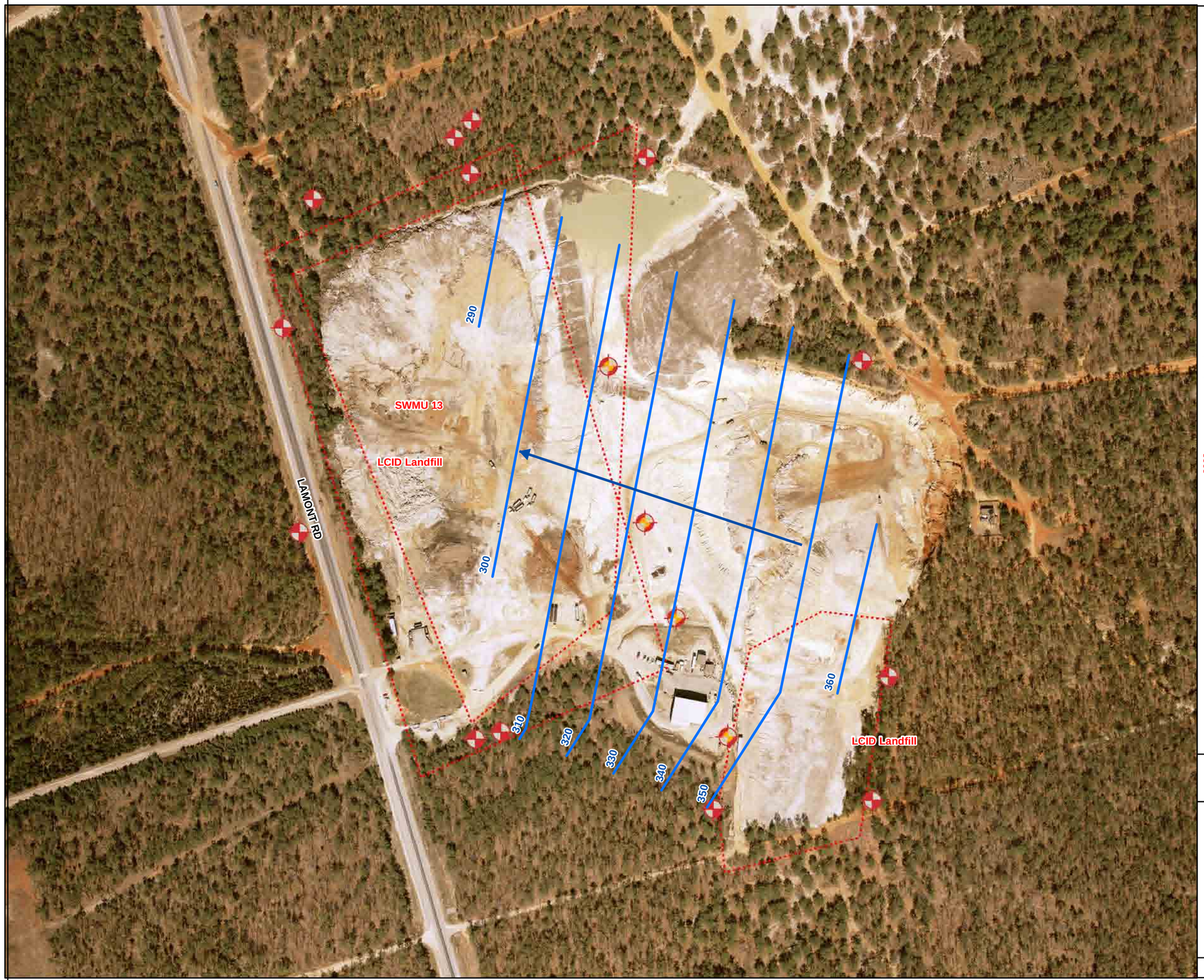
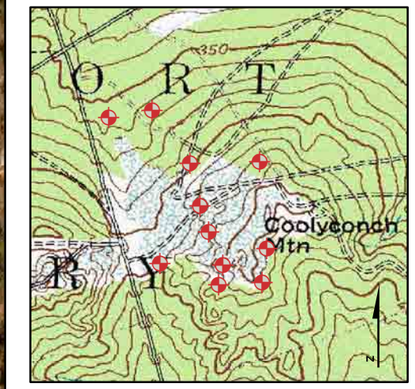
METHANE MONITORING RESULTS

LAMONT STREET LANDFILL
FT. BRAGG, NC

DATE: SEPT 2009

FIGURE 3





LEGEND

- Groundwater Contour
- Monitoring Well (Removed)
- Monitoring Well
- SWMU Area

Note: Monitoring wells used for potentiometric surface are displayed with elevations in feet above MSL in parenthesis below the label.

1 inch = 296 feet

0 145 290 580'

N

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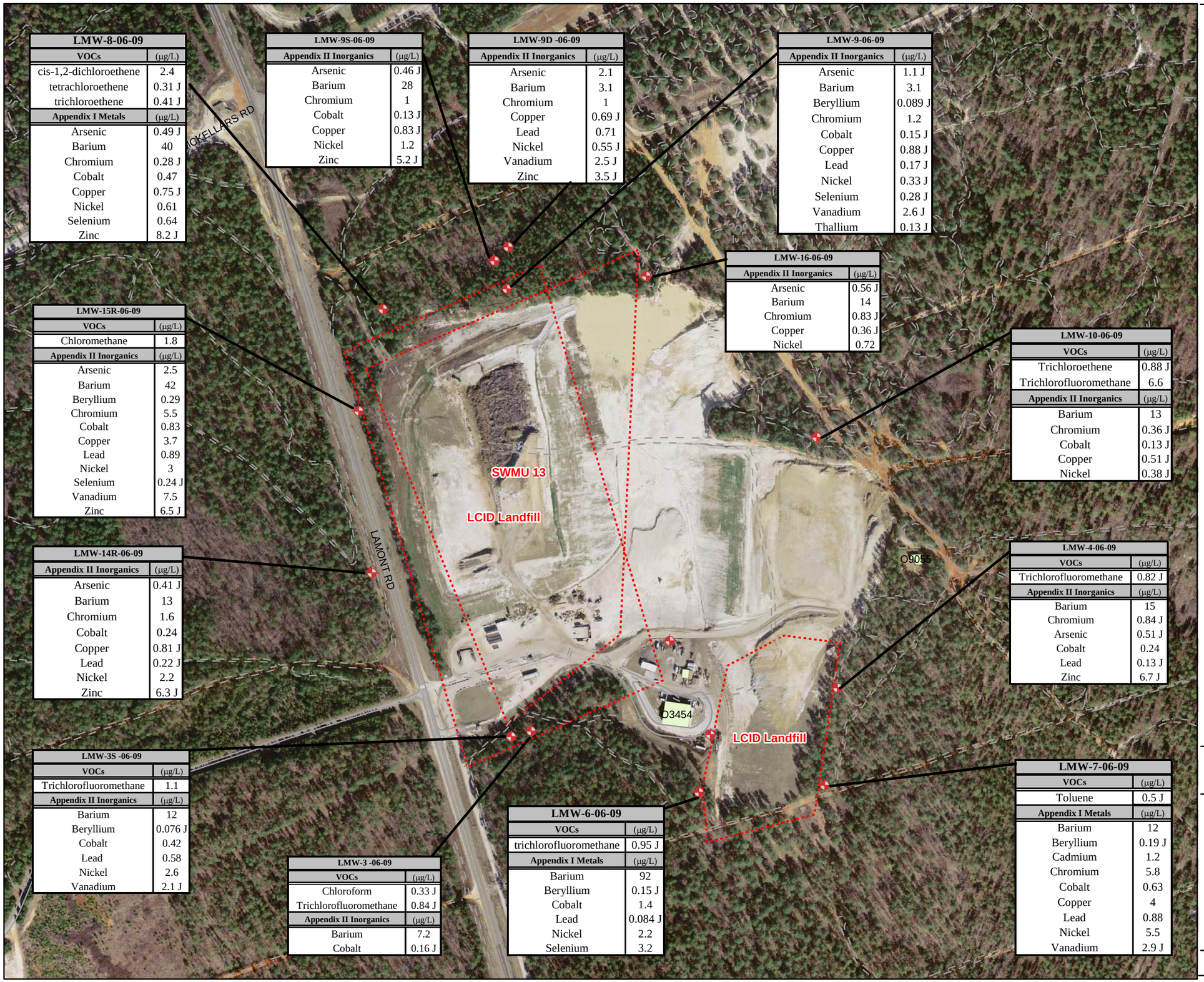
LAMONT ST LANDFILL, FORT BRAGG, NC

POTENTIOMETRIC MAP

DATE: SEPT 2009

FIGURE 4



LMW-8-06-09

VOCs	(µg/L)
cis-1,2-dichloroethene	2.4
tetrachloroethene	0.31 J
trichloroethene	0.41 J
Appendix I Metals	**(µg/L)**
Arsenic	0.49 J
Barium	40
Chromium	0.28 J
Cobalt	0.47
Copper	0.75 J
Nickel	0.61
Selenium	0.64
Zinc	8.2 J

LMW-9S-06-09

Appendix II Inorganics	(µg/L)
Arsenic	0.46 J
Barium	28
Chromium	1
Cobalt	0.13 J
Copper	0.83 J
Nickel	1.2
Zinc	5.2 J

LMW-9D -06-09

Appendix II Inorganics	(µg/L)
Arsenic	2.1
Barium	3.1
Chromium	1
Copper	0.69 J
Lead	0.71
Nickel	0.55 J
Vanadium	2.5 J
Zinc	3.5 J

LMW-9-06-09

Appendix II Inorganics	(µg/L)
Arsenic	1.1 J
Barium	3.1
Beryllium	0.089 J
Chromium	1.2
Cobalt	0.15 J
Copper	0.88 J
Lead	0.17 J
Nickel	0.33 J
Selenium	0.28 J
Vanadium	2.6 J
Thallium	0.13 J

LMW-16-06-09

Appendix II Inorganics	(µg/L)
Arsenic	0.56 J
Barium	14
Chromium	0.83 J
Copper	0.36 J
Nickel	0.72

LMW-15R-06-09

VOCs	(µg/L)
Chloromethane	1.8
Appendix II Inorganics	**(µg/L)**
Arsenic	2.5
Barium	42
Beryllium	0.29
Chromium	5.5
Cobalt	0.83
Copper	3.7
Lead	0.89
Nickel	3
Selenium	0.24 J
Vanadium	7.5
Zinc	6.5 J

LMW-10-06-09

VOCs	(µg/L)
Trichloroethene	0.88 J
Trichlorofluoromethane	6.6
Appendix II Inorganics	**(µg/L)**
Barium	13
Chromium	0.36 J
Cobalt	0.13 J
Copper	0.51 J
Nickel	0.38 J

LMW-14R-06-09

Appendix II Inorganics	(µg/L)
Arsenic	0.41 J
Barium	13
Chromium	1.6
Cobalt	0.24
Copper	0.81 J
Lead	0.22 J
Nickel	2.2
Zinc	6.3 J

LMW-4-06-09

VOCs	(µg/L)
Trichlorofluoromethane	0.82 J
Appendix II Inorganics	**(µg/L)**
Barium	15
Chromium	0.84 J
Arsenic	0.51 J
Cobalt	0.24
Lead	0.13 J
Zinc	6.7 J

LMW-3S -06-09

VOCs	(µg/L)
Trichlorofluoromethane	1.1
Appendix II Inorganics	**(µg/L)**
Barium	12
Beryllium	0.076 J
Cobalt	0.42
Lead	0.58
Nickel	2.6
Vanadium	2.1 J

LMW-3 -06-09

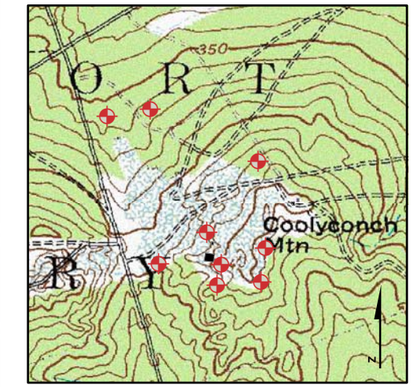
VOCs	(µg/L)
Chloroform	0.33 J
Trichlorofluoromethane	0.84 J
Appendix II Inorganics	**(µg/L)**
Barium	7.2
Cobalt	0.16 J

LMW-6-06-09

VOCs	(µg/L)
trichlorofluoromethane	0.95 J
Appendix I Metals	**(µg/L)**
Barium	92
Beryllium	0.15 J
Cobalt	1.4
Lead	0.084 J
Nickel	2.2
Selenium	3.2

LMW-7-06-09

VOCs	(µg/L)
Toluene	0.5 J
Appendix I Metals	**(µg/L)**
Barium	12
Beryllium	0.19 J
Cadmium	1.2
Chromium	5.8
Cobalt	0.63
Copper	4
Lead	0.88
Nickel	5.5
Vanadium	2.9 J



LEGEND

- MONITORING WELL
- PAVED ROAD
- DIRT ROAD
- WASH RACK AREA
- BUILDING
- SWMU AREA

NOTE: Only detected analytes shown.
Well labels show total well depth below ground surface in parenthesis.
NA - Not Available
U - Target analytes were not detected above the reporting limits
J - Analyte was present but concentration is an estimated value.
Bold - Concentrations exceed NC 2L standards.
*IMAC - Interim maximum allowable concentration
**PRG based on carcinogenic factor.

1 inch = 375 feet

0 185 370 740'

N

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LAMONT ST LANDFILL, FORT BRAGG, NC

GROUNDWATER
ANALYTICAL RESULTS

DATE: SEPT 2009 | FIGURE 5

TABLES

Table 1. Methane Monitoring Results
Lamont Landfills, Fort Bragg, NC

Well ID	Date Sampled	Time Sampled	%Methane by Volume	%Oxygen	%CO2
Gas-MW-1	06-13-09	14:32	0.2 %	14.4 %	3.1 %
Gas-MW-2	06-13-09	14:21	0.2 %	19.5 %	0.4 %
Gas-MW-3	06-13-09	13:51	0.2 %	19.1 %	1.0 %
Gas-MW-4	06-13-09	14:51	0.2 %	20.4 %	0.0 %
Gas-MW-5	06-13-09	15:19	0.2 %	17.9 %	1.3 %
Gas-MW-6	06-13-09	14:54	0.2 %	20.1 %	0.2 %
Gas-MW-7	06-13-09	14:57	0.2 %	17.6 %	1.3 %
Gas-MW-8	06-13-09	15:00	0.2 %	18.8 %	0.9 %
Gas-MW-9	06-13-09	15:06	0.2 %	12.9 %	6.6 %
Gas-MW-10	06-13-09	15:09	1.9 %	0.3 %	20.1 %
Gas-MW-11	06-13-09	14:41	0.2 %	19.4 %	1.0 %
Gas-MW-12	06-13-09	14:38	0.2 %	13.6 %	2.7 %
Gas-MW-13	06-13-09	14:35	6.7 %	16.5 %	4.3 %
Bldg 0-3533	06-13-09	N/A	N/A	N/A	N/A
Workshop	06-13-09	13:55	0.1 %	20.7 %	0.0 %
Equipment Shed	06-13-09	13:57	0.1 %	20.7 %	0.0 %
Office	06-13-09	14:21	0.2 %	20.2 %	0.0 %
Gear House	06-13-09	14:25	0.2 %	20.2 %	0.0 %
Trailer	06-13-09	14:28	0.2 %	20.3 %	0.0 %

Note:
TOC – Top of casing, btoc – Below top of casing, NA – Not Available
bgs – Below ground surface, amsl – Above mean sea level
Δ --- Selected Well for Long Term Monitoring
TOC elevation is based on vertical datum NGVD29 (source: USGS RFI, Aug. 1999)
* Erroneous reading not reported in table.

Table 2. Groundwater Elevation Data
Lamont Landfills, Fort Bragg, NC

Well ID	TOC Elev. (ft. amsl)	Water Level (ft. btoc) 04/06	Water Elev. (ft. amsl) 04/06	Water Level (ft. btoc) 11/06	Water Elev. (ft. amsl) 11/06	Water Level (ft. btoc) 5/07to 6/07	Water Elev. (ft. amsl) 5/07to 6/07	Water Level (ft. btoc) 11/07	Water Elev. (ft. amsl) 11/07	Water Level (ft. btoc) 11/08	Water Elev. (ft. amsl) 11/08	Water Level (ft. btoc) 06/09	Water Elev. (ft. amsl) 06/09
LMW-3	408.32	103.51	304.81	102.95	305.37	101.3	307.02	102.18	306.14	103.2	305.12	102.21	306.11
LMW-3s	*	NA	NA	NA	NA	58.1	NA	59.19	NA	60.4	NA	59.12	NA
LMW-4	441.79	75.54	366.25	75.12	366.67	74.71	367.08	75.42	366.37	74.65	367.14	74.74	367.05
LMW-6	431.45	80.62	350.83	81.25	350.2	79.12	352.33	80.3	351.15	81.65	349.8	80.15	351.3
LMW-7	436.62	126	310.62	125.86	310.76	125.42	311.2	125.87	310.75	125.63	310.99	124.78	311.84
LMW-8	354.07	49.81	304.26	47.08	306.99	45.48	308.59	48.68	305.39	76.66	277.41	46.85	307.22
LMW-9	364.79	83.78	281.01	83.15	281.64	84.71	280.08	82.16	282.63	80	284.79	80.71	284.08
LMW-9s	*	NA	NA	NA	NA	49.46	NA	52.46	NA	49.01	NA	51.01	NA
LMW-9d	*	NA	NA	NA	NA	74.51	NA	76.95	NA	76.66	NA	75.41	NA
LMW-10	428.68	77.24	351.44	76.22	352.46	75.13	353.55	76.81	351.87	76.48	352.2	76.38	352.3
LMW-14R	*	NA	NA	NA	NA	48.82	NA	50.07	NA	49	NA	48.97	NA
LMW-15R	*	NA	NA	NA	NA	37.85	NA	40.89	NA	37	NA	37.55	NA
LMW-16	*	NA	NA	NA	NA	37.2	NA	86.02	NA	36.48	NA	37.5	NA

Note:

TOC – Top of casing, btoc – Below top of casing, NA – Not Available

bgs – Below ground surface, amsl – Above mean sea level NS – Not Surveyed

Δ --- Selected Well for Long Term Monitoring *Well & ground-water elevations unavailable at this time.

TOC elevation is based on vertical datum NGVD29 (source: USGS RFI, Aug. 1999)

Table 3. Field Parameter Measurements
Lamont Landfills, Fort Bragg, NC

Well ID	Sample Identification	pH	Specific Conductivity (µs/cm)	Temperature (°C)	Turbidity (N.T.U.)	Dissolved Oxygen (mg/L)	ORP
LMW-3	GW-LMW-3-06-09	4.69	0.017	18.61	1.4	6.22	309
LMW-3s	GW-LMW-3s-06-09	4.56	0.024	18.97	> 999	5.13	323
LMW-4	GW-LMW-4-06-09	4.40	0.026	23.06	41.9	5.15	306
LMW-6	GW-LMW-6-06-09	4.56	0.267	22.61	3.8	0.0	279
LMW-7	GW-LMW-7-06-09	5.64	0.020	26.21	> 999	4.61	228
LMW-8	GW-LMW-8-06-09	5.89	0.286	18.90	5.6	0.0	60
LMW-9	GW-LMW-9-06-09	4.54	0.015	20.54	15.5	8.72	344
LMW-9s	GW-LMW-9s-06-09	5.40	0.219	21.82	5.4	0.0	200
LMW-9d	GW-LMW-9d-06-09	5.63	0.026	20.50	52.8	7.62	241
LMW-10	GW-LMW-10-06-09	4.60	0.030	19.21	4.9	7.86	334
LMW-14R	GW-LMW-14R-06-09	4.57	0.018	18.62	7.2	7.58	307
LMW-15R	GW-LMW-15R-06-09	4.24	0.040	20.26	2.0	6.89	325
LMW-16	GW-LMW-16-06-09	6.12	0.228	23.99	8.3	0.02	160

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Note: N.T.U. --- Nephelometric Turbidity Unit; ORP --- Oxidation Reduction Potential
#Monitoring Wells Permanently Abandoned
*High turbidity has been a continuing problem with this well.

Table 4. Summary of Ground-Water Detections
Lamont Landfills, Fort Bragg, NC

COMPOUNDS (µg/L)	Groundwater NC 2L Standard (ug/l)	EPA Drinking water MCL (ug/l)	Lamont																																								
			LMW-3 04/05	LMW-3 10/05	LMW-3 06/06	LMW-3 11/06	GW-LMW-3 06/07	GW-LMW-3 11/07	GW-LMW-3 05/08	GW-LMW-3 11/08	LMW-3 06/09	LMW-4 04/05	LMW-4 10/05	LMW-4 10/05 Dup	LMW-4 06/06	LMW-4 11/06	GW-LMW-4 06/07	GW-LMW-4 11/07	GW-LMW-4 05/08	GW-LMW-4 11/08	LMW-4 06/09	LMW-6 04/05	LMW-6 10/05	LMW-6 6/06	LMW-6 11/06	LMW-6 Dup 11/06	GW-LMW-6 06/07	GW-LMW-6 Dup 06/07	GW-LMW-6 11/07	GW-LMW-6 05/08	GW-LMW-6 11/08	GW-LMW-6 06/09	LMW-7 04/05	LMW-7 10/05	LMW-7 6/06	LMW-7 6/06 Dup	LMW-7 11/06	GW-LMW-7 06/07	GW-LMW-7 11/07	GW-LMW-7 05/08	GW-LMW-7 11/08	GW-LMW-7 06/09	LMW-8 04/05	LMW-8 10/05
VOCs (EPA 8260B)																																											
1,1,2,2-tetrachloroethane	0.17	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-dichloroethane	700	810*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,3-trichloropropane	0.005	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,4-trimethylbenzene	350	15 *	<2	<2	<2	<2	<2	<2	<3	0.24 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.21 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dibromo-3-chloropropane	0.025	0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dibromoethane	0.0004	0.05	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichloroethane	0.38	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichloropropane	0.56	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,4-dichlorobenzene	75	75	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-butanone	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
acetone	700	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	NA	<2	<2	<2	<2	<2	<2	<2	4.69 J	<2	<2	NA	<2	<2	<2	<2	<2	<2	282	4.22 J	<2	NA	<2
acrolein	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
benzene	1	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
carbon disulfide	700	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chlorobenzene	50	100	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloroethane	2800	4.6*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloroform	70	80	<2	<2	<2	<2	<2	<2	0.27 J	0.27 J	0.33 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloromethane (methyl chloride)	2.6	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.5 J	<2	<2	<2
cis-1,2-dichloroethene	70	70	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.27J
dibromochloromethane	0.41	80	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
dichlorodifluoromethane	1400	390*	<2	<2	<2	<2	<2	<2	0.45 J	0.43 J	<2	<2	<2	<2	0.57J	0.92J	<2	<2	0.71 J	0.95 J	<2	<2	<2	0.93J	2.67	2.80	<2	<2	<2	0.83 J	0.82 J	<2	<2	<2	<2	<2	<2	<2	0.71 J	<2	<2	<2	<2
diisopropyl ether	70	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
isopropylbenzene	70	660*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
m&p xylene	530#	10000#	<2	<2	<2	<2	<2	<2	<2	0.44 J	<2	<2	0.25J	<2	<2	0.23J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.230J	<2	<2	<2	<2	<2	<2	<2
methylene chloride (dichloromethane)	4.6	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MTBE	200	13*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-xylene	530#	10000#	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
sec-butylbenzene	70	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
tetrachloroethene	0.7	5	<2	<2	<2	<2	<2	.025 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.6J
toluene	1000	1000	<2	<2	<2	<2	<2	<2	<2	0.3 J	<2	0.33 J	<2	<2	<2	0.47J	<2	<2	<2	0.25 J	< 2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.30 J	<2	1.07 J	<2	<2	<2	0.850J	<2	<2	<2	<2	0.5 J	<2	<2
trans-1,2-dichloroethene	70	100	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
trichloroethene	2.8	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.24J
trichlorofluoromethane	2100	1300*	0.25 J	0.34J	0.52J	<2	<2	<2	0.74 J	0.63 J	0.84 J	2.37	0.68J	0.47J	2.53	2.37	<2	<2	3.79	2.66	0.82 J	0.63 J	1.54J	1.13J	<2	0.860J	<2	<2	<2	1.22 J	0.72 J	0.95 J	<2	<2	<2	<2	<2	2.5	4.79	<2	<2	<2	<2
vinyl chloride	0.015	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Appendix I Metals (EPA 6010B/6020A)																																											
Arsenic	10	10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.13 J	<2	<2	<2	0.51 J	<2	<2	<2	<2	<2	1.1 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.05 J	<2	<2	**10.8**	<2	<2	<2
Barium	2000	2000	<10	7.2J	5.0J	7.4	5.33	<10	5.47	5.8	<10	14.2	12.5	11.8	10	13.6	24.7	1.14J	11.20	14.7	15	9.5 J	12.3	20	33.9	33.7	52.4	46.4	42	49.2	73.7	92	31.7	30	20	10	11.6	27.4	6.28	5.48 J	7	12	48.5	38.1
Beryllium	NA	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15 J	NA	NA
Cadmium	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.701J	0.57J	<1	<1	<1	<1	<1	<1	1.2	<1	<1
Cobalt	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	0.16 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.24	<2	<2	<2	0.734J	0.733J	<2	<2	<2	0.93 J	<2	1.4	<2	<2	<2	<2	1.03	<2	<2	<2	<4	0.63	<2	<2
Chromium	50	100	<20	<20	<20	<20	<20	<20	<20	<20	< 20	10.8 J	<20	<20	<20	<20	21.7	<20	<20	<20	0.84 J	<20	<20	<20	<20	<20	4.74 J	3.75 J	<20	7.82	<20	< 20	19.0 J	23.2	<20	<20	5.28	24.7	<20	7.18	<10	5.8	<20	<20
Copper	1000	1000	<20	<20	<20	<20	<20	<20	<20	<20	< 20	<20	<20	<20	<20	<20	8.06 J	5.45 J	8.80	<20	< 20	<20	<20	<20	<20	<20	7.78 J	<20	<20	2.70 J	<20	< 20	10.8 J	11.1	10J	<20	6.64	6.05 J	7.53 J	<20	<20	4	<20	<20
Lead	15	15	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.534J	<1	0.644J	3.52	<1	0.644J	<1	0.13 J	<1	<1	<1	<1	<1	0.839 J	0.873 J	<1	<1	<1	0.084 J	3.11	3.07	3.37	2.31	1.81	3.51	<1	<1	0.533 J	0.88	<1	<1
Nickel	100	730*	<50	<50	<50	<50	<50	<50	1.12 J	<50	<50	<50	<50	<50	<50	1.6J	6.98	3.46	5.38	<50	< 50	<50	<50	<50	1.13J	1.12J	5.53 J	<50	<50	2.06	<50	2.2	18.9 J	<50	<50	<50	4.23	7.73	4.71 J	2.42	3 J	5.5	<50	<50
Selenium	50	50	<2	<2	<2	<2	<2	<2	<2	<2	0.54 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.8J	2.12	2.83	2.91	2.93	2.46	4.3	2.99 J	<2	3.2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	3.28	1.67J
Silver	17.5	180	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vanadium	NA	260*	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	15.8	<20	<20	<20	<20	<20	<20	<20	<20	<20	3.7 J	4.21	<20	<20	<20	<20	12.6 J	18.5J	8.0J	<20	3.56J	14.8	<20	<20	<8	2.9 J	<20	<20
Zinc	2100	5000	<60	<60	<60	6.46J	<60	<60	12	<60	<60	<60	<60	<60	<60	11.1	47.0	<60	15.30	<60	6.7 J	<60	<60	20J	7.63J	7.85J	17.3 J	15.2 J	27 J	10.1	<60	<60	27.5 J	31.4J	40J	20J	21.6	51.0	<60	10.9	<50	<60	<60	<60
Other Analyses																																											
Nitrate/Nitrite as N (SM 4500)	10,000	10,000	NA	<40	NA	0.333	209	139	510	5220	N/A	NA	<40	<40	NA	0.050	**643,000**	107	370	44	N/A	NA	<40	NA	1.15	1.14	1,220	1,290	950	1410	908	NA	NA	<40	NA	NA	0.119	295	528	130	113	NA	NA	<40

Note: NA -- Not Available; NS -- Not Sampled; U -- Target analytes were not detected above the reporting limits; J -- Analyte was present but concentration is an estimated value. **Bold**--Concentration exceeds NC 2L Std. * No MCL, used

PRG. #Used total values. **Used values for Chlordane. <> -- Data not recieved from laboratory

Table 4. Summary of Ground-Water Detections
Lamont Landfills, Fort Bragg, NC

COMPOUNDS (µg/L)	Groundwater NC 2L Standard (ug/l)	EPA Drinking water MCL (ug/l)	Lamont																																									
			LMW-8 6/06	LMW-8 11/06	GW-LMW-8 06/07	GW-LMW-8 11/07	GW-LMW-8 05/08	GW-LMW-8 11/08	GW-LMW-8 06/09	LMW-9 04/05	MW-DUP2 04/05	LMW-9 10/05	LMW-9 6/06	LMW-9 11/06	GW-LMW-9 06/07	GW-LMW-9 11/07	GW-LMW-9 05/08	GW-LMW-9 11/08	LMW-9 06/09	LMW-10 04/05	LMW-10 10/05	LMW-10 6/06	LMW-10 11/06	GW-LMW-10 06/07	GW-BLK 11/06	GW-LMW-10 11/07	GW-LMW-10 05/08	GW-LMW-10 11/08	LMW-10 06/09	LMW-1 11/06	LMW-3S 11/06	GW-LMW-3S 06/07	GW-LMW-3S 11/07	GW-LMW-3S 05/08	GW-LMW-3S 11/08	LMW-3S 06/09	LMW-9D 11/06	GW-LMW-9D 06/07	GW-LMW-9D 11/07	GW-LMW-9D 05/08	GW-LMW-9D 11/08	LMW-9D 06/09	LMW-9S 11/06	GW-LMW-9S 06/07
VOCs (EPA 8260B)																																												
1,1,2,2-tetrachloroethane	0.17	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-dichloroethane	700	810*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.43J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,3-trichloropropane	0.005	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,4-trimethylbenzene	350	15 *	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.21 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dibromo-3-chloropropane	0.025	0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dibromoethane	0.0004	0.05	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichloroethane	0.38	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichloropropane	0.56	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,4-dichlorobenzene	75	75	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-butanone	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
acetone	700	NA	<2	<2	<2	<2	<2	<2	<2	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.60J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
acrolein	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
benzene	1	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	**1.3**	<3	<2	<2	<2	<2	<2
carbon disulfide	700	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chlorobenzene	50	100	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloroethane	2800	4.6*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloroform	70	80	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloromethane (methyl chloride)	2.6	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
cis-1,2-dichloroethene	70	70	0.43J	0.300J	<2	0.35 J	0.35 J	<2	2.4	<2	0.44 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
dibromochloromethane	0.41	80	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	**2.08**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
dichlorodifluoromethane	1400	390*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	2.02	9.35	2.5	<2	3.4	4.66	2.42	<2	<2	12.6	<2	<2	0.62 J	2.76	<2	<2	<2	<2	<2	<2	<2	<2	<2
diisopropyl ether	70	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
isopropylbenzene	70	660*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
m&p xylene	530#	10000#	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.41 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
methylene chloride (dichloromethane)	4.6	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.69 J	0.63 J	0.49 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MTBE	200	13*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-xylene	530#	10000#	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.22 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
sec-butylbenzene	70	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
tetrachloroethene	0.7	5	<2	0.370J	<2	0.22 J	0.22 J	0.22 J	0.31 J	<2	1.87 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	4.94	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
toluene	1000	1000	<2	<2	<2	<2	<2	0.39 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.52 J	<2	0.26 J	<2	<2	<2	<2	0.57J	<2	<2	0.24 J	<2	<2	<2	1.4	1.4	<2	0.22 J	<2	<2	<2	<2	<2	<2	0.30 J	<2	<2
trans-1,2-dichloroethene	70	100	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
trichloroethene	2.8	5	0.23J	<2	<2	<2	<2	<2	0.41 J	<2	0.83 J	<2	<2	<2	<2	<2	<2	<2	<2	0.39 J	0.56J	0.91J	0.440J	<2	<2	0.48 J	<2	0.58 J	0.88 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
trichlorofluoromethane	2100	1300*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.26J	2.07	7.01	3.3	<2	7.73	10.6	<2	6.6	<2	0.330J	<2	1.03 J	0.52 J	1.05 J	1.1	<2	<2	<2	<2	<2	<2	<2	<2
vinyl chloride	0.015	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Appendix I Metals (EPA 6010B/6020A)																																												
Arsenic	10	10	<2	<2	<2	<2	<2	<2	0.49 J	1.04 J	<2	<2	1.52J	<2	1.12 J	<2	<2	8.7	1.1 J	<2	<2	<2	<2	1.15 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	7.67	7.66	<2	3.84	3.39	2.1	<2	1.68 J
Barium	2000	2000	40	32.0	34.0	41.0	34.9	29	40	<10	<10	<10	10	3.84	6.29	3 J	2.71	4	3.1	13.5	<10	20	11.9	21.3	<10	16.7	12	12.7	13	<10	5.95	18.7	13	8.86	13.8	12	13.9	5.57	120	10.1	3	3.1	77.3	80.9
Beryllium	NA	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.089 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.076 J	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.94J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt	NA	NA	<2	<2	<2	<2	0.83 J	<4	0.47	<2	<2	<2	<2	<2	<2	<2	<2	<4	0.15 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.13 J	<2	<2	<2	<2	0.53 J	<2	0.42	<2	<2	3	<2	<4	<2	1.27	1.04 J
Chromium	50	100	<20	<20	<20	<20	<20	<10	0.28 J	<20	<20	<20	10J	<20	7.14	<20	<20	<10	1.2	<20	<20	<20	<20	2.72 J	<20	<20	<20	<20	0.36 J	<20	<20	11.6	<20	<20	<20	1.7 J	6.51	<20	<20	3.32 J	<10	1	<20	5.73
Copper	1000	1000	<20	<20	<20	6 J	<20	<20	0.75 J	<20	<20	<20	10J	<20	5.28 J	7 J	<20	<20	0.88 J	<20	<20	<20	<20	<20	<20	5.41 J	2.79 J	<20	0.51 J	8.51	2.54J	<20	6	<20	<20	< 20	6.37	<20	9	2.63 J	<20	0.69 J	<20	<20
Lead	15	15	<1	<1	<1	<1	<1	<1	<1	0.525 J	<1	<1	0.87J	0.989J	1.40	<1	1.41	<1	0.17 J	<1	<1	0.78J	<1	4.15	<1	<1	<1	0.524 J	<1	<1	<1	3.71	1.47	<1	<1	0.58	3.60	3.97	0.68	3.94	<1	0.71	<1	2.16
Nickel	100	730*	<50	1.72J	<50	<50	1.76 J	<6	0.61	<50	<50	<50	<50	<50	3.26 J	<50	1.49 J	9	0.33 J	<50	<50	<50	<50	<50	<50	3.24 J	1.53 J	<50	0.38 J	<50	2.41	4.92 J	5	3.72	3.7 J	2.6	2.16	<50	<50	1.45 J	<6	0.55 J	1.15J	<50
Selenium	50	50	1.87J	1.67J	1.04 J	3.73 J	<2	<4	0.64	<2	<2	<2	<2	<2	<2	<2	<2	<4	0.28 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.15J	<2	<2	<2	<2	<2	<2	<2	<2	4.95 J	<2	<4	<4	4.56	4.53
Silver	17.5	180	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**33**	<10	<10	<10
Vanadium	NA	260*	<20	<20	<20	<20	<20	<8	<20	8.4 J	8.4 J	<20	30	<20	7.06	<20	2.78 J	<8	2.6 J	<20	<20	8.0J	<20	3.12 J	<20	<20	<20	<20	<20	<20	<20	9.91	<20	<20	<20	2.1 J	10.0	5.73	<20	5.5	5	2.5 J	<20	5.99
Zinc	2100	5000	<60	<60	<60	<60	5.20 J	<50	8.2 J	<60	<60	<60	20J	<60	17.1 J	<60	7.93 J	<50	<60	<60	<60	<60	<60	<60	<60	<60	40.8	<60	<60	<60	10.1	16.6 J	48	15.2	<60	<60	7.91	<60	<60	18	<50	3.5 J	<60	<60
Other Analyses																																												
Nitrate/Nitrite as N (SM 4500)	10,000	10,000	NA	0.216	398	527	570	466	NA	NA	NA	<40	NA	0.10	**17,200**	222	460	236	NA	NA	<40	NA	0.551	1,020	<40	964	410	513	NA	<40	0.321	196	228	550	343	NA	0.107	461	39	<40	130	NA	0.190	1,000

Table 4. Summary of Ground-Water Detections
Lamont Landfills, Fort Bragg, NC

COMPOUNDS (µg/L)	Groundwater NC 2L Standard (ug/l)	EPA Drinking water MCL (ug/l)	Lamont																												
			GW-LMW-9S 11/07	GW-LMW-9S 05/08	GW-LMW-9S 11/08	LMW-9S 06/09	LMW-15 11/06	LMW-16 11/06	GW-LMW-16 06/07	GW-LMW-16 11/07	GM-LMW-16 05/08	GW-LMW-16 11/08	LMW-16 06/09	GW-LMW-16-DUP 11/07	GW-LMW-16-DUP 11/08	GW-LMW-14R 06/07	GW-LMW-14R 11/07	GW-LMW-14R 05/08	GW-LMW-14R 11/08	LMW-14R 06/09	GW-LMW-14R DUP 11/08	GW-LMW-15R 06/07	GW-LMW-15R 11/07	GW-LMW-15R 05/08	GW-LMW-15R 11/08	LMW-15R 06/09	GW-LMW-15R DUP 11/08	GW-BLK 06/07	GW-BLK 11/07	GW-BLK 11/08	Trip Blank 11/07	Trip Blank 11/08
VOCs (EPA 8260B)																																
1,1,2,2-tetrachloroethane	0.17	NA	**0.66 J**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-dichloroethane	700	810*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,3-trichloropropane	0.005	NA	**0.76 J**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,4-trimethylbenzene	350	15 *	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.3 J	<2	<2	<2	<2	<2	<2	<2
1,2-dibromo-3-chloropropane	0.025	0.2	**0.82 J**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dibromoethane	0.0004	0.05	**0.43 J**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichloroethane	0.38	5	0.24 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichloropropane	0.56	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,4-dichlorobenzene	75	75	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-butanone	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
acetone	700	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	2.19 J
acrolein	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
benzene	1	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
carbon disulfide	700	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chlorobenzene	50	100	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloroethane	2800	4.6*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloroform	70	80	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloromethane (methyl chloride)	2.6	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.8	<2	<2	<2	<2	<2	0.40 J
cis-1,2-dichloroethene	70	70	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
dibromochloromethane	0.41	80	0.20 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
dichlorodifluoromethane	1400	390*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
diisopropyl ether	70	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
isopropylbenzene	70	660*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
m&p xylene	530#	10000#	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.47 J	<2	<2	<2	<2	<2	<2	<2
methylene chloride (dichloromethane)	4.6	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MTBE	200	13*	0.33 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-xylene	530#	10000#	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.24 J	<2	<2	<2	<2	<2	<2	<2
sec-butylbenzene	70	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
tetrachloroethene	0.7	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
toluene	1000	1000	<2	<2	0.20 J	<2	<2	0.240J	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.29 J	<2	<2	<2	<2	<2	<2	<2
trans-1,2-dichloroethene	70	100	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
trichloroethene	2.8	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
trichlorofluoromethane	2100	1300*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
vinyl chloride	0.015	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Appendix I Metals (EPA 6010B/6020A)																																
Arsenic	10	10	4.54	<2	<2	2.1	<2	<2	2.13	<2	<2	9.27	0.56 J	<2	11	1.11 J	<2	<2	9.08	0.41 J	NS	<2	<2	<2	**12.7**	2.5	9.47	<2	NS	**10.4**	<2	<2
Barium	2000	2000	2	75.3	61	3.1	37.4	23.1	41.3	35	22.9	23	14	29	4 J	14.6	12	9.72	133	13	NS	38.5	27	24.3	37.6	42	38.3	<10	NS	<4	<10	<4
Beryllium	NA	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29	NA	NA		NA	NA	NA
Cadmium	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.002 J	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1
Cobalt	NA	NA	<2	1.13	<4	<4	<2	<2	<2	<2	<2	<4	<4	<2	<4	<2	<2	0.51 J	<4	0.24	NS	<2	<2	0.65 J	<4	0.83	<4	<2	NS	<4	<2	<4
Chromium	50	100	<20	<20	<10	<10	<20	<20	20.7	<20	<20	<10	0.83 J	<20	<10	<20	<20	<20	<10	1.6	NS	<20	<20	<20	<10	5.5	<10	<20	NS	<10	<20	<10
Copper	1000	1000	7	<20	<20	0.69 J	3.66J	<20	7.37 J	6	<20	5 J	0.36 J	6	<20	<20	<20	<20	<20	0.81 J	NS	5.33 J	5 J	<20	5.2 J	3.7	<20	<20	NS	<20	<20	<20
Lead	15	15	1.19	<1	0.761	0.71	0.559J	0.643J	5.28	2.62	<1	<1	<1	4.21	<1	4.42	<1	<1	<1	0.22 J	NS	<1	<1	<1	1.08	0.89	<1	<1	NS	<1	<1	<1
Nickel	100	730*	<50	1.51 J	<6	0.55 J	1.80J	1.03J	<50	<50	<50	<6	0.72	<50	<6	<50	<50	2.39	3.2 J	2.2	NS	<50	<50	1.12 J	<6	3	<6	<50	NS	<6	<50	<6
Selenium	50	50	<2	<2	<4	<4	<2	<2	<2	2.20 J	<2	<4	<4	2.50 J	<4	<2	<2	<2	<4	<4	NS	<2	<2	<2	<4	0.24 J	<4	<2	NS	<4	<2	<4
Silver	17.5	180	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vanadium	NA	260*	<20	<20	<8	2.5 J	<20	<20	41.9	69	<20	<8	<8	26	<8	2.30 J	<20	<20	<8	<8	NS	<20	<20	<20	<8	7.5	<8	<20	NS	<8	<20	<8
Zinc	2100	5000	<60	32.2	<50	3.5 J	14.0	<60	16.5 J	<60	15.8	<50	<50	<60	<50	15.4 J	<60	18.2	<50	6.3 J	NS	<60	<60	39.3	<50	6.5 J	<50	<60	NS	<50	<60	<50
Other Analyses																																
Nitrate/Nitrite as N (SM 4500)	10,000	10,000	147	<40	132	NA	4.78	0.0520	166	1020	380	33 J	NA	1010	< 40	326	143	370	960	NA	2260	1,400	1620	<40	1460	NA	1400	<40	NS	106	<40	139

APPENDICES

APPENDIX A

GROUNDWATER SAMPLING LOGS

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft Bragg, NC
DATE: 06/09/09 TIME: 0940
SAMPLED BY: Kevin Haborak
WEATHER CONDITIONS:

Location: Lamont Landfill	**Sample ID: GW-MW-15r-06-09**

PRESERVATIVE: HCl, Ice
ANALYSES REQUESTED: VOC 8260
OF CONTAINERS:
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☒ YES ☐ NO

2. WATER LEVEL DATA

MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. WELL EVACUATION DATA

Well Depth (wd): 46.55 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 37.55 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 1.5 (gallons)
Flow Rate : 500 (ml/min) Purge vol: N/A (gallons)
Length of Time Purged: 27 (minutes) Purge time: 913
Amount Purged= 3.6 (gallons) Pump depth:

4. FIELD PARAMETERS

INSTRUMENT	CALIBRATED
pH Meter –Horiba U-22	☒
Conductivity Meter - Horiba U-22	☒
Temperature – Horiba U-22	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – Horiba U-22	☒
ORP Meter – Horiba U-22	☒
CO_2– Hach Digital Titrator	☐

Time	0913	0930	0933	0936	0939	
pH	4.57	4.22	4.22	4.25	4.24	
Sp. Cond	0.058	0.041	0.041	0.041	0.040	
Temp. °C	20.6	20.15	20.39	20.18	20.26	
Turbidity	228	3.4	2.7	3.1	2.0	
DO	7.47	7.07	6.98	6.97	6.89	
ORP	263	308	316	323	325	

5. COMMENTS: Resample metals for MW-15R @ 0950

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft Bragg, NC
DATE: 06/10/09 TIME: 0925
SAMPLED BY: Kevin Haborak
WEATHER CONDITIONS:

Location: Lamont Landfill	**Sample ID: GW-MW-14r-06-09**

PRESERVATIVE: HCl, Ice
ANALYSES REQUESTED: VOC 8260
OF CONTAINERS:
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☒ YES ☐ NO

2. WATER LEVEL DATA

MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. WELL EVACUATION DATA

Well Depth (wd): 53.70 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 48.97 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 0.8 (gallons)
Flow Rate : 500 (ml/min) Purge vol: N/A (gallons)
Length of Time Purged: 30 (minutes) Purge time: 855
Amount Purged= 4.0 (gallons) Pump depth:

4. FIELD PARAMETERS

INSTRUMENT	CALIBRATED
pH Meter –Horiba U-22	☒
Conductivity Meter - Horiba U-22	☒
Temperature – Horiba U-22	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – Horiba U-22	☒
ORP Meter – Horiba U-22	☒
CO_2– Hach Digital Titrator	☐

Time	0855	0907	0919	0922	0925	
pH	5.82	4.54	4.59	4.58	4.57	
Sp. Cond	0.027	0.019	0.018	0.018	0.018	
Temp. °C	18	17.85	18.48	18.60	18.62	
Turbidity	> 999	18	10	8.1	7.2	
DO	7.9	7.55	7.59	7.59	7.58	
ORP	260	297	305	307	308	

5. COMMENTS:

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft Bragg, NC
DATE: 06/10/09 TIME: 1645
SAMPLED BY: Kevin Haborak
WEATHER CONDITIONS:

Location: Lamont Landfill	**Sample ID: GW-MW-9-06-09**

PRESERVATIVE: HCl, Ice
ANALYSES REQUESTED: VOC 8260
OF CONTAINERS:
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☒ YES ☐ NO

2. WATER LEVEL DATA

MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. WELL EVACUATION DATA

Well Depth (wd): 137.90 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 80.71 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 9.4 (gallons)
Flow Rate : 500 (ml/min) Purge vol: N/A (gallons)
Length of Time Purged: 349 (minutes) Purge time: 1056
Amount Purged= 46.1 (gallons) Pump depth:

4. FIELD PARAMETERS

INSTRUMENT	CALIBRATED
pH Meter –Horiba U-22	☒
Conductivity Meter - Horiba U-22	☒
Temperature – Horiba U-22	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – Horiba U-22	☒
ORP Meter – Horiba U-22	☒
CO_2– Hach Digital Titrator	☐

Time	1530	1533	1536	1539		
pH	4.53	4.52	4.57	4.54		
Sp. Cond	0.015	0.015	0.015	0.015		
Temp. °C	20.48	20.67	20.57	20.54		
Turbidity	17.1	15.4	18	15.5		
DO	8.66	8.67	8.74	8.72		
ORP	347	343	344	344		

5. COMMENTS:

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft Bragg, NC
DATE: 06/11/09 TIME: 0920
SAMPLED BY: Kevin Haborak
WEATHER CONDITIONS:

Location: Lamont Landfill	**Sample ID: GW-LMW-8-06-09**

PRESERVATIVE: HCl, Ice
ANALYSES REQUESTED: VOC 8260
OF CONTAINERS:
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☒ YES ☐ NO

2. **WATER LEVEL DATA**
MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. **WELL EVACUATION DATA**
Well Depth (wd): 69.21 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 46.85 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 3.7 (gallons)
Flow Rate : 500 (ml/min) Purge vol: N/A (gallons)
Length of Time Purged: 45 (minutes) Purge time: 835
Amount Purged= 5.9 (gallons) Pump depth:

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter –Horiba U-22	☒
Conductivity Meter - Horiba U-22	☒
Temperature – Horiba U-22	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – Horiba U-22	☒
ORP Meter – Horiba U-22	☒
CO_2– Hach Digital Titrator	☐

Time	0835	0907	0911	0914		
pH	5.25	5.86	5.87	5.89		
Sp. Cond	0.092	0.273	0.281	0.286		
Temp. °C	19.05	18.78	18.84	18.90		
Turbidity	27.9	8.8	5.4	5.6		
DO	2.59	0	0	0		
ORP	296	66	63	60		

5. COMMENTS:
Sample Dup-1 @ 0800

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft Bragg, NC
DATE: 06/11/09 TIME: 1035
SAMPLED BY: Kevin Haborak
WEATHER CONDITIONS:

Location: Lamont Landfill	**Sample ID: GW-LMW-9S-06-09**

PRESERVATIVE: HCl, Ice
ANALYSES REQUESTED: VOC 8260
OF CONTAINERS:
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☒ YES ☐ NO

2. WATER LEVEL DATA

MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. WELL EVACUATION DATA

Well Depth (wd): 59.00 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 51.01 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 1.3 (gallons)
Flow Rate : 500 (ml/min) Purge vol: N/A (gallons)
Length of Time Purged: 46 (minutes) Purge time: 940
Amount Purged= 6.1 (gallons) Pump depth:

4. FIELD PARAMETERS

INSTRUMENT	CALIBRATED
pH Meter –Horiba U-22	☒
Conductivity Meter - Horiba U-22	☒
Temperature – Horiba U-22	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – Horiba U-22	☒
ORP Meter – Horiba U-22	☒
CO_2– Hach Digital Titrator	☐

Time	0949	1008	1025	1028	1031	
pH	5.71	5.37	5.39	5.40	5.40	
Sp. Cond	0.308	0.225	0.219	0.219	0.219	
Temp. °C	20.96	21.22	21.90	21.77	21.82	
Turbidity	> 999	9.8	6.8	6.0	5.4	
DO	2.41	0	0	0	0	
ORP	100	186	197	199	200	

5. COMMENTS: Flow rate was 500 ml / min at start of purge but did not continue at steady state. Total gallons purged closer to 4 ½ gallons.

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft Bragg, NC
DATE: 06/11/09 TIME: 1240
SAMPLED BY: Kevin Haborak
WEATHER CONDITIONS:

Location: Lamont Landfill	**Sample ID: GW-LMW-9D-06-09**

PRESERVATIVE: HCl, Ice
ANALYSES REQUESTED: VOC 8260
OF CONTAINERS:
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☒ YES ☐ NO

2. **WATER LEVEL DATA**
MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. **WELL EVACUATION DATA**
Well Depth (wd): 85.00 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 75.41 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 1.6 (gallons)
Flow Rate : 400 (ml/min) Purge vol: N/A (gallons)
Length of Time Purged: 77 (minutes) Purge time: 1123
Amount Purged= 8.1 (gallons) Pump depth:

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter –Horiba U-22	☒
Conductivity Meter - Horiba U-22	☒
Temperature – Horiba U-22	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – Horiba U-22	☒
ORP Meter – Horiba U-22	☒
CO_2– Hach Digital Titrator	☐

Time	1123	1224	1231	1238		
pH	6.61	5.65	5.64	5.63		
Sp. Cond	0.061	.026	0.026	0.026		
Temp. °C	20.97	20.34	20.26	20.50		
Turbidity	> 999	58.7	57.2	52.8		
DO	8.58	7.82	7.60	7.62		
ORP	159	235	239	241		

5. COMMENTS:

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft Bragg, NC
DATE: 06/11/09 TIME: 1540
SAMPLED BY: Kevin Haborak
WEATHER CONDITIONS:

Location: Lamont Landfill	**Sample ID: GW-LMW-16-06-09**

PRESERVATIVE: HCl, Ice
ANALYSES REQUESTED: VOC 8260
OF CONTAINERS:
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☒ YES ☐ NO

2. WATER LEVEL DATA

MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. WELL EVACUATION DATA

Well Depth (wd): 42.00 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 37.50 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 0.7 (gallons)
Flow Rate : 500 (ml/min) Purge vol: N/A (gallons)
Length of Time Purged: 58 (minutes) Purge time: 1442
Amount Purged= 7.7 (gallons) Pump depth:

4. FIELD PARAMETERS

INSTRUMENT	CALIBRATED
pH Meter –Horiba U-22	☒
Conductivity Meter - Horiba U-22	☒
Temperature – Horiba U-22	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – Horiba U-22	☒
ORP Meter – Horiba U-22	☒
CO_2– Hach Digital Titrator	☐

Time	1442	1529	1532	1535		
pH	5.97	6.10	6.11	6.12		
Sp. Cond	0.209	0.226	0.227	0.228		
Temp. °C	20.91	23.82	24.16	23.99		
Turbidity	536	12.2	9.2	8.3		
DO	1.14	0	0	0.02		
ORP	172	166	162	160		

5. COMMENTS:

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft Bragg, NC
DATE: 06/11/09 TIME: 1640
SAMPLED BY: Kevin Haborak
WEATHER CONDITIONS:

Location: Lamont Landfill	**Sample ID: GW-LMW-10-06-09**

PRESERVATIVE: HCl, Ice
ANALYSES REQUESTED: VOC 8260
OF CONTAINERS:
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☒ YES ☐ NO

2. **WATER LEVEL DATA**

MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. **WELL EVACUATION DATA**

Well Depth (wd): 82.75 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 76.38 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 1.0 (gallons)
Flow Rate : 400 (ml/min) Purge vol: N/A (gallons)
Length of Time Purged: 33 (minutes) Purge time: 1607
Amount Purged= 3.5 (gallons) Pump depth:

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter –Horiba U-22	☒
Conductivity Meter - Horiba U-22	☒
Temperature – Horiba U-22	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – Horiba U-22	☒
ORP Meter – Horiba U-22	☒
CO_2– Hach Digital Titrator	☐

Time	1616	1632	1635	1638		
pH	4.82	4.62	4.59	4.60		
Sp. Cond	0.030	0.029	0.029	0.030		
Temp. °C	16.89	19.30	19.23	19.21		
Turbidity	52.3	8.5	5.6	4.9		
DO	8.22	7.94	7.97	7.86		
ORP	306	329	332	334		

5. COMMENTS:

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft Bragg, NC
DATE: 06/12/09 TIME: 0920

SAMPLED BY: Kevin Haborak
WEATHER CONDITIONS:

Location: Lamont Landfill	**Sample ID: GW-MW-6-06-09**

PRESERVATIVE: HCl, Ice
ANALYSES REQUESTED: VOC 8260
OF CONTAINERS:
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☒ YES ☐ NO

2. WATER LEVEL DATA

MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. WELL EVACUATION DATA

Well Depth (wd): 94.45 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 80.15 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 2.3 (gallons)
Flow Rate : 500 (ml/min) Purge vol: N/A (gallons)
Length of Time Purged: 42 (minutes) Purge time: 838
Amount Purged= 5.5 (gallons) Pump depth:

4. FIELD PARAMETERS

INSTRUMENT	CALIBRATED
pH Meter –Horiba U-22	☒
Conductivity Meter - Horiba U-22	☒
Temperature – Horiba U-22	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – Horiba U-22	☒
ORP Meter – Horiba U-22	☒
CO_2– Hach Digital Titrator	☐

Time	0838	0909	0912	0915		
pH	4.52	4.56	4.57	4.56		
Sp. Cond	0.290	0.262	0.267	0.267		
Temp. °C	19.38	22.07	22.39	22.61		
Turbidity	> 999	7.6	4.9	3.8		
DO	0.34	0	0	0		
ORP	253	281	280	279		

5. COMMENTS:

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft Bragg, NC
DATE: 06/12/09 TIME: 1235
SAMPLED BY: Kevin Haborak

WEATHER CONDITIONS:

Location: Lamont Landfill	**Sample ID: GW-MW-3-06-09**

PRESERVATIVE: HCl, Ice
ANALYSES REQUESTED: VOC 8260
OF CONTAINERS:
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☒ YES ☐ NO

2. WATER LEVEL DATA

MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. WELL EVACUATION DATA

Well Depth (wd): 122.90 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 102.21 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 3.4 (gallons)
Flow Rate : 500 (ml/min) Purge vol: N/A (gallons)
Length of Time Purged: 29 (minutes) Purge time: 1206
Amount Purged= 3.8 (gallons) Pump depth:

4. FIELD PARAMETERS

INSTRUMENT	CALIBRATED
pH Meter –Horiba U-22	☒
Conductivity Meter - Horiba U-22	☒
Temperature – Horiba U-22	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – Horiba U-22	☒
ORP Meter – Horiba U-22	☒
CO_2– Hach Digital Titrator	☐

Time	1206	1227	1230	1233		
pH	4.85	4.74	4.72	4.69		
Sp. Cond	0.019	0.017	0.017	0.017		
Temp. °C	19.13	18.71	18.76	18.61		
Turbidity	> 999	1.9	2.6	1.4		
DO	7.34	6.26	6.23	6.22		
ORP	274	305	307	309		

5. COMMENTS: Well needs Bollards around MW-3 & MW-3S

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft Bragg, NC
DATE: 06/12/09 TIME: 1330
SAMPLED BY: Kevin Haborak
WEATHER CONDITIONS:

Location: Lamont Landfill	**Sample ID: GW-MW-3S-06-09**

PRESERVATIVE: HCl, Ice
ANALYSES REQUESTED: VOC 8260
OF CONTAINERS:
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☒ YES ☐ NO

2. WATER LEVEL DATA

MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. WELL EVACUATION DATA

Well Depth (wd): 67.00 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 59.12 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 1.3 (gallons)
Flow Rate : 500 (ml/min) Purge vol: N/A (gallons)
Length of Time Purged: 45 (minutes) Purge time: 1245
Amount Purged= 5.9 (gallons) Pump depth:

4. FIELD PARAMETERS

INSTRUMENT	CALIBRATED
pH Meter –Horiba U-22	☒
Conductivity Meter - Horiba U-22	☒
Temperature – Horiba U-22	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – Horiba U-22	☒
ORP Meter – Horiba U-22	☒
CO_2– Hach Digital Titrator	☐

Time	1245	1314	1317	1320		
pH	4.65	4.57	4.53	4.56		
Sp. Cond	0.026	0.025	0.028	0.024		
Temp. °C	18.63	19.22	19.02	18.97		
Turbidity	> 999	> 999	> 999	> 999		
DO	4.46	4.60	4.82	5.13		
ORP	306	321	322	323		

5. COMMENTS:

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft Bragg, NC
DATE: 06/12/09 TIME: 1550
SAMPLED BY: Kevin Haborak
WEATHER CONDITIONS:

Location: Lamont Landfill	**Sample ID: GW-MW-7-06-09**

PRESERVATIVE: HCl, Ice
ANALYSES REQUESTED: VOC 8260
OF CONTAINERS:
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☒ YES ☐ NO

2. WATER LEVEL DATA

MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. WELL EVACUATION DATA

Well Depth (wd): 130.06 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 124.78 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 0.9 (gallons)
Flow Rate : 200 (ml/min) Purge vol: N/A (gallons)
Length of Time Purged: 55 (minutes) Purge time: 1455
Amount Purged= 2.9 (gallons) Pump depth:

4. FIELD PARAMETERS

INSTRUMENT	CALIBRATED
pH Meter –Horiba U-22	☒
Conductivity Meter - Horiba U-22	☒
Temperature – Horiba U-22	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – Horiba U-22	☒
ORP Meter – Horiba U-22	☒
CO_2– Hach Digital Titrator	☐

Time	1455	1540	1543	1546		
pH	5.29	5.78	5.66	5.64		
Sp. Cond	0.019	0.020	0.020	0.020		
Temp. °C	26.36	25.40	20.81	26.21		
Turbidity	> 999	> 999	> 999	> 999		
DO	8.84	4.56	4.59	4.61		
ORP	264	220	227	228		

5. COMMENTS: Pump malfunctioned had to restart purge. Well goes dry after 45 minutes and 2 ½ volumes. Sample trip blank @ 1555

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft Bragg, NC
DATE: 06/14/09 TIME: 1350
SAMPLED BY: Kevin Haborak
WEATHER CONDITIONS:

Location: Lamont Landfill	**Sample ID: GW-MW-4-06-09**

PRESERVATIVE: HCl, Ice

ANALYSES REQUESTED: VOC 8260
OF CONTAINERS:
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☒ YES ☐ NO

2. WATER LEVEL DATA

MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. WELL EVACUATION DATA

Well Depth (wd): 82.35 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 74.74 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 1.2 (gallons)
Flow Rate : 500 (ml/min) Purge vol: N/A (gallons)
Length of Time Purged: 77 (minutes) Purge time: 1233
Amount Purged= 10.2 (gallons) Pump depth:

4. FIELD PARAMETERS

INSTRUMENT	CALIBRATED
pH Meter –Horiba U-22	☒
Conductivity Meter - Horiba U-22	☒
Temperature – Horiba U-22	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – Horiba U-22	☒
ORP Meter – Horiba U-22	☒
CO_2– Hach Digital Titrator	☐

Time	1233	1337	1340	1343		
pH	4.39	4.39	4.37	4.40		
Sp. Cond	0.080	0.026	0.026	0.026		
Temp. °C	22.23	22.20	22.90	23.06		
Turbidity	> 999	41	64.6	41.9		
DO	8.39	5.16	5.16	5.15		
ORP	266	307	308	306		

5. COMMENTS: Finish purge 1350 will sample 06/15/09.
06/15/09 – Sample MW-4 @ 1115. Sample Dup-2 @ 0000.
Go talk to Dan about clearing on Longstreet LF.

APPENDIX B

DATA VALIDATION REPORTS

Subject: Chemical Data Quality Assessment for Ft. Bragg, North Carolina, Lamont Landfill June 2009 Groundwater Sampling

Introduction

The data for these samples were evaluated using guidelines established in the Environmental Protection Agency's National Functional Guidelines for Data Review and the Environmental Quality-Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects (EM-200-1-6). *Test America (Savannah) performed the analysis and provided an analytical report. The job number is: 680-48080-1*

Sampling Procedures

Soil samples were collected as specified in the work plan and documented on the Chain-of-Custody (COC). Samples were packaged, shipped, and received as specified in the work plan. The samples were delivered at a temperature below four degress Celcius (^{o}C) and no problems were noted by TA for the pH of the samples. The Chain of Custody (COC) was signed by the sampling party, but the relinquish time and date were not included. No other non-conformances were noted for the COC.

No qualifications are necessary.

Analytical Procedures

The Delivery Order and the COC specify the analytical methods used by the Laboratory. The samples were analyzed for Appendix I metals by SW846 6020/3030C.

Metals

Holding Times

Holding Times are established and monitored to ensure analytical results accurately represent analyte concentrations in a sample at the time of collection. When the holding time is exceeded, there is generally a loss of the analyte due to a variety of mechanisms, such as deposition on the sample container walls or precipitation. The holding times for Appendix I metals is 6 months.

Data Review Results

The holding times were met for all samples. *No qualifications are necessary.*

Method Blanks

Method Blanks are analyzed and evaluated with samples to determine the existence and magnitude of possible laboratory created contamination. If blank contamination is found, samples need to be closely examined for the same contaminants. If the contaminants are not detected in the samples, then there is little need for concern. The following approach is used when the blank contaminant is also reported in the sample:

- If the sample result is at least ten times that in the blank, then the likely contribution to the sample from the laboratory environment is at most 10% and the possible contamination is negligible.

- If the sample result is at least five times but less than ten times the blank result, the compound is probably present in the samples, but the numerical result should be considered an upper limit of the true concentration.

- If the sample result is below five times the level in the blank, there is no adequate means by which to judge whether the sample result is attributable to laboratory contamination. When this occurs, the sample data is qualified as being the result of laboratory contamination.

Data Review Results
One method blank was associated with the samples. The method blank was interference free.

No qualifications are necessary.

Equipment Blanks
The purpose of Equipment Blanks is to monitor the effectiveness of the cleaning procedure used for the decontamination of sampling equipment in the field and the possibility of contamination at one site being carried over to another sampling site. When disposable-sampling equipment is used, Equipment Blanks serve to monitor the cleanliness of these items. Equipment Blanks are collected at a rate of 5% per samples collected.

The proper way to prepare an effective Equipment Blank is to take a quantity of analyte-free water to the sampling site, rinse the equipment with the analyte-free water directly into the sample container, add preservatives, and then treat as a regular sample. At least one Equipment Blank should be prepared for each type of analyte group collected with each item of equipment.

Data Review Results
No rinsate blanks or field blanks were submitted with the samples.

No qualifications are necessary.

Field Duplicate Sample Analysis
Duplicate samples are analyzed to evaluate the overall precision for both the field and the laboratory. Precision is the measure of the Relative Percent Difference (RPD) between the analytical results for duplicate samples. It is expected that soil field duplicates will exhibit greater variance than water field duplicates due to the difficulties associated with collecting identical soil field duplicate samples. The RPD control limit for soil samples for this project was set at less than 50% for results that were five times the reporting limit. For aqueous duplicates, if the sample results are greater than five times the

reporting limit, the acceptance criteria for the RPD is 20% or less. If the sample results are less than five times the reporting limit, the duplicate acceptance is evaluated on the sample results rather than the RPD. There are no guidelines for data qualification based on poor field duplicate precision. Professional judgement was used to determine whether to qualify the data. Field duplicate samples are collected at a rate of 10% per samples collected and are sent to the laboratory as blind duplicates.

Data Review Results
No duplicate sets were submitted with the samples.

No qualifications are necessary.

Matrix Spike Sample Analysis
The purpose of Matrix Spike analysis is to provide information about the effects that the sample matrix exerts on the digestion and the analytical methodology. The potential sample bias may be estimated by noting the degree to which the MS concentration was lowered or elevated in the spike analysis. However, this bias should serve only as an approximation since sample specific problems may be the cause of the discrepancy, especially in soil samples. The control limits for Matrix Spike recoveries for TAL metals have been established at 75-125% recovery. The RPD for Matrix Spike/Matrix Spike Duplicate (MS/MSD) pairs established by the laboratory is less than 20%. When recoveries are below 30%, the reported results are qualified as biased low (L) and the reporting limits are rejected (R). When the spike recoveries fall between 30-75%, the reported results and reporting limits are qualified as biased low (L, UL) for the parent sample. When spike recoveries exceed 125%, the reported results are qualified as biased high (K), but the reporting limits are not affected. When the sample result is greater than four times the spike concentration, the spike recovery limits do not apply.

Data Review Results
One MS/MSD pair was associated with the samples. Each of the analytes was included in the MS/MSD and the %R for the MS/MSD were within established control limits. The relative percent difference (RPD) was calculated for the MS/MSD. The RPD for each of the analytes was within established control limits.

The MS/MSD were over-spiked and had to be diluted at a 200:1 dilution factor. As a result of the dilution, the concentrations of Sb, Cd, Ag, V, and Zn were above the MDL but below the RL. This concentration led to the results for these analytes being flagged J. However, the results were within established control limits.

No qualifications are necessary.

Laboratory Control Sample Analysis
The Laboratory Control Sample (LCS) is used to monitor the efficiency of the digestion procedure and analytical instrument operation. The inability of the laboratory to successfully analyze a LCS is indicative of an analytical problem related to the

digestion/sample preparation procedures and/or instrument operations. The laboratory established control limits for LCS recoveries are 80-120%.

Data Review Results

One laboratory control sample (LCS) was associated with the samples. Each of the analytes was included in the LCS and the LCS percent recoveries (%R) were within established control limits.

The LCS was over-spiked and had to be diluted at a 200:1 dilution factor. As a result of the dilution, the concentrations of antimony (Sb), cadmium (Cd), silver (Ag), V, and Zn were above the MDL but below the RL. This concentration led to the results for these analytes being flagged J. However, the results were within established control limits.

No qualifications are necessary.

Data Qualification Summary

These data are acceptable and can be considered as representative of the samples collected in the field.

Kevin G. Haborak
Geophysicist
HTRW Section

Subject: Chemical Data Quality Assessment for Ft. Bragg, North Carolina, Lamont Landfill June 2009 Groundwater Sampling

Introduction
The data for these samples were evaluated using guidelines established in the Environmental Protection Agency's National Functional Guidelines for Data Review and the Environmental Quality-Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects (EM-200-1-6). *Test America (Savannah) performed the analysis and provided an analytical report. The job number is: 680-48140-1*

Sampling Procedures
The samples were received by the lab on June 12, 2009 in good condition. All holding times and extraction times were met for the samples. The samples were delivered at a temperature below four degress Celcius (^{o}C) and no problems were noted by TA for the pH of the samples. No non-conformances were noted for the COC.

No qualifications are necessary.

Analytical Procedures
The Delivery Order and the COC specify the analytical methods used by the Laboratory. The samples were analyzed for Appendix I metals by SW846 6020/3030C and Appendix I volatile organic compounds (VOCs) by SW846 8260B/5030B.

Metals

Holding Times
Holding Times are established and monitored to ensure analytical results accurately represent analyte concentrations in a sample at the time of collection. When the holding time is exceeded, there is generally a loss of the analyte due to a variety of mechanisms, such as deposition on the sample container walls or precipitation. The holding times for Appendix I metals is 6 months.

Data Review Results
The holding and extraction times were met for all samples.

No qualifications are necessary.

Method Blanks
Method Blanks are analyzed and evaluated with samples to determine the existence and magnitude of possible laboratory created contamination. If blank contamination is found, samples need to be closely examined for the same contaminants. If the contaminants are not detected in the samples, then there is little need for concern. The following approach is used when the blank contaminant is also reported in the sample:

- If the sample result is at least ten times that in the blank, then the likely contribution to the sample from the laboratory environment is at most 10% and the possible contamination is negligible.

- If the sample result is at least five times but less than ten times the blank result, the compound is probably present in the samples, but the numerical result should be considered an upper limit of the true concentration.

- If the sample result is below five times the level in the blank, there is no adequate means by which to judge whether the sample result is attributable to laboratory contamination. When this occurs, the sample data is qualified as being the result of laboratory contamination.

Data Review Results
The method blank was non-detect for target analytes.

No qualifications are necessary.

Equipment Blanks
The purpose of Equipment Blanks is to monitor the effectiveness of the cleaning procedure used for the decontamination of sampling equipment in the field and the possibility of contamination at one site being carried over to another sampling site. When disposable-sampling equipment is used, Equipment Blanks serve to monitor the cleanliness of these items. Equipment Blanks are collected at a rate of 5% per samples collected.

The proper way to prepare an effective Equipment Blank is to take a quantity of analyte-free water to the sampling site, rinse the equipment with the analyte-free water directly into the sample container, add preservatives, and then treat as a regular sample. At least one Equipment Blank should be prepared for each type of analyte group collected with each item of equipment.

Data Review Results
No rinsate blanks or field blanks were submitted with the samples.

No qualifications are necessary.

Field Duplicate Sample Analysis
Duplicate samples are analyzed to evaluate the overall precision for both the field and the laboratory. Precision is the measure of the Relative Percent Difference (RPD) between the analytical results for duplicate samples. It is expected that soil field duplicates will exhibit greater variance than water field duplicates due to the difficulties associated with collecting identical soil field duplicate samples. The RPD control limit for soil samples for this project was set at less than 50% for results that were five times the reporting limit. For aqueous duplicates, if the sample results are greater than five times the reporting limit, the acceptance criteria for the RPD is 20% or less. If the sample results

are less than five times the reporting limit, the duplicate acceptance is evaluated on the sample results rather than the RPD. There are no guidelines for data qualification based on poor field duplicate precision. Professional judgement was used to determine whether to qualify the data. Field duplicate samples are collected at a rate of 10% per samples collected and are sent to the laboratory as blind duplicates.

Data Review Results

Table 1: Comparison of Field Duplicates for Metals Analyses

Field Duplicate Pair	Parameter	Original Result ppb	Duplicate Result ppb	RPD	RPD Limits
GW-LMW-4-06-09	Arsenic	0.49 J	0.51 J	NA	<20%
GW-LMW-DUP-2	Barium	40	41	2%	<20%
	Chromium	0.28 J	0.33 J	NA	<20%
	Cobalt	0.47	0.41	NA	<20%
	Copper	0.75 J	0.83 J	NA	<20%
	Lead	< 0.3	0.093 J	NA	<20%
	Nickel	0.61	0.63	NA	<20%
	Selenium	0.64	0.5 J	NA	<20%
	Thallium	< 0.3	0.13 J	NA	<20%
	Zinc	8.2 J	11	NA	<20%

Notes:

NA = The analyte was not detected at a level that was at least five times the reporting limits in at least one of the replicate samples.

Ten analytes were identified in at least one of the replicate samples. Only one analyte, barium, was positively identified in the in the replicates samples at a level that was greater than five times the reporting limit. The RPD for this analyte was within established guidelines.

No qualifications are necessary.

Matrix Spike Sample Analysis

The purpose of Matrix Spike analysis is to provide information about the effects that the sample matrix exerts on the digestion and the analytical methodology. The potential sample bias may be estimated by noting the degree to which the MS concentration was lowered or elevated in the spike analysis. However, this bias should serve only as an approximation since sample specific problems may be the cause of the discrepancy, especially in soil samples. The control limits for Matrix Spike recoveries for TAL metals have been established at 75-125% recovery. The RPD for Matrix Spike/Matrix Spike Duplicate (MS/MSD) pairs established by the laboratory is less than 20%. When recoveries are below 30%, the reported results are qualified as biased low (L) and the reporting limits are rejected (R). When the spike recoveries fall between 30-75%, the reported results and reporting limits are qualified as biased low (L, UL) for the parent sample. When spike recoveries exceed 125%, the reported results are qualified as biased high (K), but the reporting limits are not affected. When the sample result is greater than four times the spike concentration, the spike recovery limits do not apply.

Data Review Results
An MS/MSD pair was not submitted with the samples for analysis.

No qualifications are necessary.

Laboratory Control Sample Analysis
The Laboratory Control Sample (LCS) and LCS duplicate (LCSD) are used to monitor the efficiency of the digestion procedure and analytical instrument operation. The inability of the laboratory to successfully analyze a LCS/LCSD is indicative of an analytical problem related to the digestion/sample preparation procedures and/or instrument operations. The laboratory established control limits for LCS/LCSD recoveries and RPD are presented in the analytical report.

Data Review Results
One LCS was associated with the samples. Each of the analytes was included in the LCS and the LCS percent recoveries were within established control limits.

No qualifications are necessary.

Data Qualification Summary
These data are acceptable and can be considered as representative of the samples collected in the field.

Organics

Holding Times
Holding Times are established and monitored to ensure analytical results accurately represent analyte concentrations in a sample at the time of collection. When the holding time is exceeded, there is generally a loss of the analyte due to a variety of mechanisms, such as deposition on the sample container walls or precipitation. The holding times for Appendix I VOCs is 14 days.

Data Review Results
The holding times were met for all samples.

No qualifications are necessary.

Method Blanks
Method Blanks are analyzed and evaluated with samples to determine the existence and magnitude of possible laboratory created contamination. If blank contamination is found, samples need to be closely examined for the same contaminants. If the contaminants are not detected in the samples, then there is little need for concern. The following approach is used when the blank contaminant is also reported in the sample:

- If the sample result is at least ten times that in the blank, then the likely contribution to the sample from the laboratory environment is at most 10% and the possible contamination is negligible.

- If the sample result is at least five times but less than ten times the blank result, the compound is probably present in the samples, but the numerical result should be considered an upper limit of the true concentration.

- If the sample result is below five times the level in the blank, there is no adequate means by which to judge whether the sample result is attributable to laboratory contamination. When this occurs, the sample data is qualified as being the result of laboratory contamination.

Data Review Results
Three method blanks were associated with the VOC analyses. The method blanks were interference free.

No qualifications are necessary.

Equipment Blanks
The purpose of Equipment Blanks is to monitor the effectiveness of the cleaning procedure used for the decontamination of sampling equipment in the field and the possibility of contamination at one site being carried over to another sampling site. When disposable-sampling equipment is used, Equipment Blanks serve to monitor the cleanliness of these items. Equipment Blanks are collected at a rate of 5% per samples collected.

The proper way to prepare an effective Equipment Blank is to take a quantity of analyte-free water to the sampling site, rinse the equipment with the analyte-free water directly into the sample container, add preservatives, and then treat as a regular sample. At least one Equipment Blank should be prepared for each type of analyte group collected with each item of equipment.

Data Review Results
No rinsate blanks or field blanks were submitted with the samples.

No qualifications are necessary.

Trip Blank
Trip Blanks are an integral and essential part of any quality control process. The trip blank is designed to detect any contaminants that may have been introduced from the time the samples left the laboratory to the time the samples returned to the laboratory

Data Review Results Acetonitrile was detected in the trip blank. This analyte is not one of the target analytes for the sampling program.

No qualifications are necessary.

Field Duplicate Sample Analysis

Duplicate samples are analyzed to evaluate the overall precision for both the field and the laboratory. Precision is the measure of the Relative Percent Difference (RPD) between the analytical results for duplicate samples. It is expected that soil field duplicates will exhibit greater variance than water field duplicates due to the difficulties associated with collecting identical soil field duplicate samples. For aqueous duplicates, if the sample results are greater than five times the reporting limit, the acceptance criteria for the RPD is 20% or less. If the sample results are less than five times the reporting limit, the duplicate acceptance is evaluated on the sample results rather than the RPD. There are no guidelines for data qualification based on poor field duplicate precision. Professional judgement was used to determine whether to qualify the data. Field duplicate samples are collected at a rate of 10% per samples collected and are sent to the laboratory as blind duplicates.

Data Review Results

Table 2: Comparison of Field Duplicates for VOC Analyses

Field Duplicate Pair	Parameter	Original Result ppb	Duplicate Result ppb	RPD	RPD Control Limits
GW-LMW-8-06-09	Chloromethane	3.3	<0.33	NA	<20%
GW-LMW-DUP-1	Tetrachloroethane	0.31 J	0.29 J	NA	<20%

Notes:

NA = The analyte was not detected at a level that was at least five times the reporting limits in at least one of the replicate samples.

Two analytes were identified in the parent sample at levels that were less than five times the reporting limit. One of the analytes, tetrachloroethane, was not identified in the duplicate sample. The other analyte, tetrachloroethane, was tentatively identified in the duplicate sample at a level that was less than five times the reporting limit. Due to the low analyte concentrations, a significant analysis could not be performed.

No qualifications are necessary.

Matrix Spike Sample Analysis

The purpose of Matrix Spike analysis is to provide information about the effects that the sample matrix exerts on the digestion and the analytical methodology. The potential sample bias may be estimated by noting the degree to which the MS concentration was lowered or elevated in the spike analysis. However, this bias should serve only as an approximation since sample specific problems may be the cause of the discrepancy,

especially in soil samples. The control limits for Matrix Spike recoveries for TAL metals have been established at 75-125% recovery. The RPD for Matrix Spike/Matrix Spike Duplicate (MS/MSD) pairs established by the laboratory is less than 20%. When recoveries are below 30%, the reported results are qualified as biased low (L) and the reporting limits are rejected (R). When the spike recoveries fall between 30-75%, the reported results and reporting limits are qualified as biased low (L, UL) for the parent sample. When spike recoveries exceed 125%, the reported results are qualified as biased high (K), but the reporting limits are not affected. When the sample result is greater than four times the spike concentration, the spike recovery limits do not apply.

Data Review Results
An MS/MSD pair associated with sample GW-LMW-9S-06-09 was submitted for analysis. The percent recoveries for carbon disulfide and 1,1-dichloroethane were biased high for both the MS and MSD. The percent recovery for 1,1,1-trichloroethane was biased high for the MSD. The three LCS/LCSD pairs were within control limits and the samples were non-detect for these analytes.

No qualifications are necessary.

Laboratory Control Sample Analysis
The Laboratory Control Sample (LCS) and LCS duplicate (LCSD) are used to monitor the efficiency of the digestion procedure and analytical instrument operation. The inability of the laboratory to successfully analyze a LCS/LCSD is indicative of an analytical problem related to the digestion/sample preparation procedures and/or instrument operations. The laboratory established control limits for LCS/LCSD recoveries and RPD are presented in the analytical report.

Data Review Results
Three LCS/LCSD pairs were associated with the samples. Each of the analytes was included in the LCS/LCSD and the LCS/LCSD percent recoveries and RPDs were within established control limits.

No qualifications are necessary.

Surrogate Spike Recovery
Laboratory performance for individual samples is measured by the use of surrogate spikes. Surrogates are compounds added to every sample at the beginning of the sample preparation to monitor the success of the preparation of the sample on an individual basis. Surrogate compounds are selected based on their ability to mimic the behavior of specific target analytes held to be particularly sensitive to sample preparation. Unusually low or high surrogate recoveries may indicate some deficiency in the analytical system or that some matrix effects exist, resulting in low or high sample results for target analytes. Method and matrix-specific control limits have been established by the laboratory to monitor surrogate recovery.

Data Review Results

The surrogate recoveries were reviewed for the VOC analyses. The recoveries were within established control limits.

No qualifications are necessary.

Data Qualification Summary

These data are acceptable and can be considered as representative of the samples collected in the field.

Kevin G. Haborak
Geophysicist
HTRW Section

Subject: Chemical Data Quality Assessment for Ft. Bragg, North Carolina, Lamont Landfill June 2009 Groundwater Sampling

Introduction
The data for these samples were evaluated using guidelines established in the Environmental Protection Agency's National Functional Guidelines for Data Review and the Environmental Quality-Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects (EM-200-1-6). *Test America (Savannah) performed the analysis and provided an analytical report. The job number is: 680-48155-1*

Sampling Procedures
The samples were received by the lab on June 13, 2009 in good condition. All holding times and extraction times were met for the samples. The samples were delivered at a temperature below four degress Celcius (^{o}C) and no problems were noted by TA for the pH of the samples. A trip blank sample was noted on the Chain-of-Custody (COC), but no sample was submitted. No other non-conformances were noted for the COC.

No qualifications are necessary.

Analytical Procedures
The Delivery Order and the COC specify the analytical methods used by the Laboratory. The samples were analyzed for Appendix I metals by SW846 6020/3030C and Appendix I volatile organic compounds (VOCs) by SW846 8260B/5030B.

Metals

Holding Times
Holding Times are established and monitored to ensure analytical results accurately represent analyte concentrations in a sample at the time of collection. When the holding time is exceeded, there is generally a loss of the analyte due to a variety of mechanisms, such as deposition on the sample container walls or precipitation. The holding times for Appendix I metals is 6 months.

Data Review Results
The holding and extraction times were met for all samples.

No qualifications are necessary.

Method Blanks
Method Blanks are analyzed and evaluated with samples to determine the existence and magnitude of possible laboratory created contamination. If blank contamination is found, samples need to be closely examined for the same contaminants. If the contaminants are not detected in the samples, then there is little need for concern. The following approach is used when the blank contaminant is also reported in the sample:

- If the sample result is at least ten times that in the blank, then the likely contribution to the sample from the laboratory environment is at most 10% and the possible contamination is negligible.

- If the sample result is at least five times but less than ten times the blank result, the compound is probably present in the samples, but the numerical result should be considered an upper limit of the true concentration.

- If the sample result is below five times the level in the blank, there is no adequate means by which to judge whether the sample result is attributable to laboratory contamination. When this occurs, the sample data is qualified as being the result of laboratory contamination.

Data Review Results
The method blank for metals contained detections for arsenic (As) and Zinc (Zn) that were above the MDL but below the RL, as such these detections were flagged as estimated. The concentration of As detected is 0.40 J μg/L and the MDL is 0.40 μg/L; concentration of Zn detected is 6.3 J μg/L and the MDL is 2.6 μg/L.

Arsenic and zinc were detected in the associated samples at concentrations that were less than five times the value observed in the blank. These detections should be flagged U.

Equipment Blanks
The purpose of Equipment Blanks is to monitor the effectiveness of the cleaning procedure used for the decontamination of sampling equipment in the field and the possibility of contamination at one site being carried over to another sampling site. When disposable-sampling equipment is used, Equipment Blanks serve to monitor the cleanliness of these items. Equipment Blanks are collected at a rate of 5% per samples collected.

The proper way to prepare an effective Equipment Blank is to take a quantity of analyte-free water to the sampling site, rinse the equipment with the analyte-free water directly into the sample container, add preservatives, and then treat as a regular sample. At least one Equipment Blank should be prepared for each type of analyte group collected with each item of equipment.

Data Review Results
One rinsate blanks was submitted with the samples. Tentative detections (above the MDL but below the RL) were reported for As, chromium (Cr), copper (Cu), and nickel (Ni).

Detections of the analytes in the associated samples that are less than five times the value observed in the blank should be flagged as U. Detections that are greater than five times but less than ten times the blank concentration should be flagged as J.

Field Duplicate Sample Analysis

Duplicate samples are analyzed to evaluate the overall precision for both the field and the laboratory. Precision is the measure of the Relative Percent Difference (RPD) between the analytical results for duplicate samples. It is expected that soil field duplicates will exhibit greater variance than water field duplicates due to the difficulties associated with collecting identical soil field duplicate samples. The RPD control limit for soil samples for this project was set at less than 50% for results that were five times the reporting limit. For aqueous duplicates, if the sample results are greater than five times the reporting limit, the acceptance criteria for the RPD is 20% or less. If the sample results are less than five times the reporting limit, the duplicate acceptance is evaluated on the sample results rather than the RPD. There are no guidelines for data qualification based on poor field duplicate precision. Professional judgement was used to determine whether to qualify the data. Field duplicate samples are collected at a rate of 10% per samples collected and are sent to the laboratory as blind duplicates.

Data Review Results

Replicate samples were not submitted for analysis.

No qualifications are necessary.

Matrix Spike Sample Analysis

The purpose of Matrix Spike analysis is to provide information about the effects that the sample matrix exerts on the digestion and the analytical methodology. The potential sample bias may be estimated by noting the degree to which the MS concentration was lowered or elevated in the spike analysis. However, this bias should serve only as an approximation since sample specific problems may be the cause of the discrepancy, especially in soil samples. The control limits for Matrix Spike recoveries for TAL metals have been established at 75-125% recovery. The RPD for Matrix Spike/Matrix Spike Duplicate (MS/MSD) pairs established by the laboratory is less than 20%. When recoveries are below 30%, the reported results are qualified as biased low (L) and the reporting limits are rejected (R). When the spike recoveries fall between 30-75%, the reported results and reporting limits are qualified as biased low (L, UL) for the parent sample. When spike recoveries exceed 125%, the reported results are qualified as biased high (K), but the reporting limits are not affected. When the sample result is greater than four times the spike concentration, the spike recovery limits do not apply.

Data Review Results

An MS/MSD pair was not submitted with the samples for analysis. However, the aliquot submitted for GW-LMW-06-09 was used to prepare an MS/MSD pair. All percent recoveries and RPDs were within established guidelines.

No qualifications are necessary.

Laboratory Control Sample Analysis

The Laboratory Control Sample (LCS) and LCS duplicate (LCSD) are used to monitor the efficiency of the digestion procedure and analytical instrument operation. The inability of the laboratory to successfully analyze a LCS/LCSD is indicative of an analytical problem related to the digestion/sample preparation procedures and/or instrument operations. The laboratory established control limits for LCS/LCSD recoveries and RPD are presented in the analytical report.

Data Review Results
One LCS was associated with the samples. Each of the analytes was included in the LCS and the LCS percent recoveries were within established control limits.

No qualifications are necessary.

Data Qualification Summary
These data are acceptable and can be considered as representative of the samples collected in the field. However, the following qualifications should be made to the data.

Table 2: Qualification of Appendix I metals Data

Sample	Parameter	Qualification Flag
All	As	U
	Zn	U
GW-LMW-6-06-09	Cr	U
	Cu	U
GW-LMW-3-06-09	Cr	U
	Cu	U
	Ni	U
GW-LMW-3S-06-09	Cr	J
	Cu	U

Organics

Holding Times
Holding Times are established and monitored to ensure analytical results accurately represent analyte concentrations in a sample at the time of collection. When the holding time is exceeded, there is generally a loss of the analyte due to a variety of mechanisms, such as deposition on the sample container walls or precipitation. The holding times for Appendix I VOCs is 14 days.

Data Review Results
The holding times were met for all samples.

No qualifications are necessary.

Method Blanks
Method Blanks are analyzed and evaluated with samples to determine the existence and magnitude of possible laboratory created contamination. If blank contamination is found, samples need to be closely examined for the same contaminants. If the contaminants are not detected in the samples, then there is little need for concern. The following approach is used when the blank contaminant is also reported in the sample:

- If the sample result is at least ten times that in the blank, then the likely contribution to the sample from the laboratory environment is at most 10% and the possible contamination is negligible.

- If the sample result is at least five times but less than ten times the blank result, the compound is probably present in the samples, but the numerical result should be considered an upper limit of the true concentration.

- If the sample result is below five times the level in the blank, there is no adequate means by which to judge whether the sample result is attributable to laboratory contamination. When this occurs, the sample data is qualified as being the result of laboratory contamination.

Data Review Results
Two method blanks were associated with the VOC analyses. The method blanks were interference free.

No qualifications are necessary.

Equipment Blanks
The purpose of Equipment Blanks is to monitor the effectiveness of the cleaning procedure used for the decontamination of sampling equipment in the field and the possibility of contamination at one site being carried over to another sampling site. When disposable-sampling equipment is used, Equipment Blanks serve to monitor the cleanliness of these items. Equipment Blanks are collected at a rate of 5% per samples collected.

The proper way to prepare an effective Equipment Blank is to take a quantity of analyte-free water to the sampling site, rinse the equipment with the analyte-free water directly into the sample container, add preservatives, and then treat as a regular sample. At least one Equipment Blank should be prepared for each type of analyte group collected with each item of equipment.

Data Review Results
One rinsate blank was submitted with the samples. The blank sample was non-detect for the target analytes.

No qualifications are necessary.

Trip Blank
Trip Blanks are an integral and essential part of any quality control process. The trip blank is designed to detect any contaminants that may have been introduced from the time the samples left the laboratory to the time the samples returned to the laboratory

Data Review Results No trip blank was submitted with the samples.

No qualifications are necessary.

Field Duplicate Sample Analysis
Duplicate samples are analyzed to evaluate the overall precision for both the field and the laboratory. Precision is the measure of the Relative Percent Difference (RPD) between the analytical results for duplicate samples. It is expected that soil field duplicates will exhibit greater variance than water field duplicates due to the difficulties associated with collecting identical soil field duplicate samples. For aqueous duplicates, if the sample results are greater than five times the reporting limit, the acceptance criteria for the RPD is 20% or less. If the sample results are less than five times the reporting limit, the duplicate acceptance is evaluated on the sample results rather than the RPD. There are no guidelines for data qualification based on poor field duplicate precision. Professional judgement was used to determine whether to qualify the data. Field duplicate samples are collected at a rate of 10% per samples collected and are sent to the laboratory as blind duplicates.

Data Review Results
No replicate samples were submitted for analysis.

No qualifications are necessary.

Matrix Spike Sample Analysis
The purpose of Matrix Spike analysis is to provide information about the effects that the sample matrix exerts on the digestion and the analytical methodology. The potential sample bias may be estimated by noting the degree to which the MS concentration was lowered or elevated in the spike analysis. However, this bias should serve only as an approximation since sample specific problems may be the cause of the discrepancy, especially in soil samples. The control limits for Matrix Spike recoveries for TAL metals have been established at 75-125% recovery. The RPD for Matrix Spike/Matrix Spike Duplicate (MS/MSD) pairs established by the laboratory is less than 20%. When recoveries are below 30%, the reported results are qualified as biased low (L) and the reporting limits are rejected (R). When the spike recoveries fall between 30-75%, the reported results and reporting limits are qualified as biased low (L, UL) for the parent sample. When spike recoveries exceed 125%, the reported results are qualified as biased

high (K), but the reporting limits are not affected. When the sample result is greater than four times the spike concentration, the spike recovery limits do not apply.

Data Review Results
No MS/MSD samples were submitted for analysis.

No qualifications are necessary.

Laboratory Control Sample Analysis
The Laboratory Control Sample (LCS) and LCS duplicate (LCSD) are used to monitor the efficiency of the digestion procedure and analytical instrument operation. The inability of the laboratory to successfully analyze a LCS/LCSD is indicative of an analytical problem related to the digestion/sample preparation procedures and/or instrument operations. The laboratory established control limits for LCS/LCSD recoveries and RPD are presented in the analytical report.

Data Review Results
Two LCS/LCSD pairs were associated with the samples. Each of the analytes was included in the LCS/LCSD and the LCS/LCSD percent recoveries and RPDs were within established control limits.

No qualifications are necessary.

Surrogate Spike Recovery
Laboratory performance for individual samples is measured by the use of surrogate spikes. Surrogates are compounds added to every sample at the beginning of the sample preparation to monitor the success of the preparation of the sample on an individual basis. Surrogate compounds are selected based on their ability to mimic the behavior of specific target analytes held to be particularly sensitive to sample preparation. Unusually low or high surrogate recoveries may indicate some deficiency in the analytical system or that some matrix effects exist, resulting in low or high sample results for target analytes. Method and matrix-specific control limits have been established by the laboratory to monitor surrogate recovery.

Data Review Results
The surrogate recoveries were reviewed for the VOC analyses. The recoveries were within established control limits.

No qualifications are necessary.

Data Qualification Summary
These data are acceptable and can be considered as representative of the samples collected in the field.

Kevin G. Haborak
Geophysicist
HTRW Section

Subject: Chemical Data Quality Assessment for Ft. Bragg, North Carolina, Lamont Landfill June 2009 Groundwater Sampling

Introduction
The data for these samples were evaluated using guidelines established in the Environmental Protection Agency's National Functional Guidelines for Data Review and the Environmental Quality-Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste (HTRW) Projects (EM-200-1-6). *Test America (Savannah) performed the analysis and provided an analytical report. The job number is: 680-48180-2*

Sampling Procedures
The samples were received by the lab on June 16, 2009 in good condition. All holding times and extraction times were met for the samples. The samples were delivered at a temperature below four degress Celcius (^{o}C) and no problems were noted by TA for the pH of the samples. No non-conformances were noted for the COC.

No qualifications are necessary.

Analytical Procedures
The Delivery Order and the COC specify the analytical methods used by the Laboratory. The samples were analyzed for Appendix I metals by SW846 6020/3030C and Appendix I volatile organic compounds (VOCs) by SW846 8260B/5030B.

Metals

Holding Times
Holding Times are established and monitored to ensure analytical results accurately represent analyte concentrations in a sample at the time of collection. When the holding time is exceeded, there is generally a loss of the analyte due to a variety of mechanisms, such as deposition on the sample container walls or precipitation. The holding times for Appendix I metals is 6 months.

Data Review Results
The holding times were met for all samples.

No qualifications are necessary.

Method Blanks
Method Blanks are analyzed and evaluated with samples to determine the existence and magnitude of possible laboratory created contamination. If blank contamination is found, samples need to be closely examined for the same contaminants. If the contaminants are not detected in the samples, then there is little need for concern. The following approach is used when the blank contaminant is also reported in the sample:

- If the sample result is at least ten times that in the blank, then the likely contribution to the sample from the laboratory environment is at most 10% and the possible contamination is negligible.

- If the sample result is at least five times but less than ten times the blank result, the compound is probably present in the samples, but the numerical result should be considered an upper limit of the true concentration.

- If the sample result is below five times the level in the blank, there is no adequate means by which to judge whether the sample result is attributable to laboratory contamination. When this occurs, the sample data is qualified as being the result of laboratory contamination.

Data Review Results
The method blank for metals contained detections for copper (Cu) and nickel (Ni) that were above the MDL but below the RL, as such these detections were flagged as estimated. The concentration of Cu detected is 0.22 μg/L and the MDL is 0.20 μg/L; concentration of Ni detected is 0.25 μg/L and the MDL is 0.20 μg/L.

The positive results for Cu and Ni in the GW-LMW-4-06-0, which are less than five times the value observed in the blank, should be flagged U. The concentrations of Cu and Ni in GW-LMW-DUP-2 were greater than five times the value observed in the blank.

Equipment Blanks
The purpose of Equipment Blanks is to monitor the effectiveness of the cleaning procedure used for the decontamination of sampling equipment in the field and the possibility of contamination at one site being carried over to another sampling site. When disposable-sampling equipment is used, Equipment Blanks serve to monitor the cleanliness of these items. Equipment Blanks are collected at a rate of 5% per samples collected.

The proper way to prepare an effective Equipment Blank is to take a quantity of analyte-free water to the sampling site, rinse the equipment with the analyte-free water directly into the sample container, add preservatives, and then treat as a regular sample. At least one Equipment Blank should be prepared for each type of analyte group collected with each item of equipment.

Data Review Results
No rinsate blanks or field blanks were submitted with the samples.

No qualifications are necessary.

Field Duplicate Sample Analysis
Duplicate samples are analyzed to evaluate the overall precision for both the field and the laboratory. Precision is the measure of the Relative Percent Difference (RPD) between the analytical results for duplicate samples. It is expected that soil field duplicates will

exhibit greater variance than water field duplicates due to the difficulties associated with collecting identical soil field duplicate samples. The RPD control limit for soil samples for this project was set at less than 50% for results that were five times the reporting limit. For aqueous duplicates, if the sample results are greater than five times the reporting limit, the acceptance criteria for the RPD is 20% or less. If the sample results are less than five times the reporting limit, the duplicate acceptance is evaluated on the sample results rather than the RPD. There are no guidelines for data qualification based on poor field duplicate precision. Professional judgement was used to determine whether to qualify the data. Field duplicate samples are collected at a rate of 10% per samples collected and are sent to the laboratory as blind duplicates.

Data Review Results

Table 1: Comparison of Field Duplicates for Metals Analyses

Field Duplicate Pair	Parameter	Original Result ppb	Duplicate Result ppb	RPD	RPD Limits
GW-LMW-4-06-09	Barium	13	15	14%	<20%
GW-LMW-DUP-2	Chromium	0.84 J	1.2	NA	<20%
	Cobalt	0.24	0.28	NA	<20%
	Copper	0.74 J	1.9	NA	<20%
	Lead	0.13 J	0.2 J	NA	<20%
	Nickel	0.79	3.0	NA	<20%
	Zinc	6.7 J	820	NA	<20%

Notes:

NA = The analyte was not detected at a level that was at least five times the reporting limits in at least one of the replicate samples.

Seven analytes were identified in one of the replicate samples. Only one analyte, barium, was positively identified in the in the replicates samples at a level that was greater than five times the reporting limit. The RPD for this analyte was within established guidelines.

No qualifications are necessary.

Matrix Spike Sample Analysis

The purpose of Matrix Spike analysis is to provide information about the effects that the sample matrix exerts on the digestion and the analytical methodology. The potential sample bias may be estimated by noting the degree to which the MS concentration was lowered or elevated in the spike analysis. However, this bias should serve only as an approximation since sample specific problems may be the cause of the discrepancy, especially in soil samples. The control limits for Matrix Spike recoveries for TAL metals have been established at 75-125% recovery. The RPD for Matrix Spike/Matrix Spike Duplicate (MS/MSD) pairs established by the laboratory is less than 20%. When recoveries are below 30%, the reported results are qualified as biased low (L) and the reporting limits are rejected (R). When the spike recoveries fall between 30-75%, the reported results and reporting limits are qualified as biased low (L, UL) for the parent sample. When spike recoveries exceed 125%, the reported results are qualified as biased

high (K), but the reporting limits are not affected. When the sample result is greater than four times the spike concentration, the spike recovery limits do not apply.

Data Review Results
An MS/MSD pair was not submitted with the samples for analysis.

No qualifications are necessary.

Laboratory Control Sample Analysis
The Laboratory Control Sample (LCS) and LCS duplicate (LCSD) are used to monitor the efficiency of the digestion procedure and analytical instrument operation. The inability of the laboratory to successfully analyze a LCS/LCSD is indicative of an analytical problem related to the digestion/sample preparation procedures and/or instrument operations. The laboratory established control limits for LCS/LCSD recoveries and RPD are presented in the analytical report.

Data Review Results
One LCS was associated with the samples. Each of the analytes was included in the LCS and the LCS percent recoveries were within established control limits.

No qualifications are necessary.

Data Qualification Summary
These data are acceptable and can be considered as representative of the samples collected in the field. However, the following qualifications should be made to the data.

Table 2: Qualification of Appendix I metals Data

Sample	Parameter	Qualification Flag
GW-LMW-4-06-09	Copper	U
	Nickel	U

Organics

Holding Times
Holding Times are established and monitored to ensure analytical results accurately represent analyte concentrations in a sample at the time of collection. When the holding time is exceeded, there is generally a loss of the analyte due to a variety of mechanisms, such as deposition on the sample container walls or precipitation. The holding times for Appendix I VOCs is 14 days.

Data Review Results
The holding times were met for all samples.

No qualifications are necessary.

Method Blanks
Method Blanks are analyzed and evaluated with samples to determine the existence and magnitude of possible laboratory created contamination. If blank contamination is found, samples need to be closely examined for the same contaminants. If the contaminants are not detected in the samples, then there is little need for concern. The following approach is used when the blank contaminant is also reported in the sample:

- If the sample result is at least ten times that in the blank, then the likely contribution to the sample from the laboratory environment is at most 10% and the possible contamination is negligible.

- If the sample result is at least five times but less than ten times the blank result, the compound is probably present in the samples, but the numerical result should be considered an upper limit of the true concentration.

- If the sample result is below five times the level in the blank, there is no adequate means by which to judge whether the sample result is attributable to laboratory contamination. When this occurs, the sample data is qualified as being the result of laboratory contamination.

Data Review Results
The method blank for VOCs was interference free.

No qualifications are necessary.

Equipment Blanks
The purpose of Equipment Blanks is to monitor the effectiveness of the cleaning procedure used for the decontamination of sampling equipment in the field and the possibility of contamination at one site being carried over to another sampling site. When disposable-sampling equipment is used, Equipment Blanks serve to monitor the cleanliness of these items. Equipment Blanks are collected at a rate of 5% per samples collected.

The proper way to prepare an effective Equipment Blank is to take a quantity of analyte-free water to the sampling site, rinse the equipment with the analyte-free water directly into the sample container, add preservatives, and then treat as a regular sample. At least one Equipment Blank should be prepared for each type of analyte group collected with each item of equipment.

Data Review Results
No rinsate blanks or field blanks were submitted with the samples.

No qualifications are necessary.

Trip Blank
Trip Blanks are an integral and essential part of any quality control process. The trip blank is designed to detect any contaminants that may have been introduced from the time the samples left the laboratory to the time the samples returned to the laboratory

Data Review Results There were not any detectable contaminates in the trip blank.

No qualifications are necessary.

Field Duplicate Sample Analysis
Duplicate samples are analyzed to evaluate the overall precision for both the field and the laboratory. Precision is the measure of the Relative Percent Difference (RPD) between the analytical results for duplicate samples. It is expected that soil field duplicates will exhibit greater variance than water field duplicates due to the difficulties associated with collecting identical soil field duplicate samples. For aqueous duplicates, if the sample results are greater than five times the reporting limit, the acceptance criteria for the RPD is 20% or less. If the sample results are less than five times the reporting limit, the duplicate acceptance is evaluated on the sample results rather than the RPD. There are no guidelines for data qualification based on poor field duplicate precision. Professional judgement was used to determine whether to qualify the data. Field duplicate samples are collected at a rate of 10% per samples collected and are sent to the laboratory as blind duplicates.

Data Review Results

Table 3: Comparison of Field Duplicates for VOC Analyses

Field Duplicate Pair	Parameter	Original Result ppb	Duplicate Result ppb	RPD	RPD Control Limits
GW-LMW-4-06-09	Toluene	0.56 J	<0.33	NA	<20%
GW-LMW-DUP-2	Trichlorofluoromethane	0.82 J	3.0	NA	<20%

Notes:

NA = The analyte was not detected at a level that was at least five times the reporting limits in at least one of the replicate samples.

Two analytes were tentatively identified in the parent sample. One of the analytes, toluene, was not identified in the duplicate sample. The other analyte, trichlorofluoromethane, was positively identified in the duplicate sample at a level that was less than five times the reporting limit. Due to the low analyte concentrations, a significant analysis could not be performed.

No qualifications are necessary.

Matrix Spike Sample Analysis

The purpose of Matrix Spike analysis is to provide information about the effects that the sample matrix exerts on the digestion and the analytical methodology. The potential sample bias may be estimated by noting the degree to which the MS concentration was lowered or elevated in the spike analysis. However, this bias should serve only as an approximation since sample specific problems may be the cause of the discrepancy, especially in soil samples. The control limits for Matrix Spike recoveries for TAL metals have been established at 75-125% recovery. The RPD for Matrix Spike/Matrix Spike Duplicate (MS/MSD) pairs established by the laboratory is less than 20%. When recoveries are below 30%, the reported results are qualified as biased low (L) and the reporting limits are rejected (R). When the spike recoveries fall between 30-75%, the reported results and reporting limits are qualified as biased low (L, UL) for the parent sample. When spike recoveries exceed 125%, the reported results are qualified as biased high (K), but the reporting limits are not affected. When the sample result is greater than four times the spike concentration, the spike recovery limits do not apply.

Data Review Results
An MS/MSD pair was not submitted with the samples for analysis.

No qualifications are necessary.

Laboratory Control Sample Analysis
The Laboratory Control Sample (LCS) and LCS duplicate (LCSD) are used to monitor the efficiency of the digestion procedure and analytical instrument operation. The inability of the laboratory to successfully analyze a LCS/LCSD is indicative of an analytical problem related to the digestion/sample preparation procedures and/or instrument operations. The laboratory established control limits for LCS/LCSD recoveries and RPD are presented in the analytical report.

Data Review Results
One LCS/LCSD pair was associated with the samples. Each of the analytes was included in the LCS/LCSD and the LCS/LCSD percent recoveries and RPDs were within established control limits.

No qualifications are necessary.

Surrogate Spike Recovery
Laboratory performance for individual samples is measured by the use of surrogate spikes. Surrogates are compounds added to every sample at the beginning of the sample preparation to monitor the success of the preparation of the sample on an individual basis. Surrogate compounds are selected based on their ability to mimic the behavior of specific target analytes held to be particularly sensitive to sample preparation. Unusually low or high surrogate recoveries may indicate some deficiency in the analytical system or that some matrix effects exist, resulting in low or high sample results for target analytes. Method and matrix-specific control limits have been established by the laboratory to monitor surrogate recovery.

Data Review Results
The surrogate recoveries were reviewed for the VOC analyses. The recoveries were within established control limits.

No qualifications are necessary.

Data Qualification Summary
These data are acceptable and can be considered as representative of the samples collected in the field.

Kevin G. Haborak
Geophysicist
HTRW Section

APPENDIX C

CHAIN OF CUSTODY AND LABORATORY ANALYTICAL REPORTS

(Electronic Only)

ANALYTICAL REPORT

Job Number: 680-48080-1

Job Description: Lamont Landfill

For:
U.S. Army Corps of Engineers
PO BOX 889
Savannah, GA 31402-0889

Attention: Mr. Kevin Haborak

Approved for release.
Terry Hornsby
Project Manager I
6/25/2009 10:32 AM

Terry Hornsby
Project Manager I
terry.hornsby@testamericainc.com
06/25/2009

cc: Mr. Judson Smith

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. This report may not be reproduced, except in full, without the written approval of the laboratory. Questions should be directed to the person who signed this report.

Savannah Certifications and ID #s: A2LA: 0399.01; AL: 41450; ARDEQ: 88-0692; ARDOH; CA: 03217CA; CO; CT: PH0161; DE; FL: E87052; GA: 803; Guam; HI; IL: 200022; IN; IA: 353; KS: E-10322; KY EPPC: 90084; KY UST; LA DEQ: 30690; LA DHH: LA080008; ME: 2008022; MD: 250; MA: M-GA006; MI: 9925; MS; NFESC: 249; NV: GA00006; NJ: GA769; NM; NY: 10842; NC DWQ: 269; NC DHHS: 13701; PA: 68-00474; PR: GA00006; RI: LAO00244; SC: 98001001; TN: TN0296; TX: T104704185; USEPA: GA00006; VT: VT-87052; VA: 00302; WA; WV DEP: 094; WV DHHR: 9950 C; WI DNR: 999819810; WY/EPAR8: 8TMS-Q

TestAmerica Laboratories, Inc.
TestAmerica Savannah 5102 LaRoche Avenue, Savannah, GA 31404
Tel (912) 354-7858 Fax (912) 352-0165 www.testamericainc.com

METHOD / ANALYST SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-48080-1

Method	Analyst	Analyst ID
SW846 6020	Boyuk, Brian	BB

SAMPLE SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-48080-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-48080-1	GW-LMW-14R-06-09	Water	06/10/2009 0925	06/11/2009 0935
680-48080-2	GW-LMW-15R-06-09	Water	06/10/2009 0950	06/11/2009 0935
680-48080-3	GW-LMW-9-06-09	Water	06/10/2009 1645	06/11/2009 0935

Client: U.S. Army Corps of Engineers

Job Number: 680-48080-1

Client Sample ID: **GW-LMW-14R-06-09**

Lab Sample ID: 680-48080-1
Client Matrix: Water

Date Sampled: 06/10/2009 0925
Date Received: 06/11/2009 0935

6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020
Preparation: 3030C
Dilution: 1.0
Date Analyzed: 06/19/2009 0542
Date Prepared: 06/12/2009 1027

Analysis Batch: 680-140859
Prep Batch: 680-140258

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	0.41	J	0.40	1.2
Barium	13		0.15	1.0
Beryllium	0.070	U	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	1.6		0.16	1.0
Cobalt	0.24		0.078	0.23
Copper	0.81	J	0.21	1.0
Lead	0.22	J	0.080	0.30
Nickel	2.2		0.20	0.60
Selenium	0.21	U	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	1.4	U	1.4	5.9
Zinc	6.3	J	2.6	10
Thallium	0.10	U	0.10	0.30

Client: U.S. Army Corps of Engineers

Job Number: 680-48080-1

Client Sample ID: **GW-LMW-15R-06-09**

Lab Sample ID: 680-48080-2
Client Matrix: Water

Date Sampled: 06/10/2009 0950
Date Received: 06/11/2009 0935

6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020
Preparation: 3030C
Dilution: 1.0
Date Analyzed: 06/19/2009 0616
Date Prepared: 06/12/2009 1027

Analysis Batch: 680-140859
Prep Batch: 680-140258

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	2.5		0.40	1.2
Barium	42		0.15	1.0
Beryllium	0.29		0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	5.5		0.16	1.0
Cobalt	0.83		0.078	0.23
Copper	3.7		0.21	1.0
Lead	0.89		0.080	0.30
Nickel	3.0		0.20	0.60
Selenium	0.24	J	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	7.5		1.4	5.9
Zinc	6.5	J	2.6	10
Thallium	0.10	U	0.10	0.30

Client: U.S. Army Corps of Engineers

Job Number: 680-48080-1

Client Sample ID: **GW-LMW-9-06-09**

Lab Sample ID: 680-48080-3
Client Matrix: Water

Date Sampled: 06/10/2009 1645
Date Received: 06/11/2009 0935

6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020
Preparation: 3030C
Dilution: 1.0
Date Analyzed: 06/19/2009 0623
Date Prepared: 06/12/2009 1027

Analysis Batch: 680-140859
Prep Batch: 680-140258

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	1.1	J	0.40	1.2
Barium	3.1		0.15	1.0
Beryllium	0.089	J	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	1.2		0.16	1.0
Cobalt	0.15	J	0.078	0.23
Copper	0.88	J	0.21	1.0
Lead	0.17	J	0.080	0.30
Nickel	0.33	J	0.20	0.60
Selenium	0.28	J	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	2.6	J	1.4	5.9
Zinc	2.6	U	2.6	10
Thallium	0.13	J	0.10	0.30

DATA REPORTING QUALIFIERS

Client: U.S. Army Corps of Engineers

Job Number: 680-48080-1

Lab Section	Qualifier	Description
Metals		
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	U	Undetected at the Limit of Detection.

Client: U.S. Army Corps of Engineers

Job Number: 680-48080-1

Method Blank - Batch: 680-140258

Method: 6020
Preparation: 3030C

Lab Sample ID:	MB 680-140258/4-A	Analysis Batch:	680-140859	Instrument ID:	ICP MS - A
Client Matrix:	Water	Prep Batch:	680-140258	Lab File ID:	N/A
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	50 mL
Date Analyzed:	06/19/2009 0528			Final Weight/Volume:	50 mL
Date Prepared:	06/12/2009 1027				

Analyte	Result	Qual	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	0.40	U	0.40	1.2
Barium	0.15	U	0.15	1.0
Beryllium	0.070	U	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	0.16	U	0.16	1.0
Cobalt	0.078	U	0.078	0.23
Copper	0.21	U	0.21	1.0
Lead	0.080	U	0.080	0.30
Nickel	0.20	U	0.20	0.60
Selenium	0.21	U	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	1.4	U	1.4	5.9
Zinc	2.6	U	2.6	10
Thallium	0.10	U	0.10	0.30

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48080-1

Lab Control Sample - Batch: 680-140258

Method: 6020
Preparation: 3030C

Lab Sample ID: LCS 680-140258/5-A
Client Matrix: Water
Dilution: 200
Date Analyzed: 06/19/2009 0535
Date Prepared: 06/12/2009 1027

Analysis Batch: 680-140859
Prep Batch: 680-140258
Units: ug/L

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	500	506	101	75 - 125	J
Arsenic	2000	2070	103	75 - 125	
Barium	2000	2140	107	75 - 125	
Beryllium	50.0	48.8	98	75 - 125	
Cadmium	50.0	58.6	117	75 - 125	J
Chromium	200	207	104	75 - 125	
Cobalt	500	485	97	75 - 125	
Copper	250	269	107	75 - 125	
Lead	500	490	98	75 - 125	
Nickel	500	524	105	75 - 125	
Selenium	2000	2140	107	75 - 125	
Silver	50.0	53.0	106	75 - 125	J
Vanadium	500	514	103	75 - 125	J
Zinc	500	546	109	75 - 125	J
Thallium	2000	2080	104	75 - 125	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48080-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-140258

Method: 6020
Preparation: 3030C

MS Lab Sample ID:	680-48080-1	Analysis Batch:	680-140859	Instrument ID:	ICP MS - A
Client Matrix:	Water	Prep Batch:	680-140258	Lab File ID:	N/A
Dilution:	200			Initial Weight/Volume:	50 mL
Date Analyzed:	06/19/2009 0602			Final Weight/Volume:	50 mL
Date Prepared:	06/12/2009 1027				

MSD Lab Sample ID:	680-48080-1	Analysis Batch:	680-140859	Instrument ID:	ICP MS - A
Client Matrix:	Water	Prep Batch:	680-140258	Lab File ID:	N/A
Dilution:	200			Initial Weight/Volume:	50 mL
Date Analyzed:	06/19/2009 0609			Final Weight/Volume:	50 mL
Date Prepared:	06/12/2009 1027				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Antimony	99	102		3.11		J	J
Arsenic	101	103		1.76			
Barium	107	109		2.31			
Beryllium	97	103		5.85			
Cadmium	106	103		2.41		J	J
Chromium	100	103		3.04			
Cobalt	97	99		2.94			
Copper	102	108		6.15			
Lead	96	98		2.27			
Nickel	106	108		1.67			
Selenium	106	107		1.69			
Silver	102	105		2.39		J	J
Vanadium	103	106		3.02		J	J
Zinc	110	105		4.83		J	J
Thallium	102	105		2.60			

Calculations are performed before rounding to avoid round-off errors in calculated results.

TestAmerica INCORPORATED

To assist us in using the proper analytical methods, is this work being conducted for regulatory purposes?
Compliance Monitoring _____

Client Name: USACE
Client #:
Address: 100 W Ogle thorpe Ave
City/State/Zip Code: Savannah GA 31401
Project Manager: Kevin Haborak
Telephone Number: (912) 652 6083
Fax: —
Sampler Name: (Print Name) Kevin Haborak
Sampler Signature:

Project Name: Lamont LF
Project #:
Site/Location ID: Fayetteville
State: NC
Report To: Kevin Haborak
Invoice To: Judson Smith
Quote #:
PO#:

TAT: X Standard; ___ Rush (surcharges may apply)
Date Needed:
Fax Results: Y (N)

SAMPLE ID	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix (SL - Sludge, DW - Drinking Water, GW - Groundwater, S - Soil/Solid, WW - Wastewater, Specify Other)	Preservation & # of Containers: HNO_3	HCl	NaOH	H_2SO_4	Methanol	None	Other (Specify)	Analyze For: App I Metals 6020C										REMARKS
GW-LMW-14R-06-09	6/10/09	09:25	G	N	GW	X							X										
GW-LMW-15R-06-09	6/10/09	09:50	G	N	GW	X							X										
GW-LMW-9-06-09	6/10/09	16:45	G	N	GW	X							X										
																							680480080

QC Deliverables: ___ None; X Level 2 (Batch QC); ___ Level 3; ___ Level 4; Other: _____

Special Instructions:
Call Jud for delivery order #
Email results to Kevin.Haborak@USACE.ARMY.MIL

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
				061109	0935
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

LABORATORY COMMENTS:
Init Lab Temp:
Rec Lab Temp:
Custody Seals: Y N N/A
Bottles Supplied by Test America: Y N
Method of Shipment: 3-4 TEMP

06/25/2009

ANALYTICAL REPORT

Job Number: 680-48140-1

Job Description: Lamont Landfill

For:
U.S. Army Corps of Engineers
PO BOX 889
Savannah, GA 31402-0889

Attention: Mr. Kevin Haborak

Approved for release.
Terry Hornsby
Project Manager I
6/29/2009 3:48 PM

Terry Hornsby
Project Manager I
terry.hornsby@testamericainc.com
06/29/2009

cc: Mr. Judson Smith

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Job Narrative
680-J48140-1

Receipt
All samples were received in good condition within temperature requirements.

GC/MS VOA
Method 8260B: The trip blank associated with these samples contained a detection above the reporting limit (RL) for the following analyte: acetonitrile.

The primary analysis for this sample detected acetonitrile just below the reporting limit (RL).

The results from both the primary and secondary runs have been reported.

Method 8260B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 140840 were outside control limits. The associated laboratory control sample (LCS) met acceptance criteria.

Carbon disulfide and 1, 1-dichloroethane were outside control limits in the MS/MSD. 1,1,1- trichloroethane was outside control limits in the MSD.

No other analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

VOA Prep
No analytical or quality issues were noted.

METHOD / ANALYST SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Method	Analyst	Analyst ID
SW846 8260B	Lui, Chung	CL
SW846 6020	Boyuk, Brian	BB

SAMPLE SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-48140-1	GW-LMW-10-06-09	Water	06/11/2009 1640	06/12/2009 0914
680-48140-2TB	Trip Blank	Water	06/11/2009 0000	06/12/2009 0914
680-48140-3	GW-LMW-9S-06-09	Water	06/11/2009 1035	06/12/2009 0914
680-48140-3MS	GW-LMW-9S-06-09	Water	06/11/2009 1035	06/12/2009 0914
680-48140-3MSD	GW-LMW-9S-06-09	Water	06/11/2009 1035	06/12/2009 0914
680-48140-4FD	GW-LMW-DUP-1	Water	06/11/2009 0000	06/12/2009 0914
680-48140-5	GW-LMW-9D-06-09	Water	06/11/2009 1240	06/12/2009 0914
680-48140-6	GW-LMW-8-06-09	Water	06/11/2009 0920	06/12/2009 0914
680-48140-7	GW-LMW-16-06-09	Water	06/11/2009 1540	06/12/2009 0914
680-48140-8	GW-LMW-15R-06-09	Water	06/09/2009 0940	06/12/2009 0914
680-48140-9	GW-LMW-14R-06-09	Water	06/10/2009 0925	06/12/2009 0914
680-48140-10	GW-LMW-9-06-09	Water	06/10/2009 1645	06/12/2009 0914

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-10-06-09**

Lab Sample ID: 680-48140-1
Client Matrix: Water

Date Sampled: 06/11/2009 1640
Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 06/18/2009 1443
Date Prepared: 06/18/2009 1443

Analysis Batch: 680-140763

Instrument ID: GC/MS Volatiles - P
Lab File ID: p0233.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.88	J	0.13	1.0
Trichlorofluoromethane	6.6		0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-10-06-09**

Lab Sample ID: 680-48140-1

Client Matrix: Water

Date Sampled: 06/11/2009 1640

Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2009 1443

Date Prepared: 06/18/2009 1443

Analysis Batch: 680-140763

Instrument ID: GC/MS Volatiles - P

Lab File ID: p0233.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	91	75 - 120
Dibromofluoromethane	100	75 - 121
Toluene-d8 (Surr)	104	75 - 120

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-48140-2TB

Client Matrix: Water

Date Sampled: 06/11/2009 0000

Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/17/2009 1405

Date Prepared: 06/17/2009 1405

Analysis Batch: 680-140585

Instrument ID: GC/MS Volatiles - P

Lab File ID: p0202.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-48140-2TB

Client Matrix: Water

Date Sampled: 06/11/2009 0000

Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/17/2009 1405

Date Prepared: 06/17/2009 1405

Analysis Batch: 680-140585

Instrument ID: GC/MS Volatiles - P

Lab File ID: p0202.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	89	75 - 120
Dibromofluoromethane	102	75 - 121
Toluene-d8 (Surr)	101	75 - 120

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-48140-2TB

Client Matrix: Water

Date Sampled: 06/11/2009 0000

Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2009 1413

Date Prepared: 06/18/2009 1413

Analysis Batch: 680-140763

Run Type: RA

Instrument ID: GC/MS Volatiles - P

Lab File ID: p0231.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-48140-2TB

Client Matrix: Water

Date Sampled: 06/11/2009 0000

Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2009 1413

Date Prepared: 06/18/2009 1413

Analysis Batch: 680-140763

Run Type: RA

Instrument ID: GC/MS Volatiles - P

Lab File ID: p0231.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	92	75 - 120
Dibromofluoromethane	101	75 - 121
Toluene-d8 (Surr)	104	75 - 120

Client: U.S. Army Corps of Engineers | Job Number: 680-48140-1

Client Sample ID: **GW-LMW-9S-06-09**

Lab Sample ID: 680-48140-3 | Date Sampled: 06/11/2009 1035
Client Matrix: Water | Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B | Analysis Batch: 680-140585 | Instrument ID: GC/MS Volatiles - P
Preparation: 5030B | Lab File ID: p0204.d
Dilution: 1.0 | Initial Weight/Volume: 5 mL
Date Analyzed: 06/17/2009 1448 | Final Weight/Volume: 5 mL
Date Prepared: 06/17/2009 1448

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-9S-06-09**

Lab Sample ID: 680-48140-3

Client Matrix: Water

Date Sampled: 06/11/2009 1035

Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/17/2009 1448

Date Prepared: 06/17/2009 1448

Analysis Batch: 680-140585

Instrument ID: GC/MS Volatiles - P

Lab File ID: p0204.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	91	75 - 120
Dibromofluoromethane	105	75 - 121
Toluene-d8 (Surr)	100	75 - 120

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-DUP-1**

Lab Sample ID: 680-48140-4FD

Client Matrix: Water

Date Sampled: 06/11/2009 0000

Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2009 1513

Date Prepared: 06/18/2009 1513

Analysis Batch: 680-140763

Instrument ID: GC/MS Volatiles - P

Lab File ID: p0235.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	2.4		0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.29	J	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.41	J	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-DUP-1**

Lab Sample ID: 680-48140-4FD

Client Matrix: Water

Date Sampled: 06/11/2009 0000

Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2009 1513

Date Prepared: 06/18/2009 1513

Analysis Batch: 680-140763

Instrument ID: GC/MS Volatiles - P

Lab File ID: p0235.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	89	75 - 120
Dibromofluoromethane	101	75 - 121
Toluene-d8 (Surr)	101	75 - 120

Client: U.S. Army Corps of Engineers | Job Number: 680-48140-1

Client Sample ID: **GW-LMW-9D-06-09**

Lab Sample ID: 680-48140-5 | Date Sampled: 06/11/2009 1240
Client Matrix: Water | Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B | Analysis Batch: 680-140763 | Instrument ID: GC/MS Volatiles - P
Preparation: 5030B | Lab File ID: p0237.d
Dilution: 1.0 | Initial Weight/Volume: 5 mL
Date Analyzed: 06/18/2009 1543 | Final Weight/Volume: 5 mL
Date Prepared: 06/18/2009 1543

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-9D-06-09**

Lab Sample ID: 680-48140-5

Client Matrix: Water

Date Sampled: 06/11/2009 1240

Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2009 1543

Date Prepared: 06/18/2009 1543

Analysis Batch: 680-140763

Instrument ID: GC/MS Volatiles - P

Lab File ID: p0237.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	91	75 - 120
Dibromofluoromethane	102	75 - 121
Toluene-d8 (Surr)	103	75 - 120

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-8-06-09**

Lab Sample ID: 680-48140-6
Client Matrix: Water

Date Sampled: 06/11/2009 0920
Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 06/18/2009 1642
Date Prepared: 06/18/2009 1642

Analysis Batch: 680-140763

Instrument ID: GC/MS Volatiles - P
Lab File ID: p0241.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	3.3		0.33	1.0
cis-1,2-Dichloroethene	2.4		0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.31	J	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.41	J	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-8-06-09**

Lab Sample ID: 680-48140-6

Client Matrix: Water

Date Sampled: 06/11/2009 0920

Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2009 1642

Date Prepared: 06/18/2009 1642

Analysis Batch: 680-140763

Instrument ID: GC/MS Volatiles - P

Lab File ID: p0241.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	90	75 - 120
Dibromofluoromethane	101	75 - 121
Toluene-d8 (Surr)	102	75 - 120

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-16-06-09**

Lab Sample ID: 680-48140-7
Client Matrix: Water

Date Sampled: 06/11/2009 1540
Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 06/18/2009 1811
Date Prepared: 06/18/2009 1811

Analysis Batch: 680-140763

Instrument ID: GC/MS Volatiles - P
Lab File ID: p0247.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-16-06-09**

Lab Sample ID: 680-48140-7

Client Matrix: Water

Date Sampled: 06/11/2009 1540

Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2009 1811

Date Prepared: 06/18/2009 1811

Analysis Batch: 680-140763

Instrument ID: GC/MS Volatiles - P

Lab File ID: p0247.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	89	75 - 120
Dibromofluoromethane	101	75 - 121
Toluene-d8 (Surr)	101	75 - 120

Client: U.S. Army Corps of Engineers | Job Number: 680-48140-1

Client Sample ID: **GW-LMW-15R-06-09**

Lab Sample ID: 680-48140-8 | Date Sampled: 06/09/2009 0940
Client Matrix: Water | Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B | Analysis Batch: 680-140763 | Instrument ID: GC/MS Volatiles - P
Preparation: 5030B | Lab File ID: p0243.d
Dilution: 1.0 | Initial Weight/Volume: 5 mL
Date Analyzed: 06/18/2009 1712 | Final Weight/Volume: 5 mL
Date Prepared: 06/18/2009 1712

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	1.8		0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-15R-06-09**

Lab Sample ID: 680-48140-8

Client Matrix: Water

Date Sampled: 06/09/2009 0940

Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2009 1712

Date Prepared: 06/18/2009 1712

Analysis Batch: 680-140763

Instrument ID: GC/MS Volatiles - P

Lab File ID: p0243.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	89	75 - 120
Dibromofluoromethane	98	75 - 121
Toluene-d8 (Surr)	102	75 - 120

Client: U.S. Army Corps of Engineers | Job Number: 680-48140-1

Client Sample ID: **GW-LMW-14R-06-09**

Lab Sample ID: 680-48140-9 | Date Sampled: 06/10/2009 0925
Client Matrix: Water | Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B | Analysis Batch: 680-140763 | Instrument ID: GC/MS Volatiles - P
Preparation: 5030B | Lab File ID: p0245.d
Dilution: 1.0 | Initial Weight/Volume: 5 mL
Date Analyzed: 06/18/2009 1742 | Final Weight/Volume: 5 mL
Date Prepared: 06/18/2009 1742

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-14R-06-09**

Lab Sample ID: 680-48140-9

Client Matrix: Water

Date Sampled: 06/10/2009 0925

Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2009 1742

Date Prepared: 06/18/2009 1742

Analysis Batch: 680-140763

Instrument ID: GC/MS Volatiles - P

Lab File ID: p0245.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	87	75 - 120
Dibromofluoromethane	100	75 - 121
Toluene-d8 (Surr)	106	75 - 120

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-9-06-09**

Lab Sample ID: 680-48140-10
Client Matrix: Water

Date Sampled: 06/10/2009 1645
Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 06/17/2009 1532
Date Prepared: 06/17/2009 1532

Analysis Batch: 680-140585

Instrument ID: GC/MS Volatiles - P
Lab File ID: p0206.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-9-06-09**

Lab Sample ID: 680-48140-10

Client Matrix: Water

Date Sampled: 06/10/2009 1645

Date Received: 06/12/2009 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/17/2009 1532

Date Prepared: 06/17/2009 1532

Analysis Batch: 680-140585

Instrument ID: GC/MS Volatiles - P

Lab File ID: p0206.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	90	75 - 120
Dibromofluoromethane	103	75 - 121
Toluene-d8 (Surr)	102	75 - 120

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-10-06-09**

Lab Sample ID: 680-48140-1
Client Matrix: Water

Date Sampled: 06/11/2009 1640
Date Received: 06/12/2009 0914

6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020
Preparation: 3030C
Dilution: 1.0
Date Analyzed: 06/22/2009 1609
Date Prepared: 06/12/2009 1708

Analysis Batch: 680-141125
Prep Batch: 680-140316

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	0.40	U	0.40	1.2
Barium	13		0.15	1.0
Beryllium	0.070	U	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	0.36	J	0.16	1.0
Cobalt	0.13	J	0.078	0.23
Copper	0.51	J	0.21	1.0
Lead	0.080	U	0.080	0.30
Nickel	0.38	J	0.20	0.60
Selenium	0.21	U	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	1.4	U	1.4	5.9
Zinc	2.6	U	2.6	10
Thallium	0.10	U	0.10	0.30

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-9S-06-09**

Lab Sample ID: 680-48140-3
Client Matrix: Water

Date Sampled: 06/11/2009 1035
Date Received: 06/12/2009 0914

6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020
Preparation: 3030C
Dilution: 1.0
Date Analyzed: 06/22/2009 1616
Date Prepared: 06/12/2009 1708

Analysis Batch: 680-141125
Prep Batch: 680-140316

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	0.46	J	0.40	1.2
Barium	28		0.15	1.0
Beryllium	0.070	U	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	1.0		0.16	1.0
Cobalt	0.13	J	0.078	0.23
Copper	0.83	J	0.21	1.0
Lead	0.080	U	0.080	0.30
Nickel	1.2		0.20	0.60
Selenium	0.21	U	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	1.4	U	1.4	5.9
Zinc	5.2	J	2.6	10
Thallium	0.10	U	0.10	0.30

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-DUP-1**

Lab Sample ID: 680-48140-4FD
Client Matrix: Water

Date Sampled: 06/11/2009 0000
Date Received: 06/12/2009 0914

6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020
Preparation: 3030C
Dilution: 1.0
Date Analyzed: 06/22/2009 1649
Date Prepared: 06/12/2009 1708

Analysis Batch: 680-141125
Prep Batch: 680-140316

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	0.51	J	0.40	1.2
Barium	41		0.15	1.0
Beryllium	0.070	U	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	0.33	J	0.16	1.0
Cobalt	0.41		0.078	0.23
Copper	0.83	J	0.21	1.0
Lead	0.093	J	0.080	0.30
Nickel	0.63		0.20	0.60
Selenium	0.50	J	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	1.4	U	1.4	5.9
Zinc	11		2.6	10
Thallium	0.13	J	0.10	0.30

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-9D-06-09**

Lab Sample ID: 680-48140-5
Client Matrix: Water

Date Sampled: 06/11/2009 1240
Date Received: 06/12/2009 0914

6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020
Preparation: 3030C
Dilution: 1.0
Date Analyzed: 06/22/2009 1656
Date Prepared: 06/12/2009 1708

Analysis Batch: 680-141125
Prep Batch: 680-140316

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	2.1		0.40	1.2
Barium	3.1		0.15	1.0
Beryllium	0.070	U	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	1.0		0.16	1.0
Cobalt	0.078	U	0.078	0.23
Copper	0.69	J	0.21	1.0
Lead	0.71		0.080	0.30
Nickel	0.55	J	0.20	0.60
Selenium	0.21	U	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	2.5	J	1.4	5.9
Zinc	3.5	J	2.6	10
Thallium	0.10	U	0.10	0.30

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-8-06-09**

Lab Sample ID: 680-48140-6
Client Matrix: Water

Date Sampled: 06/11/2009 0920
Date Received: 06/12/2009 0914

6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020
Preparation: 3030C
Dilution: 1.0
Date Analyzed: 06/22/2009 1716
Date Prepared: 06/12/2009 1708

Analysis Batch: 680-141125
Prep Batch: 680-140316

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	0.49	J	0.40	1.2
Barium	40		0.15	1.0
Beryllium	0.070	U	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	0.28	J	0.16	1.0
Cobalt	0.47		0.078	0.23
Copper	0.75	J	0.21	1.0
Lead	0.080	U	0.080	0.30
Nickel	0.61		0.20	0.60
Selenium	0.64		0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	1.4	U	1.4	5.9
Zinc	8.2	J	2.6	10
Thallium	0.10	U	0.10	0.30

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Client Sample ID: **GW-LMW-16-06-09**

Lab Sample ID: 680-48140-7
Client Matrix: Water

Date Sampled: 06/11/2009 1540
Date Received: 06/12/2009 0914

6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020
Preparation: 3030C
Dilution: 1.0
Date Analyzed: 06/22/2009 1723
Date Prepared: 06/12/2009 1708

Analysis Batch: 680-141125
Prep Batch: 680-140316

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	0.56	J	0.40	1.2
Barium	14		0.15	1.0
Beryllium	0.070	U	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	0.83	J	0.16	1.0
Cobalt	0.078	U	0.078	0.23
Copper	0.36	J	0.21	1.0
Lead	0.080	U	0.080	0.30
Nickel	0.72		0.20	0.60
Selenium	0.21	U	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	1.4	U	1.4	5.9
Zinc	2.6	U	2.6	10
Thallium	0.10	U	0.10	0.30

DATA REPORTING QUALIFIERS

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Lab Section	Qualifier	Description
GC/MS VOA		
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	U	Undetected at the Limit of Detection.
Metals		
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	U	Undetected at the Limit of Detection.

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Method Blank - Batch: 680-140585

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-140585/6
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/17/2009 1226
Date Prepared: 06/17/2009 1226

Analysis Batch: 680-140585
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq175.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Method Blank - Batch: 680-140585

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-140585/6
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/17/2009 1226
Date Prepared: 06/17/2009 1226

Analysis Batch: 680-140585
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq175.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	90	75 - 120
Dibromofluoromethane	102	75 - 121
Toluene-d8 (Surr)	100	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-140585

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID: LCS 680-140585/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/17/2009 1120
Date Prepared: 06/17/2009 1120

Analysis Batch: 680-140585
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq172.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

LCSD Lab Sample ID: LCSD 680-140585/5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/17/2009 1142
Date Prepared: 06/17/2009 1142

Analysis Batch: 680-140585
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq173.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,1,1,2-Tetrachloroethane	100	99	81 - 128	2	30		
1,1,1-Trichloroethane	98	98	76 - 127	1	30		
1,1,2,2-Tetrachloroethane	97	92	69 - 129	5	30		
1,1,2-Trichloroethane	101	95	75 - 121	6	30		
1,1-Dichloroethane	98	102	74 - 127	5	30		
1,1-Dichloroethene	99	105	62 - 141	6	30		
1,2,3-Trichloropropane	90	85	70 - 130	6	30		
1,2-Dibromo-3-Chloropropane	90	87	49 - 140	3	30		
1,2-Dichlorobenzene	92	89	79 - 124	3	30		
1,2-Dichloroethane	99	94	66 - 132	5	30		
1,2-Dichloropropane	100	97	73 - 124	3	30		
1,4-Dichlorobenzene	92	90	81 - 122	3	30		
2-Butanone (MEK)	85	84	33 - 157	2	30		
2-Hexanone	87	85	34 - 161	2	30		
4-Methyl-2-pentanone (MIBK)	90	85	40 - 151	6	30		
Acetone	88	86	17 - 175	2	50		
Benzene	101	98	77 - 119	3	30		
Bromoform	103	100	62 - 133	2	30		
Bromomethane	126	138	12 - 184	9	50		
Carbon disulfide	101	108	55 - 131	6	30		
Carbon tetrachloride	105	109	71 - 135	3	30		
Chlorobenzene	93	90	85 - 116	3	30		
Chlorobromomethane	107	108	10 - 150	1	30		
Chlorodibromomethane	100	98	75 - 133	2	30		
Chloroethane	93	101	40 - 165	9	50		
Chloroform	99	101	82 - 120	1	30		
Chloromethane	101	104	48 - 142	3	50		
cis-1,2-Dichloroethene	100	103	69 - 134	3	30		
cis-1,3-Dichloropropene	103	98	76 - 126	5	30		
Dibromomethane	99	95	78 - 119	4	30		
Dichlorobromomethane	104	100	78 - 127	4	30		
Ethylbenzene	93	93	86 - 116	1	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-140585

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID: LCS 680-140585/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/17/2009 1120
Date Prepared: 06/17/2009 1120

Analysis Batch: 680-140585
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq172.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

LCSD Lab Sample ID: LCSD 680-140585/5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/17/2009 1142
Date Prepared: 06/17/2009 1142

Analysis Batch: 680-140585
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq173.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ethylene Dibromide	100	94	80 - 121	6	30		
Methylene Chloride	108	111	70 - 125	3	30		
Styrene	95	93	82 - 122	1	30		
Tetrachloroethene	89	91	76 - 126	3	30		
Toluene	99	96	81 - 117	2	30		
trans-1,2-Dichloroethene	100	105	72 - 131	5	30		
trans-1,3-Dichloropropene	104	100	73 - 128	5	30		
Trichloroethene	98	96	84 - 115	2	30		
Trichlorofluoromethane	98	105	58 - 149	7	50		
Vinyl acetate	105	102	10 - 217	3	30		
Vinyl chloride	100	106	59 - 144	6	50		
Xylenes, Total	94	94	84 - 118	0	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	94	92	75 - 120
Dibromofluoromethane	97	98	75 - 121
Toluene-d8 (Surr)	100	97	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Method Blank - Batch: 680-140763

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-140763/6
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1344
Date Prepared: 06/18/2009 1344

Analysis Batch: 680-140763
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq193.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Method Blank - Batch: 680-140763

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-140763/6
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1344
Date Prepared: 06/18/2009 1344

Analysis Batch: 680-140763
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq193.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	89	75 - 120
Dibromofluoromethane	102	75 - 121
Toluene-d8 (Surr)	102	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-140763

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID: LCS 680-140763/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1141
Date Prepared: 06/18/2009 1141

Analysis Batch: 680-140763
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq185.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

LCSD Lab Sample ID: LCSD 680-140763/5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1215
Date Prepared: 06/18/2009 1215

Analysis Batch: 680-140763
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq187.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,1,1,2-Tetrachloroethane	103	102	81 - 128	1	30		
1,1,1-Trichloroethane	102	101	76 - 127	1	30		
1,1,2,2-Tetrachloroethane	93	96	69 - 129	2	30		
1,1,2-Trichloroethane	101	101	75 - 121	0	30		
1,1-Dichloroethane	101	101	74 - 127	0	30		
1,1-Dichloroethene	98	100	62 - 141	2	30		
1,2,3-Trichloropropane	86	89	70 - 130	3	30		
1,2-Dibromo-3-Chloropropane	93	95	49 - 140	1	30		
1,2-Dichlorobenzene	86	89	79 - 124	3	30		
1,2-Dichloroethane	97	98	66 - 132	1	30		
1,2-Dichloropropane	99	101	73 - 124	2	30		
1,4-Dichlorobenzene	87	87	81 - 122	0	30		
2-Butanone (MEK)	86	90	33 - 157	5	30		
2-Hexanone	84	87	34 - 161	3	30		
4-Methyl-2-pentanone (MIBK)	89	92	40 - 151	3	30		
Acetone	87	92	17 - 175	6	50		
Benzene	101	100	77 - 119	1	30		
Bromoform	104	107	62 - 133	2	30		
Bromomethane	130	130	12 - 184	0	50		
Carbon disulfide	100	99	55 - 131	1	30		
Carbon tetrachloride	112	110	71 - 135	2	30		
Chlorobenzene	91	91	85 - 116	1	30		
Chlorobromomethane	108	95	10 - 150	13	30		
Chlorodibromomethane	104	103	75 - 133	1	30		
Chloroethane	100	93	40 - 165	7	50		
Chloroform	99	101	82 - 120	2	30		
Chloromethane	103	107	48 - 142	4	50		
cis-1,2-Dichloroethene	98	101	69 - 134	2	30		
cis-1,3-Dichloropropene	104	106	76 - 126	2	30		
Dibromomethane	99	99	78 - 119	0	30		
Dichlorobromomethane	106	107	78 - 127	1	30		
Ethylbenzene	93	93	86 - 116	0	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-140763

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID: LCS 680-140763/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1141
Date Prepared: 06/18/2009 1141

Analysis Batch: 680-140763
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq185.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

LCSD Lab Sample ID: LCSD 680-140763/5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1215
Date Prepared: 06/18/2009 1215

Analysis Batch: 680-140763
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq187.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ethylene Dibromide	99	100	80 - 121	1	30		
Methylene Chloride	111	112	70 - 125	1	30		
Styrene	93	95	82 - 122	2	30		
Tetrachloroethene	89	87	76 - 126	2	30		
Toluene	98	98	81 - 117	1	30		
trans-1,2-Dichloroethene	102	101	72 - 131	1	30		
trans-1,3-Dichloropropene	105	106	73 - 128	0	30		
Trichloroethene	96	99	84 - 115	3	30		
Trichlorofluoromethane	100	99	58 - 149	0	50		
Vinyl acetate	100	100	10 - 217	0	30		
Vinyl chloride	101	104	59 - 144	3	50		
Xylenes, Total	92	93	84 - 118	1	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	91	92	75 - 120
Dibromofluoromethane	97	100	75 - 121
Toluene-d8 (Surr)	102	100	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Method Blank - Batch: 680-140840

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-140840/6
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/19/2009 1200
Date Prepared: 06/19/2009 1200

Analysis Batch: 680-140840
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq207.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Method Blank - Batch: 680-140840

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-140840/6
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/19/2009 1200
Date Prepared: 06/19/2009 1200

Analysis Batch: 680-140840
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq207.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	89	75 - 120
Dibromofluoromethane	99	75 - 121
Toluene-d8 (Surr)	101	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-140840

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID: LCS 680-140840/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/19/2009 1001
Date Prepared: 06/19/2009 1001

Analysis Batch: 680-140840
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq199.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

LCSD Lab Sample ID: LCSD 680-140840/5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/19/2009 1031
Date Prepared: 06/19/2009 1031

Analysis Batch: 680-140840
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq201.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,1,1,2-Tetrachloroethane	111	106	81 - 128	5	30		
1,1,1-Trichloroethane	109	108	76 - 127	1	30		
1,1,2,2-Tetrachloroethane	98	97	69 - 129	1	30		
1,1,2-Trichloroethane	105	109	75 - 121	4	30		
1,1-Dichloroethane	99	99	74 - 127	0	30		
1,1-Dichloroethene	102	97	62 - 141	5	30		
1,2,3-Trichloropropane	92	87	70 - 130	5	30		
1,2-Dibromo-3-Chloropropane	101	100	49 - 140	1	30		
1,2-Dichlorobenzene	88	85	79 - 124	3	30		
1,2-Dichloroethane	106	106	66 - 132	0	30		
1,2-Dichloropropane	106	109	73 - 124	3	30		
1,4-Dichlorobenzene	89	86	81 - 122	4	30		
2-Butanone (MEK)	86	89	33 - 157	3	30		
2-Hexanone	89	90	34 - 161	1	30		
4-Methyl-2-pentanone (MIBK)	95	98	40 - 151	3	30		
Acetone	90	88	17 - 175	2	50		
Benzene	107	106	77 - 119	1	30		
Bromoform	121	116	62 - 133	4	30		
Bromomethane	136	133	12 - 184	2	50		
Carbon disulfide	99	98	55 - 131	1	30		
Carbon tetrachloride	133	125	71 - 135	6	30		
Chlorobenzene	94	91	85 - 116	4	30		
Chlorobromomethane	95	97	10 - 150	2	30		
Chlorodibromomethane	113	108	75 - 133	4	30		
Chloroethane	107	101	40 - 165	6	50		
Chloroform	101	100	82 - 120	1	30		
Chloromethane	102	99	48 - 142	2	50		
cis-1,2-Dichloroethene	99	99	69 - 134	0	30		
cis-1,3-Dichloropropene	110	111	76 - 126	1	30		
Dibromomethane	104	105	78 - 119	1	30		
Dichlorobromomethane	116	118	78 - 127	2	30		
Ethylbenzene	95	93	86 - 116	2	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-140840

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID: LCS 680-140840/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/19/2009 1001
Date Prepared: 06/19/2009 1001

Analysis Batch: 680-140840
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq199.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

LCSD Lab Sample ID: LCSD 680-140840/5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/19/2009 1031
Date Prepared: 06/19/2009 1031

Analysis Batch: 680-140840
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq201.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ethylene Dibromide	103	105	80 - 121	2	30		
Methylene Chloride	109	107	70 - 125	2	30		
Styrene	97	92	82 - 122	6	30		
Tetrachloroethene	91	86	76 - 126	7	30		
Toluene	101	101	81 - 117	0	30		
trans-1,2-Dichloroethene	102	100	72 - 131	2	30		
trans-1,3-Dichloropropene	113	113	73 - 128	0	30		
Trichloroethene	103	100	84 - 115	3	30		
Trichlorofluoromethane	103	101	58 - 149	2	50		
Vinyl acetate	96	96	10 - 217	0	30		
Vinyl chloride	105	102	59 - 144	3	50		
Xylenes, Total	94	90	84 - 118	4	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	93	92	75 - 120
Dibromofluoromethane	99	96	75 - 121
Toluene-d8 (Surr)	105	106	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-140840

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	680-48140-3	Analysis Batch:	680-140840	Instrument ID:	GC/MS Volatiles - P
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	p0279.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Date Analyzed:	06/19/2009 1641			Final Weight/Volume:	5 mL
Date Prepared:	06/19/2009 1641				

MSD Lab Sample ID:	680-48140-3	Analysis Batch:	680-140840	Instrument ID:	GC/MS Volatiles - P
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	p0281.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Date Analyzed:	06/19/2009 1711			Final Weight/Volume:	5 mL
Date Prepared:	06/19/2009 1711				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1,1,2-Tetrachloroethane	94	101	81 - 128	7	30		
1,1,1-Trichloroethane	124	130	76 - 127	5	30		J
1,1,2,2-Tetrachloroethane	86	89	69 - 129	4	30		
1,1,2-Trichloroethane	98	102	75 - 121	4	30		
1,1-Dichloroethane	148	154	74 - 127	4	30	J	J
1,1-Dichloroethene	114	116	62 - 141	1	30		
1,2,3-Trichloropropane	84	87	70 - 130	4	30		
1,2-Dibromo-3-Chloropropane	100	102	49 - 140	2	30		
1,2-Dichlorobenzene	85	89	79 - 124	4	30		
1,2-Dichloroethane	99	103	66 - 132	4	30		
1,2-Dichloropropane	103	104	73 - 124	1	30		
1,4-Dichlorobenzene	85	89	81 - 122	5	30		
2-Butanone (MEK)	84	90	33 - 157	7	30		
2-Hexanone	86	90	34 - 161	4	30		
4-Methyl-2-pentanone (MIBK)	93	95	40 - 151	2	30		
Acetone	97	104	17 - 175	7	50		
Benzene	108	112	77 - 119	4	30		
Bromoform	95	101	62 - 133	6	30		
Bromomethane	121	130	12 - 184	8	50		
Carbon disulfide	132	140	55 - 131	6	30	J	J
Carbon tetrachloride	120	127	71 - 135	6	30		
Chlorobenzene	92	96	85 - 116	4	30		
Chlorobromomethane	104	107	10 - 150	3	30		
Chlorodibromomethane	94	98	75 - 133	4	30		
Chloroethane	104	104	40 - 165	1	50		
Chloroform	106	109	82 - 120	4	30		
Chloromethane	96	101	48 - 142	5	50		
cis-1,2-Dichloroethene	106	111	69 - 134	4	30		
cis-1,3-Dichloropropene	87	91	76 - 126	4	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-140840

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	680-48140-3	Analysis Batch:	680-140840	Instrument ID:	GC/MS Volatiles - P
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	p0279.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Date Analyzed:	06/19/2009 1641			Final Weight/Volume:	5 mL
Date Prepared:	06/19/2009 1641				

MSD Lab Sample ID:	680-48140-3	Analysis Batch:	680-140840	Instrument ID:	GC/MS Volatiles - P
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	p0281.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Date Analyzed:	06/19/2009 1711			Final Weight/Volume:	5 mL
Date Prepared:	06/19/2009 1711				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Dibromomethane	100	106	78 - 119	6	30		
Dichlorobromomethane	102	105	78 - 127	3	30		
Ethylbenzene	98	102	86 - 116	4	30		
Ethylene Dibromide	93	95	80 - 121	2	30		
Methylene Chloride	117	124	70 - 125	6	30		
Styrene	94	97	82 - 122	3	30		
Tetrachloroethene	90	94	76 - 126	4	30		
Toluene	103	106	81 - 117	3	30		
trans-1,2-Dichloroethene	105	111	72 - 131	5	30		
trans-1,3-Dichloropropene	85	89	73 - 128	5	30		
Trichloroethene	103	104	84 - 115	0	30		
Trichlorofluoromethane	105	108	58 - 149	3	50		
Vinyl acetate	65	61	10 - 217	7	30		
Vinyl chloride	104	109	59 - 144	5	50		
Xylenes, Total	92	97	84 - 118	5	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
4-Bromofluorobenzene	91	91	75 - 120
Dibromofluoromethane	96	100	75 - 121
Toluene-d8 (Surr)	103	105	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Method Blank - Batch: 680-140316

Method: 6020
Preparation: 3030C

Lab Sample ID: MB 680-140316/9-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/22/2009 1555
Date Prepared: 06/12/2009 1708

Analysis Batch: 680-141125
Prep Batch: 680-140316
Units: ug/L

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	0.40	U	0.40	1.2
Barium	0.15	U	0.15	1.0
Beryllium	0.070	U	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	0.16	U	0.16	1.0
Cobalt	0.078	U	0.078	0.23
Copper	0.21	U	0.21	1.0
Lead	0.080	U	0.080	0.30
Nickel	0.20	U	0.20	0.60
Selenium	0.21	U	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	1.4	U	1.4	5.9
Zinc	2.6	U	2.6	10
Thallium	0.10	U	0.10	0.30

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Lab Control Sample - Batch: 680-140316

Method: 6020
Preparation: 3030C

Lab Sample ID: LCS 680-140316/10-A
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 06/22/2009 1602
Date Prepared: 06/12/2009 1708

Analysis Batch: 680-141125
Prep Batch: 680-140316
Units: ug/L

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	50.0	50.2	100	75 - 125	
Arsenic	100	106	106	75 - 125	
Barium	100	108	108	75 - 125	
Beryllium	50.0	52.8	106	75 - 125	
Cadmium	50.0	52.7	105	75 - 125	
Chromium	100	107	107	75 - 125	
Cobalt	50.0	48.9	98	75 - 125	
Copper	100	110	110	75 - 125	
Lead	50.0	50.3	101	75 - 125	
Nickel	100	109	109	75 - 125	
Selenium	100	108	108	75 - 125	
Silver	50.0	50.4	101	75 - 125	
Vanadium	100	107	107	75 - 125	
Zinc	100	108	108	75 - 125	
Thallium	40.0	42.6	107	75 - 125	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48140-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-140316

Method: 6020
Preparation: 3030C

MS Lab Sample ID:	680-48140-3	Analysis Batch: 680-141125	Instrument ID: ICP MS - A
Client Matrix:	Water	Prep Batch: 680-140316	Lab File ID: N/A
Dilution:	5.0		Initial Weight/Volume: 50 mL
Date Analyzed:	06/22/2009 1636		Final Weight/Volume: 50 mL
Date Prepared:	06/12/2009 1708		

MSD Lab Sample ID:	680-48140-3	Analysis Batch: 680-141125	Instrument ID: ICP MS - A
Client Matrix:	Water	Prep Batch: 680-140316	Lab File ID: N/A
Dilution:	5.0		Initial Weight/Volume: 50 mL
Date Analyzed:	06/22/2009 1642		Final Weight/Volume: 50 mL
Date Prepared:	06/12/2009 1708		

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Antimony	98	99	75 - 125	0	20		
Arsenic	101	105	75 - 125	4	20		
Barium	106	107	75 - 125	1	20		
Beryllium	103	103	75 - 125	1	20		
Cadmium	101	104	75 - 125	3	20		
Chromium	103	105	75 - 125	2	20		
Cobalt	94	95	75 - 125	2	20		
Copper	104	107	75 - 125	3	20		
Lead	98	98	75 - 125	0	20		
Nickel	104	106	75 - 125	2	20		
Selenium	103	103	75 - 125	0	20		
Silver	97	98	75 - 125	1	20		
Vanadium	104	106	75 - 125	2	20		
Zinc	101	104	75 - 125	3	20		
Thallium	104	104	75 - 125	0	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Page: 1 of 2
Project #:
GEL Quote #:
COC Number (1):
PO Number:

GEL Chain of Custody and Analytical Request

GEL Work Order Number:

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: USACE Phone #: (912) 652 6083
Project/Site Name: Lamont LP Fax #:
Address: 100 W. Oglethorpe Ave, Savannah, GA, 31401
Collected by: Kevin Haborak Send Results To: Kevin Haborak

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Radioactive	TSCA Regulated	Total number of containers	App I VOCs HCl	App I metals 3020 HNO3									<-- Preservative Type (6)
GW-LMW-10-06-09	6/11/09	1640	G	N	GW			4	X	X									metals 3030C
TRIP BLANK	—	—	TB	N	GW			2	X										
GW-LMW-9S-06-09-MS	6/11/09	1035	MS	N	GW			4	X	X									
GW-LMW-9S-06-09-MSD	6/11/09	1035	MSD	N	GW			4	X	X									
GW-LMW-9S-06-09	6/11/09	1035	G	N	GW			4	X	X									
GW-LMW-Dup-1	6/11/09	0000	G	N	GW			4	X	X									
GW-LMW-9D-06-09	6/11/09	1240	G	N	GW			4	X	X									
GW-LMW-8-06-09	6/11/09	0928	G	N	GW			4	X	X									
GW-LMW-16-06-09	6/11/09	1548	G	N	GW			4	X	X									metals 3030C

Comments
Note: extra sample is required for sample specific QC

TAT Requested: Normal: X Rush: Specify: (Subject to Surcharge) Fax Results: Yes / No Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*
Email Results to Kevin.Haborak@USACE.ARMY.MIL

Sample Collection Time Zone: Eastern Pacific Central Other Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1 [signature]	6/11/09	18:01	1 Bethia Daughtry	6/12/09	8:00
2			2		
			3		

Sample Shipping and Delivery Details

GEL PM: Terry 1080-481140
Method of Shipment: FedEx Date Shipped: 6/11/09
Airbill #:
Airbill #: TEMPERATURE 1.8

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

Chain of Custody Number = Client Determined
QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.
Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).
(6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

WHITE = LABORATORY YELLOW = FILE PINK = CLIENT

06/29/2009

Page: 2 of 2
Project #:
GEL Quote #:
COC Number (1):
PO Number:

GEL Chain of Custody and Analytical Request

GEL Work Order Number:

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: USACE
Phone #: (912) 652 6083
Project/Site Name: Lamont LF
Fax #:
Address: 100 W Oglethorpe Ave, Savannah, GA, 31401
Collected by: Kevin Haborak
Send Results To: Kevin Haborak

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	App I VOC HCl	<-- Preservative Type (6)	Comments
GW-LMW-15R-06-09	6/9/09	0940	G	N	GW		X	3	X		Note: extra sample is required for sample specific QC
GW-LMW-14R-06-09	6/10/9	0925	G	N	GW		X	3	X		
GW-LMW-9-06-09	6/10/9	1645	G	N	GW		X	3	X		

TAT Requested: Normal: X Rush: Specify: (Subject to Surcharge)
Fax Results: Yes / No
Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*
Email Results to Kevin.Haborak@USACE.ARMY.MIL

Sample Collection Time Zone: Eastern / Central / Mountain / Pacific / Other

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1 [signature]	6/11/09	18:01	1 Beth A Daughtry	6/12/9	0914
2			2		
3			3		

Sample Shipping and Delivery Details

GEL PM: Terry
Method of Shipment: FedEx
Date Shipped: 6/11/09
Airbill #: 680-4814C
Airbill #:
TEMPERATURE: 1.8

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

Chain of Custody Number - Client Determined
QC Codes: N - Normal Sample, TB - Trip Blank, FD - Field Duplicate, EB - Equipment Blank, MS - Matrix Spike Sample, MSD - Matrix Spike Duplicate Sample, G - Grab, C - Composite
Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.
Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, SO=Soil, SD=Sediment, SL - Sludge, SS -Solid Waste, O=Oil, F -Filter, P -Wipe, U-Urine, F=Fecal, N=Nasal
Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).
6.) Preservative Type: HA - Hydrochloric Acid, NI - Nitric Acid, SH - Sodium Hydroxide, SA - Sulfuric Acid, AA - Ascorbic Acid, HX - Hexane, ST - Sodium Thiosulfate. If no preservative is added - leave field blank

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

ANALYTICAL REPORT

Job Number: 680-48155-1

Job Description: Lamont Landfill

For:
U.S. Army Corps of Engineers
PO BOX 889
Savannah, GA 31402-0889

Attention: Mr. Kevin Haborak

Approved for release.
Terry Hornsby
Project Manager I
6/29/2009 4:02 PM

Terry Hornsby
Project Manager I
terry.hornsby@testamericainc.com
06/29/2009

cc: Mr. Judson Smith

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. This report may not be reproduced, except in full, without the written approval of the laboratory. Questions should be directed to the person who signed this report.

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TestAmerica Laboratories, Inc.
TestAmerica Savannah 5102 LaRoche Avenue, Savannah, GA 31404
Tel (912) 354-7858 Fax (912) 352-0165 www.testamericainc.com

Job Narrative
680-J48155-1

Receipt
The Trip Blank was listed on the Chain-of-Custody (COC); however, no sample volume was received.

All other samples were received in good condition within temperature requirements.

GC/MS VOA
No analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

VOA Prep
No analytical or quality issues were noted.

METHOD / ANALYST SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Method	Analyst	Analyst ID
SW846 8260B	Lui, Chung	CL
SW846 6020	Boyuk, Brian	BB

SAMPLE SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-48155-1	GW-LMW-6-06-09	Water	06/12/2009 0920	06/13/2009 1035
680-48155-2	GW-LMW-3-06-09	Water	06/12/2009 1235	06/13/2009 1035
680-48155-3	GW-LMW-3S-06-09	Water	06/12/2009 1330	06/13/2009 1035
680-48155-4	GW-LMW-7-06-09	Water	06/12/2009 1550	06/13/2009 1035
680-48155-5FB	GW-LMW-Blank	Water	06/12/2009 1555	06/13/2009 1035

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Client Sample ID: **GW-LMW-6-06-09**

Lab Sample ID: 680-48155-1
Client Matrix: Water

Date Sampled: 06/12/2009 0920
Date Received: 06/13/2009 1035

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 06/18/2009 1557
Date Prepared: 06/18/2009 1557

Analysis Batch: 680-140772

Instrument ID: GC/MS Volatiles - P C2
Lab File ID: p0238.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.95	J	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Client Sample ID: **GW-LMW-6-06-09**

Lab Sample ID: 680-48155-1
Client Matrix: Water

Date Sampled: 06/12/2009 0920
Date Received: 06/13/2009 1035

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 06/18/2009 1557
Date Prepared: 06/18/2009 1557

Analysis Batch: 680-140772

Instrument ID: GC/MS Volatiles - P C2
Lab File ID: p0238.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	94	75 - 120
Dibromofluoromethane	100	75 - 121
Toluene-d8 (Surr)	103	75 - 120

Client: U.S. Army Corps of Engineers | Job Number: 680-48155-1

Client Sample ID: **GW-LMW-3-06-09**

Lab Sample ID: 680-48155-2 | Date Sampled: 06/12/2009 1235
Client Matrix: Water | Date Received: 06/13/2009 1035

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B | Analysis Batch: 680-140772 | Instrument ID: GC/MS Volatiles - P C2
Preparation: 5030B | Lab File ID: p0240.d
Dilution: 1.0 | Initial Weight/Volume: 5 mL
Date Analyzed: 06/18/2009 1627 | Final Weight/Volume: 5 mL
Date Prepared: 06/18/2009 1627

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.33	J	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.84	J	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Client Sample ID: **GW-LMW-3-06-09**

Lab Sample ID: 680-48155-2

Client Matrix: Water

Date Sampled: 06/12/2009 1235

Date Received: 06/13/2009 1035

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2009 1627

Date Prepared: 06/18/2009 1627

Analysis Batch: 680-140772

Instrument ID: GC/MS Volatiles - P C2

Lab File ID: p0240.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	91	75 - 120
Dibromofluoromethane	101	75 - 121
Toluene-d8 (Surr)	102	75 - 120

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Client Sample ID: **GW-LMW-3S-06-09**

Lab Sample ID: 680-48155-3
Client Matrix: Water

Date Sampled: 06/12/2009 1330
Date Received: 06/13/2009 1035

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 06/18/2009 1657
Date Prepared: 06/18/2009 1657

Analysis Batch: 680-140772

Instrument ID: GC/MS Volatiles - P C2
Lab File ID: p0242.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	1.1		0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Client Sample ID: **GW-LMW-3S-06-09**

Lab Sample ID: 680-48155-3

Client Matrix: Water

Date Sampled: 06/12/2009 1330

Date Received: 06/13/2009 1035

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2009 1657

Date Prepared: 06/18/2009 1657

Analysis Batch: 680-140772

Instrument ID: GC/MS Volatiles - P C2

Lab File ID: p0242.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	91	75 - 120
Dibromofluoromethane	102	75 - 121
Toluene-d8 (Surr)	103	75 - 120

Client: U.S. Army Corps of Engineers | Job Number: 680-48155-1

Client Sample ID: **GW-LMW-7-06-09**

Lab Sample ID: 680-48155-4 | Date Sampled: 06/12/2009 1550
Client Matrix: Water | Date Received: 06/13/2009 1035

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B | Analysis Batch: 680-140772 | Instrument ID: GC/MS Volatiles - P C2
Preparation: 5030B | Lab File ID: p0244.d
Dilution: 1.0 | Initial Weight/Volume: 5 mL
Date Analyzed: 06/18/2009 1727 | Final Weight/Volume: 5 mL
Date Prepared: 06/18/2009 1727

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.50	J	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Client Sample ID: **GW-LMW-7-06-09**

Lab Sample ID: 680-48155-4

Client Matrix: Water

Date Sampled: 06/12/2009 1550

Date Received: 06/13/2009 1035

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2009 1727

Date Prepared: 06/18/2009 1727

Analysis Batch: 680-140772

Instrument ID: GC/MS Volatiles - P C2

Lab File ID: p0244.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	91	75 - 120
Dibromofluoromethane	100	75 - 121
Toluene-d8 (Surr)	103	75 - 120

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Client Sample ID: **GW-LMW-Blank**

Lab Sample ID: 680-48155-5FB

Client Matrix: Water

Date Sampled: 06/12/2009 1555

Date Received: 06/13/2009 1035

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2009 1612

Date Prepared: 06/18/2009 1612

Analysis Batch: 680-140763

Instrument ID: GC/MS Volatiles - P

Lab File ID: p0239.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Client Sample ID: **GW-LMW-Blank**

Lab Sample ID: 680-48155-5FB

Client Matrix: Water

Date Sampled: 06/12/2009 1555

Date Received: 06/13/2009 1035

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2009 1612

Date Prepared: 06/18/2009 1612

Analysis Batch: 680-140763

Instrument ID: GC/MS Volatiles - P

Lab File ID: p0239.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	89	75 - 120
Dibromofluoromethane	103	75 - 121
Toluene-d8 (Surr)	103	75 - 120

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Client Sample ID: **GW-LMW-6-06-09**

Lab Sample ID: 680-48155-1
Client Matrix: Water

Date Sampled: 06/12/2009 0920
Date Received: 06/13/2009 1035

6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020
Preparation: 3030C
Dilution: 1.0
Date Analyzed: 06/19/2009 0656
Date Prepared: 06/15/2009 0832

Analysis Batch: 680-140856
Prep Batch: 680-140365

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	0.65	J B	0.40	1.2
Barium	92		0.15	1.0
Beryllium	0.15	J	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	0.48	J	0.16	1.0
Cobalt	1.4		0.078	0.23
Copper	1.7		0.21	1.0
Lead	0.084	J	0.080	0.30
Nickel	2.2		0.20	0.60
Selenium	3.2		0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	1.4	U	1.4	5.9
Zinc	8.2	J B	2.6	10
Thallium	0.10	U	0.10	0.30

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Client Sample ID: **GW-LMW-3-06-09**

Lab Sample ID: 680-48155-2
Client Matrix: Water

Date Sampled: 06/12/2009 1235
Date Received: 06/13/2009 1035

6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020
Preparation: 3030C
Dilution: 1.0
Date Analyzed: 06/19/2009 0730
Date Prepared: 06/15/2009 0832

Analysis Batch: 680-140856
Prep Batch: 680-140365

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	0.42	J B	0.40	1.2
Barium	7.2		0.15	1.0
Beryllium	0.070	U	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	0.32	J	0.16	1.0
Cobalt	0.16	J	0.078	0.23
Copper	0.70	J	0.21	1.0
Lead	0.080	U	0.080	0.30
Nickel	0.54	J	0.20	0.60
Selenium	0.21	U	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	1.4	U	1.4	5.9
Zinc	7.3	J B	2.6	10
Thallium	0.10	U	0.10	0.30

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Client Sample ID: **GW-LMW-3S-06-09**

Lab Sample ID: 680-48155-3
Client Matrix: Water

Date Sampled: 06/12/2009 1330
Date Received: 06/13/2009 1035

6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020
Preparation: 3030C
Dilution: 1.0
Date Analyzed: 06/19/2009 0737
Date Prepared: 06/15/2009 0832

Analysis Batch: 680-140856
Prep Batch: 680-140365

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	0.73	J B	0.40	1.2
Barium	12		0.15	1.0
Beryllium	0.076	J	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	1.7		0.16	1.0
Cobalt	0.42		0.078	0.23
Copper	1.4		0.21	1.0
Lead	0.58		0.080	0.30
Nickel	2.6		0.20	0.60
Selenium	0.21	U	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	2.1	J	1.4	5.9
Zinc	18	B	2.6	10
Thallium	0.10	U	0.10	0.30

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Client Sample ID: **GW-LMW-7-06-09**

Lab Sample ID: 680-48155-4
Client Matrix: Water

Date Sampled: 06/12/2009 1550
Date Received: 06/13/2009 1035

6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020
Preparation: 3030C
Dilution: 1.0
Date Analyzed: 06/19/2009 0744
Date Prepared: 06/15/2009 0832

Analysis Batch: 680-140856
Prep Batch: 680-140365

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	1.1	J B	0.40	1.2
Barium	12		0.15	1.0
Beryllium	0.19	J	0.070	0.21
Cadmium	1.2		0.20	0.60
Chromium	5.8		0.16	1.0
Cobalt	0.63		0.078	0.23
Copper	4.0		0.21	1.0
Lead	0.88		0.080	0.30
Nickel	5.5		0.20	0.60
Selenium	0.21	U	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	2.9	J	1.4	5.9
Zinc	29	B	2.6	10
Thallium	0.10	U	0.10	0.30

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Client Sample ID: **GW-LMW-Blank**

Lab Sample ID: 680-48155-5FB
Client Matrix: Water

Date Sampled: 06/12/2009 1555
Date Received: 06/13/2009 1035

6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020
Preparation: 3030C
Dilution: 1.0
Date Analyzed: 06/19/2009 0804
Date Prepared: 06/15/2009 0832

Analysis Batch: 680-140856
Prep Batch: 680-140365

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	0.43	J B	0.40	1.2
Barium	0.15	U	0.15	1.0
Beryllium	0.070	U	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	0.23	J	0.16	1.0
Cobalt	0.078	U	0.078	0.23
Copper	0.53	J	0.21	1.0
Lead	0.080	U	0.080	0.30
Nickel	0.22	J	0.20	0.60
Selenium	0.21	U	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	1.4	U	1.4	5.9
Zinc	2.6	U	2.6	10
Thallium	0.10	U	0.10	0.30

DATA REPORTING QUALIFIERS

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Lab Section	Qualifier	Description
GC/MS VOA		
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	U	Undetected at the Limit of Detection.
Metals		
	B	Blank contamination: The analyte was detected above one-half the reporting limit in an associated blank.
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	U	Undetected at the Limit of Detection.

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Method Blank - Batch: 680-140763

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-140763/6
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1344
Date Prepared: 06/18/2009 1344

Analysis Batch: 680-140763
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq193.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Method Blank - Batch: 680-140763

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-140763/6
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1344
Date Prepared: 06/18/2009 1344

Analysis Batch: 680-140763
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq193.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	89	75 - 120
Dibromofluoromethane	102	75 - 121
Toluene-d8 (Surr)	102	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-140763

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID: LCS 680-140763/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1141
Date Prepared: 06/18/2009 1141

Analysis Batch: 680-140763
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq185.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

LCSD Lab Sample ID: LCSD 680-140763/5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1215
Date Prepared: 06/18/2009 1215

Analysis Batch: 680-140763
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq187.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,1,1,2-Tetrachloroethane	103	102	81 - 128	1	30		
1,1,1-Trichloroethane	102	101	76 - 127	1	30		
1,1,2,2-Tetrachloroethane	93	96	69 - 129	2	30		
1,1,2-Trichloroethane	101	101	75 - 121	0	30		
1,1-Dichloroethane	101	101	74 - 127	0	30		
1,1-Dichloroethene	98	100	62 - 141	2	30		
1,2,3-Trichloropropane	86	89	70 - 130	3	30		
1,2-Dibromo-3-Chloropropane	93	95	49 - 140	1	30		
1,2-Dichlorobenzene	86	89	79 - 124	3	30		
1,2-Dichloroethane	97	98	66 - 132	1	30		
1,2-Dichloropropane	99	101	73 - 124	2	30		
1,4-Dichlorobenzene	87	87	81 - 122	0	30		
2-Butanone (MEK)	86	90	33 - 157	5	30		
2-Hexanone	84	87	34 - 161	3	30		
4-Methyl-2-pentanone (MIBK)	89	92	40 - 151	3	30		
Acetone	87	92	17 - 175	6	50		
Benzene	101	100	77 - 119	1	30		
Bromoform	104	107	62 - 133	2	30		
Bromomethane	130	130	12 - 184	0	50		
Carbon disulfide	100	99	55 - 131	1	30		
Carbon tetrachloride	112	110	71 - 135	2	30		
Chlorobenzene	91	91	85 - 116	1	30		
Chlorobromomethane	108	95	10 - 150	13	30		
Chlorodibromomethane	104	103	75 - 133	1	30		
Chloroethane	100	93	40 - 165	7	50		
Chloroform	99	101	82 - 120	2	30		
Chloromethane	103	107	48 - 142	4	50		
cis-1,2-Dichloroethene	98	101	69 - 134	2	30		
cis-1,3-Dichloropropene	104	106	76 - 126	2	30		
Dibromomethane	99	99	78 - 119	0	30		
Dichlorobromomethane	106	107	78 - 127	1	30		
Ethylbenzene	93	93	86 - 116	0	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-140763

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID: LCS 680-140763/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1141
Date Prepared: 06/18/2009 1141

Analysis Batch: 680-140763
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq185.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

LCSD Lab Sample ID: LCSD 680-140763/5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1215
Date Prepared: 06/18/2009 1215

Analysis Batch: 680-140763
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq187.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ethylene Dibromide	99	100	80 - 121	1	30		
Methylene Chloride	111	112	70 - 125	1	30		
Styrene	93	95	82 - 122	2	30		
Tetrachloroethene	89	87	76 - 126	2	30		
Toluene	98	98	81 - 117	1	30		
trans-1,2-Dichloroethene	102	101	72 - 131	1	30		
trans-1,3-Dichloropropene	105	106	73 - 128	0	30		
Trichloroethene	96	99	84 - 115	3	30		
Trichlorofluoromethane	100	99	58 - 149	0	50		
Vinyl acetate	100	100	10 - 217	0	30		
Vinyl chloride	101	104	59 - 144	3	50		
Xylenes, Total	92	93	84 - 118	1	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	91	92	75 - 120
Dibromofluoromethane	97	100	75 - 121
Toluene-d8 (Surr)	102	100	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Method Blank - Batch: 680-140772

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-140772/6
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1358
Date Prepared: 06/18/2009 1358

Analysis Batch: 680-140772
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P C2
Lab File ID: pq194.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Method Blank - Batch: 680-140772

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-140772/6
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1358
Date Prepared: 06/18/2009 1358

Analysis Batch: 680-140772
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P C2
Lab File ID: pq194.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	91	75 - 120
Dibromofluoromethane	100	75 - 121
Toluene-d8 (Surr)	99	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-140772

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID: LCS 680-140772/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1156
Date Prepared: 06/18/2009 1156

Analysis Batch: 680-140772
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P C2
Lab File ID: pq186.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

LCSD Lab Sample ID: LCSD 680-140772/5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1230
Date Prepared: 06/18/2009 1230

Analysis Batch: 680-140772
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P C2
Lab File ID: pq188.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,1,1,2-Tetrachloroethane	102	103	81 - 128	1	30		
1,1,1-Trichloroethane	99	103	76 - 127	3	30		
1,1,2,2-Tetrachloroethane	92	94	69 - 129	2	30		
1,1,2-Trichloroethane	97	97	75 - 121	0	30		
1,1-Dichloroethane	108	106	74 - 127	2	30		
1,1-Dichloroethene	111	107	62 - 141	4	30		
1,2,3-Trichloropropane	87	88	70 - 130	0	30		
1,2-Dibromo-3-Chloropropane	79	84	49 - 140	6	30		
1,2-Dichlorobenzene	84	87	79 - 124	3	30		
1,2-Dichloroethane	92	92	66 - 132	0	30		
1,2-Dichloropropane	96	96	73 - 124	0	30		
1,4-Dichlorobenzene	86	88	81 - 122	3	30		
2-Butanone (MEK)	91	92	33 - 157	1	30		
2-Hexanone	87	88	34 - 161	1	30		
4-Methyl-2-pentanone (MIBK)	87	89	40 - 151	2	30		
Acetone	89	90	17 - 175	1	50		
Benzene	102	101	77 - 119	1	30		
Bromoform	99	100	62 - 133	1	30		
Bromomethane	93	115	12 - 184	21	50		
Carbon disulfide	109	109	55 - 131	0	30		
Carbon tetrachloride	112	112	71 - 135	0	30		
Chlorobenzene	91	93	85 - 116	2	30		
Chlorobromomethane	87	88	10 - 150	1	30		
Chlorodibromomethane	100	100	75 - 133	0	30		
Chloroethane	88	91	40 - 165	4	50		
Chloroform	103	104	82 - 120	2	30		
Chloromethane	86	108	48 - 142	23	50		
cis-1,2-Dichloroethene	106	104	69 - 134	2	30		
cis-1,3-Dichloropropene	101	100	76 - 126	1	30		
Dibromomethane	92	93	78 - 119	1	30		
Dichlorobromomethane	101	101	78 - 127	0	30		
Ethylbenzene	94	96	86 - 116	2	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-140772

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID: LCS 680-140772/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1156
Date Prepared: 06/18/2009 1156

Analysis Batch: 680-140772
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P C2
Lab File ID: pq186.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

LCSD Lab Sample ID: LCSD 680-140772/5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2009 1230
Date Prepared: 06/18/2009 1230

Analysis Batch: 680-140772
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P C2
Lab File ID: pq188.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ethylene Dibromide	94	94	80 - 121	0	30		
Methylene Chloride	105	105	70 - 125	0	30		
Styrene	93	94	82 - 122	1	30		
Tetrachloroethene	92	94	76 - 126	2	30		
Toluene	99	100	81 - 117	1	30		
trans-1,2-Dichloroethene	109	106	72 - 131	3	30		
trans-1,3-Dichloropropene	99	99	73 - 128	0	30		
Trichloroethene	96	97	84 - 115	1	30		
Trichlorofluoromethane	100	98	58 - 149	2	50		
Vinyl acetate	106	104	10 - 217	3	30		
Vinyl chloride	107	110	59 - 144	3	50		
Xylenes, Total	94	94	84 - 118	0	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	90	92	75 - 120
Dibromofluoromethane	102	100	75 - 121
Toluene-d8 (Surr)	98	99	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Method Blank - Batch: 680-140365

Method: 6020
Preparation: 3030C

Lab Sample ID: MB 680-140365/6-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/19/2009 0643
Date Prepared: 06/15/2009 0832

Analysis Batch: 680-140856
Prep Batch: 680-140365
Units: ug/L

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	0.40	J	0.40	1.2
Barium	0.15	U	0.15	1.0
Beryllium	0.070	U	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	0.16	U	0.16	1.0
Cobalt	0.078	U	0.078	0.23
Copper	0.21	U	0.21	1.0
Lead	0.080	U	0.080	0.30
Nickel	0.20	U	0.20	0.60
Selenium	0.21	U	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	1.4	U	1.4	5.9
Zinc	6.3	J	2.6	10
Thallium	0.10	U	0.10	0.30

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Lab Control Sample - Batch: 680-140365

Method: 6020
Preparation: 3030C

Lab Sample ID: LCS 680-140365/7-A
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 06/19/2009 0650
Date Prepared: 06/15/2009 0832

Analysis Batch: 680-140856
Prep Batch: 680-140365
Units: ug/L

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	50.0	49.8	100	75 - 125	
Arsenic	100	106	106	75 - 125	
Barium	100	108	108	75 - 125	
Beryllium	50.0	50.0	100	75 - 125	
Cadmium	50.0	52.2	104	75 - 125	
Chromium	100	101	101	75 - 125	
Cobalt	50.0	47.9	96	75 - 125	
Copper	100	104	104	75 - 125	
Lead	50.0	48.6	97	75 - 125	
Nickel	100	101	101	75 - 125	
Selenium	100	107	107	75 - 125	
Silver	50.0	50.5	101	75 - 125	
Vanadium	100	102	102	75 - 125	
Zinc	100	108	108	75 - 125	
Thallium	40.0	41.2	103	75 - 125	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48155-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-140365

Method: 6020
Preparation: 3030C

MS Lab Sample ID:	680-48155-1	Analysis Batch:	680-140856	Instrument ID:	ICP MS - A
Client Matrix:	Water	Prep Batch:	680-140365	Lab File ID:	N/A
Dilution:	5.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/19/2009 0717			Final Weight/Volume:	50 mL
Date Prepared:	06/15/2009 0832				

MSD Lab Sample ID:	680-48155-1	Analysis Batch:	680-140856	Instrument ID:	ICP MS - A
Client Matrix:	Water	Prep Batch:	680-140365	Lab File ID:	N/A
Dilution:	5.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/19/2009 0723			Final Weight/Volume:	50 mL
Date Prepared:	06/15/2009 0832				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Antimony	97	97	75 - 125	0	20		
Arsenic	100	101	75 - 125	0	20		
Barium	98	100	75 - 125	1	20		
Beryllium	97	95	75 - 125	2	20		
Cadmium	100	102	75 - 125	2	20		
Chromium	97	98	75 - 125	1	20		
Cobalt	91	92	75 - 125	1	20		
Copper	98	103	75 - 125	5	20		
Lead	90	91	75 - 125	1	20		
Nickel	98	99	75 - 125	0	20		
Selenium	102	102	75 - 125	0	20		
Silver	98	98	75 - 125	0	20		
Vanadium	99	100	75 - 125	1	20		
Zinc	103	101	75 - 125	2	20		
Thallium	93	95	75 - 125	2	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

TestAmerica
INCORPORATED

To assist us in using the proper analytical methods, is this work being conducted for regulatory purposes?
Compliance Monitoring _____

Client Name: USACE Client #: _____
Address: 100 W Oglethorpe Ave
City/State/Zip Code: Savannah GA 31401
Project Manager: Kevin Haborak
Telephone Number: (912) 652 6083 Fax: —
Sampler Name: (Print Name) Kevin Haborak
Sampler Signature: [signature]

Project Name: Lamont LF
Project #: _____
Site/Location ID: Fayetteville State: NC
Report To: Kevin Haborak
Invoice To: Judson Smith
Quote #: _____ PO#: _____

TAT
X Standard
__ Rush (surcharges may apply)

Date Needed: _____

Fax Results: Y (N)

SAMPLE ID	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix: SL - Sludge DW - Drinking Water GW - Groundwater S - Soil/Solid WW - Wastewater Specify Other	Preservation & # of Containers: HNO_3	HCl	NaOH	H_2SO_4	Methanol	None	Other (Specify)	Analyze For: Appt I metals 3020C	Appt I VOCs	QC Deliverables: None / Level 2 (Batch QC) / Level 3 / Level 4 / Other:	REMARKS
GW-LMW-6-06-09	6/12/09	0920	G	N	GW	1	3						X	X		3020C
GW-LMW-3-06-09	6/12/09	1235	G	N	GW	1	3						X	X		3020C
GW-LMW-35-06-09	6/12/09	1330	G	N	GW	1	3						X	X		3020C
GW-LMW-7-06-09	6/12/09	1550	G	N	GW	1	3						X	X		3020C
GW-LMW-Blank	6/12/09	1555	G	N	GW	1	3						X	X		3020C
TRIP BLANK	6/12/09	—	G	N	GW		3							X		

Special Instructions: Email Results to Kevin.Haborak@USACE.ARMY.MIL
Terry Hornsby is TA Project Manager 680-48155

Relinquished By:	Date: 6/12/09	Time: 1725	Received By: [signature]	Date: 6/13/09	Time: 1035
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

LABORATORY COMMENTS:
Init Lab Temp:
Rec Lab Temp:
Custody Seals: Y N N/A
Bottles Supplied by Test America: Y N
Method of Shipment:

TEMPERATURE 2.6

06/29/2009

ANALYTICAL REPORT

Job Number: 680-48180-2

Job Description: Lamont Landfill

For:
U.S. Army Corps of Engineers
PO BOX 889
Savannah, GA 31402-0889

Attention: Mr. Kevin Haborak

Approved for release.
Terry Hornsby
Project Manager I
6/25/2009 7:31 PM

Terry Hornsby
Project Manager I
terry.hornsby@testamericainc.com
06/25/2009

cc: Mr. Judson Smith

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. This report may not be reproduced, except in full, without the written approval of the laboratory. Questions should be directed to the person who signed this report.

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TestAmerica Laboratories, Inc.
TestAmerica Savannah 5102 LaRoche Avenue, Savannah, GA 31404
Tel (912) 354-7858 Fax (912) 352-0165 www.testamericainc.com

METHOD / ANALYST SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-48180-2

Method	Analyst	Analyst ID
SW846 8260B	Lanier, Carolyn	CL
SW846 6020	Boyuk, Brian	BB

SAMPLE SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-48180-2

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-48180-9	GW-LMW-4-06-09	Water	06/15/2009 1115	06/16/2009 0907
680-48180-10FD	GW-LMW-Dup-2	Water	06/15/2009 0000	06/16/2009 0907

Client: U.S. Army Corps of Engineers

Job Number: 680-48180-2

Client Sample ID: **GW-LMW-4-06-09**

Lab Sample ID: 680-48180-9

Client Matrix: Water

Date Sampled: 06/15/2009 1115

Date Received: 06/16/2009 0907

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/22/2009 1727

Date Prepared: 06/22/2009 1727

Analysis Batch: 680-141087

Instrument ID: GC/MS Volatiles - A

Lab File ID: a4147.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.56	J	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.82	J	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48180-2

Client Sample ID: **GW-LMW-4-06-09**

Lab Sample ID: 680-48180-9

Client Matrix: Water

Date Sampled: 06/15/2009 1115

Date Received: 06/16/2009 0907

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/22/2009 1727

Date Prepared: 06/22/2009 1727

Analysis Batch: 680-141087

Instrument ID: GC/MS Volatiles - A

Lab File ID: a4147.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	96	75 - 120
Dibromofluoromethane	98	75 - 121
Toluene-d8 (Surr)	98	75 - 120

Client: U.S. Army Corps of Engineers

Job Number: 680-48180-2

Client Sample ID: **GW-LMW-Dup-2**

Lab Sample ID: 680-48180-10FD

Client Matrix: Water

Date Sampled: 06/15/2009 0000

Date Received: 06/16/2009 0907

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/22/2009 1756

Date Prepared: 06/22/2009 1756

Analysis Batch: 680-141087

Instrument ID: GC/MS Volatiles - A

Lab File ID: a4149.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	3.0		0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-48180-2

Client Sample ID: **GW-LMW-Dup-2**

Lab Sample ID: 680-48180-10FD

Client Matrix: Water

Date Sampled: 06/15/2009 0000

Date Received: 06/16/2009 0907

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/22/2009 1756

Date Prepared: 06/22/2009 1756

Analysis Batch: 680-141087

Instrument ID: GC/MS Volatiles - A

Lab File ID: a4149.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	100	75 - 120
Dibromofluoromethane	96	75 - 121
Toluene-d8 (Surr)	100	75 - 120

Client: U.S. Army Corps of Engineers

Job Number: 680-48180-2

Client Sample ID: **GW-LMW-4-06-09**

Lab Sample ID: 680-48180-9
Client Matrix: Water

Date Sampled: 06/15/2009 1115
Date Received: 06/16/2009 0907

6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020
Preparation: 3030C
Dilution: 1.0
Date Analyzed: 06/22/2009 1529
Date Prepared: 06/16/2009 1453

Analysis Batch: 680-141124
Prep Batch: 680-140503

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	0.40	U	0.40	1.2
Barium	13		0.15	1.0
Beryllium	0.070	U	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	0.84	J	0.16	1.0
Cobalt	0.24		0.078	0.23
Copper	0.74	J	0.21	1.0
Lead	0.13	J	0.080	0.30
Nickel	0.79		0.20	0.60
Selenium	0.21	U	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	1.4	U	1.4	5.9
Zinc	6.7	J	2.6	10
Thallium	0.10	U	0.10	0.30

Client: U.S. Army Corps of Engineers

Job Number: 680-48180-2

Client Sample ID: **GW-LMW-Dup-2**

Lab Sample ID: 680-48180-10FD
Client Matrix: Water

Date Sampled: 06/15/2009 0000
Date Received: 06/16/2009 0907

6020 Inductively Coupled Plasma - Mass Spectrometry

Method: 6020
Preparation: 3030C
Dilution: 1.0
Date Analyzed: 06/22/2009 1535
Date Prepared: 06/16/2009 1453

Analysis Batch: 680-141124
Prep Batch: 680-140503

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	0.40	U	0.40	1.2
Barium	15		0.15	1.0
Beryllium	0.070	U	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	1.2		0.16	1.0
Cobalt	0.28		0.078	0.23
Copper	1.9		0.21	1.0
Lead	0.20	J	0.080	0.30
Nickel	3.0		0.20	0.60
Selenium	0.21	U	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	1.4	U	1.4	5.9
Zinc	820		2.6	10
Thallium	0.10	U	0.10	0.30

DATA REPORTING QUALIFIERS

Client: U.S. Army Corps of Engineers

Job Number: 680-48180-2

Lab Section	Qualifier	Description
GC/MS VOA		
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	U	Undetected at the Limit of Detection.
Metals		
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	U	Undetected at the Limit of Detection.

Client: U.S. Army Corps of Engineers

Job Number: 680-48180-2

Method Blank - Batch: 680-141087

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-141087/24
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/22/2009 1204
Date Prepared: 06/22/2009 1204

Analysis Batch: 680-141087
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - A
Lab File ID: aq523.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.5
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.2
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.3
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
1,2-Dichloropropane	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
2-Butanone (MEK)	1.0	U	1.0	10
2-Hexanone	1.0	U	1.0	10
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Bromoform	0.50	U	0.50	1.5
Bromomethane	0.80	U	0.80	2.4
Carbon disulfide	0.60	U	0.60	2.0
Carbon tetrachloride	0.50	U	0.50	1.5
Chlorobenzene	0.25	U	0.25	1.0
Chlorobromomethane	0.14	U	0.14	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloroform	0.14	U	0.14	1.0
Chloromethane	0.33	U	0.33	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
Dibromomethane	0.20	U	0.20	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Ethylbenzene	0.11	U	0.11	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
Iodomethane	1.0	U	1.0	5.0
Methylene Chloride	1.0	U	1.0	5.0
Styrene	0.11	U	0.11	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Toluene	0.33	U	0.33	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48180-2

Method Blank - Batch: 680-141087

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-141087/24
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/22/2009 1204
Date Prepared: 06/22/2009 1204

Analysis Batch: 680-141087
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - A
Lab File ID: aq523.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
Vinyl acetate	0.28	U	0.28	2.0
Vinyl chloride	0.18	U	0.18	1.0
Xylenes, Total	0.20	U	0.20	2.0

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	97	75 - 120
Dibromofluoromethane	99	75 - 121
Toluene-d8 (Surr)	101	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48180-2

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-141087

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-141087/21	Analysis Batch:	680-141087	Instrument ID:	GC/MS Volatiles - A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	aq515.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/22/2009 1007			Final Weight/Volume:	5 mL
Date Prepared:	06/22/2009 1007				

LCSD Lab Sample ID:	LCSD 680-141087/22	Analysis Batch:	680-141087	Instrument ID:	GC/MS Volatiles - A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	aq517.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/22/2009 1036			Final Weight/Volume:	5 mL
Date Prepared:	06/22/2009 1036				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,1,1,2-Tetrachloroethane	112	116	81 - 128	4	30		
1,1,1-Trichloroethane	98	110	76 - 127	11	30		
1,1,2,2-Tetrachloroethane	97	96	69 - 129	1	30		
1,1,2-Trichloroethane	89	91	75 - 121	2	30		
1,1-Dichloroethane	85	93	74 - 127	9	30		
1,1-Dichloroethene	98	108	62 - 141	10	30		
1,2,3-Trichloropropane	93	98	70 - 130	5	30		
1,2-Dibromo-3-Chloropropane	117	124	49 - 140	6	30		
1,2-Dichlorobenzene	107	108	79 - 124	1	30		
1,2-Dichloroethane	95	98	66 - 132	3	30		
1,2-Dichloropropane	90	97	73 - 124	7	30		
1,4-Dichlorobenzene	104	104	81 - 122	0	30		
2-Butanone (MEK)	79	87	33 - 157	9	30		
2-Hexanone	100	101	34 - 161	2	30		
4-Methyl-2-pentanone (MIBK)	92	93	40 - 151	0	30		
Acetone	97	102	17 - 175	5	50		
Benzene	87	91	77 - 119	5	30		
Bromoform	112	111	62 - 133	0	30		
Bromomethane	89	99	12 - 184	11	50		
Carbon disulfide	95	104	55 - 131	9	30		
Carbon tetrachloride	107	115	71 - 135	7	30		
Chlorobenzene	102	104	85 - 116	2	30		
Chlorobromomethane	90	89	10 - 150	2	30		
Chlorodibromomethane	111	112	75 - 133	1	30		
Chloroethane	86	97	40 - 165	12	50		
Chloroform	93	99	82 - 120	7	30		
Chloromethane	79	77	48 - 142	2	50		
cis-1,2-Dichloroethene	92	99	69 - 134	7	30		
cis-1,3-Dichloropropene	100	103	76 - 126	3	30		
Dibromomethane	88	93	78 - 119	6	30		
Dichlorobromomethane	101	107	78 - 127	6	30		
Ethylbenzene	98	106	86 - 116	8	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48180-2

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-141087

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-141087/21	Analysis Batch:	680-141087	Instrument ID:	GC/MS Volatiles - A
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	aq515.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/22/2009 1007			Final Weight/Volume:	5 mL
Date Prepared:	06/22/2009 1007				

LCSD Lab Sample ID:	LCSD 680-141087/22	Analysis Batch:	680-141087	Instrument ID:	GC/MS Volatiles - A
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	aq517.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/22/2009 1036			Final Weight/Volume:	5 mL
Date Prepared:	06/22/2009 1036				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ethylene Dibromide	98	100	80 - 121	1	30		
Methylene Chloride	99	104	70 - 125	5	30		
Styrene	105	107	82 - 122	2	30		
Tetrachloroethene	100	112	76 - 126	12	30		
Toluene	95	97	81 - 117	3	30		
trans-1,2-Dichloroethene	99	109	72 - 131	10	30		
trans-1,3-Dichloropropene	103	106	73 - 128	2	30		
Trichloroethene	94	102	84 - 115	7	30		
Trichlorofluoromethane	88	98	58 - 149	10	50		
Vinyl acetate	96	101	10 - 217	5	30		
Vinyl chloride	82	90	59 - 144	8	50		
Xylenes, Total	103	106	84 - 118	3	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	104	104	75 - 120
Dibromofluoromethane	99	104	75 - 121
Toluene-d8 (Surr)	94	98	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48180-2

Method Blank - Batch: 680-140503

Method: 6020
Preparation: 3030C

Lab Sample ID:	MB 680-140503/10-A	Analysis Batch:	680-141124	Instrument ID:	ICP MS - A
Client Matrix:	Water	Prep Batch:	680-140503	Lab File ID:	N/A
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	50 mL
Date Analyzed:	06/21/2009 1800			Final Weight/Volume:	50 mL
Date Prepared:	06/16/2009 1453				

Analyte	Result	Qual	MDL	RL
Antimony	0.99	U	0.99	3.0
Arsenic	0.40	U	0.40	1.2
Barium	0.15	U	0.15	1.0
Beryllium	0.070	U	0.070	0.21
Cadmium	0.20	U	0.20	0.60
Chromium	0.16	U	0.16	1.0
Cobalt	0.078	U	0.078	0.23
Copper	0.22	J	0.21	1.0
Lead	0.080	U	0.080	0.30
Nickel	0.25	J	0.20	0.60
Selenium	0.21	U	0.21	0.63
Silver	0.10	U	0.10	0.30
Vanadium	1.4	U	1.4	5.9
Zinc	2.6	U	2.6	10
Thallium	0.10	U	0.10	0.30

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: U.S. Army Corps of Engineers

Job Number: 680-48180-2

Lab Control Sample - Batch: 680-140503

Method: 6020
Preparation: 3030C

Lab Sample ID: LCS 680-140503/11-A
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 06/21/2009 1807
Date Prepared: 06/16/2009 1453

Analysis Batch: 680-141124
Prep Batch: 680-140503
Units: ug/L

Instrument ID: ICP MS - A
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	50.0	50.2	100	75 - 125	
Arsenic	100	109	109	75 - 125	
Barium	100	109	109	75 - 125	
Beryllium	50.0	52.8	106	75 - 125	
Cadmium	50.0	53.7	107	75 - 125	
Chromium	100	101	101	75 - 125	
Cobalt	50.0	48.8	98	75 - 125	
Copper	100	106	106	75 - 125	
Lead	50.0	50.4	101	75 - 125	
Nickel	100	104	104	75 - 125	
Selenium	100	107	107	75 - 125	
Silver	50.0	50.8	102	75 - 125	
Vanadium	100	103	103	75 - 125	
Zinc	100	108	108	75 - 125	
Thallium	40.0	42.6	106	75 - 125	

Calculations are performed before rounding to avoid round-off errors in calculated results.

TestAmerica INCORPORATED

To assist us in using the proper analytical methods, is this work being conducted for regulatory purposes?
Compliance Monitoring _____

Client Name: USACE Client #: _____
Address: 100 W Oglethorpe Ave
City/State/Zip Code: Savannah GA 31401
Project Manager: Kevin Haborak
Telephone Number: (912) 597 3255 Fax: —
Sampler Name: (Print Name) Kevin Haborak
Sampler Signature: [signature]

Project Name: Longstreet LF
Project #: _____
Site/Location ID: Fayetteville State: NC
Report To: Kevin Haborak
Invoice To: Judson Smith
Quote #: _____ PO#: _____

TAT: [X] Standard [ ] Rush (surcharges may apply)
Date Needed: _____
Fax Results: Y [X] N

SAMPLE ID	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix (SL - Sludge, DW - Drinking Water, GW - Groundwater, S - Soil/Solid, WW - Wastewater, Specify Other)	Preservation & # of Containers: HNO_3	HCl	NaOH	H_2SO_4	Methanol	None	Other (Specify) HNO3/ZnAc	Analyze For: 8270 SVOC	8141 Organophosphorus	8081 Pest	8082 PCB	Nitrate	App II metals 2020C	App II VOC 8260	Sulfide	Cyanide	REMARKS
SL MW-11R-06-09	6/15/09	1540	G	N	GW	1	3	1	-	-	6	1										metals extract by 2020C

QC Deliverables: ___ None; [X] Level 2 (Batch QC); ___ Level 3; ___ Level 4; Other: _____

Special Instructions: Email Results to Kevin.Haborak@USACE.ARMY.MIL

LABORATORY COMMENTS:
Init Lab Temp:
Rec Lab Temp:
Custody Seals: Y N N/A
Bottles Supplied by Test America: Y N
Method of Shipment:

Relinquished By	Date	Time	Received By	Date	Time
[signature]	6/15/09	1745	[signature]	6/16/09	0907

(2)

680 - 48180

TestAmerica INCORPORATED

To assist us in using the proper analytical methods, is this work being conducted for regulatory purposes?
Compliance Monitoring _____

Client Name: USACE
Client #: _____
Address: 100 W Oglethorpe Ave
City/State/Zip Code: Savannah GA 31401
Project Manager: Kevin Haborak
Telephone Number: (912) 547 3255
Fax: _____
Sampler Name: (Print Name) Kevin Haborak
Sampler Signature: [signature]

Project Name: ~~Longstreet~~ Lamont LF
Project #: _____
Site/Location ID: Fayetteville
State: NC
Report To: Kevin Haborak
Invoice To: Judson Smith
Quote #: _____
PO#: _____

TAT: X Standard; ___ Rush (surcharges may apply)
Date Needed: _____
Fax Results: Y (N)

SAMPLE ID	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix (SL - Sludge, DW - Drinking Water, GW - Groundwater, S - Soil/Solid, WW - Wastewater, Specify Other)	Preservation & # of Containers: HNO_3	HCl	NaOH	H_2SO_4	Methanol	None	Other (Specify)	Analyze For: App I VOCs 8260	App I Metals 3020C	QC Deliverables	REMARKS
GW-LMW-1-06-09	6/15/09	1115	G	N	GW	1	3						X	X		metals extract by 3030C
GW-LMW-Dup-2	6/15/09	0000	G	N	GW	1	3						X	X		

QC Deliverables: ___ None; X Level 2 (Batch QC); ___ Level 3; ___ Level 4; Other: _____

Special Instructions: Email Results to Kevin.Haborak@USACE.ARMY.MIL

Relinquished By:	Date: 6/15/09	Time: 1745	Received By: [signature]	Date: 6/16/09	Time: 0907
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

LABORATORY COMMENTS:
Init Lab Temp:
Rec Lab Temp:
Custody Seals: Y N N/A
Bottles Supplied by Test America: Y N
Method of Shipment:

680-48180

Login Sample Receipt Check List

Client: U.S. Army Corps of Engineers

Job Number: 680-48180-2

Login Number: 48180

List Source: TestAmerica Savannah

Creator: Lanier, Herbert D

List Number: 1

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	False	-8 No "R" in ID on labels
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	

APPENDIX D

STATISTICAL REPORTS
(Electronic Only)

US Army Corps
of Engineers
Savannah District

DIRECTORATE OF PUBLIC
WORKS and ENVIRONMENT
Fort Bragg, North Carolina

Statistical Analysis of Ground-Water Data
Lamont Road Land Clearing and Inert Debris Landfill
Fort Bragg, North Carolina
Rounds N1 through N18

Permit No. 26G and 26-08

September 2009

Prepared by
U.S. Army Corps of Engineers, Savannah District
100 West Oglethorpe Ave.
Savannah, Georgia 31401

Statistical Analysis of Ground-Water Data
Lamont Road Land Clearing and Inert Debris Landfill
Fort Bragg, North Carolina
Rounds N1 through N17

EXECUTIVE SUMMARY

Fort Bragg authorized the U.S. Army Corps of Engineers, Savannah District to perform the required sampling of the Lamont Land Clearing and Inert Debris Landfill. The evaluation of ground-water data was in accordance with 15A NC3AC 13B.1634 for detection monitoring systems.

Sampling activities occurred in June, 2009. The background and compliance wells sampled are listed on Table 1. The monitoring well network was originally comprised of 11 wells, 4 of the original wells have been abandoned and 6 additional wells have been installed. Therefore, the current monitoring well network consists of 13 wells. Ground-water data were statistically analyzed to determine if the mean concentration for each analyte deviated significantly from the mean concentration from the background well data. All ground-water samples were analyzed for Appendix I Organics by EPA method 8260B and Appendix I Inorganics by EPA methods 6010B and 6020A. Any analyte with a detection during this event was tested to determine if the detection was a statistically significant increase over background levels.

Analysis of the barium data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-9S. The SSI was not confirmed by either the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the barium data in monitoring well LMW-9S are not SSIs.

Analysis of the chloromethane data using the Non-Parametric Prediction Limit indicated that the data in LMW-8 and LMW-15/15R contained possible SSIs. The SSIs were not confirmed by either the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the chloromethane data in monitoring wells LMW-8 and LMW-15/15R are not statistically significant increases.

Analysis of the cobalt data using the Kruskal-Wallis test indicated a possible SSI at the group level, no single well was indicated to have an SSI. Therefore, the Non-Parametric Prediction Limit was used to test if the data contained SSIs. The Non-Parametric Prediction Limit did not indicate that the data contained SSIs for any of the wells.

Analysis of the copper data using the Kruskal-Wallis test indicated a possible SSI at the group level, no single well was indicated to have an SSI. Therefore, the Non-Parametric Prediction Limit was used to test if the data contained SSIs. The Non-Parametric Prediction Limit did not indicate that the data contained SSIs for any of the wells.

Analysis of the nickel data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-3S. The SSI was not confirmed by either the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the nickel data in monitoring well LMW-3S are not SSIs.

Analysis of the selenium data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-6. The SSI was not confirmed by the Mann-Kendall Trend Analysis but was confirmed by the Shewhart-CUSUM Control Chart. Since the statistical tests are inconclusive, further data is needed to confirm the SSI.

Analysis of the trichlorofluoromethane data using the Kruskal-Wallis test indicated a possible SSI at the group level, no single well was indicated to have an SSI. Therefore, the Non-Parametric Prediction Limit was used to test if the data contained SSIs. The Non-Parametric Prediction Limit indicated that the data for LMW-10 possibly contained a SSI. The Non-Parametric Tolerance Interval method indicated that 3 of the 13 data points for LMW-10 were possible SSIs, but that the data fluctuates from levels that are considered possible SSIs to levels that are not indicated to be SSIs (from a max of 10ppb [May 2008] to non-detect [most recently in November 2007]). The fluctuating levels have not resulted in two SSIs being indentified for back-to-back events. Since the statistical tests are inconclusive, further sampling is needed to confirm the SSI.

Analysis of the vanadium data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-9D. The SSI was not confirmed by either the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the vanadium data in monitoring well LMW-9D are not SSIs.

Analysis of the zinc data using the Kruskal-Wallis test indicated a possible SSI at the group level, no single well was indicated to have an SSI. Therefore, the Non-Parametric Prediction Limit was used to test if the data contained SSIs. The Non-Parametric Prediction Limit did not indicate that the data contained SSIs for any of the wells.

The results of the statistical analysis indicate that the compliance well concentrations do not vary significantly from background concentrations for any of the other parameters analyzed. Future analytical results will be evaluated using the same procedures.

REGISTERED PROFESSIONAL GEOLOGIST CERTIFICATION

I certify that I am a qualified ground-water scientist who has received a baccalaureate or post graduate degree in the natural sciences or engineering and have sufficient training and experience in ground-water hydrology and related fields as demonstrated by state registration and completion of accredited university courses that enable me to make sound professional judgments regarding ground-water monitoring and contaminant fate and transport. I further certify that this report was prepared by me or by a subordinate working under my direction.

_____

.Kevin G. Haborak, P.G.

DATE: April 2009

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Figure 1: Flowchart of the Statistical Tests Performed for Each Analyte Detected in Compliance Wells

LIST OF SUPPLEMENTAL MATERIAL

Lamont Road Land Clearing and Inert Debris Landfill N=18 Statistical Data on CD Format

1.0 BACKGROUND

Fort Bragg authorized the U.S. Army Corps of Engineers, Savannah District to perform the required sampling of the Lamont LCID Landfill. Sampling activities for the eighteenth round of sampling (N=18) were conducted during June, 2009. This facility is a Land Clearing and Inert Debris Landfill (LCID) located east of Lamont Road at Fort Bragg in Cumberland County, North Carolina.

A comparison of statistical procedures was performed using this data to determine an adequate statistical analysis for future monitoring at the facility. Guidance for determining proper statistical methods was obtained from the EPA guidance document titled: Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities - Interim Final Guidance, April 1989 (herein referenced as the Guidance) and it's addendum Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities - Addendum to Interim Final Guidance, July 1992 (herein referenced as the Addendum). The statistical computer software ChemStat (version 5.0) used for this analysis is based on the guidance documents referenced above.

Factors that were considered in selecting a statistical method include departures from normality, unequal variances, temporal and spatial variability, and the percentage of non-detects. Tests for normality that were considered include: Probability Plots, Chi-Squared, Shapiro-Wilk Test, and Shapiro-Francia Test. Statistical analysis procedures considered were: parametric Two Sample t-Test, non-parametric Wilcoxin Rank-Sum Test; parametric ANOVA Tests, non-parametric Kruskal-Wallis Test, Tolerance and Prediction Intervals, and Control Charts.

2.0 DETERMINATION OF APPROPRIATE DISTRIBUTIONAL MODEL

A statistical test predicts the average behavior (distribution) of a random variable by comparing the means (normal distribution) or medians (lognormal and non-parametric distributions) of the compliance well data to background well data. Before conducting a statistical analysis, a distributional assumption must be tested to determine whether the data conform to the assumed distribution.

Prior to testing for significance, the distribution of each parameter is determined to be normal, lognormal, or neither. First, the dataset is used to test the assumption that the distribution is normal. If this assumption is rejected, the same data are log transformed and the hypothesis that the distribution is lognormal is tested. If these assumptions are rejected, it is concluded that the data are neither normally nor lognormally distributed. The data is determined to be non-normal if the distribution of each parameter is determined to be neither normal nor lognormal.

The Shapiro-Francia Test was selected as the main test to determine whether the data conform to the assumed distribution. This test has a good likelihood of distinguishing between the target distribution (normal) and other common distributions (for example, uniform or skewed), and is recommended for data sets with 50 or more samples.

3.0 SELECTION OF STATISTICAL METHOD

The ground-water samples were analyzed for Appendix I organics and inorganics. Monitoring well MW-4 serves as the background well. The compliance monitoring well results were compared to the background results by means of an applicable statistical procedure. These monitoring wells are listed on Table 1.

Table 1 Ground-Water Monitoring Network

WELL NAME	STATUS
MW-3	**Active - Compliance Monitoring Well**
MW-5	**Abandoned - Compliance Monitoring Well**
MW-6	**Active - Compliance Monitoring Well**
MW-7	**Active - Compliance Monitoring Well**
MW-8	**Active - Compliance Monitoring Well**
MW-9	**Active - Compliance Monitoring Well**
MW-10	**Active - Compliance Monitoring Well**
MW-11	**Abandoned - Compliance Monitoring Well**
MW-12	**Abandoned - Compliance Monitoring Well**
MW-13	**Abandoned - Compliance Monitoring Well**
MW-4	**Active - Compliance Monitoring Well (Background)**
MW-1	**Active - Compliance Monitoring Well**
MW-3S	**Active - Compliance Monitoring Well**
MW-9D	**Active - Compliance Monitoring Well**
MW-9S	**Active - Compliance Monitoring Well**
MW-15	**Active - Compliance Monitoring Well**
MW-16	**Active - Compliance Monitoring Wells**

For this report, contamination is described as the difference in average concentrations between the background and compliance sample data. Random variation of the sample results occurred, but this variation does not necessarily represent contamination. The statistical test used for this report predicted the average behavior (distribution) of a random variable by comparing the means (normal) or medians (lognormal and non-parametric) of compliance well data to background data. It tested the hypothesis that all background and compliance wells have the same median concentration of a constituent. If the hypothesis of equal medians was rejected, then additional calculations were required to determine which compliance wells showed evidence of contamination.

Different statistical tests were used as appropriate for the different distributional patterns that occur within the data. Prior to testing for statistical significance, the distribution of each parameter was determined to be normal, lognormal, or non-normal if the amount of non-detects was less than 15%. The Shapiro-Francia Test was selected as the primary test to determine whether the data conform to the assumed distribution. This test has a good

likelihood of distinguishing between the target distribution (normal) and other common distributions (for example, uniform or skewed) and is valid for samples with 50 or more observations. The process of choosing the appropriate statistical analyses is illustrated on Figure 1.

If the data were either normally or lognormally distributed the ANOVA Test was applied. The ANOVA Test assumed that there were at least three groups of data (including background), with a minimum of four samples per group. It also assumed that the results were normally or lognormally distributed. This test calculated the F-statistic and its corresponding significance probability. If the computed F-statistic was not significant (less than the tabulated F-statistic), it was concluded that there was no significant difference between the average background concentration and the average concentrations of compliance wells. If the F-statistic was significant, it was concluded that at least one pair of well groups is probably different. In this case, ANOVA proceeded to make individual comparisons between background and compliance well data to isolate which well(s) showed evidence of contamination.

If the data were non-normally distributed, or the fraction of nondetects exceeded 15% but were less than 90%, then the Kruskal-Wallis Test was applied. If the fraction of non-detects exceeded 90%, then the Non-Parametric Prediction Limit was applied. For these tests to be sufficiently sensitive, the sample size for any group must be at least 4. A Kruskal-Wallis Test can be used in any situation that the parametric analysis of variance can be used. This test computes the H-statistic, adjusts it for ties, and compares it to the appropriate chi-square critical value. If the H-statistic is less than the critical value, the null-hypothesis is accepted, and it is concluded that there are no differences between median background and compliance well concentrations. If the H-statistic is greater than the critical value, it is concluded that at least one pair of well groups is statistically different.

In this case, the Kruskal-Wallis Test performs post-hoc comparisons between background and compliance well data to determine which wells, if any, show evidence of contamination. If the difference between the average ranks and the mean background rank of any individual well exceeds the critical difference calculated for that well, then evidence of contamination exists. A drawback to the Kruskal-Wallis Test is the dependence on background samples. Fewer background samples will result in an increase of incidence of false positives. An additional drawback to the Kruskal-Wallis Test is that past detections can be the cause for the determination of a statistically significant increase since the test does not discriminate between present and past values.

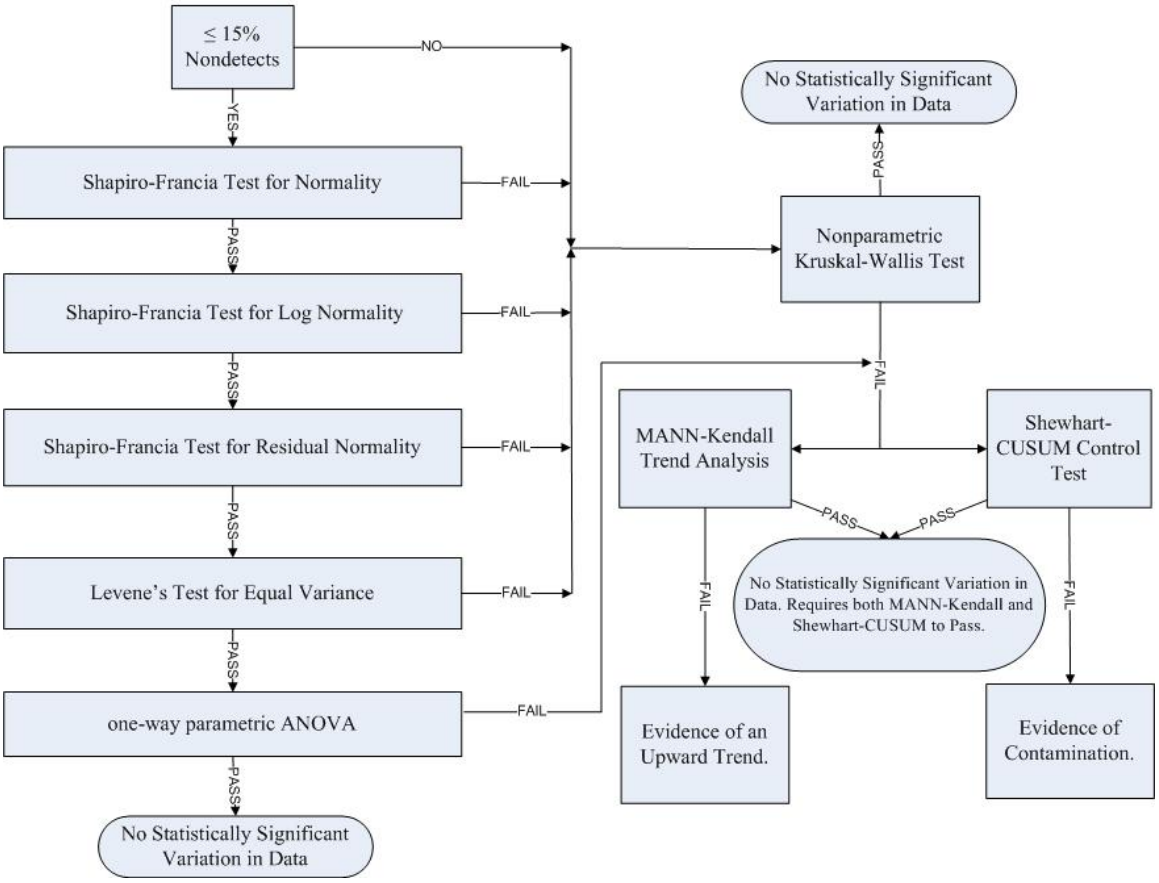
Additional statistical analyses can help to determine the validity of the positive results. Intra-well comparisons of data from a single well to previous data from the same well are performed to determine if a trend of increasing concentration is occurring. The Mann-Kendall Trend Analysis and the Shewhart-CUSUM Control Chart statistical tests were selected for these additional analyses.

The purpose for the Mann-Kendall Trend Analysis is to determine trends in sets of data. The assumption of the Mann-Kendall Trend Analysis procedure is the idea that, if an

increasing trend really exists, the sample taken first from any randomly selected pair of measurements should, on average, have a lower concentration than the measurement collected at a later point. The result for a data set being examined by the Mann-Kendall Trend Analysis is either a downward trend, an upward trend, or no trend.

The Shewhart-CUSUM Control Chart is a graphical method to assess contamination levels for individual wells. This analysis visually tracks concentrations at a given well over time to determine whether they exceed critical thresholds, thus implying a significant increase over the baseline value. Shewhart-CUSUM Control Charts are very susceptible to false positives. However, the graph is useful in providing a visual indication of changing trends in parameter concentrations.

Figure 1: Flowchart of the Statistical Tests Performed for Each Analyte Detected in Compliance Wells



4.0 FIELD ACTIVITIES

This section describes the procedures that were followed for equipment decontamination, ground-water sampling, quality assurance sampling, preservation, handling, and shipment of samples. Ground-water samples were collected using a low-flow purge method with a bladder pump. Immediately before purging a well, the static water level below

the top of the well casing and the total depth of the well were measured to the nearest 0.01 foot and recorded in the field notebook.

The volume of water in the well, including the saturated pore volume (assumed to be 30%) of the sand-packed annulus, was calculated based on the static water level and the well construction information. Well volume calculations were placed in the field notebook. The inlet of the sampling pump was placed at the mid-point of the screened interval. This level was adjusted for wells where the static water level is within the well screen. The monitoring wells were purged using a variable-flow bladder pump at a rate of 500 ml/min or less.

Temperature and specific conductance were monitored to ensure the water quality had stabilized to within 10% of the previous reading. Turbidity readings should either stabilize at or be lower than 10 Nephelometric Turbidity Units (NTUs). Stabilization occurs with pH measurements when readings remain constant within 0.1 Standard Units (SU). The rate of pumping was determined and noted in the field notebook. The purge rate was adjusted, as necessary, to avoid purging any well to dryness and to equal the recharge of the aquifer.

All sampling equipment was protected from contaminated soil surfaces to prevent contamination of the samples (e.g., equipment may be placed on disposable polyethylene plastic sheeting). Ground-water sampling data (including sample number, location, quantity of water purged, field parameters, site conditions, etc.) were documented in the field notebook.

5.0 RESULTS

The U.S. Army Corps of Engineers, Savannah District performed the required sampling of the Lamont Road LCID Landfill in accordance with the Fort Bragg request. The evaluation of ground-water data is according to 15A NC3AC 13B.1634 for detection monitoring systems.

Sampling activities were completed during June, 2009. The background and compliance wells sampled are listed on Table 1. Ground-water data were statistically analyzed to determine if the mean concentration for each sample analyte deviates significantly from the mean concentration from the background well. All ground-water samples were analyzed for Appendix I Organics by EPA method 8260B and Appendix I Inorganics by EPA methods 6010B and 6020A.

Analysis of the barium data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-9S. The SSI was not confirmed by either the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the barium data in monitoring well LMW-9S are not SSIs.

Analysis of the chloromethane data using the Non-Parametric Prediction Limit indicated that the data in LMW-8 and LMW-15/15R contained possible SSIs. The SSIs were not confirmed by either the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the chloromethane data in monitoring wells LMW-8 and LMW-15/15R are not statistically significant increases.

Analysis of the cobalt data using the Kruskal-Wallis test indicated a possible SSI at the group level, no single well was indicated to have an SSI. Therefore, the Non-Parametric Prediction Limit was used to test if the data contained SSIs. The Non-Parametric Prediction Limit did not indicate that the data contained SSIs for any of the wells.

Analysis of the copper data using the Kruskal-Wallis test indicated a possible SSI at the group level, no single well was indicated to have an SSI. Therefore, the Non-Parametric Prediction Limit was used to test if the data contained SSIs. The Non-Parametric Prediction Limit did not indicate that the data contained SSIs for any of the wells.

Analysis of the nickel data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-3S. The SSI was not confirmed by either the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the nickel data in monitoring well LMW-3S are not SSIs.

Analysis of the selenium data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-6. The SSI was not confirmed by the Mann-Kendall Trend Analysis but was confirmed by the Shewhart-CUSUM Control Chart. Since the statistical tests are inconclusive, further data is needed to confirm the SSI.

Analysis of the trichlorofluoromethane data using the Kruskal-Wallis test indicated a possible SSI at the group level, no single well was indicated to have an SSI. Therefore, the Non-Parametric Prediction Limit was used to test if the data contained SSIs. The Non-Parametric Prediction Limit indicated that the data for LMW-10 possibly contained a SSI. The Non-Parametric Tolerance Interval method indicated that 3 of the 13 data points for LMW-10 were possible SSIs, but that the data fluctuates from levels that are considered possible SSIs to levels that are not indicated to be SSIs (from a max of 10ppb [May 2008] to non-detect [most recently in November 2007]). The fluctuating levels have not resulted in two SSIs being indentified for back-to-back events. Since the statistical tests are inconclusive, further sampling is needed to confirm the SSI.

Analysis of the vanadium data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-9D. The SSI was not confirmed by either the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the vanadium data in monitoring well LMW-9D are not SSIs.

Analysis of the zinc data using the Kruskal-Wallis test indicated a possible SSI at the group level, no single well was indicated to have an SSI. Therefore, the Non-Parametric Prediction Limit was used to test if the data contained SSIs. The Non-Parametric Prediction Limit did not indicate that the data contained SSIs for any of the wells.

The results of the statistical analysis indicate that the compliance well concentrations do not vary significantly from background concentrations for any of the other parameters analyzed. Future analytical results will be evaluated using the same procedures.

6.0 CONCLUSIONS

The selenium and trichlorofluoromethane results from Lamont Road Land Clearing and Inert Debris Landfill require additional sampling events to determine if evidence of a SSI or an upward trend exists. Compliance well concentrations do not vary significantly from background concentrations for any of the other parameters analyzed. Future analytical results will be evaluated using the same statistical procedures.

7.0 REFERENCES

EPA, Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities - Interim Final Guidance, April 1989

EPA, Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities - Addendum to Interim Final Guidance, July 1992

EPA, Region IV, Standard Operating Procedures and Quality Assurance Manual, Revision 1, November, 2001.

Concentrations (ppb)

Parameter: 1,2-cis-Dichloroethylene

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 194
Percent Non-Detects: 99.4872%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	16 (100%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.15 U	ND<0.15 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	13 (100%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
LMW-9S	6	6 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.15 U	ND<0.15 U
LMW-9D	6	6 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1

			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.15 U		ND<0.15 U
LMW-9	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.15 U		ND<0.15 U
LMW-8	16	15 (93.75%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<0 J	ND<0 J	
			6/19/2006	ND<0 J	ND<0 J	
			11/18/2006	ND<0 J	ND<0 J	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<0 J	ND<0 J	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	2.4	2.4	
LMW-7	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.15 U		ND<0.15 U
LMW-6	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	

			4/1/2005	ND<1	ND<1	
			10/26/2005		ND<1	ND<1
			6/19/2006		ND<1	ND<1
			11/18/2006		ND<1	ND<1
			6/2/2007	ND<1	ND<1	
			11/15/2007		ND<1	ND<1
			5/20/2008		ND<1	ND<1
			11/20/2008		ND<1	ND<1
			6/11/2009		ND<0.15 U	ND<0.15 U
LMW-3S	6	6 (100%)	11/18/2006		ND<1	ND<1
			6/2/2007	ND<1	ND<1	
			11/15/2007		ND<1	ND<1
			5/20/2008		ND<1	ND<1
			11/20/2008		ND<1	ND<1
			6/11/2009		ND<0.15 U	ND<0.15 U
LMW-3	18	18 (100%)	11/19/1996		ND<1	ND<1
			3/24/1997		ND<1	ND<1
			1/16/1998		ND<1	ND<1
			3/16/1999		ND<1	ND<1
			9/23/1999		ND<1	ND<1
			3/14/2000		ND<1	ND<1
			9/23/2003		ND<1	ND<1
			3/10/2004		ND<1	ND<1
			10/12/2004		ND<1	ND<1
			4/1/2005	ND<1	ND<1	
			10/26/2005		ND<1	ND<1
			6/19/2006		ND<1	ND<1
			11/18/2006		ND<1	ND<1
			6/2/2007	ND<1	ND<1	
			11/15/2007		ND<1	ND<1
			5/20/2008		ND<1	ND<1
			11/20/2008		ND<1	ND<1
			6/11/2009		ND<0.15 U	ND<0.15 U
LMW-16	6	6 (100%)	11/18/2006		ND<1	ND<1
			6/2/2007	ND<1	ND<1	
			11/15/2007		ND<1	ND<1
			5/20/2008		ND<1	ND<1
			11/20/2008		ND<1	ND<1
			6/11/2009		ND<0.15 U	ND<0.15 U
LMW-15	9	9 (100%)	11/18/2006		ND<1	ND<1
			6/2/2007	ND<1	ND<1	
			11/15/2007		ND<1	ND<1
			11/15/2007		ND<1	ND<1
			5/20/2008		ND<1	ND<1
			5/20/2008		ND<1	ND<1
			11/20/2008		ND<1	ND<1
			11/20/2008		ND<1	ND<1
			6/11/2009		ND<0.15 U	ND<0.15 U
LMW-14R	5	5 (100%)	6/2/2007	ND<1	ND<1	
			11/15/2007		ND<1	ND<1
			5/20/2008		ND<1	ND<1
			11/20/2008		ND<1	ND<1
			6/11/2009		ND<0.15 U	ND<0.15 U
LMW-13	11	11 (100%)	3/14/2000		ND<1	ND<1
			9/23/2003		ND<1	ND<1

		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-12	11	11 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-11	11	11 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-10	13	13 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		11/18/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
		6/11/2009	ND<0.15 U	ND<0.15 U	

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: 1,2-cis-Dichloroethylene

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 99.4872%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 16
Maximum Background Concentration = 1
Confidence Level = 66.7%
False Positive Rate = 33.3%

Location	Date	Samples	Mean	Significant
MW-5	11/20/2008	1	1	FALSE
LMW-9S	6/11/2009	1	0.15	FALSE
LMW-9D	6/11/2009	1	0.15	FALSE
LMW-9	6/11/2009	1	0.15	FALSE
LMW-8	6/11/2009	1	2.4	TRUE
LMW-7	6/11/2009	1	0.15	FALSE
LMW-6	6/11/2009	1	0.15	FALSE
LMW-3S	6/11/2009	1	0.15	FALSE
LMW-3	6/11/2009	1	0.15	FALSE
LMW-16	6/11/2009	1	0.15	FALSE
LMW-15	6/11/2009	1	0.15	FALSE
LMW-14R	6/11/2009	1	0.15	FALSE
LMW-13	11/20/2008	1	1	FALSE
LMW-12	11/20/2008	1	1	FALSE
LMW-11	11/20/2008	1	1	FALSE
LMW-10	6/11/2009	1	0.15	FALSE

Mann-Kendall Trend Analysis

Parameter: 1,2-cis-Dichloroethylene

Location: LMW-8

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

95% Confidence Level

Xj	Xk	Xj - Xk		Positives	Negatives
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<0 J	ND<1	-1	0	1	
ND<0 J	ND<1	-1	0	2	
ND<0 J	ND<1	-1	0	3	
ND<1	ND<1	0	0	3	
ND<0 J	ND<1	-1	0	4	
ND<1	ND<1	0	0	4	
ND<1	ND<1	0	0	4	
2.4	ND<1	1.4	1	4	
ND<1	ND<1	0	1	4	
ND<1	ND<1	0	1	4	
ND<1	ND<1	0	1	4	
ND<1	ND<1	0	1	4	
ND<1	ND<1	0	1	4	
ND<1	ND<1	0	1	4	
ND<0 J	ND<1	-1	1	5	
ND<0 J	ND<1	-1	1	6	
ND<0 J	ND<1	-1	1	7	
ND<1	ND<1	0	1	7	
ND<0 J	ND<1	-1	1	8	
ND<1	ND<1	0	1	8	
ND<1	ND<1	0	1	8	
2.4	ND<1	1.4	2	8	
ND<1	ND<1	0	2	8	
ND<1	ND<1	0	2	8	
ND<1	ND<1	0	2	8	
ND<1	ND<1	0	2	8	
ND<1	ND<1	0	2	8	
ND<0 J	ND<1	-1	2	9	
ND<0 J	ND<1	-1	2	10	
ND<0 J	ND<1	-1	2	11	
ND<1	ND<1	0	2	11	
ND<0 J	ND<1	-1	2	12	
ND<1	ND<1	0	2	12	
ND<1	ND<1	0	2	12	
2.4	ND<1	1.4	3	12	
ND<1	ND<1	0	3	12	
ND<1	ND<1	0	3	12	
ND<1	ND<1	0	3	12	

ND<1	ND<1	0	3	12
ND<0 J	ND<1	-1	3	13
ND<0 J	ND<1	-1	3	14
ND<0 J	ND<1	-1	3	15
ND<1	ND<1	0	3	15
ND<0 J	ND<1	-1	3	16
ND<1	ND<1	0	3	16
ND<1	ND<1	0	3	16
2.4	ND<1	1.4	4	16
ND<1	ND<1	0	4	16
ND<1	ND<1	0	4	16
ND<1	ND<1	0	4	16
ND<0 J	ND<1	-1	4	17
ND<0 J	ND<1	-1	4	18
ND<0 J	ND<1	-1	4	19
ND<1	ND<1	0	4	19
ND<0 J	ND<1	-1	4	20
ND<1	ND<1	0	4	20
ND<1	ND<1	0	4	20
2.4	ND<1	1.4	5	20
ND<1	ND<1	0	5	20
ND<1	ND<1	0	5	20
ND<0 J	ND<1	-1	5	21
ND<0 J	ND<1	-1	5	22
ND<0 J	ND<1	-1	5	23
ND<1	ND<1	0	5	23
ND<0 J	ND<1	-1	5	24
ND<1	ND<1	0	5	24
ND<1	ND<1	0	5	24
2.4	ND<1	1.4	6	24
ND<1	ND<1	0	6	24
ND<0 J	ND<1	-1	6	25
ND<0 J	ND<1	-1	6	26
ND<0 J	ND<1	-1	6	27
ND<1	ND<1	0	6	27
ND<0 J	ND<1	-1	6	28
ND<1	ND<1	0	6	28
ND<1	ND<1	0	6	28
2.4	ND<1	1.4	7	28
ND<0 J	ND<1	-1	7	29
ND<0 J	ND<1	-1	7	30
ND<0 J	ND<1	-1	7	31
ND<1	ND<1	0	7	31
ND<0 J	ND<1	-1	7	32
ND<1	ND<1	0	7	32
ND<1	ND<1	0	7	32
2.4	ND<1	1.4	8	32
ND<0 J	ND<0 J	0	8	32
ND<0 J	ND<0 J	0	8	32
ND<1	ND<0 J	1	9	32
ND<0 J	ND<0 J	0	9	32
ND<1	ND<0 J	1	10	32
ND<1	ND<0 J	1	11	32
2.4	ND<0 J	2.4	12	32
ND<0 J	ND<0 J	0	12	32

ND<1	ND<0 J	1	13	32
ND<0 J	ND<0 J	0	13	32
ND<1	ND<0 J	1	14	32
ND<1	ND<0 J	1	15	32
2.4	ND<0 J	2.4	16	32
ND<1	ND<0 J	1	17	32
ND<0 J	ND<0 J	0	17	32
ND<1	ND<0 J	1	18	32
ND<1	ND<0 J	1	19	32
2.4	ND<0 J	2.4	20	32
ND<0 J	ND<1	-1	20	33
ND<1	ND<1	0	20	33
ND<1	ND<1	0	20	33
2.4	ND<1	1.4	21	33
ND<1	ND<0 J	1	22	33
ND<1	ND<0 J	1	23	33
2.4	ND<0 J	2.4	24	33
ND<1	ND<1	0	24	33
2.4	ND<1	1.4	25	33
2.4	ND<1	1.4	26	33

S Statistic = 26 - 33 = -7

Tied Group	Value	Members
1	1	11
2	0	4

Time Period		Observations
1/16/1998		1
3/16/1999		1
9/23/1999		1
3/14/2000		1
9/23/2003		1
3/10/2004		1
10/12/2004		1
4/1/2005	1	
10/26/2005		1
6/19/2006		1
11/18/2006		1
6/2/2007	1	
11/15/2007		1
5/20/2008		1
11/20/2008		1
6/11/2009		1

There are 0 time periods with multiple data

A = 3126
B = 0
C = 1014
D = 0
E = 122
F = 0
a = 8880
b = 30240

c = 480
Group Variance = 319.667
Z-Score = -0.335585
Comparison Level at 95% confidence level = 1.65463 (upward trend)
-0.335585 <= 1.65463 indicating no evidence of an upward trend

Concentrations (ppb)

Parameter: Arsenic

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 154
Percent Non-Detects: 78.9744%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	14 (87.5%)	1/16/1998	ND<2	ND<2
			3/16/1999	ND<2	ND<2
			9/23/1999	ND<2	ND<2
			3/14/2000	ND<2	ND<2
			9/23/2003	ND<2	ND<2
			3/10/2004	ND<2	ND<2
			10/12/2004	ND<2	ND<2
			4/1/2005	ND<2	ND<2
			10/26/2005	ND<2	ND<2
			6/19/2006	ND<2	ND<2
			11/18/2006	ND<2	ND<2
			6/2/2007	1 J	1 J
			11/15/2007	1 J	1 J
			5/20/2008	ND<2	ND<2
			11/20/2008	ND<2	ND<2
			6/11/2009	ND<0.4 U	ND<0.4 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	11 (84.6154%)	1/16/1998	ND<2	ND<2
			3/16/1999	ND<2	ND<2
			9/23/1999	ND<2	ND<2
			3/14/2000	34	34
			9/23/2003	ND<2	ND<2
			3/10/2004	60	60
			10/12/2004	ND<2	ND<2
			4/1/2005	ND<2	ND<2
			10/26/2005	ND<2	ND<2
			6/19/2006	ND<2	ND<2
			11/15/2007	ND<2	ND<2
			5/20/2008	ND<2	ND<2
			11/20/2008	ND<2	ND<2
LMW-9S	6	3 (50%)	11/18/2006	ND<2	ND<2
			6/2/2007	1 J	1 J
			11/15/2007	4	4
			5/20/2008	ND<2	ND<2
			11/20/2008	ND<2	ND<2
			6/11/2009	0.46 J	0.46 J
LMW-9D	6	1 (16.6667%)	11/18/2006	7	7
			6/2/2007	7	7
			11/15/2007	ND<2	ND<2
			5/20/2008	3	3

			11/20/2008	3	3	
			6/11/2009	2.1	2.1	
LMW-9	16	10 (62.5%)	1/16/1998	ND<2	ND<2	
			3/16/1999	ND<2	ND<2	
			9/23/1999	3	3	
			3/14/2000	ND<2	ND<2	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	
			10/12/2004	ND<2	ND<2	
			4/1/2005	1 J	1 J	
			10/26/2005	ND<2	ND<2	
			6/19/2006	1 J	1 J	
			11/18/2006	ND<2	ND<2	
			6/2/2007	1 J	1 J	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	8	8	
			6/11/2009	1.1 J	1.1 J	
LMW-8	16	15 (93.75%)	1/16/1998	ND<2	ND<2	
			3/16/1999	ND<2	ND<2	
			9/23/1999	ND<2	ND<2	
			3/14/2000	ND<2	ND<2	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	
			10/12/2004	ND<2	ND<2	
			4/1/2005	ND<2	ND<2	
			10/26/2005	ND<2	ND<2	
			6/19/2006	ND<2	ND<2	
			11/18/2006	ND<2	ND<2	
			6/2/2007	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			6/11/2009	0.49 J	0.49 J	
LMW-7	16	12 (75%)	1/16/1998	ND<2	ND<2	
			3/16/1999	ND<2	ND<2	
			9/23/1999	ND<2	ND<2	
			3/14/2000	10	10	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	
			10/12/2004	ND<2	ND<2	
			4/1/2005	ND<2	ND<2	
			10/26/2005	ND<2	ND<2	
			6/19/2006	ND<2	ND<2	
			11/18/2006	ND<2	ND<2	
			6/2/2007	1 J	1 J	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	10	10	
			6/11/2009	1.1 J B	1.1 J B	
LMW-6	16	14 (87.5%)	1/16/1998	ND<2	ND<2	
			3/16/1999	ND<2	ND<2	
			9/23/1999	ND<2	ND<2	
			3/14/2000	ND<2	ND<2	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	
			10/12/2004	ND<2	ND<2	
			4/1/2005	ND<2	ND<2	

			10/26/2005	ND<2	ND<2	
			6/19/2006	ND<2	ND<2	
			11/18/2006	ND<2	ND<2	
			6/2/2007	1 J	1 J	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			6/11/2009	0.65 J B	0.65 J B	
LMW-3S	6	5 (83.3333%)	11/18/2006	ND<2	ND<2	
			6/2/2007	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			6/11/2009	0.73 J B	0.73 J B	
LMW-3	18	17 (94.4444%)	11/19/1996	ND<2	ND<2	
			3/24/1997	ND<2	ND<2	
			1/16/1998	ND<2	ND<2	
			3/16/1999	ND<2	ND<2	
			9/23/1999	ND<2	ND<2	
			3/14/2000	ND<2	ND<2	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	
			10/12/2004	ND<2	ND<2	
			4/1/2005	ND<2	ND<2	
			10/26/2005	ND<2	ND<2	
			6/19/2006	ND<2	ND<2	
			11/18/2006	ND<2	ND<2	
			6/2/2007	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			6/11/2009	0.42 J B	0.42 J B	
LMW-16	6	3 (50%)	11/18/2006	ND<2	ND<2	
			6/2/2007	2	2	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	9	9	
			6/11/2009	0.56 J	0.56 J	
LMW-15	9	8 (88.8889%)	11/18/2006	ND<2	ND<2	
			6/2/2007	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			6/11/2009	2.5	2.5	
LMW-14R	5	2 (40%)	6/2/2007	1 J	1 J	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	9	9	
			6/11/2009	0.41 J	0.41 J	
LMW-13	11	10 (90.9091%)	3/14/2000	16	16	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	

		10/12/2004	ND<2	ND<2	
		4/1/2005	ND<2	ND<2	
		10/26/2005	ND<2	ND<2	
		6/19/2006	ND<2	ND<2	
		6/2/2007	ND<2	ND<2	
		11/15/2007	ND<2	ND<2	
		5/20/2008	ND<2	ND<2	
		11/20/2008	ND<2	ND<2	
LMW-12	11	10 (90.9091%)	3/14/2000	57	57
		9/23/2003	ND<2	ND<2	
		3/10/2004	ND<2	ND<2	
		10/12/2004	ND<2	ND<2	
		4/1/2005	ND<2	ND<2	
		10/26/2005	ND<2	ND<2	
		6/19/2006	ND<2	ND<2	
		6/2/2007	ND<2	ND<2	
		11/15/2007	ND<2	ND<2	
		5/20/2008	ND<2	ND<2	
		11/20/2008	ND<2	ND<2	
LMW-11	11	9 (81.8182%)	3/14/2000	12	12
		9/23/2003	ND<2	ND<2	
		3/10/2004	18	18	
		10/12/2004	ND<2	ND<2	
		4/1/2005	ND<2	ND<2	
		10/26/2005	ND<2	ND<2	
		6/19/2006	ND<2	ND<2	
		6/2/2007	ND<2	ND<2	
		11/15/2007	ND<2	ND<2	
		5/20/2008	ND<2	ND<2	
		11/20/2008	ND<2	ND<2	
LMW-10	13	10 (76.9231%)	3/14/2000	23	23
		9/23/2003	ND<2	ND<2	
		3/10/2004	25	25	
		10/12/2004	ND<2	ND<2	
		4/1/2005	ND<2	ND<2	
		10/26/2005	ND<2	ND<2	
		6/19/2006	ND<2	ND<2	
		11/18/2006	ND<2	ND<2	
		6/2/2007	1 J	1 J	
		11/15/2007	ND<2	ND<2	
		5/20/2008	ND<2	ND<2	
		11/20/2008	ND<2	ND<2	
		6/11/2009	ND<0.4 U		ND<0.4 U

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Kruskal-Wallis Non-Parametric Test

Parameter: Arsenic

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	ND<2	77.5
	3/16/1999	ND<2	77.5
	9/23/1999	ND<2	77.5
	3/14/2000	ND<2	77.5
	9/23/2003	ND<2	77.5
	3/10/2004	ND<2	77.5
	10/12/2004	ND<2	77.5
	4/1/2005	ND<2	77.5
	10/26/2005	ND<2	77.5
	6/19/2006	ND<2	77.5
	11/18/2006	ND<2	77.5
	6/2/2007	1 J	162
	11/15/2007	1 J	163
	5/20/2008	ND<2	77.5
	11/20/2008	ND<2	77.5
	6/11/2009	ND<0.4 U	77.5

Rank Sum = 1410
Rank Mean = 88.125

Background Rank Sum = 1410
Background Rank Mean = 88.125

Compliance Wells

Well ID	Date	Result	Rank
MW-5	1/16/1998	ND<2	77.5
	3/16/1999	ND<2	77.5
	9/23/1999	ND<2	77.5
	3/14/2000	34	193
	9/23/2003	ND<2	77.5
	3/10/2004	60	195
	10/12/2004	ND<2	77.5
	4/1/2005	ND<2	77.5
	10/26/2005	ND<2	77.5
	6/19/2006	ND<2	77.5
	11/15/2007	ND<2	77.5
	5/20/2008	ND<2	77.5
	11/20/2008	ND<2	77.5

Rank Sum = 1240.5
Rank Mean = 95.4231

LMW-9S	11/18/2006	ND<2	77.5
	6/2/2007	1 J	164
	11/15/2007	4	180
	5/20/2008	ND<2	77.5
	11/20/2008	ND<2	77.5

	6/11/2009	0.46 J	157

Rank Sum = 733.5
Rank Mean = 122.25

LMW-9D	11/18/2006	7	181
	6/2/2007	7	182
	11/15/2007	ND<2	77.5
	5/20/2008	3	177
	11/20/2008	3	178
	6/11/2009	2.1	175

Rank Sum = 970.5
Rank Mean = 161.75

LMW-9	1/16/1998	ND<2	77.5
	3/16/1999	ND<2	77.5
	9/23/1999	3	179
	3/14/2000	ND<2	77.5
	9/23/2003	ND<2	77.5
	3/10/2004	ND<2	77.5
	10/12/2004	ND<2	77.5
	4/1/2005	1 J	165
	10/26/2005	ND<2	77.5
	6/19/2006	1 J	166
	11/18/2006	ND<2	77.5
	6/2/2007	1 J	167
	11/15/2007	ND<2	77.5
	5/20/2008	ND<2	77.5
	11/20/2008	8	183
	6/11/2009	1.1 J	172

Rank Sum = 1807
Rank Mean = 112.938

LMW-8	1/16/1998	ND<2	77.5
	3/16/1999	ND<2	77.5
	9/23/1999	ND<2	77.5
	3/14/2000	ND<2	77.5
	9/23/2003	ND<2	77.5
	3/10/2004	ND<2	77.5
	10/12/2004	ND<2	77.5
	4/1/2005	ND<2	77.5
	10/26/2005	ND<2	77.5
	6/19/2006	ND<2	77.5
	11/18/2006	ND<2	77.5
	6/2/2007	ND<2	77.5
	11/15/2007	ND<2	77.5
	5/20/2008	ND<2	77.5
	11/20/2008	ND<2	77.5
	6/11/2009	0.49 J	158

Rank Sum = 1320.5
Rank Mean = 82.5313

LMW-7	1/16/1998	ND<2	77.5
	3/16/1999	ND<2	77.5
	9/23/1999	ND<2	77.5
	3/14/2000	10	186
	9/23/2003	ND<2	77.5
	3/10/2004	ND<2	77.5
	10/12/2004	ND<2	77.5
	4/1/2005	ND<2	77.5
	10/26/2005	ND<2	77.5
	6/19/2006	ND<2	77.5
	11/18/2006	ND<2	77.5

	6/2/2007	1 J	168
	11/15/2007	ND<2	77.5
	5/20/2008	ND<2	77.5
	11/20/2008	10	187
	6/11/2009	1.1 J B	173

Rank Sum = 1644
Rank Mean = 102.75

LMW-6	1/16/1998	ND<2	77.5
	3/16/1999	ND<2	77.5
	9/23/1999	ND<2	77.5
	3/14/2000	ND<2	77.5
	9/23/2003	ND<2	77.5
	3/10/2004	ND<2	77.5
	10/12/2004	ND<2	77.5
	4/1/2005	ND<2	77.5
	10/26/2005	ND<2	77.5
	6/19/2006	ND<2	77.5
	11/18/2006	ND<2	77.5
	6/2/2007	1 J	169
	11/15/2007	ND<2	77.5
	5/20/2008	ND<2	77.5
	11/20/2008	ND<2	77.5
	6/11/2009	0.65 J B	160

Rank Sum = 1414
Rank Mean = 88.375

LMW-3S	11/18/2006	ND<2	77.5
	6/2/2007	ND<2	77.5
	11/15/2007	ND<2	77.5
	5/20/2008	ND<2	77.5
	11/20/2008	ND<2	77.5
	6/11/2009	0.73 J B	161

Rank Sum = 548.5
Rank Mean = 91.4167

LMW-3	11/19/1996	ND<2	77.5
	3/24/1997	ND<2	77.5
	1/16/1998	ND<2	77.5
	3/16/1999	ND<2	77.5
	9/23/1999	ND<2	77.5
	3/14/2000	ND<2	77.5
	9/23/2003	ND<2	77.5
	3/10/2004	ND<2	77.5
	10/12/2004	ND<2	77.5
	4/1/2005	ND<2	77.5
	10/26/2005	ND<2	77.5
	6/19/2006	ND<2	77.5
	11/18/2006	ND<2	77.5
	6/2/2007	ND<2	77.5
	11/15/2007	ND<2	77.5
	5/20/2008	ND<2	77.5
	11/20/2008	ND<2	77.5
	6/11/2009	0.42 J B	156

Rank Sum = 1473.5
Rank Mean = 81.8611

LMW-16	11/18/2006	ND<2	77.5
	6/2/2007	2	174
	11/15/2007	ND<2	77.5
	5/20/2008	ND<2	77.5
	11/20/2008	9	184

	6/11/2009	0.56 J	159

Rank Sum = 749.5
Rank Mean = 124.917

LMW-15	11/18/2006	ND<2	77.5
	6/2/2007	ND<2	77.5
	11/15/2007	ND<2	77.5
	11/15/2007	ND<2	77.5
	5/20/2008	ND<2	77.5
	5/20/2008	ND<2	77.5
	11/20/2008	ND<2	77.5
	11/20/2008	ND<2	77.5
	6/11/2009	2.5	176

Rank Sum = 796
Rank Mean = 88.4444

LMW-14R	6/2/2007	1 J	170
	11/15/2007	ND<2	77.5
	5/20/2008	ND<2	77.5
	11/20/2008	9	185
	6/11/2009	0.41 J	155

Rank Sum = 665
Rank Mean = 133

LMW-13	3/14/2000	16	189
	9/23/2003	ND<2	77.5
	3/10/2004	ND<2	77.5
	10/12/2004	ND<2	77.5
	4/1/2005	ND<2	77.5
	10/26/2005	ND<2	77.5
	6/19/2006	ND<2	77.5
	6/2/2007	ND<2	77.5
	11/15/2007	ND<2	77.5
	5/20/2008	ND<2	77.5
	11/20/2008	ND<2	77.5

Rank Sum = 964
Rank Mean = 87.6364

LMW-12	3/14/2000	57	194
	9/23/2003	ND<2	77.5
	3/10/2004	ND<2	77.5
	10/12/2004	ND<2	77.5
	4/1/2005	ND<2	77.5
	10/26/2005	ND<2	77.5
	6/19/2006	ND<2	77.5
	6/2/2007	ND<2	77.5
	11/15/2007	ND<2	77.5
	5/20/2008	ND<2	77.5
	11/20/2008	ND<2	77.5

Rank Sum = 969
Rank Mean = 88.0909

LMW-11	3/14/2000	12	188
	9/23/2003	ND<2	77.5
	3/10/2004	18	190
	10/12/2004	ND<2	77.5
	4/1/2005	ND<2	77.5
	10/26/2005	ND<2	77.5
	6/19/2006	ND<2	77.5
	6/2/2007	ND<2	77.5
	11/15/2007	ND<2	77.5
	5/20/2008	ND<2	77.5

	11/20/2008	ND<2	77.5	

Rank Sum = 1075.5
Rank Mean = 97.7727

LMW-10	3/14/2000	23	191	
	9/23/2003	ND<2	77.5	
	3/10/2004	25	192	
	10/12/2004	ND<2	77.5	
	4/1/2005	ND<2	77.5	
	10/26/2005	ND<2	77.5	
	6/19/2006	ND<2	77.5	
	11/18/2006	ND<2	77.5	
	6/2/2007	1 J	171	
	11/15/2007	ND<2	77.5	
	5/20/2008	ND<2	77.5	
	11/20/2008	ND<2	77.5	
	6/11/2009	ND<0.4 U		77.5

Rank Sum = 1329
Rank Mean = 102.231

Calculation Results:

Kruskal-Wallis H Statistic = 18.0654
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 35.6004
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
18.0654 < 26.2962 indicating no significant group difference at 5% significance level
35.6004 > 26.2962 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634
Mean background rank is 88.125

Well	Mean Rank	Dif from Bkg	Critical Value
MW-5	95.4231	7.29808	49.0225
LMW-9S	122.25	34.125	62.8498
LMW-9D	161.75	73.625	62.8498
LMW-9	112.938	24.8125	46.4177
LMW-8	82.5313	-5.59375	46.4177
LMW-7	102.75	14.625	46.4177
LMW-6	88.375	0.25	46.4177
LMW-3S	91.4167	3.29167	62.8498
LMW-3	81.8611	-6.26389	45.1099
LMW-16	124.917	36.7917	62.8498
LMW-15	88.4444	0.319444	54.7037
LMW-14R	133	44.875	67.2656
LMW-13	87.6364	-0.488636	51.4226
LMW-12	88.0909	-0.0340909	51.4226
LMW-11	97.7727	9.64773	51.4226
LMW-10	102.231	14.1058	49.0225

Individual Well Comparisons at Groupwise 5% Significance Level (0.3125% Significance Level per comparison)

0.3125% Z score is 2.74777
Mean background rank is 88.125

Well	Mean Rank	Dif from Bkg	Critical Value
MW-5	95.4231	7.29808	57.9031
LMW-9S	122.25	34.125	74.2352
LMW-9D	161.75	73.625	74.2352
LMW-9	112.938	24.8125	54.8264
LMW-8	82.5313	-5.59375	54.8264

LMW-7	102.75	14.625	54.8264	
LMW-6	88.375	0.25	54.8264	
LMW-3S	91.4167	3.29167	74.2352	
LMW-3	81.8611	-6.2638	953.2816	
LMW-16	124.917	36.7917	74.2352	
LMW-15	88.4444	0.319444		64.6135
LMW-14R		133	44.875	79.4509
LMW-13	87.6364	-0.488636		60.7379
LMW-12	88.0909	-0.0340909		60.7379
LMW-11	97.7727	9.64773	60.7379	
LMW-10	102.231	14.1058	57.9031	

Mann-Kendall Trend Analysis

Parameter: Arsenic

Location: LMW-9D

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

95% Confidence Level

Xj	Xk	Xj - Xk		Positives	Negatives
7	7	0	0	0	
ND<2	7	-5	0	1	
3	7	-4	0	2	
3	7	-4	0	3	
2.1	7	-4.9	0	4	
ND<2	7	-5	0	5	
3	7	-4	0	6	
3	7	-4	0	7	
2.1	7	-4.9	0	8	
3	ND<2	1	1	8	
3	ND<2	1	2	8	
2.1	ND<2	0.1	3	8	
3	3	0	3	8	
2.1	3	-0.9	3	9	
2.1	3	-0.9	3	10	

S Statistic = 3 - 10 = -7
Comparing at 95% confidence level (upward trend)
Probability of obtaining S >= -7 is 0.136
S < 0 or 0.136 >= 0.05 indicating no evidence of an upward trend

Concentrations (ppb)

Parameter: Barium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 88
Percent Non-Detects: 45.1282%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	5 (31.25%)	1/16/1998	ND<10	ND<10
			3/16/1999	20	20
			9/23/1999	8 J	8 J
			3/14/2000	ND<10	ND<10
			9/23/2003	ND<10	ND<10
			3/10/2004	ND<10	ND<10
			10/12/2004	ND<10	ND<10
			4/1/2005	14	14
			10/26/2005	12	12
			6/19/2006	10	10
			11/18/2006	13	13
			6/2/2007	24	24
			11/15/2007	13	13
			5/20/2008	11	11
			11/20/2008	14	14
			6/11/2009	13	13

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	10 (76.9231%)	1/16/1998	ND<10	ND<10
			3/16/1999	20	20
			9/23/1999	9 J	9 J
			3/14/2000	ND<10	ND<10
			9/23/2003	ND<10	ND<10
			3/10/2004	ND<10	ND<10
			10/12/2004	ND<10	ND<10
			4/1/2005	ND<10	ND<10
			10/26/2005	ND<10	ND<10
			6/19/2006	ND<10	ND<10
			11/15/2007	17	17
			5/20/2008	ND<10	ND<10
			11/20/2008	ND<10	ND<10
LMW-9S	6	0 (0%)	11/18/2006	77	77
			6/2/2007	80	80
			11/15/2007	2 J	2 J
			5/20/2008	75	75
			11/20/2008	61	61
			6/11/2009	28	28
LMW-9D	6	0 (0%)	11/18/2006	13	13
			6/2/2007	5	5
			11/15/2007	120	120
			5/20/2008	10	10

			11/20/2008	3 J	3 J	
			6/11/2009	3.1	3.1	
LMW-9	16	7 (43.75%)	1/16/1998	ND<10	ND<10	
			3/16/1999	10	10	
			9/23/1999	22	22	
			3/14/2000	ND<10	ND<10	
			9/23/2003	ND<10	ND<10	
			3/10/2004	ND<10	ND<10	
			10/12/2004	ND<10	ND<10	
			4/1/2005	ND<10	ND<10	
			10/26/2005	ND<10	ND<10	
			6/19/2006	10	10	
			11/18/2006	3 J	3 J	
			6/2/2007	6	6	
			11/15/2007	3 J	3 J	
			5/20/2008	2 J	2 J	
			11/20/2008	4 J	4 J	
			6/11/2009	3.1	3.1	
LMW-8	16	5 (31.25%)	1/16/1998	ND<10	ND<10	
			3/16/1999	10	10	
			9/23/1999	109	109	
			3/14/2000	ND<10	ND<10	
			9/23/2003	ND<10	ND<10	
			3/10/2004	ND<10	ND<10	
			10/12/2004	ND<10	ND<10	
			4/1/2005	48	48	
			10/26/2005	38	38	
			6/19/2006	40	40	
			11/18/2006	32	32	
			6/2/2007	34	34	
			11/15/2007	41	41	
			5/20/2008	34	34	
			11/20/2008	29	29	
			6/11/2009	40	40	
LMW-7	16	5 (31.25%)	1/16/1998	ND<10	ND<10	
			3/16/1999	20	20	
			9/23/1999	22	22	
			3/14/2000	ND<10	ND<10	
			9/23/2003	ND<10	ND<10	
			3/10/2004	ND<10	ND<10	
			10/12/2004	ND<10	ND<10	
			4/1/2005	31	31	
			10/26/2005	30	30	
			6/19/2006	20	20	
			11/18/2006	11	11	
			6/2/2007	27	27	
			11/15/2007	6 J	6 J	
			5/20/2008	5 J	5 J	
			11/20/2008	7 J	7 J	
			6/11/2009	12	12	
LMW-6	16	5 (31.25%)	1/16/1998	ND<10	ND<10	
			3/16/1999	8 J	8 J	
			9/23/1999	18	18	
			3/14/2000	ND<10	ND<10	
			9/23/2003	ND<10	ND<10	
			3/10/2004	ND<10	ND<10	
			10/12/2004	ND<10	ND<10	
			4/1/2005	9 J	9 J	

			10/26/2005	12	12	
			6/19/2006	20	20	
			11/18/2006	33	33	
			6/2/2007	52	52	
			11/15/2007	42	42	
			5/20/2008	49	49	
			11/20/2008	73	73	
			6/11/2009	92	92	
LMW-3S	6	0 (0%)	11/18/2006	5 J	5 J	
			6/2/2007	18	18	
			11/15/2007	13	13	
			5/20/2008	8 J	8 J	
			11/20/2008	13	13	
			6/11/2009	12	12	
LMW-3	18	9 (50%)	11/19/1996	ND<10	ND<10	
			3/24/1997	ND<10	ND<10	
			1/16/1998	ND<10	ND<10	
			3/16/1999	8 J	8 J	
			9/23/1999	7 J	7 J	
			3/14/2000	ND<10	ND<10	
			9/23/2003	ND<10	ND<10	
			3/10/2004	ND<10	ND<10	
			10/12/2004	ND<10	ND<10	
			4/1/2005	ND<10	ND<10	
			10/26/2005	7 J	7 J	
			6/19/2006	5 J	5 J	
			11/18/2006	7 J	7 J	
			6/2/2007	5	5	
			11/15/2007	ND<10	ND<10	
			5/20/2008	5 J	5 J	
			11/20/2008	5 J	5 J	
			6/11/2009	7.2	7.2	
LMW-16	6	0 (0%)	11/18/2006	23	23	
			6/2/2007	41	41	
			11/15/2007	35	35	
			5/20/2008	22	22	
			11/20/2008	23	23	
			6/11/2009	14	14	
LMW-15	9	3 (33.3333%)	11/18/2006	37	37	
			6/2/2007	38	38	
			11/15/2007	ND<10	ND<10	
			11/15/2007	27	27	
			5/20/2008	ND<10	ND<10	
			5/20/2008	24	24	
			11/20/2008	38	38	
			11/20/2008	ND<10	ND<10	
			6/11/2009	42	42	
LMW-14R	5	0 (0%)	6/2/2007	14	14	
			11/15/2007	12	12	
			5/20/2008	9 J	9 J	
			11/20/2008	13	13	
			6/11/2009	13	13	
LMW-13	11	11 (100%)	3/14/2000	ND<10	ND<10	
			9/23/2003	ND<10	ND<10	
			3/10/2004	ND<10	ND<10	

		10/12/2004	ND<10	ND<10	
		4/1/2005	ND<10	ND<10	
		10/26/2005	ND<10	ND<10	
		6/19/2006	ND<10	ND<10	
		6/2/2007	ND<10	ND<10	
		11/15/2007	ND<10	ND<10	
		5/20/2008	ND<10	ND<10	
		11/20/2008	ND<10	ND<10	
LMW-12	11	11 (100%)	3/14/2000	ND<10	ND<10
		9/23/2003	ND<10	ND<10	
		3/10/2004	ND<10	ND<10	
		10/12/2004	ND<10	ND<10	
		4/1/2005	ND<10	ND<10	
		10/26/2005	ND<10	ND<10	
		6/19/2006	ND<10	ND<10	
		6/2/2007	ND<10	ND<10	
		11/15/2007	ND<10	ND<10	
		5/20/2008	ND<10	ND<10	
		11/20/2008	ND<10	ND<10	
LMW-11	11	11 (100%)	3/14/2000	ND<10	ND<10
		9/23/2003	ND<10	ND<10	
		3/10/2004	ND<10	ND<10	
		10/12/2004	ND<10	ND<10	
		4/1/2005	ND<10	ND<10	
		10/26/2005	ND<10	ND<10	
		6/19/2006	ND<10	ND<10	
		6/2/2007	ND<10	ND<10	
		11/15/2007	ND<10	ND<10	
		5/20/2008	ND<10	ND<10	
		11/20/2008	ND<10	ND<10	
LMW-10	13	6 (46.1538%)	3/14/2000	ND<10	ND<10
		9/23/2003	ND<10	ND<10	
		3/10/2004	ND<10	ND<10	
		10/12/2004	ND<10	ND<10	
		4/1/2005	13	13	
		10/26/2005	ND<10	ND<10	
		6/19/2006	20	20	
		11/18/2006	11	11	
		6/2/2007	21	21	
		11/15/2007	ND<10	ND<10	
		5/20/2008	12	12	
		11/20/2008	12	12	
		6/11/2009	13	13	

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Kruskal-Wallis Non-Parametric Test

Parameter: Barium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	ND<10	44.5
	3/16/1999	20	150
	9/23/1999	8 J	111
	3/14/2000	ND<10	44.5
	9/23/2003	ND<10	44.5
	3/10/2004	ND<10	44.5
	10/12/2004	ND<10	44.5
	4/1/2005	14	143
	10/26/2005	12	126
	6/19/2006	10	118
	11/18/2006	13	133
	6/2/2007	24	162
	11/15/2007	13	134
	5/20/2008	11	123
	11/20/2008	14	144
	6/11/2009	13	135

Rank Sum = 1701.5
Rank Mean = 106.344

Background Rank Sum = 1701.5
Background Rank Mean = 106.344

Compliance Wells

Well ID	Date	Result	Rank
MW-5	1/16/1998	ND<10	44.5
	3/16/1999	20	151
	9/23/1999	9 J	115
	3/14/2000	ND<10	44.5
	9/23/2003	ND<10	44.5
	3/10/2004	ND<10	44.5
	10/12/2004	ND<10	44.5
	4/1/2005	ND<10	44.5
	10/26/2005	ND<10	44.5
	6/19/2006	ND<10	44.5
	11/15/2007	17	147
	5/20/2008	ND<10	44.5
	11/20/2008	ND<10	44.5

Rank Sum = 858
Rank Mean = 66

LMW-9S	11/18/2006	77	191
	6/2/2007	80	192
	11/15/2007	2 J	89
	5/20/2008	75	190
	11/20/2008	61	188

	6/11/2009	28	166

Rank Sum = 1016
Rank Mean = 169.333

LMW-9D	11/18/2006	13	136
	6/2/2007	5	97
	11/15/2007	120	195
	5/20/2008	10	119
	11/20/2008	3 J	91
	6/11/2009	3.1	94

Rank Sum = 732
Rank Mean = 122

LMW-9	1/16/1998	ND<10	44.5
	3/16/1999	10	120
	9/23/1999	22	157
	3/14/2000	ND<10	44.5
	9/23/2003	ND<10	44.5
	3/10/2004	ND<10	44.5
	10/12/2004	ND<10	44.5
	4/1/2005	ND<10	44.5
	10/26/2005	ND<10	44.5
	6/19/2006	10	121
	11/18/2006	3 J	92
	6/2/2007	6	104
	11/15/2007	3 J	93
	5/20/2008	2 J	90
	11/20/2008	4 J	96
	6/11/2009	3.1	95

Rank Sum = 1279.5
Rank Mean = 79.9688

LMW-8	1/16/1998	ND<10	44.5
	3/16/1999	10	122
	9/23/1999	109	194
	3/14/2000	ND<10	44.5
	9/23/2003	ND<10	44.5
	3/10/2004	ND<10	44.5
	10/12/2004	ND<10	44.5
	4/1/2005	48	185
	10/26/2005	38	176
	6/19/2006	40	179
	11/18/2006	32	170
	6/2/2007	34	172
	11/15/2007	41	181
	5/20/2008	34	173
	11/20/2008	29	167
	6/11/2009	40	180

Rank Sum = 2121.5
Rank Mean = 132.594

LMW-7	1/16/1998	ND<10	44.5
	3/16/1999	20	152
	9/23/1999	22	158
	3/14/2000	ND<10	44.5
	9/23/2003	ND<10	44.5
	3/10/2004	ND<10	44.5
	10/12/2004	ND<10	44.5
	4/1/2005	31	169
	10/26/2005	30	168
	6/19/2006	20	153
	11/18/2006	11	124

	6/2/2007	27	164
	11/15/2007	6 J	105
	5/20/2008	5 J	98
	11/20/2008	7 J	106
	6/11/2009	12	127

Rank Sum = 1746.5
Rank Mean = 109.156

LMW-6	1/16/1998	ND<10	44.5
	3/16/1999	8 J	112
	9/23/1999	18	148
	3/14/2000	ND<10	44.5
	9/23/2003	ND<10	44.5
	3/10/2004	ND<10	44.5
	10/12/2004	ND<10	44.5
	4/1/2005	9 J	116
	10/26/2005	12	128
	6/19/2006	20	154
	11/18/2006	33	171
	6/2/2007	52	187
	11/15/2007	42	183
	5/20/2008	49	186
	11/20/2008	73	189
	6/11/2009	92	193

Rank Sum = 1989.5
Rank Mean = 124.344

LMW-3S	11/18/2006	5 J	99
	6/2/2007	18	149
	11/15/2007	13	137
	5/20/2008	8 J	113
	11/20/2008	13	138
	6/11/2009	12	129

Rank Sum = 765
Rank Mean = 127.5

LMW-3	11/19/1996	ND<10	44.5
	3/24/1997	ND<10	44.5
	1/16/1998	ND<10	44.5
	3/16/1999	8 J	114
	9/23/1999	7 J	107
	3/14/2000	ND<10	44.5
	9/23/2003	ND<10	44.5
	3/10/2004	ND<10	44.5
	10/12/2004	ND<10	44.5
	4/1/2005	ND<10	44.5
	10/26/2005	7 J	108
	6/19/2006	5 J	100
	11/18/2006	7 J	109
	6/2/2007	5	101
	11/15/2007	ND<10	44.5
	5/20/2008	5 J	102
	11/20/2008	5 J	103
	6/11/2009	7.2	110

Rank Sum = 1354.5
Rank Mean = 75.25

LMW-16	11/18/2006	23	160
	6/2/2007	41	182
	11/15/2007	35	174
	5/20/2008	22	159
	11/20/2008	23	161

	6/11/2009	14	145

Rank Sum = 981
Rank Mean = 163.5

LMW-15	11/18/2006	37	175
	6/2/2007	38	177
	11/15/2007	ND<10	44.5
	11/15/2007	27	165
	5/20/2008	ND<10	44.5
	5/20/2008	24	163
	11/20/2008	38	178
	11/20/2008	ND<10	44.5
	6/11/2009	42	184

Rank Sum = 1175.5
Rank Mean = 130.611

LMW-14R	6/2/2007	14	146
	11/15/2007	12	130
	5/20/2008	9 J	117
	11/20/2008	13	139
	6/11/2009	13	140

Rank Sum = 672
Rank Mean = 134.4

LMW-13	3/14/2000	ND<10	44.5
	9/23/2003	ND<10	44.5
	3/10/2004	ND<10	44.5
	10/12/2004	ND<10	44.5
	4/1/2005	ND<10	44.5
	10/26/2005	ND<10	44.5
	6/19/2006	ND<10	44.5
	6/2/2007	ND<10	44.5
	11/15/2007	ND<10	44.5
	5/20/2008	ND<10	44.5
	11/20/2008	ND<10	44.5

Rank Sum = 489.5
Rank Mean = 44.5

LMW-12	3/14/2000	ND<10	44.5
	9/23/2003	ND<10	44.5
	3/10/2004	ND<10	44.5
	10/12/2004	ND<10	44.5
	4/1/2005	ND<10	44.5
	10/26/2005	ND<10	44.5
	6/19/2006	ND<10	44.5
	6/2/2007	ND<10	44.5
	11/15/2007	ND<10	44.5
	5/20/2008	ND<10	44.5
	11/20/2008	ND<10	44.5

Rank Sum = 489.5
Rank Mean = 44.5

LMW-11	3/14/2000	ND<10	44.5
	9/23/2003	ND<10	44.5
	3/10/2004	ND<10	44.5
	10/12/2004	ND<10	44.5
	4/1/2005	ND<10	44.5
	10/26/2005	ND<10	44.5
	6/19/2006	ND<10	44.5
	6/2/2007	ND<10	44.5
	11/15/2007	ND<10	44.5
	5/20/2008	ND<10	44.5

	11/20/2008	ND<10	44.5

Rank Sum = 489.5
Rank Mean = 44.5

LMW-10	3/14/2000	ND<10	44.5
	9/23/2003	ND<10	44.5
	3/10/2004	ND<10	44.5
	10/12/2004	ND<10	44.5
	4/1/2005	13	141
	10/26/2005	ND<10	44.5
	6/19/2006	20	155
	11/18/2006	11	125
	6/2/2007	21	156
	11/15/2007	ND<10	44.5
	5/20/2008	12	131
	11/20/2008	12	132
	6/11/2009	13	142

Rank Sum = 1249
Rank Mean = 96.0769

Calculation Results:

Kruskal-Wallis H Statistic = 74.3595
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 81.8844
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
74.3595 > 26.2962 indicating a significant group difference at 5% significance level
81.8844 > 26.2962 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634
Mean background rank is 106.344

Well	Mean Rank	Dif from Bkg	Critical Value
MW-5	66	-40.3438	49.0225
LMW-9S	169.333	62.9896	62.8498
LMW-9D	122	15.6563	62.8498
LMW-9	79.9688	-26.375	46.4177
LMW-8	132.594	26.25	46.4177
LMW-7	109.156	2.8125	46.4177
LMW-6	124.344	18	46.4177
LMW-3S	127.5	21.1563	62.8498
LMW-3	75.25	-31.0938	45.1099
LMW-16	163.5	57.1563	62.8498
LMW-15	130.611	24.2674	54.7037
LMW-14R		134.4	28.0563	67.2656
LMW-13	44.5	-61.8438	51.4226
LMW-12	44.5	-61.8438	51.4226
LMW-11	44.5	-61.8438	51.4226
LMW-10	96.0769	-10.2668	49.0225

Individual Well Comparisons at Groupwise 5% Significance Level (0.3125% Significance Level per comparison)

0.3125% Z score is 2.74777
Mean background rank is 106.344

Well	Mean Rank	Dif from Bkg	Critical Value
MW-5	66	-40.3438	57.9031
LMW-9S	169.333	62.9896	74.2352
LMW-9D	122	15.6563	74.2352
LMW-9	79.9688	-26.375	54.8264
LMW-8	132.594	26.25	54.8264

LMW-7	109.156	2.8125	54.8264	
LMW-6	124.344	18	54.8264	
LMW-3S	127.5	21.1563	74.2352	
LMW-3	75.25	-31.0938	53.2816	
LMW-16	163.5	57.1563	74.2352	
LMW-15	130.611	24.2674	64.6135	
LMW-14R		134.4	28.0563	79.4509
LMW-13	44.5	-61.8438	60.7379	
LMW-12	44.5	-61.8438	60.7379	
LMW-11	44.5	-61.8438	60.7379	
LMW-10	96.0769	-10.2668	57.9031	

Mann-Kendall Trend Analysis

Parameter: Barium

Location: LMW-9S

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

95% Confidence Level

Xj	Xk	Xj - Xk		Positives	Negatives
80	77	3	1	0	
2 J	77	-75	1	1	
75	77	-2	1	2	
61	77	-16	1	3	
28	77	-49	1	4	
2 J	80	-78	1	5	
75	80	-5	1	6	
61	80	-19	1	7	
28	80	-52	1	8	
75	2 J	73	2	8	
61	2 J	59	3	8	
28	2 J	26	4	8	
61	75	-14	4	9	
28	75	-47	4	10	
28	61	-33	4	11	

S Statistic = 4 - 11 = -7
Comparing at 95% confidence level (upward trend)
Probability of obtaining S >= -7 is 0.136
S < 0 or 0.136 >= 0.05 indicating no evidence of an upward trend

Concentrations (ppb)

Parameter: Beryllium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 190
Percent Non-Detects: 97.4359%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	16 (100%)	1/16/1998	ND<10	ND<10
			3/16/1999	ND<10	ND<10
			9/23/1999	ND<10	ND<10
			3/14/2000	ND<10	ND<10
			9/23/2003	ND<10	ND<10
			3/10/2004	ND<10	ND<10
			10/12/2004	ND<10	ND<10
			4/1/2005	ND<10	ND<10
			10/26/2005	ND<10	ND<10
			6/19/2006	ND<10	ND<10
			11/18/2006	ND<10	ND<10
			6/2/2007	ND<10	ND<10
			11/15/2007	ND<10	ND<10
			5/20/2008	ND<10	ND<10
			11/20/2008	ND<10	ND<10
			6/11/2009	ND<0.07 U	ND<0.07 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	13 (100%)	1/16/1998	ND<10	ND<10
			3/16/1999	ND<10	ND<10
			9/23/1999	ND<10	ND<10
			3/14/2000	ND<10	ND<10
			9/23/2003	ND<10	ND<10
			3/10/2004	ND<10	ND<10
			10/12/2004	ND<10	ND<10
			4/1/2005	ND<10	ND<10
			10/26/2005	ND<10	ND<10
			6/19/2006	ND<10	ND<10
			11/15/2007	ND<10	ND<10
			5/20/2008	ND<10	ND<10
			11/20/2008	ND<10	ND<10
LMW-9S	6	6 (100%)	11/18/2006	ND<10	ND<10
			6/2/2007	ND<10	ND<10
			11/15/2007	ND<10	ND<10
			5/20/2008	ND<10	ND<10
			11/20/2008	ND<10	ND<10
			6/11/2009	ND<0.07 U	ND<0.07 U
LMW-9D	6	6 (100%)	11/18/2006	ND<10	ND<10
			6/2/2007	ND<10	ND<10
			11/15/2007	ND<10	ND<10
			5/20/2008	ND<10	ND<10

			11/20/2008	ND<10	ND<10	
			6/11/2009	ND<0.07 U		ND<0.07 U
LMW-9	16	15 (93.75%)	1/16/1998		ND<10	ND<10
			3/16/1999	ND<10	ND<10	
			9/23/1999	ND<10	ND<10	
			3/14/2000	ND<10	ND<10	
			9/23/2003	ND<10	ND<10	
			3/10/2004	ND<10	ND<10	
			10/12/2004	ND<10	ND<10	
			4/1/2005	ND<10	ND<10	
			10/26/2005	ND<10	ND<10	
			6/19/2006	ND<10	ND<10	
			11/18/2006	ND<10	ND<10	
			6/2/2007	ND<10	ND<10	
			11/15/2007	ND<10	ND<10	
			5/20/2008	ND<10	ND<10	
			11/20/2008	ND<10	ND<10	
			6/11/2009	0.089 J	0.089 J	
LMW-8	16	16 (100%)	1/16/1998		ND<10	ND<10
			3/16/1999	ND<10	ND<10	
			9/23/1999	ND<10	ND<10	
			3/14/2000	ND<10	ND<10	
			9/23/2003	ND<10	ND<10	
			3/10/2004	ND<10	ND<10	
			10/12/2004	ND<10	ND<10	
			4/1/2005	ND<10	ND<10	
			10/26/2005	ND<10	ND<10	
			6/19/2006	ND<10	ND<10	
			11/18/2006	ND<10	ND<10	
			6/2/2007	ND<10	ND<10	
			11/15/2007	ND<10	ND<10	
			5/20/2008	ND<10	ND<10	
			11/20/2008	ND<10	ND<10	
			6/11/2009	ND<0.07 U		ND<0.07 U
LMW-7	16	15 (93.75%)	1/16/1998		ND<10	ND<10
			3/16/1999	ND<10	ND<10	
			9/23/1999	ND<10	ND<10	
			3/14/2000	ND<10	ND<10	
			9/23/2003	ND<10	ND<10	
			3/10/2004	ND<10	ND<10	
			10/12/2004	ND<10	ND<10	
			4/1/2005	ND<10	ND<10	
			10/26/2005	ND<10	ND<10	
			6/19/2006	ND<10	ND<10	
			11/18/2006	ND<10	ND<10	
			6/2/2007	ND<10	ND<10	
			11/15/2007	ND<10	ND<10	
			5/20/2008	ND<10	ND<10	
			11/20/2008	ND<10	ND<10	
			6/11/2009	0.19 J	0.19 J	
LMW-6	16	15 (93.75%)	1/16/1998		ND<10	ND<10
			3/16/1999	ND<10	ND<10	
			9/23/1999	ND<10	ND<10	
			3/14/2000	ND<10	ND<10	
			9/23/2003	ND<10	ND<10	
			3/10/2004	ND<10	ND<10	
			10/12/2004	ND<10	ND<10	
			4/1/2005	ND<10	ND<10	

			10/26/2005	ND<10	ND<10	
			6/19/2006	ND<10	ND<10	
			11/18/2006	ND<10	ND<10	
			6/2/2007	ND<10	ND<10	
			11/15/2007	ND<10	ND<10	
			5/20/2008	ND<10	ND<10	
			11/20/2008	ND<10	ND<10	
			6/11/2009	0.15 J	0.15 J	
LMW-3S	6	5 (83.3333%)	11/18/2006	ND<10	ND<10	
			6/2/2007	ND<10	ND<10	
			11/15/2007	ND<10	ND<10	
			5/20/2008	ND<10	ND<10	
			11/20/2008	ND<10	ND<10	
			6/11/2009	0.076 J	0.076 J	
LMW-3	18	18 (100%)	11/19/1996	ND<10	ND<10	
			3/24/1997	ND<10	ND<10	
			1/16/1998	ND<10	ND<10	
			3/16/1999	ND<10	ND<10	
			9/23/1999	ND<10	ND<10	
			3/14/2000	ND<10	ND<10	
			9/23/2003	ND<10	ND<10	
			3/10/2004	ND<10	ND<10	
			10/12/2004	ND<10	ND<10	
			4/1/2005	ND<10	ND<10	
			10/26/2005	ND<10	ND<10	
			6/19/2006	ND<10	ND<10	
			11/18/2006	ND<10	ND<10	
			6/2/2007	ND<10	ND<10	
			11/15/2007	ND<10	ND<10	
			5/20/2008	ND<10	ND<10	
			11/20/2008	ND<10	ND<10	
			6/11/2009	ND<0.07 U	ND<0.07 U	
LMW-16	6	6 (100%)	11/18/2006	ND<10	ND<10	
			6/2/2007	ND<10	ND<10	
			11/15/2007	ND<10	ND<10	
			5/20/2008	ND<10	ND<10	
			11/20/2008	ND<10	ND<10	
			6/11/2009	ND<0.07 U	ND<0.07 U	
LMW-15	9	8 (88.8889%)	11/18/2006	ND<10	ND<10	
			6/2/2007	ND<10	ND<10	
			11/15/2007	ND<10	ND<10	
			11/15/2007	ND<10	ND<10	
			5/20/2008	ND<10	ND<10	
			5/20/2008	ND<10	ND<10	
			11/20/2008	ND<10	ND<10	
			11/20/2008	ND<10	ND<10	
			6/11/2009	0.29	0.29	
LMW-14R	5	5 (100%)	6/2/2007	ND<10	ND<10	
			11/15/2007	ND<10	ND<10	
			5/20/2008	ND<10	ND<10	
			11/20/2008	ND<10	ND<10	
			6/11/2009	ND<0.07 U	ND<0.07 U	
LMW-13	11	11 (100%)	3/14/2000	ND<10	ND<10	
			9/23/2003	ND<10	ND<10	
			3/10/2004	ND<10	ND<10	

		10/12/2004	ND<10	ND<10	
		4/1/2005	ND<10	ND<10	
		10/26/2005	ND<10	ND<10	
		6/19/2006	ND<10	ND<10	
		6/2/2007	ND<10	ND<10	
		11/15/2007	ND<10	ND<10	
		5/20/2008	ND<10	ND<10	
		11/20/2008	ND<10	ND<10	
LMW-12	11	11 (100%)	3/14/2000	ND<10	ND<10
		9/23/2003	ND<10	ND<10	
		3/10/2004	ND<10	ND<10	
		10/12/2004	ND<10	ND<10	
		4/1/2005	ND<10	ND<10	
		10/26/2005	ND<10	ND<10	
		6/19/2006	ND<10	ND<10	
		6/2/2007	ND<10	ND<10	
		11/15/2007	ND<10	ND<10	
		5/20/2008	ND<10	ND<10	
		11/20/2008	ND<10	ND<10	
LMW-11	11	11 (100%)	3/14/2000	ND<10	ND<10
		9/23/2003	ND<10	ND<10	
		3/10/2004	ND<10	ND<10	
		10/12/2004	ND<10	ND<10	
		4/1/2005	ND<10	ND<10	
		10/26/2005	ND<10	ND<10	
		6/19/2006	ND<10	ND<10	
		6/2/2007	ND<10	ND<10	
		11/15/2007	ND<10	ND<10	
		5/20/2008	ND<10	ND<10	
		11/20/2008	ND<10	ND<10	
LMW-10	13	13 (100%)	3/14/2000	ND<10	ND<10
		9/23/2003	ND<10	ND<10	
		3/10/2004	ND<10	ND<10	
		10/12/2004	ND<10	ND<10	
		4/1/2005	ND<10	ND<10	
		10/26/2005	ND<10	ND<10	
		6/19/2006	ND<10	ND<10	
		11/18/2006	ND<10	ND<10	
		6/2/2007	ND<10	ND<10	
		11/15/2007	ND<10	ND<10	
		5/20/2008	ND<10	ND<10	
		11/20/2008	ND<10	ND<10	
		6/11/2009	ND<0.07 U		ND<0.07 U

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Beryllium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 97.4359%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 16
Maximum Background Concentration = 10
Confidence Level = 66.7%
False Positive Rate = 33.3%

Location	Date	Samples	Mean	Significant
MW-5	11/20/2008	1	10	FALSE
LMW-9S	6/11/2009	1	0.07	FALSE
LMW-9D	6/11/2009	1	0.07	FALSE
LMW-9	6/11/2009	1	0.089	FALSE
LMW-8	6/11/2009	1	0.07	FALSE
LMW-7	6/11/2009	1	0.19	FALSE
LMW-6	6/11/2009	1	0.15	FALSE
LMW-3S	6/11/2009	1	0.076	FALSE
LMW-3	6/11/2009	1	0.07	FALSE
LMW-16	6/11/2009	1	0.07	FALSE
LMW-15	6/11/2009	1	0.29	FALSE
LMW-14R	6/11/2009	1	0.07	FALSE
LMW-13	11/20/2008	1	10	FALSE
LMW-12	11/20/2008	1	10	FALSE
LMW-11	11/20/2008	1	10	FALSE
LMW-10	6/11/2009	1	0.07	FALSE

Concentrations (ppb)

Parameter: Cadmium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 179
Percent Non-Detects: 91.7949%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	14 (87.5%)	1/16/1998	4	4
			3/16/1999	ND<20	ND<20
			9/23/1999	ND<20	ND<20
			3/14/2000	3 J	3 J
			9/23/2003	ND<20	ND<20
			3/10/2004	ND<20	ND<20
			10/12/2004	ND<20	ND<20
			4/1/2005	ND<20	ND<20
			10/26/2005	ND<20	ND<20
			6/19/2006	ND<20	ND<20
			11/18/2006	ND<20	ND<20
			6/2/2007	ND<20	ND<20
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
			6/11/2009	ND<0.2 U	ND<0.2 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	12 (92.3077%)	1/16/1998	ND<20	ND<20
			3/16/1999	ND<20	ND<20
			9/23/1999	ND<20	ND<20
			3/14/2000	3 J	3 J
			9/23/2003	ND<20	ND<20
			3/10/2004	ND<20	ND<20
			10/12/2004	ND<20	ND<20
			4/1/2005	ND<20	ND<20
			10/26/2005	ND<20	ND<20
			6/19/2006	ND<20	ND<20
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
LMW-9S	6	6 (100%)	11/18/2006	ND<20	ND<20
			6/2/2007	ND<20	ND<20
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
			6/11/2009	ND<0.2 U	ND<0.2 U
LMW-9D	6	6 (100%)	11/18/2006	ND<20	ND<20
			6/2/2007	ND<20	ND<20
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20

			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<0.2 U		ND<0.2 U
LMW-9	16	16 (100%)	1/16/1998		ND<20	ND<20
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<0.2 U		ND<0.2 U
LMW-8	16	15 (93.75%)	1/16/1998		2 J	2 J
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<0.2 U		ND<0.2 U
LMW-7	16	12 (75%)	1/16/1998		38	38
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	3 J	3 J	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	1 J	1 J	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<0 J	ND<0 J	
			6/19/2006	ND<0 J	ND<0 J	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	1.2	1.2	
LMW-6	16	14 (87.5%)	1/16/1998		ND<20	ND<20
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	1 J	1 J	
			9/23/2003	31	31	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	

			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<0.2 U		ND<0.2 U
LMW-3S	6	6 (100%)	11/18/2006	ND<20		ND<20
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<0.2 U		ND<0.2 U
LMW-3	18	17 (94.4444%)	11/19/1996	ND<20		ND<20
			3/24/1997	ND<20	ND<20	
			1/16/1998	ND<20	ND<20	
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	2 J	2 J	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<0.2 U		ND<0.2 U
LMW-16	6	5 (83.3333%)	11/18/2006	ND<20		ND<20
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	2 J	2 J	
			6/11/2009	ND<0.2 U		ND<0.2 U
LMW-15	9	9 (100%)	11/18/2006	ND<20		ND<20
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<0.2 U		ND<0.2 U
LMW-14R	5	5 (100%)	6/2/2007	ND<20		ND<20
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<0.2 U		ND<0.2 U
LMW-13	11	10 (90.9091%)	3/14/2000	1 J		1 J
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	

		10/12/2004	ND<20	ND<20	
		4/1/2005	ND<20	ND<20	
		10/26/2005	ND<20	ND<20	
		6/19/2006	ND<20	ND<20	
		6/2/2007	ND<20	ND<20	
		11/15/2007	ND<20	ND<20	
		5/20/2008	ND<20	ND<20	
		11/20/2008	ND<20	ND<20	
LMW-12	11	10 (90.9091%)	3/14/2000	4 J	4 J
		9/23/2003	ND<20	ND<20	
		3/10/2004	ND<20	ND<20	
		10/12/2004	ND<20	ND<20	
		4/1/2005	ND<20	ND<20	
		10/26/2005	ND<20	ND<20	
		6/19/2006	ND<20	ND<20	
		6/2/2007	ND<20	ND<20	
		11/15/2007	ND<20	ND<20	
		5/20/2008	ND<20	ND<20	
		11/20/2008	ND<20	ND<20	
LMW-11	11	10 (90.9091%)	3/14/2000	ND<20	ND<20
		9/23/2003	ND<20	ND<20	
		3/10/2004	ND<20	ND<20	
		10/12/2004	2 J	2 J	
		4/1/2005	ND<20	ND<20	
		10/26/2005	ND<20	ND<20	
		6/19/2006	ND<20	ND<20	
		6/2/2007	ND<20	ND<20	
		11/15/2007	ND<20	ND<20	
		5/20/2008	ND<20	ND<20	
		11/20/2008	ND<20	ND<20	
LMW-10	13	12 (92.3077%)	3/14/2000	1 J	1 J
		9/23/2003	ND<20	ND<20	
		3/10/2004	ND<20	ND<20	
		10/12/2004	ND<20	ND<20	
		4/1/2005	ND<20	ND<20	
		10/26/2005	ND<20	ND<20	
		6/19/2006	ND<0 J	ND<0 J	
		11/18/2006	ND<20	ND<20	
		6/2/2007	ND<20	ND<20	
		11/15/2007	ND<20	ND<20	
		5/20/2008	ND<20	ND<20	
		11/20/2008	ND<20	ND<20	
		6/11/2009	ND<0.2 U		ND<0.2 U

There are 0 unused locations

Loc.	Meas. ND	Date	Conc.	Original

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Cadmium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 91.7949%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 16
Maximum Background Concentration = 20
Confidence Level = 66.7%
False Positive Rate = 33.3%

Location	Date	Samples	Mean	Significant
MW-5	11/20/2008	1	20	FALSE
LMW-9S	6/11/2009	1	0.2	FALSE
LMW-9D	6/11/2009	1	0.2	FALSE
LMW-9	6/11/2009	1	0.2	FALSE
LMW-8	6/11/2009	1	0.2	FALSE
LMW-7	6/11/2009	1	1.2	FALSE
LMW-6	6/11/2009	1	0.2	FALSE
LMW-3S	6/11/2009	1	0.2	FALSE
LMW-3	6/11/2009	1	0.2	FALSE
LMW-16	6/11/2009	1	0.2	FALSE
LMW-15	6/11/2009	1	0.2	FALSE
LMW-14R	6/11/2009	1	0.2	FALSE
LMW-13	11/20/2008	1	20	FALSE
LMW-12	11/20/2008	1	20	FALSE
LMW-11	11/20/2008	1	20	FALSE
LMW-10	6/11/2009	1	0.2	FALSE

Concentrations (ppb)

Parameter: Chloroform

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 190
Percent Non-Detects: 97.4359%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	15 (93.75%)	1/16/1998	78	78
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.14 U	ND<0.14 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	12 (92.3077%)	1/16/1998	8	8
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
LMW-9S	6	6 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.14 U	ND<0.14 U
LMW-9D	6	6 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1

			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.14 U		ND<0.14 U
LMW-9	16	15 (93.75%)	1/16/1998	ND<1	ND<1	
			3/16/1999	3	3	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.14 U		ND<0.14 U
LMW-8	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.14 U		ND<0.14 U
LMW-7	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.14 U		ND<0.14 U
LMW-6	16	15 (93.75%)	1/16/1998	6	6	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	

			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.14 U		ND<0.14 U
LMW-3S	6	6 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.14 U		ND<0.14 U
LMW-3	18	17 (94.4444%)	11/19/1996	ND<1	ND<1	
			3/24/1997	ND<1	ND<1	
			1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<0 J	ND<0 J	
			11/20/2008	ND<0 J	ND<0 J	
			6/11/2009	0.33 J	0.33 J	
LMW-16	6	6 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.14 U		ND<0.14 U
LMW-15	9	9 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.14 U		ND<0.14 U
LMW-14R	5	5 (100%)	6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.14 U		ND<0.14 U
LMW-13	11	11 (100%)	3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	

		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-12	11	11 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-11	11	11 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-10	13	13 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		11/18/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
		6/11/2009	ND<0.14 U		ND<0.14 U

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Chloroform

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 97.4359%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 16
Maximum Background Concentration = 78
Confidence Level = 66.7%
False Positive Rate = 33.3%

Location	Date	Samples	Mean	Significant
MW-5	11/20/2008	1	1	FALSE
LMW-9S	6/11/2009	1	0.14	FALSE
LMW-9D	6/11/2009	1	0.14	FALSE
LMW-9	6/11/2009	1	0.14	FALSE
LMW-8	6/11/2009	1	0.14	FALSE
LMW-7	6/11/2009	1	0.14	FALSE
LMW-6	6/11/2009	1	0.14	FALSE
LMW-3S	6/11/2009	1	0.14	FALSE
LMW-3	6/11/2009	1	0.33	FALSE
LMW-16	6/11/2009	1	0.14	FALSE
LMW-15	6/11/2009	1	0.14	FALSE
LMW-14R	6/11/2009	1	0.14	FALSE
LMW-13	11/20/2008	1	1	FALSE
LMW-12	11/20/2008	1	1	FALSE
LMW-11	11/20/2008	1	1	FALSE
LMW-10	6/11/2009	1	0.14	FALSE

Concentrations (ppb)

Parameter: Chloromethane

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 377
Total Non-Detect: 375
Percent Non-Detects: 99.4695%
Total Background Measurements: 31
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	31	31 (100%)	1/16/1998	ND<1	ND<1
			1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<1	ND<1
			11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.33 U	ND<0.33 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	26	26 (100%)	1/16/1998	ND<1	ND<1
			1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			9/23/2003	ND<1	ND<1

			3/10/2004	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
LMW-9S	11	11 (100%)	11/18/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.33 U		ND<0.33 U
LMW-9D	11	11 (100%)	11/18/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.33 U		ND<0.33 U
LMW-9	31	31 (100%)	1/16/1998	ND<1	ND<1	
			1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	

			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.33 U		ND<0.33 U
LMW-8	31	30 (96.7742%)	1/16/1998		ND<1	ND<1
			1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	3.3	3.3	
LMW-7	31	31 (100%)	1/16/1998		ND<1	ND<1
			1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	

			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<0 J	ND<0 J	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.33 U		ND<0.33 U
LMW-6	31	31 (100%)	1/16/1998	ND<1	ND<1	
			1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.33 U		ND<0.33 U
LMW-3S	11	11 (100%)	11/18/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.33 U		ND<0.33 U
LMW-3	35	35 (100%)	11/19/1996	ND<1	ND<1	
			11/19/1996	ND<1	ND<1	
			3/24/1997	ND<1	ND<1	
			3/24/1997	ND<1	ND<1	
			1/16/1998	ND<1	ND<1	

			1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.33 U		ND<0.33 U
LMW-16	11	11 (100%)	11/18/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.33 U		ND<0.33 U
LMW-15	17	16 (94.1176%)	11/18/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	1.8	1.8	
LMW-14R	9	9 (100%)	6/2/2007	ND<1	ND<1	

		6/2/2007	ND<1	ND<1	
		11/15/2007		ND<1	ND<1
		11/15/2007		ND<1	ND<1
		5/20/2008		ND<1	ND<1
		5/20/2008		ND<1	ND<1
		11/20/2008		ND<1	ND<1
		11/20/2008		ND<1	ND<1
		6/11/2009		ND<0.33 U	ND<0.33 U
LMW-13	22	22 (100%)	3/14/2000	ND<1	ND<1
		3/14/2000		ND<1	ND<1
		9/23/2003		ND<1	ND<1
		9/23/2003		ND<1	ND<1
		3/10/2004		ND<1	ND<1
		3/10/2004		ND<1	ND<1
		10/12/2004		ND<1	ND<1
		10/12/2004		ND<1	ND<1
		4/1/2005	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005		ND<1	ND<1
		10/26/2005		ND<1	ND<1
		6/19/2006		ND<1	ND<1
		6/19/2006		ND<1	ND<1
		6/2/2007	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007		ND<1	ND<1
		11/15/2007		ND<1	ND<1
		5/20/2008		ND<1	ND<1
		5/20/2008		ND<1	ND<1
		11/20/2008		ND<1	ND<1
		11/20/2008		ND<1	ND<1
LMW-12	22	22 (100%)	3/14/2000	ND<1	ND<1
		3/14/2000		ND<1	ND<1
		9/23/2003		ND<1	ND<1
		9/23/2003		ND<1	ND<1
		3/10/2004		ND<1	ND<1
		3/10/2004		ND<1	ND<1
		10/12/2004		ND<1	ND<1
		10/12/2004		ND<1	ND<1
		4/1/2005	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005		ND<1	ND<1
		10/26/2005		ND<1	ND<1
		6/19/2006		ND<1	ND<1
		6/19/2006		ND<1	ND<1
		6/2/2007	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007		ND<1	ND<1
		11/15/2007		ND<1	ND<1
		5/20/2008		ND<1	ND<1
		5/20/2008		ND<1	ND<1
		11/20/2008		ND<1	ND<1
		11/20/2008		ND<1	ND<1
LMW-11	22	22 (100%)	3/14/2000	ND<1	ND<1
		3/14/2000		ND<1	ND<1
		9/23/2003		ND<1	ND<1
		9/23/2003		ND<1	ND<1
		3/10/2004		ND<1	ND<1
		3/10/2004		ND<1	ND<1
		10/12/2004		ND<1	ND<1

		10/12/2004	ND<1	ND<1	
		4/1/2005 ND<1	ND<1		
		4/1/2005 ND<1	ND<1		
		10/26/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007 ND<1	ND<1		
		6/2/2007 ND<1	ND<1		
		11/15/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-10 25	25 (100%)	3/14/2000	ND<1	ND<1	
		3/14/2000	ND<1	ND<1	
		9/23/2003	ND<1	ND<1	
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005 ND<1	ND<1		
		4/1/2005 ND<1	ND<1		
		10/26/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		11/18/2006	ND<1	ND<1	
		11/18/2006	ND<1	ND<1	
		6/2/2007 ND<1	ND<1		
		6/2/2007 ND<1	ND<1		
		11/15/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
		6/11/2009	ND<0.33 U		ND<0.33 U

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Chloromethane

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 99.4695%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 31
Maximum Background Concentration = 1
Confidence Level = 79.5%
False Positive Rate = 20.5%

Location	Date	Samples	Mean	Significant
MW-5	11/20/2008	2	1	FALSE
LMW-9S	6/11/2009	1	0.33	FALSE
LMW-9D	6/11/2009	1	0.33	FALSE
LMW-9	6/11/2009	1	0.33	FALSE
LMW-8	6/11/2009	1	3.3	TRUE
LMW-7	6/11/2009	1	0.33	FALSE
LMW-6	6/11/2009	1	0.33	FALSE
LMW-3S	6/11/2009	1	0.33	FALSE
LMW-3	6/11/2009	1	0.33	FALSE
LMW-16	6/11/2009	1	0.33	FALSE
LMW-15	6/11/2009	1	1.8	TRUE
LMW-14R	6/11/2009	1	0.33	FALSE
LMW-13	11/20/2008	2	1	FALSE
LMW-12	11/20/2008	2	1	FALSE
LMW-11	11/20/2008	2	1	FALSE
LMW-10	6/11/2009	1	0.33	FALSE

Mann-Kendall Trend Analysis

Parameter: Chloromethane

Location: LMW-8

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

95% Confidence Level

Xj	Xk	Xj - Xk		Positives	Negatives
ND<1	ND<1	Same Date		0	0
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
3.3	ND<1	2.3	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	

ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
3.3	ND<1	2.3	2	0	
ND<1	ND<1	Same Date		2	0
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
3.3	ND<1	2.3	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	

ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
3.3	ND<1	2.3	4	0	
ND<1	ND<1	Same Date		4	0
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
3.3	ND<1	2.3	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
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ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
3.3	ND<1	2.3	6	0	
ND<1	ND<1	Same Date		6	0

ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
3.3	ND<1	2.3	7	0	
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ND<1	ND<1	0	7	0	
ND<1	ND<1	0	7	0	
ND<1	ND<1	0	7	0	
ND<1	ND<1	0	7	0	
ND<1	ND<1	0	7	0	
ND<1	ND<1	0	7	0	
ND<1	ND<1	0	7	0	
ND<1	ND<1	0	7	0	
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ND<1	ND<1	0	7	0	
ND<1	ND<1	0	7	0	
ND<1	ND<1	0	7	0	
ND<1	ND<1	0	7	0	
3.3	ND<1	2.3	8	0	
ND<1	ND<1	Same Date		8	0
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	

ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
3.3	ND<1	2.3	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
3.3	ND<1	2.3	10	0	
ND<1	ND<1	Same Date		10	0
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
3.3	ND<1	2.3	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	

ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
3.3	ND<1	2.3	12	0	
ND<1	ND<1	Same Date		12	0
ND<1	ND<1	0	12	0	
ND<1	ND<1	0	12	0	
ND<1	ND<1	0	12	0	
ND<1	ND<1	0	12	0	
ND<1	ND<1	0	12	0	
ND<1	ND<1	0	12	0	
ND<1	ND<1	0	12	0	
ND<1	ND<1	0	12	0	
ND<1	ND<1	0	12	0	
ND<1	ND<1	0	12	0	
ND<1	ND<1	0	12	0	
ND<1	ND<1	0	12	0	
ND<1	ND<1	0	12	0	
ND<1	ND<1	0	12	0	
ND<1	ND<1	0	12	0	
ND<1	ND<1	0	12	0	
3.3	ND<1	2.3	13	0	
ND<1	ND<1	0	13	0	
ND<1	ND<1	0	13	0	
ND<1	ND<1	0	13	0	
ND<1	ND<1	0	13	0	
ND<1	ND<1	0	13	0	
ND<1	ND<1	0	13	0	
ND<1	ND<1	0	13	0	
ND<1	ND<1	0	13	0	
ND<1	ND<1	0	13	0	
ND<1	ND<1	0	13	0	
ND<1	ND<1	0	13	0	
ND<1	ND<1	0	13	0	
ND<1	ND<1	0	13	0	
ND<1	ND<1	0	13	0	
ND<1	ND<1	0	13	0	
ND<1	ND<1	0	13	0	
3.3	ND<1	2.3	14	0	
ND<1	ND<1	Same Date		14	0
ND<1	ND<1	0	14	0	
ND<1	ND<1	0	14	0	
ND<1	ND<1	0	14	0	
ND<1	ND<1	0	14	0	
ND<1	ND<1	0	14	0	
ND<1	ND<1	0	14	0	
ND<1	ND<1	0	14	0	
ND<1	ND<1	0	14	0	
ND<1	ND<1	0	14	0	
ND<1	ND<1	0	14	0	
ND<1	ND<1	0	14	0	
ND<1	ND<1	0	14	0	
ND<1	ND<1	0	14	0	
ND<1	ND<1	0	14	0	

3.3	ND<1	2.3	15	0
ND<1	ND<1	0	15	0
ND<1	ND<1	0	15	0
ND<1	ND<1	0	15	0
ND<1	ND<1	0	15	0
ND<1	ND<1	0	15	0
ND<1	ND<1	0	15	0
ND<1	ND<1	0	15	0
ND<1	ND<1	0	15	0
ND<1	ND<1	0	15	0
ND<1	ND<1	0	15	0
ND<1	ND<1	0	15	0
ND<1	ND<1	0	15	0
ND<1	ND<1	0	15	0
ND<1	ND<1	0	15	0
3.3	ND<1	2.3	16	0
ND<1	ND<1	Same Date	16	0
ND<1	ND<1	0	16	0
ND<1	ND<1	0	16	0
ND<1	ND<1	0	16	0
ND<1	ND<1	0	16	0
ND<1	ND<1	0	16	0
ND<1	ND<1	0	16	0
ND<1	ND<1	0	16	0
ND<1	ND<1	0	16	0
ND<1	ND<1	0	16	0
ND<1	ND<1	0	16	0
ND<1	ND<1	0	16	0
ND<1	ND<1	0	16	0
3.3	ND<1	2.3	17	0
ND<1	ND<1	0	17	0
ND<1	ND<1	0	17	0
ND<1	ND<1	0	17	0
ND<1	ND<1	0	17	0
ND<1	ND<1	0	17	0
ND<1	ND<1	0	17	0
ND<1	ND<1	0	17	0
ND<1	ND<1	0	17	0
ND<1	ND<1	0	17	0
ND<1	ND<1	0	17	0
ND<1	ND<1	0	17	0
ND<1	ND<1	0	17	0
3.3	ND<1	2.3	18	0
ND<1	ND<1	Same Date	18	0
ND<1	ND<1	0	18	0
ND<1	ND<1	0	18	0
ND<1	ND<1	0	18	0
ND<1	ND<1	0	18	0
ND<1	ND<1	0	18	0
ND<1	ND<1	0	18	0
ND<1	ND<1	0	18	0
ND<1	ND<1	0	18	0
ND<1	ND<1	0	18	0
ND<1	ND<1	0	18	0
3.3	ND<1	2.3	19	0
ND<1	ND<1	0	19	0
ND<1	ND<1	0	19	0

ND<1	ND<1	0	19	0	
ND<1	ND<1	0	19	0	
ND<1	ND<1	0	19	0	
ND<1	ND<1	0	19	0	
ND<1	ND<1	0	19	0	
ND<1	ND<1	0	19	0	
ND<1	ND<1	0	19	0	
ND<1	ND<1	0	19	0	
3.3	ND<1	2.3	20	0	
ND<1	ND<1	Same Date		20	0
ND<1	ND<1	0	20	0	
ND<1	ND<1	0	20	0	
ND<1	ND<1	0	20	0	
ND<1	ND<1	0	20	0	
ND<1	ND<1	0	20	0	
ND<1	ND<1	0	20	0	
ND<1	ND<1	0	20	0	
ND<1	ND<1	0	20	0	
3.3	ND<1	2.3	21	0	
ND<1	ND<1	0	21	0	
ND<1	ND<1	0	21	0	
ND<1	ND<1	0	21	0	
ND<1	ND<1	0	21	0	
ND<1	ND<1	0	21	0	
ND<1	ND<1	0	21	0	
ND<1	ND<1	0	21	0	
ND<1	ND<1	0	21	0	
3.3	ND<1	2.3	22	0	
ND<1	ND<1	Same Date		22	0
ND<1	ND<1	0	22	0	
ND<1	ND<1	0	22	0	
ND<1	ND<1	0	22	0	
ND<1	ND<1	0	22	0	
ND<1	ND<1	0	22	0	
ND<1	ND<1	0	22	0	
3.3	ND<1	2.3	23	0	
ND<1	ND<1	0	23	0	
ND<1	ND<1	0	23	0	
ND<1	ND<1	0	23	0	
ND<1	ND<1	0	23	0	
ND<1	ND<1	0	23	0	
ND<1	ND<1	0	23	0	
3.3	ND<1	2.3	24	0	
ND<1	ND<1	Same Date		24	0
ND<1	ND<1	0	24	0	
ND<1	ND<1	0	24	0	
ND<1	ND<1	0	24	0	
ND<1	ND<1	0	24	0	
3.3	ND<1	2.3	25	0	
ND<1	ND<1	0	25	0	
ND<1	ND<1	0	25	0	
ND<1	ND<1	0	25	0	
ND<1	ND<1	0	25	0	
3.3	ND<1	2.3	26	0	

ND<1	ND<1	Same Date		26	0
ND<1	ND<1	0	26	0	
ND<1	ND<1	0	26	0	
3.3	ND<1	2.3	27	0	
ND<1	ND<1	0	27	0	
ND<1	ND<1	0	27	0	
3.3	ND<1	2.3	28	0	
ND<1	ND<1	Same Date		28	0
3.3	ND<1	2.3	29	0	
3.3	ND<1	2.3	30	0	

S Statistic = 30 - 0 = 30

Tied Group	Value	Members
1	1	30

Time Period		Observations
1/16/1998		2
3/16/1999		2
9/23/1999		2
3/14/2000		2
9/23/2003		2
3/10/2004		2
10/12/2004		2
4/1/2005	2	
10/26/2005		2
6/19/2006		2
11/18/2006		2
6/2/2007	2	
11/15/2007		2
5/20/2008		2
11/20/2008		2
6/11/2009		1

There are 15 time periods with multiple data

A = 56550
B = 270
C = 24360
D = 0
E = 870
F = 30
a = 62310
b = 242730
c = 1860
Group Variance = 319.032
Z-Score = 1.62361
Comparison Level at 95% confidence level = 1.65463 (upward trend)
1.62361 <= 1.65463 indicating no evidence of an upward trend

Mann-Kendall Trend Analysis

Parameter: Chloromethane

Location: LMW-15

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

95% Confidence Level

Xj	Xk	Xj - Xk		Positives	Negatives
ND<1	ND<1	Same Date		0	0
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
ND<1	ND<1	0	0	0	
1.8	ND<1	0.8	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
ND<1	ND<1	0	1	0	
1.8	ND<1	0.8	2	0	
ND<1	ND<1	Same Date		2	0
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
ND<1	ND<1	0	2	0	
1.8	ND<1	0.8	3	0	

ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
ND<1	ND<1	0	3	0	
1.8	ND<1	0.8	4	0	
ND<1	ND<1	Same Date		4	0
ND<1	ND<1	Same Date		4	0
ND<1	ND<1	Same Date		4	0
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
ND<1	ND<1	0	4	0	
1.8	ND<1	0.8	5	0	
ND<1	ND<1	Same Date		5	0
ND<1	ND<1	Same Date		5	0
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
ND<1	ND<1	0	5	0	
1.8	ND<1	0.8	6	0	
ND<1	ND<1	Same Date		6	0
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
ND<1	ND<1	0	6	0	
1.8	ND<1	0.8	7	0	
ND<1	ND<1	0	7	0	
ND<1	ND<1	0	7	0	
ND<1	ND<1	0	7	0	
ND<1	ND<1	0	7	0	
ND<1	ND<1	0	7	0	
ND<1	ND<1	0	7	0	
ND<1	ND<1	0	7	0	
ND<1	ND<1	0	7	0	
1.8	ND<1	0.8	8	0	
ND<1	ND<1	Same Date		8	0
ND<1	ND<1	Same Date		8	0

ND<1	ND<1	Same Date		8	0
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
ND<1	ND<1	0	8	0	
1.8	ND<1	0.8	9	0	
ND<1	ND<1	Same Date		9	0
ND<1	ND<1	Same Date		9	0
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
ND<1	ND<1	0	9	0	
1.8	ND<1	0.8	10	0	
ND<1	ND<1	Same Date		10	0
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
ND<1	ND<1	0	10	0	
1.8	ND<1	0.8	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
ND<1	ND<1	0	11	0	
1.8	ND<1	0.8	12	0	
ND<1	ND<1	Same Date		12	0
ND<1	ND<1	Same Date		12	0
ND<1	ND<1	Same Date		12	0
1.8	ND<1	0.8	13	0	
ND<1	ND<1	Same Date		13	0
ND<1	ND<1	Same Date		13	0
1.8	ND<1	0.8	14	0	
ND<1	ND<1	Same Date		14	0
1.8	ND<1	0.8	15	0	
1.8	ND<1	0.8	16	0	

S Statistic = 16 - 0 = 16

Tied Group	Value	Members
1	1	16

Time Period	Observations
11/18/2006	2
6/2/2007	2
11/15/2007	4
5/20/2008	4
11/20/2008	4
6/11/2009	1

There are 5 time periods with multiple data

A = 8880
B = 504
C = 3360

D = 72
E = 240
F = 40
a = 10608
b = 36720
c = 544
Group Variance = 92.2353
Z-Score = 1.56186
Comparison Level at 95% confidence level = 1.65463 (upward trend)
1.56186 <= 1.65463 indicating no evidence of an upward trend

Concentrations (ppb)

Parameter: Chromium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 141
Percent Non-Detects: 72.3077%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	10 (62.5%)	1/16/1998	345	345
			3/16/1999	ND<20	ND<20
			9/23/1999	ND<20	ND<20
			3/14/2000	87	87
			9/23/2003	ND<20	ND<20
			3/10/2004	120	120
			10/12/2004	ND<20	ND<20
			4/1/2005	10 J	10 J
			10/26/2005	ND<20	ND<20
			6/19/2006	ND<20	ND<20
			11/18/2006	ND<20	ND<20
			6/2/2007	21	21
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
			6/11/2009	0.84 J	0.84 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	11 (84.6154%)	1/16/1998	ND<20	ND<20
			3/16/1999	ND<20	ND<20
			9/23/1999	ND<20	ND<20
			3/14/2000	79	79
			9/23/2003	ND<20	ND<20
			3/10/2004	84	84
			10/12/2004	ND<20	ND<20
			4/1/2005	ND<20	ND<20
			10/26/2005	ND<20	ND<20
			6/19/2006	ND<20	ND<20
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
LMW-9S	6	4 (66.6667%)	11/18/2006	ND<20	ND<20
			6/2/2007	5	5
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
			6/11/2009	1	1
LMW-9D	6	3 (50%)	11/18/2006	6 J	6 J
			6/2/2007	ND<20	ND<20
			11/15/2007	ND<20	ND<20
			5/20/2008	3 J	3 J

			11/20/2008	ND<20	ND<20	
			6/11/2009	1	1	
LMW-9	16	9 (56.25%)	1/16/1998	23	23	
			3/16/1999	ND<20	ND<20	
			9/23/1999	22	22	
			3/14/2000	17 J	17 J	
			9/23/2003	ND<20	ND<20	
			3/10/2004	19 J	19 J	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	10 J	10 J	
			11/18/2006	ND<20	ND<20	
			6/2/2007	7	7	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	1.2	1.2	
LMW-8	16	12 (75%)	1/16/1998	ND<20	ND<20	
			3/16/1999	6 J	6 J	
			9/23/1999	13 J	13 J	
			3/14/2000	21	21	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	0.28 J	0.28 J	
LMW-7	16	7 (43.75%)	1/16/1998	10 J	10 J	
			3/16/1999	ND<20	ND<20	
			9/23/1999	5 J	5 J	
			3/14/2000	34	34	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	19 J	19 J	
			10/26/2005	23	23	
			6/19/2006	ND<20	ND<20	
			11/18/2006	5 J	5 J	
			6/2/2007	24	24	
			11/15/2007	ND<20	ND<20	
			5/20/2008	7 J	7 J	
			11/20/2008	ND<20	ND<20	
			6/11/2009	5.8	5.8	
LMW-6	16	10 (62.5%)	1/16/1998	13 J	13 J	
			3/16/1999	ND<20	ND<20	
			9/23/1999	6 J	6 J	
			3/14/2000	34	34	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	

			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	4 J	4 J	
			11/15/2007	ND<20	ND<20	
			5/20/2008	7 J	7 J	
			11/20/2008	ND<20	ND<20	
			6/11/2009	0.48 J	0.48 J	
LMW-3S	6	4 (66.6667%)	11/18/2006	ND<20	ND<20	
			6/2/2007	11	11	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	1.7	1.7	
LMW-3	18	17 (94.4444%)	11/19/1996	ND<20	ND<20	
			3/24/1997	ND<20	ND<20	
			1/16/1998	ND<20	ND<20	
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	0.32 J	0.32 J	
LMW-16	6	4 (66.6667%)	11/18/2006	ND<20	ND<20	
			6/2/2007	20	20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	0.83 J	0.83 J	
LMW-15	9	8 (88.8889%)	11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	5.5	5.5	
LMW-14R	5	4 (80%)	6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	1.6	1.6	
LMW-13	11	10 (90.9091%)	3/14/2000	27	27	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	

		10/12/2004	ND<20	ND<20	
		4/1/2005 ND<20	ND<20		
		10/26/2005	ND<20	ND<20	
		6/19/2006	ND<20	ND<20	
		6/2/2007 ND<20	ND<20		
		11/15/2007	ND<20	ND<20	
		5/20/2008	ND<20	ND<20	
		11/20/2008	ND<20	ND<20	
LMW-12 11	10 (90.9091%)	3/14/2000		93	93
		9/23/2003	ND<20	ND<20	
		3/10/2004	ND<20	ND<20	
		10/12/2004	ND<20	ND<20	
		4/1/2005 ND<20	ND<20		
		10/26/2005	ND<20	ND<20	
		6/19/2006	ND<20	ND<20	
		6/2/2007 ND<20	ND<20		
		11/15/2007	ND<20	ND<20	
		5/20/2008	ND<20	ND<20	
		11/20/2008	ND<20	ND<20	
LMW-11 11	9 (81.8182%)	3/14/2000		20	20
		9/23/2003	ND<20	ND<20	
		3/10/2004	40	40	
		10/12/2004	ND<20	ND<20	
		4/1/2005 ND<20	ND<20		
		10/26/2005	ND<20	ND<20	
		6/19/2006	ND<20	ND<20	
		6/2/2007 ND<20	ND<20		
		11/15/2007	ND<20	ND<20	
		5/20/2008	ND<20	ND<20	
		11/20/2008	ND<20	ND<20	
LMW-10 13	9 (69.2308%)	3/14/2000		28	28
		9/23/2003	ND<20	ND<20	
		3/10/2004	36	36	
		10/12/2004	ND<20	ND<20	
		4/1/2005 ND<20	ND<20		
		10/26/2005	ND<20	ND<20	
		6/19/2006	ND<20	ND<20	
		11/18/2006	ND<20	ND<20	
		6/2/2007 2	2		
		11/15/2007	ND<20	ND<20	
		5/20/2008	ND<20	ND<20	
		11/20/2008	ND<20	ND<20	
		6/11/2009	0.36 J	0.36 J	

There are 0 unused locations

Loc.	Meas. ND	Date	Conc.	Original

Kruskal-Wallis Non-Parametric Test

Parameter: Chromium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	345	195
	3/16/1999	ND<20	71
	9/23/1999	ND<20	71
	3/14/2000	87	192
	9/23/2003	ND<20	71
	3/10/2004	120	194
	10/12/2004	ND<20	71
	4/1/2005	10 J	167
	10/26/2005	ND<20	71
	6/19/2006	ND<20	71
	11/18/2006	ND<20	71
	6/2/2007	21	178
	11/15/2007	ND<20	71
	5/20/2008	ND<20	71
	11/20/2008	ND<20	71
	6/11/2009	0.84 J	147

Rank Sum = 1783
Rank Mean = 111.438

Background Rank Sum = 1783
Background Rank Mean = 111.438

Compliance Wells

Well ID	Date	Result	Rank
MW-5	1/16/1998	ND<20	71
	3/16/1999	ND<20	71
	9/23/1999	ND<20	71
	3/14/2000	79	190
	9/23/2003	ND<20	71
	3/10/2004	84	191
	10/12/2004	ND<20	71
	4/1/2005	ND<20	71
	10/26/2005	ND<20	71
	6/19/2006	ND<20	71
	11/15/2007	ND<20	71
	5/20/2008	ND<20	71
	11/20/2008	ND<20	71

Rank Sum = 1162
Rank Mean = 89.3846

LMW-9S	11/18/2006	ND<20	71
	6/2/2007	5	156
	11/15/2007	ND<20	71
	5/20/2008	ND<20	71
	11/20/2008	ND<20	71

	6/11/2009	1	148

Rank Sum = 588
Rank Mean = 98

LMW-9D	11/18/2006	6 J	161
	6/2/2007	ND<20	71
	11/15/2007	ND<20	71
	5/20/2008	3 J	154
	11/20/2008	ND<20	71
	6/11/2009	1	149

Rank Sum = 677
Rank Mean = 112.833

LMW-9	1/16/1998	23	181
	3/16/1999	ND<20	71
	9/23/1999	22	180
	3/14/2000	17 J	173
	9/23/2003	ND<20	71
	3/10/2004	19 J	174
	10/12/2004	ND<20	71
	4/1/2005	ND<20	71
	10/26/2005	ND<20	71
	6/19/2006	10 J	168
	11/18/2006	ND<20	71
	6/2/2007	7	164
	11/15/2007	ND<20	71
	5/20/2008	ND<20	71
	11/20/2008	ND<20	71
	6/11/2009	1.2	150

Rank Sum = 1829
Rank Mean = 114.313

LMW-8	1/16/1998	ND<20	71
	3/16/1999	6 J	162
	9/23/1999	13 J	171
	3/14/2000	21	179
	9/23/2003	ND<20	71
	3/10/2004	ND<20	71
	10/12/2004	ND<20	71
	4/1/2005	ND<20	71
	10/26/2005	ND<20	71
	6/19/2006	ND<20	71
	11/18/2006	ND<20	71
	6/2/2007	ND<20	71
	11/15/2007	ND<20	71
	5/20/2008	ND<20	71
	11/20/2008	ND<20	71
	6/11/2009	0.28 J	142

Rank Sum = 1506
Rank Mean = 94.125

LMW-7	1/16/1998	10 J	169
	3/16/1999	ND<20	71
	9/23/1999	5 J	157
	3/14/2000	34	186
	9/23/2003	ND<20	71
	3/10/2004	ND<20	71
	10/12/2004	ND<20	71
	4/1/2005	19 J	175
	10/26/2005	23	182
	6/19/2006	ND<20	71
	11/18/2006	5 J	158

	6/2/2007	24	183
	11/15/2007	ND<20	71
	5/20/2008	7 J	165
	11/20/2008	ND<20	71
	6/11/2009	5.8	160

Rank Sum = 2032
Rank Mean = 127

LMW-6	1/16/1998	13 J	172
	3/16/1999	ND<20	71
	9/23/1999	6 J	163
	3/14/2000	34	187
	9/23/2003	ND<20	71
	3/10/2004	ND<20	71
	10/12/2004	ND<20	71
	4/1/2005	ND<20	71
	10/26/2005	ND<20	71
	6/19/2006	ND<20	71
	11/18/2006	ND<20	71
	6/2/2007	4 J	155
	11/15/2007	ND<20	71
	5/20/2008	7 J	166
	11/20/2008	ND<20	71
	6/11/2009	0.48 J	145

Rank Sum = 1698
Rank Mean = 106.125

LMW-3S	11/18/2006	ND<20	71
	6/2/2007	11	170
	11/15/2007	ND<20	71
	5/20/2008	ND<20	71
	11/20/2008	ND<20	71
	6/11/2009	1.7	152

Rank Sum = 606
Rank Mean = 101

LMW-3	11/19/1996	ND<20	71
	3/24/1997	ND<20	71
	1/16/1998	ND<20	71
	3/16/1999	ND<20	71
	9/23/1999	ND<20	71
	3/14/2000	ND<20	71
	9/23/2003	ND<20	71
	3/10/2004	ND<20	71
	10/12/2004	ND<20	71
	4/1/2005	ND<20	71
	10/26/2005	ND<20	71
	6/19/2006	ND<20	71
	11/18/2006	ND<20	71
	6/2/2007	ND<20	71
	11/15/2007	ND<20	71
	5/20/2008	ND<20	71
	11/20/2008	ND<20	71
	6/11/2009	0.32 J	143

Rank Sum = 1350
Rank Mean = 75

LMW-16	11/18/2006	ND<20	71
	6/2/2007	20	176
	11/15/2007	ND<20	71
	5/20/2008	ND<20	71
	11/20/2008	ND<20	71

	6/11/2009	0.83 J	146

Rank Sum = 606
Rank Mean = 101

LMW-15	11/18/2006	ND<20	71
	6/2/2007	ND<20	71
	11/15/2007	ND<20	71
	11/15/2007	ND<20	71
	5/20/2008	ND<20	71
	5/20/2008	ND<20	71
	11/20/2008	ND<20	71
	11/20/2008	ND<20	71
	6/11/2009	5.5	159

Rank Sum = 727
Rank Mean = 80.7778

LMW-14R	6/2/2007	ND<20	71
	11/15/2007	ND<20	71
	5/20/2008	ND<20	71
	11/20/2008	ND<20	71
	6/11/2009	1.6	151

Rank Sum = 435
Rank Mean = 87

LMW-13	3/14/2000	27	184
	9/23/2003	ND<20	71
	3/10/2004	ND<20	71
	10/12/2004	ND<20	71
	4/1/2005	ND<20	71
	10/26/2005	ND<20	71
	6/19/2006	ND<20	71
	6/2/2007	ND<20	71
	11/15/2007	ND<20	71
	5/20/2008	ND<20	71
	11/20/2008	ND<20	71

Rank Sum = 894
Rank Mean = 81.2727

LMW-12	3/14/2000	93	193
	9/23/2003	ND<20	71
	3/10/2004	ND<20	71
	10/12/2004	ND<20	71
	4/1/2005	ND<20	71
	10/26/2005	ND<20	71
	6/19/2006	ND<20	71
	6/2/2007	ND<20	71
	11/15/2007	ND<20	71
	5/20/2008	ND<20	71
	11/20/2008	ND<20	71

Rank Sum = 903
Rank Mean = 82.0909

LMW-11	3/14/2000	20	177
	9/23/2003	ND<20	71
	3/10/2004	40	189
	10/12/2004	ND<20	71
	4/1/2005	ND<20	71
	10/26/2005	ND<20	71
	6/19/2006	ND<20	71
	6/2/2007	ND<20	71
	11/15/2007	ND<20	71
	5/20/2008	ND<20	71

	11/20/2008	ND<20	71

Rank Sum = 1005
Rank Mean = 91.3636

LMW-10	3/14/2000	28	185
	9/23/2003	ND<20	71
	3/10/2004	36	188
	10/12/2004	ND<20	71
	4/1/2005	ND<20	71
	10/26/2005	ND<20	71
	6/19/2006	ND<20	71
	11/18/2006	ND<20	71
	6/2/2007	2	153
	11/15/2007	ND<20	71
	5/20/2008	ND<20	71
	11/20/2008	ND<20	71
	6/11/2009	0.36 J	144

Rank Sum = 1309
Rank Mean = 100.692

Calculation Results:

Kruskal-Wallis H Statistic = 13.667
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 21.9742
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
13.667 < 26.2962 indicating no significant group difference at 5% significance level
21.9742 < 26.2962 indicating no significant group difference at 5% significance level when adjusted for ties

Concentrations (ppb)

Parameter: Cobalt

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 177
Percent Non-Detects: 90.7692%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	15 (93.75%)	1/16/1998	ND<20	ND<20
			3/16/1999	ND<20	ND<20
			9/23/1999	ND<20	ND<20
			3/14/2000	ND<20	ND<20
			9/23/2003	ND<20	ND<20
			3/10/2004	ND<20	ND<20
			10/12/2004	ND<20	ND<20
			4/1/2005	ND<20	ND<20
			10/26/2005	ND<20	ND<20
			6/19/2006	ND<20	ND<20
			11/18/2006	ND<20	ND<20
			6/2/2007	ND<20	ND<20
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
			6/11/2009	0.24	0.24

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	13 (100%)	1/16/1998	ND<20	ND<20
			3/16/1999	ND<20	ND<20
			9/23/1999	ND<20	ND<20
			3/14/2000	ND<20	ND<20
			9/23/2003	ND<20	ND<20
			3/10/2004	ND<20	ND<20
			10/12/2004	ND<20	ND<20
			4/1/2005	ND<20	ND<20
			10/26/2005	ND<20	ND<20
			6/19/2006	ND<20	ND<20
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
LMW-9S	6	2 (33.3333%)	11/18/2006	1 J	1 J
			6/2/2007	1 J	1 J
			11/15/2007	ND<20	ND<20
			5/20/2008	1 J	1 J
			11/20/2008	ND<20	ND<20
			6/11/2009	0.13 J	0.13 J
LMW-9D	6	5 (83.3333%)	11/18/2006	ND<20	ND<20
			6/2/2007	ND<20	ND<20
			11/15/2007	3 J	3 J
			5/20/2008	ND<20	ND<20

			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<0.078 U		ND<0.078 U
LMW-9	16	14 (87.5%)	1/16/1998		ND<20	ND<20
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	10 J	10 J	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	0.15 J	0.15 J	
LMW-8	16	15 (93.75%)	1/16/1998		ND<20	ND<20
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<0 J	ND<0 J	
			11/20/2008	ND<20	ND<20	
			6/11/2009	0.47	0.47	
LMW-7	16	14 (87.5%)	1/16/1998		ND<20	ND<20
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	1 J	1 J	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	0.63	0.63	
LMW-6	16	14 (87.5%)	1/16/1998		ND<20	ND<20
			3/16/1999	ND<20	ND<20	
			9/23/1999	11 J	11 J	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	

			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<0 J	ND<0 J	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<0 J	ND<0 J	
			11/20/2008	ND<20	ND<20	
			6/11/2009	1.4	1.4	
LMW-3S	6	5 (83.3333%)	11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<0 J	ND<0 J	
			11/20/2008	ND<20	ND<20	
			6/11/2009	0.42	0.42	
LMW-3	18	17 (94.4444%)	11/19/1996	ND<20	ND<20	
			3/24/1997	ND<20	ND<20	
			1/16/1998	ND<20	ND<20	
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	0.16 J	0.16 J	
LMW-16	6	6 (100%)	11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<0.078 U	ND<0.078 U	
LMW-15	9	8 (88.8889%)	11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			5/20/2008	ND<0 J	ND<0 J	
			11/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	0.83	0.83	
LMW-14R	5	4 (80%)	6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<0 J	ND<0 J	
			11/20/2008	ND<20	ND<20	
			6/11/2009	0.24	0.24	
LMW-13	11	11 (100%)	3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	

		10/12/2004	ND<20	ND<20	
		4/1/2005	ND<20	ND<20	
		10/26/2005	ND<20	ND<20	
		6/19/2006	ND<20	ND<20	
		6/2/2007	ND<20	ND<20	
		11/15/2007	ND<20	ND<20	
		5/20/2008	ND<20	ND<20	
		11/20/2008	ND<20	ND<20	
LMW-12	11	11 (100%)	3/14/2000	ND<20	ND<20
		9/23/2003	ND<20	ND<20	
		3/10/2004	ND<20	ND<20	
		10/12/2004	ND<20	ND<20	
		4/1/2005	ND<20	ND<20	
		10/26/2005	ND<20	ND<20	
		6/19/2006	ND<20	ND<20	
		6/2/2007	ND<20	ND<20	
		11/15/2007	ND<20	ND<20	
		5/20/2008	ND<20	ND<20	
		11/20/2008	ND<20	ND<20	
LMW-11	11	11 (100%)	3/14/2000	ND<20	ND<20
		9/23/2003	ND<20	ND<20	
		3/10/2004	ND<20	ND<20	
		10/12/2004	ND<20	ND<20	
		4/1/2005	ND<20	ND<20	
		10/26/2005	ND<20	ND<20	
		6/19/2006	ND<20	ND<20	
		6/2/2007	ND<20	ND<20	
		11/15/2007	ND<20	ND<20	
		5/20/2008	ND<20	ND<20	
		11/20/2008	ND<20	ND<20	
LMW-10	13	12 (92.3077%)	3/14/2000	ND<20	ND<20
		9/23/2003	ND<20	ND<20	
		3/10/2004	ND<20	ND<20	
		10/12/2004	ND<20	ND<20	
		4/1/2005	ND<20	ND<20	
		10/26/2005	ND<20	ND<20	
		6/19/2006	ND<20	ND<20	
		11/18/2006	ND<20	ND<20	
		6/2/2007	ND<20	ND<20	
		11/15/2007	ND<20	ND<20	
		5/20/2008	ND<20	ND<20	
		11/20/2008	ND<20	ND<20	
		6/11/2009	0.13 J	0.13 J	

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Kruskal-Wallis Non-Parametric Test

Parameter: Cobalt

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	ND<20	89
	3/16/1999	ND<20	89
	9/23/1999	ND<20	89
	3/14/2000	ND<20	89
	9/23/2003	ND<20	89
	3/10/2004	ND<20	89
	10/12/2004	ND<20	89
	4/1/2005	ND<20	89
	10/26/2005	ND<20	89
	6/19/2006	ND<20	89
	11/18/2006	ND<20	89
	6/2/2007	ND<20	89
	11/15/2007	ND<20	89
	5/20/2008	ND<20	89
	11/20/2008	ND<20	89
	6/11/2009	0.24	182

Rank Sum = 1517
Rank Mean = 94.8125

Background Rank Sum = 1517
Background Rank Mean = 94.8125

Compliance Wells

Well ID	Date	Result	Rank
MW-5	1/16/1998	ND<20	89
	3/16/1999	ND<20	89
	9/23/1999	ND<20	89
	3/14/2000	ND<20	89
	9/23/2003	ND<20	89
	3/10/2004	ND<20	89
	10/12/2004	ND<20	89
	4/1/2005	ND<20	89
	10/26/2005	ND<20	89
	6/19/2006	ND<20	89
	11/15/2007	ND<20	89
	5/20/2008	ND<20	89
	11/20/2008	ND<20	89

Rank Sum = 1157
Rank Mean = 89

LMW-9S	11/18/2006	1 J	188
	6/2/2007	1 J	189
	11/15/2007	ND<20	89
	5/20/2008	1 J	190
	11/20/2008	ND<20	89

	6/11/2009	0.13 J	178

Rank Sum = 923
Rank Mean = 153.833

LMW-9D	11/18/2006	ND<20	89
	6/2/2007	ND<20	89
	11/15/2007	3 J	193
	5/20/2008	ND<20	89
	11/20/2008	ND<20	89
	6/11/2009	ND<0.078 U	89

Rank Sum = 638
Rank Mean = 106.333

LMW-9	1/16/1998	ND<20	89
	3/16/1999	ND<20	89
	9/23/1999	ND<20	89
	3/14/2000	ND<20	89
	9/23/2003	ND<20	89
	3/10/2004	ND<20	89
	10/12/2004	ND<20	89
	4/1/2005	ND<20	89
	10/26/2005	ND<20	89
	6/19/2006	10 J	194
	11/18/2006	ND<20	89
	6/2/2007	ND<20	89
	11/15/2007	ND<20	89
	5/20/2008	ND<20	89
	11/20/2008	ND<20	89
	6/11/2009	0.15 J	180

Rank Sum = 1620
Rank Mean = 101.25

LMW-8	1/16/1998	ND<20	89
	3/16/1999	ND<20	89
	9/23/1999	ND<20	89
	3/14/2000	ND<20	89
	9/23/2003	ND<20	89
	3/10/2004	ND<20	89
	10/12/2004	ND<20	89
	4/1/2005	ND<20	89
	10/26/2005	ND<20	89
	6/19/2006	ND<20	89
	11/18/2006	ND<20	89
	6/2/2007	ND<20	89
	11/15/2007	ND<20	89
	5/20/2008	ND<0 J	89
	11/20/2008	ND<20	89
	6/11/2009	0.47	185

Rank Sum = 1520
Rank Mean = 95

LMW-7	1/16/1998	ND<20	89
	3/16/1999	ND<20	89
	9/23/1999	ND<20	89
	3/14/2000	ND<20	89
	9/23/2003	ND<20	89
	3/10/2004	ND<20	89
	10/12/2004	ND<20	89
	4/1/2005	ND<20	89
	10/26/2005	ND<20	89
	6/19/2006	ND<20	89
	11/18/2006	1 J	191

	6/2/2007	ND<20	89
	11/15/2007	ND<20	89
	5/20/2008	ND<20	89
	11/20/2008	ND<20	89
	6/11/2009	0.63	186

Rank Sum = 1623
Rank Mean = 101.438

LMW-6	1/16/1998	ND<20	89
	3/16/1999	ND<20	89
	9/23/1999	11 J	195
	3/14/2000	ND<20	89
	9/23/2003	ND<20	89
	3/10/2004	ND<20	89
	10/12/2004	ND<20	89
	4/1/2005	ND<20	89
	10/26/2005	ND<20	89
	6/19/2006	ND<20	89
	11/18/2006	ND<0 J	89
	6/2/2007	ND<20	89
	11/15/2007	ND<20	89
	5/20/2008	ND<0 J	89
	11/20/2008	ND<20	89
	6/11/2009	1.4	192

Rank Sum = 1633
Rank Mean = 102.063

LMW-3S	11/18/2006	ND<20	89
	6/2/2007	ND<20	89
	11/15/2007	ND<20	89
	5/20/2008	ND<0 J	89
	11/20/2008	ND<20	89
	6/11/2009	0.42	184

Rank Sum = 629
Rank Mean = 104.833

LMW-3	11/19/1996	ND<20	89
	3/24/1997	ND<20	89
	1/16/1998	ND<20	89
	3/16/1999	ND<20	89
	9/23/1999	ND<20	89
	3/14/2000	ND<20	89
	9/23/2003	ND<20	89
	3/10/2004	ND<20	89
	10/12/2004	ND<20	89
	4/1/2005	ND<20	89
	10/26/2005	ND<20	89
	6/19/2006	ND<20	89
	11/18/2006	ND<20	89
	6/2/2007	ND<20	89
	11/15/2007	ND<20	89
	5/20/2008	ND<20	89
	11/20/2008	ND<20	89
	6/11/2009	0.16 J	181

Rank Sum = 1694
Rank Mean = 94.1111

LMW-16	11/18/2006	ND<20	89
	6/2/2007	ND<20	89
	11/15/2007	ND<20	89
	5/20/2008	ND<20	89
	11/20/2008	ND<20	89

	6/11/2009	ND<0.078 U	89

Rank Sum = 534
Rank Mean = 89

LMW-15	11/18/2006	ND<20	89
	6/2/2007	ND<20	89
	11/15/2007	ND<20	89
	11/15/2007	ND<20	89
	5/20/2008	ND<20	89
	5/20/2008	ND<0 J	89
	11/20/2008	ND<20	89
	11/20/2008	ND<20	89
	6/11/2009	0.83	187

Rank Sum = 899
Rank Mean = 99.8889

LMW-14R	6/2/2007	ND<20	89
	11/15/2007	ND<20	89
	5/20/2008	ND<0 J	89
	11/20/2008	ND<20	89
	6/11/2009	0.24	183

Rank Sum = 539
Rank Mean = 107.8

LMW-13	3/14/2000	ND<20	89
	9/23/2003	ND<20	89
	3/10/2004	ND<20	89
	10/12/2004	ND<20	89
	4/1/2005	ND<20	89
	10/26/2005	ND<20	89
	6/19/2006	ND<20	89
	6/2/2007	ND<20	89
	11/15/2007	ND<20	89
	5/20/2008	ND<20	89
	11/20/2008	ND<20	89

Rank Sum = 979
Rank Mean = 89

LMW-12	3/14/2000	ND<20	89
	9/23/2003	ND<20	89
	3/10/2004	ND<20	89
	10/12/2004	ND<20	89
	4/1/2005	ND<20	89
	10/26/2005	ND<20	89
	6/19/2006	ND<20	89
	6/2/2007	ND<20	89
	11/15/2007	ND<20	89
	5/20/2008	ND<20	89
	11/20/2008	ND<20	89

Rank Sum = 979
Rank Mean = 89

LMW-11	3/14/2000	ND<20	89
	9/23/2003	ND<20	89
	3/10/2004	ND<20	89
	10/12/2004	ND<20	89
	4/1/2005	ND<20	89
	10/26/2005	ND<20	89
	6/19/2006	ND<20	89
	6/2/2007	ND<20	89
	11/15/2007	ND<20	89
	5/20/2008	ND<20	89

	11/20/2008	ND<20	89

Rank Sum = 979
Rank Mean = 89

LMW-10	3/14/2000	ND<20	89
	9/23/2003	ND<20	89
	3/10/2004	ND<20	89
	10/12/2004	ND<20	89
	4/1/2005	ND<20	89
	10/26/2005	ND<20	89
	6/19/2006	ND<20	89
	11/18/2006	ND<20	89
	6/2/2007	ND<20	89
	11/15/2007	ND<20	89
	5/20/2008	ND<20	89
	11/20/2008	ND<20	89
	6/11/2009	0.13 J	179

Rank Sum = 1247
Rank Mean = 95.9231

Calculation Results:

Kruskal-Wallis H Statistic = 7.96932
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 31.6053
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
7.96932 < 26.2962 indicating no significant group difference at 5% significance level
31.6053 > 26.2962 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634
Mean background rank is 94.8125

Well	Mean Rank		Dif from Bkg	Critical Value
MW-5	89	-5.8125	49.0225	
LMW-9S	153.833	59.0208	62.8498	
LMW-9D	106.333	11.5208	62.8498	
LMW-9	101.25	6.4375	46.4177	
LMW-8	95	0.1875	46.4177	
LMW-7	101.438	6.625	46.4177	
LMW-6	102.063	7.25	46.4177	
LMW-3S	104.833	10.0208	62.8498	
LMW-3	94.1111	-0.701389		45.1099
LMW-16	89	-5.8125	62.8498	
LMW-15	99.8889	5.07639	54.7037	
LMW-14R		107.8	12.9875	67.2656
LMW-13	89	-5.8125	51.4226	
LMW-12	89	-5.8125	51.4226	
LMW-11	89	-5.8125	51.4226	
LMW-10	95.9231	1.11058	49.0225	

Individual Well Comparisons at Groupwise 5% Significance Level (0.3125% Significance Level per comparison)

0.3125% Z score is 2.74777
Mean background rank is 94.8125

Well	Mean Rank		Dif from Bkg	Critical Value
MW-5	89	-5.8125	57.9031	
LMW-9S	153.833	59.0208	74.2352	
LMW-9D	106.333	11.5208	74.2352	
LMW-9	101.25	6.4375	54.8264	
LMW-8	95	0.1875	54.8264	

LMW-7	101.438	6.625	54.8264	
LMW-6	102.063	7.25	54.8264	
LMW-3S	104.833	10.0208	74.2352	
LMW-3	94.1111	-0.701389		53.2816
LMW-16	89	-5.8125	74.2352	
LMW-15	99.8889	5.07639	64.6135	
LMW-14R		107.8	12.9875	79.4509
LMW-13	89	-5.8125	60.7379	
LMW-12	89	-5.8125	60.7379	
LMW-11	89	-5.8125	60.7379	
LMW-10	95.9231	1.11058	57.9031	

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Cobalt

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 90.7692%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 16
Maximum Background Concentration = 20
Confidence Level = 66.7%
False Positive Rate = 33.3%

Location	Date	Samples	Mean	Significant
MW-5	11/20/2008	1	20	FALSE
LMW-9S	6/11/2009	1	0.13	FALSE
LMW-9D	6/11/2009	1	0.078	FALSE
LMW-9	6/11/2009	1	0.15	FALSE
LMW-8	6/11/2009	1	0.47	FALSE
LMW-7	6/11/2009	1	0.63	FALSE
LMW-6	6/11/2009	1	1.4	FALSE
LMW-3S	6/11/2009	1	0.42	FALSE
LMW-3	6/11/2009	1	0.16	FALSE
LMW-16	6/11/2009	1	0.078	FALSE
LMW-15	6/11/2009	1	0.83	FALSE
LMW-14R	6/11/2009	1	0.24	FALSE
LMW-13	11/20/2008	1	20	FALSE
LMW-12	11/20/2008	1	20	FALSE
LMW-11	11/20/2008	1	20	FALSE
LMW-10	6/11/2009	1	0.13	FALSE

Concentrations (ppb)

Parameter: Copper

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 142
Percent Non-Detects: 72.8205%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	11 (68.75%)	1/16/1998	73	73
			3/16/1999	ND<20	ND<20
			9/23/1999	ND<20	ND<20
			3/14/2000	ND<20	ND<20
			9/23/2003	ND<20	ND<20
			3/10/2004	ND<20	ND<20
			10/12/2004	ND<20	ND<20
			4/1/2005	ND<20	ND<20
			10/26/2005	ND<20	ND<20
			6/19/2006	ND<20	ND<20
			11/18/2006	ND<20	ND<20
			6/2/2007	8 J	8 J
			11/15/2007	5 J	5 J
			5/20/2008	8 J	8 J
			11/20/2008	ND<20	ND<20
			6/11/2009	0.74 J	0.74 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	11 (84.6154%)	1/16/1998	3 J	3 J
			3/16/1999	ND<20	ND<20
			9/23/1999	ND<20	ND<20
			3/14/2000	ND<20	ND<20
			9/23/2003	ND<20	ND<20
			3/10/2004	ND<20	ND<20
			10/12/2004	ND<20	ND<20
			4/1/2005	ND<20	ND<20
			10/26/2005	ND<20	ND<20
			6/19/2006	ND<20	ND<20
			11/15/2007	5 J	5 J
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
LMW-9S	6	4 (66.6667%)	11/18/2006	ND<20	ND<20
			6/2/2007	ND<20	ND<20
			11/15/2007	7 J	7 J
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
			6/11/2009	0.83 J	0.83 J
LMW-9D	6	2 (33.3333%)	11/18/2006	6 J	6 J
			6/2/2007	ND<20	ND<20
			11/15/2007	9 J	9 J
			5/20/2008	2 J	2 J

			11/20/2008	ND<20	ND<20	
			6/11/2009	0.69 J	0.69 J	
LMW-9	16	11 (68.75%)	1/16/1998	9 J	9 J	
			3/16/1999	ND<20	ND<20	
			9/23/1999	12 J	12 J	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	5 J	5 J	
			11/15/2007	7 J	7 J	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	0.88 J	0.88 J	
LMW-8	16	12 (75%)	1/16/1998	2 J	2 J	
			3/16/1999	5 J	5 J	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	6 J	6 J	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	0.75 J	0.75 J	
LMW-7	16	7 (43.75%)	1/16/1998	20	20	
			3/16/1999	5 J	5 J	
			9/23/1999	5 J	5 J	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	10 J	10 J	
			10/26/2005	11 J	11 J	
			6/19/2006	10 J	10 J	
			11/18/2006	ND<20	ND<20	
			6/2/2007	6 J	6 J	
			11/15/2007	8 J	8 J	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	4	4	
LMW-6	16	12 (75%)	1/16/1998	18 J	18 J	
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	

			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	7 J	7 J	
			11/15/2007	7 J	7 J	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	1.7	1.7	
LMW-3S	6	3 (50%)	11/18/2006	2 J	2 J	
			6/2/2007	ND<20	ND<20	
			11/15/2007	6 J	6 J	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	1.4	1.4	
LMW-3	18	15 (83.3333%)	11/19/1996		ND<20	ND<20
			3/24/1997	ND<20	ND<20	
			1/16/1998	4 J	4 J	
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	9 J	9 J	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	0.7 J	0.7 J	
LMW-16	6	2 (33.3333%)	11/18/2006		ND<20	ND<20
			6/2/2007	7 J	7 J	
			11/15/2007	6 J	6 J	
			5/20/2008	ND<20	ND<20	
			11/20/2008	5 J	5 J	
			6/11/2009	0.36 J	0.36 J	
LMW-15	9	4 (44.4444%)	11/18/2006		3 J	3 J
			6/2/2007	5 J	5 J	
			11/15/2007	ND<20	ND<20	
			11/15/2007	5 J	5 J	
			5/20/2008	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			11/20/2008	5 J	5 J	
			6/11/2009	3.7	3.7	
LMW-14R		5	4 (80%)	6/2/2007	ND<20	ND<20
				11/15/2007	ND<20	ND<20
				5/20/2008	ND<20	ND<20
				11/20/2008	ND<20	ND<20
				6/11/2009	0.81 J	0.81 J
LMW-13	11	11 (100%)	3/14/2000		ND<20	ND<20
			9/23/2003		ND<20	ND<20
			3/10/2004		ND<20	ND<20

		10/12/2004		ND<20	ND<20
		4/1/2005	ND<20	ND<20	
		10/26/2005		ND<20	ND<20
		6/19/2006		ND<20	ND<20
		6/2/2007	ND<20	ND<20	
		11/15/2007		ND<20	ND<20
		5/20/2008		ND<20	ND<20
		11/20/2008		ND<20	ND<20
LMW-12 11	11 (100%)	3/14/2000		ND<20	ND<20
		9/23/2003		ND<20	ND<20
		3/10/2004		ND<20	ND<20
		10/12/2004		ND<20	ND<20
		4/1/2005	ND<20	ND<20	
		10/26/2005		ND<20	ND<20
		6/19/2006		ND<20	ND<20
		6/2/2007	ND<20	ND<20	
		11/15/2007		ND<20	ND<20
		5/20/2008		ND<20	ND<20
		11/20/2008		ND<20	ND<20
LMW-11 11	11 (100%)	3/14/2000		ND<20	ND<20
		9/23/2003		ND<20	ND<20
		3/10/2004		ND<20	ND<20
		10/12/2004		ND<20	ND<20
		4/1/2005	ND<20	ND<20	
		10/26/2005		ND<20	ND<20
		6/19/2006		ND<20	ND<20
		6/2/2007	ND<20	ND<20	
		11/15/2007		ND<20	ND<20
		5/20/2008		ND<20	ND<20
		11/20/2008		ND<20	ND<20
LMW-10 13	11 (84.6154%)	3/14/2000		ND<20	ND<20
		9/23/2003		ND<20	ND<20
		3/10/2004		ND<20	ND<20
		10/12/2004		ND<20	ND<20
		4/1/2005	ND<20	ND<20	
		10/26/2005		ND<20	ND<20
		6/19/2006		ND<20	ND<20
		11/18/2006		ND<20	ND<20
		6/2/2007	ND<20	ND<20	
		11/15/2007		ND<20	ND<20
		5/20/2008		2 J	2 J
		11/20/2008		ND<20	ND<20
		6/11/2009		0.51 J	0.51 J

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Kruskal-Wallis Non-Parametric Test

Parameter: Copper

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	73	195
	3/16/1999	ND<20	71.5
	9/23/1999	ND<20	71.5
	3/14/2000	ND<20	71.5
	9/23/2003	ND<20	71.5
	3/10/2004	ND<20	71.5
	10/12/2004	ND<20	71.5
	4/1/2005	ND<20	71.5
	10/26/2005	ND<20	71.5
	6/19/2006	ND<20	71.5
	11/18/2006	ND<20	71.5
	6/2/2007	8 J	183
	11/15/2007	5 J	163
	5/20/2008	8 J	184
	11/20/2008	ND<20	71.5
	6/11/2009	0.74 J	147

Rank Sum = 1658.5
Rank Mean = 103.656

Background Rank Sum = 1658.5
Background Rank Mean = 103.656

Compliance Wells

Well ID	Date	Result	Rank
MW-5	1/16/1998	3 J	158
	3/16/1999	ND<20	71.5
	9/23/1999	ND<20	71.5
	3/14/2000	ND<20	71.5
	9/23/2003	ND<20	71.5
	3/10/2004	ND<20	71.5
	10/12/2004	ND<20	71.5
	4/1/2005	ND<20	71.5
	10/26/2005	ND<20	71.5
	6/19/2006	ND<20	71.5
	11/15/2007	5 J	164
	5/20/2008	ND<20	71.5
	11/20/2008	ND<20	71.5

Rank Sum = 1108.5
Rank Mean = 85.2692

LMW-9S	11/18/2006	ND<20	71.5
	6/2/2007	ND<20	71.5
	11/15/2007	7 J	178
	5/20/2008	ND<20	71.5
	11/20/2008	ND<20	71.5

	6/11/2009	0.83 J	150

Rank Sum = 614
Rank Mean = 102.333

LMW-9D	11/18/2006	6 J	173
	6/2/2007	ND<20	71.5
	11/15/2007	9 J	186
	5/20/2008	2 J	154
	11/20/2008	ND<20	71.5
	6/11/2009	0.69 J	145

Rank Sum = 801
Rank Mean = 133.5

LMW-9	1/16/1998	9 J	187
	3/16/1999	ND<20	71.5
	9/23/1999	12 J	192
	3/14/2000	ND<20	71.5
	9/23/2003	ND<20	71.5
	3/10/2004	ND<20	71.5
	10/12/2004	ND<20	71.5
	4/1/2005	ND<20	71.5
	10/26/2005	ND<20	71.5
	6/19/2006	ND<20	71.5
	11/18/2006	ND<20	71.5
	6/2/2007	5 J	165
	11/15/2007	7 J	179
	5/20/2008	ND<20	71.5
	11/20/2008	ND<20	71.5
	6/11/2009	0.88 J	151

Rank Sum = 1660.5
Rank Mean = 103.781

LMW-8	1/16/1998	2 J	155
	3/16/1999	5 J	166
	9/23/1999	ND<20	71.5
	3/14/2000	ND<20	71.5
	9/23/2003	ND<20	71.5
	3/10/2004	ND<20	71.5
	10/12/2004	ND<20	71.5
	4/1/2005	ND<20	71.5
	10/26/2005	ND<20	71.5
	6/19/2006	ND<20	71.5
	11/18/2006	ND<20	71.5
	6/2/2007	ND<20	71.5
	11/15/2007	6 J	174
	5/20/2008	ND<20	71.5
	11/20/2008	ND<20	71.5
	6/11/2009	0.75 J	148

Rank Sum = 1501
Rank Mean = 93.8125

LMW-7	1/16/1998	20	194
	3/16/1999	5 J	167
	9/23/1999	5 J	168
	3/14/2000	ND<20	71.5
	9/23/2003	ND<20	71.5
	3/10/2004	ND<20	71.5
	10/12/2004	ND<20	71.5
	4/1/2005	10 J	189
	10/26/2005	11 J	191
	6/19/2006	10 J	190
	11/18/2006	ND<20	71.5

	6/2/2007	6 J	175
	11/15/2007	8 J	185
	5/20/2008	ND<20	71.5
	11/20/2008	ND<20	71.5
	6/11/2009	4	161

Rank Sum = 2120.5
Rank Mean = 132.531

LMW-6	1/16/1998	18 J	193
	3/16/1999	ND<20	71.5
	9/23/1999	ND<20	71.5
	3/14/2000	ND<20	71.5
	9/23/2003	ND<20	71.5
	3/10/2004	ND<20	71.5
	10/12/2004	ND<20	71.5
	4/1/2005	ND<20	71.5
	10/26/2005	ND<20	71.5
	6/19/2006	ND<20	71.5
	11/18/2006	ND<20	71.5
	6/2/2007	7 J	180
	11/15/2007	7 J	181
	5/20/2008	ND<20	71.5
	11/20/2008	ND<20	71.5
	6/11/2009	1.7	153

Rank Sum = 1565
Rank Mean = 97.8125

LMW-3S	11/18/2006	2 J	156
	6/2/2007	ND<20	71.5
	11/15/2007	6 J	176
	5/20/2008	ND<20	71.5
	11/20/2008	ND<20	71.5
	6/11/2009	1.4	152

Rank Sum = 698.5
Rank Mean = 116.417

LMW-3	11/19/1996	ND<20	71.5
	3/24/1997	ND<20	71.5
	1/16/1998	4 J	162
	3/16/1999	ND<20	71.5
	9/23/1999	ND<20	71.5
	3/14/2000	ND<20	71.5
	9/23/2003	ND<20	71.5
	3/10/2004	ND<20	71.5
	10/12/2004	ND<20	71.5
	4/1/2005	ND<20	71.5
	10/26/2005	ND<20	71.5
	6/19/2006	ND<20	71.5
	11/18/2006	ND<20	71.5
	6/2/2007	ND<20	71.5
	11/15/2007	9 J	188
	5/20/2008	ND<20	71.5
	11/20/2008	ND<20	71.5
	6/11/2009	0.7 J	146

Rank Sum = 1568.5
Rank Mean = 87.1389

LMW-16	11/18/2006	ND<20	71.5
	6/2/2007	7 J	182
	11/15/2007	6 J	177
	5/20/2008	ND<20	71.5
	11/20/2008	5 J	169

	6/11/2009	0.36 J	143

Rank Sum = 814
Rank Mean = 135.667

LMW-15	11/18/2006	3 J	159
	6/2/2007	5 J	170
	11/15/2007	ND<20	71.5
	11/15/2007	5 J	171
	5/20/2008	ND<20	71.5
	5/20/2008	ND<20	71.5
	11/20/2008	ND<20	71.5
	11/20/2008	5 J	172
	6/11/2009	3.7	160

Rank Sum = 1118
Rank Mean = 124.222

LMW-14R	6/2/2007	ND<20	71.5
	11/15/2007	ND<20	71.5
	5/20/2008	ND<20	71.5
	11/20/2008	ND<20	71.5
	6/11/2009	0.81 J	149

Rank Sum = 435
Rank Mean = 87

LMW-13	3/14/2000	ND<20	71.5
	9/23/2003	ND<20	71.5
	3/10/2004	ND<20	71.5
	10/12/2004	ND<20	71.5
	4/1/2005	ND<20	71.5
	10/26/2005	ND<20	71.5
	6/19/2006	ND<20	71.5
	6/2/2007	ND<20	71.5
	11/15/2007	ND<20	71.5
	5/20/2008	ND<20	71.5
	11/20/2008	ND<20	71.5

Rank Sum = 786.5
Rank Mean = 71.5

LMW-12	3/14/2000	ND<20	71.5
	9/23/2003	ND<20	71.5
	3/10/2004	ND<20	71.5
	10/12/2004	ND<20	71.5
	4/1/2005	ND<20	71.5
	10/26/2005	ND<20	71.5
	6/19/2006	ND<20	71.5
	6/2/2007	ND<20	71.5
	11/15/2007	ND<20	71.5
	5/20/2008	ND<20	71.5
	11/20/2008	ND<20	71.5

Rank Sum = 786.5
Rank Mean = 71.5

LMW-11	3/14/2000	ND<20	71.5
	9/23/2003	ND<20	71.5
	3/10/2004	ND<20	71.5
	10/12/2004	ND<20	71.5
	4/1/2005	ND<20	71.5
	10/26/2005	ND<20	71.5
	6/19/2006	ND<20	71.5
	6/2/2007	ND<20	71.5
	11/15/2007	ND<20	71.5
	5/20/2008	ND<20	71.5

	11/20/2008	ND<20	71.5

Rank Sum = 786.5
Rank Mean = 71.5

LMW-10	3/14/2000	ND<20	71.5
	9/23/2003	ND<20	71.5
	3/10/2004	ND<20	71.5
	10/12/2004	ND<20	71.5
	4/1/2005	ND<20	71.5
	10/26/2005	ND<20	71.5
	6/19/2006	ND<20	71.5
	11/18/2006	ND<20	71.5
	6/2/2007	ND<20	71.5
	11/15/2007	ND<20	71.5
	5/20/2008	2 J	157
	11/20/2008	ND<20	71.5
	6/11/2009	0.51 J	144

Rank Sum = 1087.5
Rank Mean = 83.6538

Calculation Results:

Kruskal-Wallis H Statistic = 23.7054
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 38.6173
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
23.7054 < 26.2962 indicating no significant group difference at 5% significance level
38.6173 > 26.2962 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634
Mean background rank is 103.656

Well	Mean Rank	Dif from Bkg	Critical Value
MW-5	85.2692	-18.387	49.0225
LMW-9S	102.333	-1.3229	62.8498
LMW-9D	133.5	29.8438	62.8498
LMW-9	103.781	0.125	46.4177
LMW-8	93.8125	-9.8437	46.4177
LMW-7	132.531	28.875	46.4177
LMW-6	97.8125	-5.8437	46.4177
LMW-3S	116.417	12.7604	62.8498
LMW-3	87.1389	-16.517	45.1099
LMW-16	135.667	32.0104	62.8498
LMW-15	124.222	20.566	54.7037
LMW-14R	87	-16.656	67.2656
LMW-13	71.5	-32.156	51.4226
LMW-12	71.5	-32.156	51.4226
LMW-11	71.5	-32.156	51.4226
LMW-10	83.6538	-20.002	49.0225

Individual Well Comparisons at Groupwise 5% Significance Level (0.3125% Significance Level per comparison)

0.3125% Z score is 2.74777
Mean background rank is 103.656

Well	Mean Rank	Dif from Bkg	Critical Value
MW-5	85.2692	-18.387	57.9031
LMW-9S	102.333	-1.3229	74.2352
LMW-9D	133.5	29.8438	74.2352
LMW-9	103.781	0.125	54.8264
LMW-8	93.8125	-9.8437	54.8264

LMW-7	132.531	28.875	54.8264
LMW-6	97.8125	-5.84375	54.8264
LMW-3S	116.417	12.7604	74.2352
LMW-3	87.1389	-16.5174	53.2816
LMW-16	135.667	32.0104	74.2352
LMW-15	124.222	20.566	64.6135
LMW-14R		87	-16.656
LMW-13	71.5	-32.1563	60.7379
LMW-12	71.5	-32.1563	60.7379
LMW-11	71.5	-32.1563	60.7379
LMW-10	83.6538	-20.0024	57.9031
			79.4509

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Copper

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 72.8205%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 16
Maximum Background Concentration = 73
Confidence Level = 66.7%
False Positive Rate = 33.3%

Location	Date	Samples	Mean	Significant
MW-5	11/20/2008	1	20	FALSE
LMW-9S	6/11/2009	1	0.83	FALSE
LMW-9D	6/11/2009	1	0.69	FALSE
LMW-9	6/11/2009	1	0.88	FALSE
LMW-8	6/11/2009	1	0.75	FALSE
LMW-7	6/11/2009	1	4	FALSE
LMW-6	6/11/2009	1	1.7	FALSE
LMW-3S	6/11/2009	1	1.4	FALSE
LMW-3	6/11/2009	1	0.7	FALSE
LMW-16	6/11/2009	1	0.36	FALSE
LMW-15	6/11/2009	1	3.7	FALSE
LMW-14R	6/11/2009	1	0.81	FALSE
LMW-13	11/20/2008	1	20	FALSE
LMW-12	11/20/2008	1	20	FALSE
LMW-11	11/20/2008	1	20	FALSE
LMW-10	6/11/2009	1	0.51	FALSE

Concentrations (ppb)

Parameter: Lead

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 144
Percent Non-Detects: 73.8462%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	11 (68.75%)	1/16/1998	17	17
			3/16/1999	ND<1	ND<1
			9/23/1999	9	9
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	25	25
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<0 J	ND<0 J
			6/2/2007	3	3
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	0.13 J	0.13 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	10 (76.9231%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	14	14
			3/14/2000	22	22
			9/23/2003	ND<1	ND<1
			3/10/2004	52	52
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
LMW-9S	6	4 (66.6667%)	11/18/2006	ND<1	ND<1
			6/2/2007	2	2
			11/15/2007	1	1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<0 J	ND<0 J
			6/11/2009	ND<0.08 U	ND<0.08 U
LMW-9D	6	2 (33.3333%)	11/18/2006	3	3
			6/2/2007	3	3
			11/15/2007	ND<0 J	ND<0 J
			5/20/2008	3	3

			11/20/2008	ND<1	ND<1	
			6/11/2009	0.71	0.71	
LMW-9	16	11 (68.75%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	27	27	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	13	13	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<0 J	ND<0 J	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<0 J	ND<0 J	
			11/18/2006	ND<0 J	ND<0 J	
			6/2/2007	1	1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	1	1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	0.17 J	0.17 J	
LMW-8	16	15 (93.75%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	21	21	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.08 U		ND<0.08 U
LMW-7	16	8 (50%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	18	18	
			3/14/2000	16	16	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	3	3	
			10/26/2005	3	3	
			6/19/2006	3	3	
			11/18/2006	1	1	
			6/2/2007	3	3	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	0.88	0.88	
LMW-6	16	14 (87.5%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	16	16	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	

			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<0 J	ND<0 J	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	0.084 J	0.084 J	
LMW-3S	6	3 (50%)	11/18/2006	ND<1	ND<1	
			6/2/2007	3	3	
			11/15/2007	1	1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	0.58	0.58	
LMW-3	18	15 (83.3333%)	11/19/1996	ND<1	ND<1	
			3/24/1997	11	11	
			1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	8	8	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	1	1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.08 U	ND<0.08 U	
LMW-16	6	4 (66.6667%)	11/18/2006	ND<0 J	ND<0 J	
			6/2/2007	5	5	
			11/15/2007	2	2	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.08 U	ND<0.08 U	
LMW-15	9	7 (77.7778%)	11/18/2006	ND<0 J	ND<0 J	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	1	1	
			6/11/2009	0.89	0.89	
LMW-14R	5	3 (60%)	6/2/2007	4	4	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	0.22 J	0.22 J	
LMW-13	11	9 (81.8182%)	3/14/2000	44	44	
			9/23/2003	ND<1	ND<1	
			3/10/2004	35	35	

		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-12	11	9 (81.8182%)	3/14/2000	49	49
		9/23/2003	ND<1	ND<1	
		3/10/2004	18	18	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-11	11	9 (81.8182%)	3/14/2000	19	19
		9/23/2003	ND<1	ND<1	
		3/10/2004	46	46	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-10	13	10 (76.9231%)	3/14/2000	50	50
		9/23/2003	ND<1	ND<1	
		3/10/2004	130	130	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<0 J	ND<0 J	
		11/18/2006	ND<1	ND<1	
		6/2/2007	4	4	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<0 J	ND<0 J	
		6/11/2009	ND<0.08 U		ND<0.08 U

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Kruskal-Wallis Non-Parametric Test

Parameter: Lead

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	17	181
	3/16/1999	ND<1	72.5
	9/23/1999	9	175
	3/14/2000	ND<1	72.5
	9/23/2003	ND<1	72.5
	3/10/2004	25	187
	10/12/2004	ND<1	72.5
	4/1/2005	ND<1	72.5
	10/26/2005	ND<1	72.5
	6/19/2006	ND<1	72.5
	11/18/2006	ND<0 J	72.5
	6/2/2007	3	162
	11/15/2007	ND<1	72.5
	5/20/2008	ND<1	72.5
	11/20/2008	ND<1	72.5
	6/11/2009	0.13 J	146

Rank Sum = 1648.5
Rank Mean = 103.031

Background Rank Sum = 1648.5
Background Rank Mean = 103.031

Compliance Wells

Well ID	Date	Result	Rank
MW-5	1/16/1998	ND<1	72.5
	3/16/1999	ND<1	72.5
	9/23/1999	14	178
	3/14/2000	22	186
	9/23/2003	ND<1	72.5
	3/10/2004	52	194
	10/12/2004	ND<1	72.5
	4/1/2005	ND<1	72.5
	10/26/2005	ND<1	72.5
	6/19/2006	ND<1	72.5
	11/15/2007	ND<1	72.5
	5/20/2008	ND<1	72.5
	11/20/2008	ND<1	72.5

Rank Sum = 1283
Rank Mean = 98.6923

LMW-9S	11/18/2006	ND<1	72.5
	6/2/2007	2	160
	11/15/2007	1	153
	5/20/2008	ND<1	72.5
	11/20/2008	ND<0 J	72.5

	6/11/2009	ND<0.08 U	72.5

Rank Sum = 603
Rank Mean = 100.5

LMW-9D	11/18/2006	3	163
	6/2/2007	3	164
	11/15/2007	ND<0 J	72.5
	5/20/2008	3	165
	11/20/2008	ND<1	72.5
	6/11/2009	0.71	150

Rank Sum = 787
Rank Mean = 131.167

LMW-9	1/16/1998	ND<1	72.5
	3/16/1999	ND<1	72.5
	9/23/1999	27	188
	3/14/2000	ND<1	72.5
	9/23/2003	ND<1	72.5
	3/10/2004	13	177
	10/12/2004	ND<1	72.5
	4/1/2005	ND<0 J	72.5
	10/26/2005	ND<1	72.5
	6/19/2006	ND<0 J	72.5
	11/18/2006	ND<0 J	72.5
	6/2/2007	1	154
	11/15/2007	ND<1	72.5
	5/20/2008	1	155
	11/20/2008	ND<1	72.5
	6/11/2009	0.17 J	147

Rank Sum = 1618.5
Rank Mean = 101.156

LMW-8	1/16/1998	ND<1	72.5
	3/16/1999	ND<1	72.5
	9/23/1999	21	185
	3/14/2000	ND<1	72.5
	9/23/2003	ND<1	72.5
	3/10/2004	ND<1	72.5
	10/12/2004	ND<1	72.5
	4/1/2005	ND<1	72.5
	10/26/2005	ND<1	72.5
	6/19/2006	ND<1	72.5
	11/18/2006	ND<1	72.5
	6/2/2007	ND<1	72.5
	11/15/2007	ND<1	72.5
	5/20/2008	ND<1	72.5
	11/20/2008	ND<1	72.5
	6/11/2009	ND<0.08 U	72.5

Rank Sum = 1272.5
Rank Mean = 79.5313

LMW-7	1/16/1998	ND<1	72.5
	3/16/1999	ND<1	72.5
	9/23/1999	18	182
	3/14/2000	16	179
	9/23/2003	ND<1	72.5
	3/10/2004	ND<1	72.5
	10/12/2004	ND<1	72.5
	4/1/2005	3	166
	10/26/2005	3	167
	6/19/2006	3	168
	11/18/2006	1	156

	6/2/2007	3	169
	11/15/2007	ND<1	72.5
	5/20/2008	ND<1	72.5
	11/20/2008	ND<1	72.5
	6/11/2009	0.88	151

Rank Sum = 1918
Rank Mean = 119.875

LMW-6	1/16/1998	ND<1	72.5
	3/16/1999	ND<1	72.5
	9/23/1999	16	180
	3/14/2000	ND<1	72.5
	9/23/2003	ND<1	72.5
	3/10/2004	ND<1	72.5
	10/12/2004	ND<1	72.5
	4/1/2005	ND<1	72.5
	10/26/2005	ND<1	72.5
	6/19/2006	ND<1	72.5
	11/18/2006	ND<1	72.5
	6/2/2007	ND<0 J	72.5
	11/15/2007	ND<1	72.5
	5/20/2008	ND<1	72.5
	11/20/2008	ND<1	72.5
	6/11/2009	0.084 J	145

Rank Sum = 1340
Rank Mean = 83.75

LMW-3S	11/18/2006	ND<1	72.5
	6/2/2007	3	170
	11/15/2007	1	157
	5/20/2008	ND<1	72.5
	11/20/2008	ND<1	72.5
	6/11/2009	0.58	149

Rank Sum = 693.5
Rank Mean = 115.583

LMW-3	11/19/1996	ND<1	72.5
	3/24/1997	11	176
	1/16/1998	ND<1	72.5
	3/16/1999	ND<1	72.5
	9/23/1999	8	174
	3/14/2000	ND<1	72.5
	9/23/2003	ND<1	72.5
	3/10/2004	ND<1	72.5
	10/12/2004	ND<1	72.5
	4/1/2005	ND<1	72.5
	10/26/2005	ND<1	72.5
	6/19/2006	ND<1	72.5
	11/18/2006	ND<1	72.5
	6/2/2007	ND<1	72.5
	11/15/2007	1	158
	5/20/2008	ND<1	72.5
	11/20/2008	ND<1	72.5
	6/11/2009	ND<0.08 U	72.5

Rank Sum = 1595.5
Rank Mean = 88.6389

LMW-16	11/18/2006	ND<0 J	72.5
	6/2/2007	5	173
	11/15/2007	2	161
	5/20/2008	ND<1	72.5
	11/20/2008	ND<1	72.5

	6/11/2009	ND<0.08 U	72.5

Rank Sum = 624
Rank Mean = 104

LMW-15	11/18/2006	ND<0 J	72.5
	6/2/2007	ND<1	72.5
	11/15/2007	ND<1	72.5
	11/15/2007	ND<1	72.5
	5/20/2008	ND<1	72.5
	5/20/2008	ND<1	72.5
	11/20/2008	ND<1	72.5
	11/20/2008	1	159
	6/11/2009	0.89	152

Rank Sum = 818.5
Rank Mean = 90.9444

LMW-14R	6/2/2007	4	171
	11/15/2007	ND<1	72.5
	5/20/2008	ND<1	72.5
	11/20/2008	ND<1	72.5
	6/11/2009	0.22 J	148

Rank Sum = 536.5
Rank Mean = 107.3

LMW-13	3/14/2000	44	190
	9/23/2003	ND<1	72.5
	3/10/2004	35	189
	10/12/2004	ND<1	72.5
	4/1/2005	ND<1	72.5
	10/26/2005	ND<1	72.5
	6/19/2006	ND<1	72.5
	6/2/2007	ND<1	72.5
	11/15/2007	ND<1	72.5
	5/20/2008	ND<1	72.5
	11/20/2008	ND<1	72.5

Rank Sum = 1031.5
Rank Mean = 93.7727

LMW-12	3/14/2000	49	192
	9/23/2003	ND<1	72.5
	3/10/2004	18	183
	10/12/2004	ND<1	72.5
	4/1/2005	ND<1	72.5
	10/26/2005	ND<1	72.5
	6/19/2006	ND<1	72.5
	6/2/2007	ND<1	72.5
	11/15/2007	ND<1	72.5
	5/20/2008	ND<1	72.5
	11/20/2008	ND<1	72.5

Rank Sum = 1027.5
Rank Mean = 93.4091

LMW-11	3/14/2000	19	184
	9/23/2003	ND<1	72.5
	3/10/2004	46	191
	10/12/2004	ND<1	72.5
	4/1/2005	ND<1	72.5
	10/26/2005	ND<1	72.5
	6/19/2006	ND<1	72.5
	6/2/2007	ND<1	72.5
	11/15/2007	ND<1	72.5
	5/20/2008	ND<1	72.5

	11/20/2008	ND<1	72.5

Rank Sum = 1027.5
Rank Mean = 93.4091

LMW-10	3/14/2000	50	193
	9/23/2003	ND<1	72.5
	3/10/2004	130	195
	10/12/2004	ND<1	72.5
	4/1/2005	ND<1	72.5
	10/26/2005	ND<1	72.5
	6/19/2006	ND<0 J	72.5
	11/18/2006	ND<1	72.5
	6/2/2007	4	172
	11/15/2007	ND<1	72.5
	5/20/2008	ND<1	72.5
	11/20/2008	ND<0 J	72.5
	6/11/2009	ND<0.08 U	72.5

Rank Sum = 1285
Rank Mean = 98.8462

Calculation Results:

Kruskal-Wallis H Statistic = 9.03281
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 15.1226
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
9.03281 < 26.2962 indicating no significant group difference at 5% significance level
15.1226 < 26.2962 indicating no significant group difference at 5% significance level when adjusted for ties

Concentrations (ppb)

Parameter: Nickel

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 144
Percent Non-Detects: 73.8462%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	11 (68.75%)	1/16/1998	ND<30	ND<30
			3/16/1999	ND<30	ND<30
			9/23/1999	ND<30	ND<30
			3/14/2000	ND<30	ND<30
			9/23/2003	ND<30	ND<30
			3/10/2004	ND<30	ND<30
			10/12/2004	ND<30	ND<30
			4/1/2005	ND<30	ND<30
			10/26/2005	ND<30	ND<30
			6/19/2006	ND<30	ND<30
			11/18/2006	1 J	1 J
			6/2/2007	6	6
			11/15/2007	3 J	3 J
			5/20/2008	5 J	5 J
			11/20/2008	ND<30	ND<30
			6/11/2009	0.79	0.79

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	11 (84.6154%)	1/16/1998	ND<30	ND<30
			3/16/1999	6 J	6 J
			9/23/1999	ND<30	ND<30
			3/14/2000	ND<30	ND<30
			9/23/2003	ND<30	ND<30
			3/10/2004	ND<30	ND<30
			10/12/2004	ND<30	ND<30
			4/1/2005	ND<30	ND<30
			10/26/2005	ND<30	ND<30
			6/19/2006	ND<30	ND<30
			11/15/2007	3 J	3 J
			5/20/2008	ND<30	ND<30
			11/20/2008	ND<30	ND<30
LMW-9S	6	3 (50%)	11/18/2006	1 J	1 J
			6/2/2007	ND<30	ND<30
			11/15/2007	ND<30	ND<30
			5/20/2008	1 J	1 J
			11/20/2008	ND<30	ND<30
			6/11/2009	1.2	1.2
LMW-9D	6	3 (50%)	11/18/2006	2 J	2 J
			6/2/2007	ND<30	ND<30
			11/15/2007	ND<30	ND<30
			5/20/2008	1 J	1 J

			11/20/2008	ND<30	ND<30	
			6/11/2009	0.55 J	0.55 J	
LMW-9	16	11 (68.75%)	1/16/1998	ND<30	ND<30	
			3/16/1999	6 J	6 J	
			9/23/1999	ND<30	ND<30	
			3/14/2000	ND<30	ND<30	
			9/23/2003	ND<30	ND<30	
			3/10/2004	ND<30	ND<30	
			10/12/2004	ND<30	ND<30	
			4/1/2005	ND<30	ND<30	
			10/26/2005	ND<30	ND<30	
			6/19/2006	ND<30	ND<30	
			11/18/2006	ND<30	ND<30	
			6/2/2007	3 J	3 J	
			11/15/2007	ND<30	ND<30	
			5/20/2008	1 J	1 J	
			11/20/2008	9 J	9 J	
			6/11/2009	0.33 J	0.33 J	
LMW-8	16	12 (75%)	1/16/1998	ND<30	ND<30	
			3/16/1999	6 J	6 J	
			9/23/1999	ND<30	ND<30	
			3/14/2000	ND<30	ND<30	
			9/23/2003	ND<30	ND<30	
			3/10/2004	ND<30	ND<30	
			10/12/2004	ND<30	ND<30	
			4/1/2005	ND<30	ND<30	
			10/26/2005	ND<30	ND<30	
			6/19/2006	ND<30	ND<30	
			11/18/2006	1 J	1 J	
			6/2/2007	ND<30	ND<30	
			11/15/2007	ND<30	ND<30	
			5/20/2008	1 J	1 J	
			11/20/2008	ND<30	ND<30	
			6/11/2009	0.61	0.61	
LMW-7	16	9 (56.25%)	1/16/1998	ND<30	ND<30	
			3/16/1999	ND<30	ND<30	
			9/23/1999	ND<30	ND<30	
			3/14/2000	ND<30	ND<30	
			9/23/2003	ND<30	ND<30	
			3/10/2004	ND<30	ND<30	
			10/12/2004	ND<30	ND<30	
			4/1/2005	18 J	18 J	
			10/26/2005	ND<30	ND<30	
			6/19/2006	ND<30	ND<30	
			11/18/2006	4 J	4 J	
			6/2/2007	7	7	
			11/15/2007	5 J	5 J	
			5/20/2008	2 J	2 J	
			11/20/2008	3 J	3 J	
			6/11/2009	5.5	5.5	
LMW-6	16	12 (75%)	1/16/1998	ND<30	ND<30	
			3/16/1999	ND<30	ND<30	
			9/23/1999	ND<30	ND<30	
			3/14/2000	ND<30	ND<30	
			9/23/2003	ND<30	ND<30	
			3/10/2004	ND<30	ND<30	
			10/12/2004	ND<30	ND<30	
			4/1/2005	ND<30	ND<30	

			10/26/2005	ND<30	ND<30	
			6/19/2006	ND<30	ND<30	
			11/18/2006	1 J	1 J	
			6/2/2007	5	5	
			11/15/2007	ND<30	ND<30	
			5/20/2008	2 J	2 J	
			11/20/2008	ND<30	ND<30	
			6/11/2009	2.2	2.2	
LMW-3S	6	0 (0%)	11/18/2006	2 J	2 J	
			6/2/2007	4 J	4 J	
			11/15/2007	5 J	5 J	
			5/20/2008	3 J	3 J	
			11/20/2008	3 J	3 J	
			6/11/2009	2.6	2.6	
LMW-3	18	16 (88.8889%)	11/19/1996	ND<30	ND<30	
			3/24/1997	ND<30	ND<30	
			1/16/1998	ND<30	ND<30	
			3/16/1999	ND<30	ND<30	
			9/23/1999	ND<30	ND<30	
			3/14/2000	ND<30	ND<30	
			9/23/2003	ND<30	ND<30	
			3/10/2004	ND<30	ND<30	
			10/12/2004	ND<30	ND<30	
			4/1/2005	ND<30	ND<30	
			10/26/2005	ND<30	ND<30	
			6/19/2006	ND<30	ND<30	
			11/18/2006	ND<30	ND<30	
			6/2/2007	ND<30	ND<30	
			11/15/2007	ND<30	ND<30	
			5/20/2008	1 J	1 J	
			11/20/2008	ND<30	ND<30	
			6/11/2009	0.54 J	0.54 J	
LMW-16	6	4 (66.6667%)	11/18/2006	1 J	1 J	
			6/2/2007	ND<30	ND<30	
			11/15/2007	ND<30	ND<30	
			5/20/2008	ND<30	ND<30	
			11/20/2008	ND<30	ND<30	
			6/11/2009	0.72	0.72	
LMW-15	9	6 (66.6667%)	11/18/2006	1 J	1 J	
			6/2/2007	ND<30	ND<30	
			11/15/2007	ND<30	ND<30	
			11/15/2007	ND<30	ND<30	
			5/20/2008	ND<30	ND<30	
			5/20/2008	1 J	1 J	
			11/20/2008	ND<30	ND<30	
			11/20/2008	ND<30	ND<30	
			6/11/2009	3	3	
LMW-14R		5	2 (40%)	6/2/2007	ND<30	ND<30
				11/15/2007	ND<30	ND<30
				5/20/2008	2 J	2 J
				11/20/2008	3 J	3 J
				6/11/2009	2.2	2.2
LMW-13	11	11 (100%)	3/14/2000	ND<30	ND<30	
			9/23/2003	ND<30	ND<30	
			3/10/2004	ND<30	ND<30	

		10/12/2004		ND<30	ND<30
		4/1/2005	ND<30	ND<30	
		10/26/2005		ND<30	ND<30
		6/19/2006		ND<30	ND<30
		6/2/2007	ND<30	ND<30	
		11/15/2007		ND<30	ND<30
		5/20/2008		ND<30	ND<30
		11/20/2008		ND<30	ND<30
LMW-12 11	11 (100%)	3/14/2000		ND<30	ND<30
		9/23/2003		ND<30	ND<30
		3/10/2004		ND<30	ND<30
		10/12/2004		ND<30	ND<30
		4/1/2005	ND<30	ND<30	
		10/26/2005		ND<30	ND<30
		6/19/2006		ND<30	ND<30
		6/2/2007	ND<30	ND<30	
		11/15/2007		ND<30	ND<30
		5/20/2008		ND<30	ND<30
		11/20/2008		ND<30	ND<30
LMW-11 11	11 (100%)	3/14/2000		ND<30	ND<30
		9/23/2003		ND<30	ND<30
		3/10/2004		ND<30	ND<30
		10/12/2004		ND<30	ND<30
		4/1/2005	ND<30	ND<30	
		10/26/2005		ND<30	ND<30
		6/19/2006		ND<30	ND<30
		6/2/2007	ND<30	ND<30	
		11/15/2007		ND<30	ND<30
		5/20/2008		ND<30	ND<30
		11/20/2008		ND<30	ND<30
LMW-10 13	11 (84.6154%)	3/14/2000		ND<30	ND<30
		9/23/2003		ND<30	ND<30
		3/10/2004		ND<30	ND<30
		10/12/2004		ND<30	ND<30
		4/1/2005	ND<30	ND<30	
		10/26/2005		ND<30	ND<30
		6/19/2006		ND<30	ND<30
		11/18/2006		ND<30	ND<30
		6/2/2007	ND<30	ND<30	
		11/15/2007		ND<30	ND<30
		5/20/2008		1 J	1 J
		11/20/2008		ND<30	ND<30
		6/11/2009		0.38 J	0.38 J

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Kruskal-Wallis Non-Parametric Test

Parameter: Nickel

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	ND<30	72.5
	3/16/1999	ND<30	72.5
	9/23/1999	ND<30	72.5
	3/14/2000	ND<30	72.5
	9/23/2003	ND<30	72.5
	3/10/2004	ND<30	72.5
	10/12/2004	ND<30	72.5
	4/1/2005	ND<30	72.5
	10/26/2005	ND<30	72.5
	6/19/2006	ND<30	72.5
	11/18/2006	1 J	152
	6/2/2007	6	189
	11/15/2007	3 J	174
	5/20/2008	5 J	184
	11/20/2008	ND<30	72.5
	6/11/2009	0.79	151

Rank Sum = 1647.5
Rank Mean = 102.969

Background Rank Sum = 1647.5
Background Rank Mean = 102.969

Compliance Wells

Well ID	Date	Result	Rank
MW-5	1/16/1998	ND<30	72.5
	3/16/1999	6 J	190
	9/23/1999	ND<30	72.5
	3/14/2000	ND<30	72.5
	9/23/2003	ND<30	72.5
	3/10/2004	ND<30	72.5
	10/12/2004	ND<30	72.5
	4/1/2005	ND<30	72.5
	10/26/2005	ND<30	72.5
	6/19/2006	ND<30	72.5
	11/15/2007	3 J	175
	5/20/2008	ND<30	72.5
	11/20/2008	ND<30	72.5

Rank Sum = 1162.5
Rank Mean = 89.4231

LMW-9S	11/18/2006	1 J	153
	6/2/2007	ND<30	72.5
	11/15/2007	ND<30	72.5
	5/20/2008	1 J	154
	11/20/2008	ND<30	72.5

	6/11/2009	1.2	165

Rank Sum = 689.5
Rank Mean = 114.917

LMW-9D	11/18/2006	2 J	166
	6/2/2007	ND<30	72.5
	11/15/2007	ND<30	72.5
	5/20/2008	1 J	155
	11/20/2008	ND<30	72.5
	6/11/2009	0.55 J	148

Rank Sum = 686.5
Rank Mean = 114.417

LMW-9	1/16/1998	ND<30	72.5
	3/16/1999	6 J	191
	9/23/1999	ND<30	72.5
	3/14/2000	ND<30	72.5
	9/23/2003	ND<30	72.5
	3/10/2004	ND<30	72.5
	10/12/2004	ND<30	72.5
	4/1/2005	ND<30	72.5
	10/26/2005	ND<30	72.5
	6/19/2006	ND<30	72.5
	11/18/2006	ND<30	72.5
	6/2/2007	3 J	176
	11/15/2007	ND<30	72.5
	5/20/2008	1 J	156
	11/20/2008	9 J	194
	6/11/2009	0.33 J	145

Rank Sum = 1659.5
Rank Mean = 103.719

LMW-8	1/16/1998	ND<30	72.5
	3/16/1999	6 J	192
	9/23/1999	ND<30	72.5
	3/14/2000	ND<30	72.5
	9/23/2003	ND<30	72.5
	3/10/2004	ND<30	72.5
	10/12/2004	ND<30	72.5
	4/1/2005	ND<30	72.5
	10/26/2005	ND<30	72.5
	6/19/2006	ND<30	72.5
	11/18/2006	1 J	157
	6/2/2007	ND<30	72.5
	11/15/2007	ND<30	72.5
	5/20/2008	1 J	158
	11/20/2008	ND<30	72.5
	6/11/2009	0.61	149

Rank Sum = 1526
Rank Mean = 95.375

LMW-7	1/16/1998	ND<30	72.5
	3/16/1999	ND<30	72.5
	9/23/1999	ND<30	72.5
	3/14/2000	ND<30	72.5
	9/23/2003	ND<30	72.5
	3/10/2004	ND<30	72.5
	10/12/2004	ND<30	72.5
	4/1/2005	18 J	195
	10/26/2005	ND<30	72.5
	6/19/2006	ND<30	72.5
	11/18/2006	4 J	182

	6/2/2007	7	193
	11/15/2007	5 J	185
	5/20/2008	2 J	167
	11/20/2008	3 J	177
	6/11/2009	5.5	188

Rank Sum = 1939.5
Rank Mean = 121.219

LMW-6	1/16/1998	ND<30	72.5
	3/16/1999	ND<30	72.5
	9/23/1999	ND<30	72.5
	3/14/2000	ND<30	72.5
	9/23/2003	ND<30	72.5
	3/10/2004	ND<30	72.5
	10/12/2004	ND<30	72.5
	4/1/2005	ND<30	72.5
	10/26/2005	ND<30	72.5
	6/19/2006	ND<30	72.5
	11/18/2006	1 J	159
	6/2/2007	5	186
	11/15/2007	ND<30	72.5
	5/20/2008	2 J	168
	11/20/2008	ND<30	72.5
	6/11/2009	2.2	171

Rank Sum = 1554
Rank Mean = 97.125

LMW-3S	11/18/2006	2 J	169
	6/2/2007	4 J	183
	11/15/2007	5 J	187
	5/20/2008	3 J	178
	11/20/2008	3 J	179
	6/11/2009	2.6	173

Rank Sum = 1069
Rank Mean = 178.167

LMW-3	11/19/1996	ND<30	72.5
	3/24/1997	ND<30	72.5
	1/16/1998	ND<30	72.5
	3/16/1999	ND<30	72.5
	9/23/1999	ND<30	72.5
	3/14/2000	ND<30	72.5
	9/23/2003	ND<30	72.5
	3/10/2004	ND<30	72.5
	10/12/2004	ND<30	72.5
	4/1/2005	ND<30	72.5
	10/26/2005	ND<30	72.5
	6/19/2006	ND<30	72.5
	11/18/2006	ND<30	72.5
	6/2/2007	ND<30	72.5
	11/15/2007	ND<30	72.5
	5/20/2008	1 J	160
	11/20/2008	ND<30	72.5
	6/11/2009	0.54 J	147

Rank Sum = 1467
Rank Mean = 81.5

LMW-16	11/18/2006	1 J	161
	6/2/2007	ND<30	72.5
	11/15/2007	ND<30	72.5
	5/20/2008	ND<30	72.5
	11/20/2008	ND<30	72.5

	6/11/2009	0.72	150

Rank Sum = 601
Rank Mean = 100.167

LMW-15	11/18/2006	1 J	162
	6/2/2007	ND<30	72.5
	11/15/2007	ND<30	72.5
	11/15/2007	ND<30	72.5
	5/20/2008	ND<30	72.5
	5/20/2008	1 J	163
	11/20/2008	ND<30	72.5
	11/20/2008	ND<30	72.5
	6/11/2009	3	180

Rank Sum = 940
Rank Mean = 104.444

LMW-14R	6/2/2007	ND<30	72.5
	11/15/2007	ND<30	72.5
	5/20/2008	2 J	170
	11/20/2008	3 J	181
	6/11/2009	2.2	172

Rank Sum = 668
Rank Mean = 133.6

LMW-13	3/14/2000	ND<30	72.5
	9/23/2003	ND<30	72.5
	3/10/2004	ND<30	72.5
	10/12/2004	ND<30	72.5
	4/1/2005	ND<30	72.5
	10/26/2005	ND<30	72.5
	6/19/2006	ND<30	72.5
	6/2/2007	ND<30	72.5
	11/15/2007	ND<30	72.5
	5/20/2008	ND<30	72.5
	11/20/2008	ND<30	72.5

Rank Sum = 797.5
Rank Mean = 72.5

LMW-12	3/14/2000	ND<30	72.5
	9/23/2003	ND<30	72.5
	3/10/2004	ND<30	72.5
	10/12/2004	ND<30	72.5
	4/1/2005	ND<30	72.5
	10/26/2005	ND<30	72.5
	6/19/2006	ND<30	72.5
	6/2/2007	ND<30	72.5
	11/15/2007	ND<30	72.5
	5/20/2008	ND<30	72.5
	11/20/2008	ND<30	72.5

Rank Sum = 797.5
Rank Mean = 72.5

LMW-11	3/14/2000	ND<30	72.5
	9/23/2003	ND<30	72.5
	3/10/2004	ND<30	72.5
	10/12/2004	ND<30	72.5
	4/1/2005	ND<30	72.5
	10/26/2005	ND<30	72.5
	6/19/2006	ND<30	72.5
	6/2/2007	ND<30	72.5
	11/15/2007	ND<30	72.5
	5/20/2008	ND<30	72.5

	11/20/2008	ND<30	72.5

Rank Sum = 797.5
Rank Mean = 72.5

LMW-10	3/14/2000	ND<30	72.5
	9/23/2003	ND<30	72.5
	3/10/2004	ND<30	72.5
	10/12/2004	ND<30	72.5
	4/1/2005	ND<30	72.5
	10/26/2005	ND<30	72.5
	6/19/2006	ND<30	72.5
	11/18/2006	ND<30	72.5
	6/2/2007	ND<30	72.5
	11/15/2007	ND<30	72.5
	5/20/2008	1 J	164
	11/20/2008	ND<30	72.5
	6/11/2009	0.38 J	146

Rank Sum = 1107.5
Rank Mean = 85.1923

Calculation Results:

Kruskal-Wallis H Statistic = 27.5501
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 46.1239
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
27.5501 > 26.2962 indicating a significant group difference at 5% significance level
46.1239 > 26.2962 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634
Mean background rank is 102.969

Well	Mean Rank	Dif from Bkg	Critical Value
MW-5	89.4231	-13.5457	49.0225
LMW-9S	114.917	11.9479	62.8498
LMW-9D	114.417	11.4479	62.8498
LMW-9	103.719	0.75	46.4177
LMW-8	95.375	-7.5937	46.4177
LMW-7	121.219	18.25	46.4177
LMW-6	97.125	-5.8437	46.4177
LMW-3S	178.167	75.1979	62.8498
LMW-3	81.5	-21.4688	45.1099
LMW-16	100.167	-2.8020	62.8498
LMW-15	104.444	1.47569	54.7037
LMW-14R		133.6	30.6312	67.2656
LMW-13	72.5	-30.4688	51.4226
LMW-12	72.5	-30.4688	51.4226
LMW-11	72.5	-30.4688	51.4226
LMW-10	85.1923	-17.776	49.0225

Individual Well Comparisons at Groupwise 5% Significance Level (0.3125% Significance Level per comparison)

0.3125% Z score is 2.74777
Mean background rank is 102.969

Well	Mean Rank	Dif from Bkg	Critical Value
MW-5	89.4231	-13.5457	57.9031
LMW-9S	114.917	11.9479	74.2352
LMW-9D	114.417	11.4479	74.2352
LMW-9	103.719	0.75	54.8264
LMW-8	95.375	-7.5937	54.8264

LMW-7	121.219	18.25	54.8264	
LMW-6	97.125	-5.84375	54.8264	
LMW-3S	178.167	75.1979	74.2352	
LMW-3	81.5	-21.4688	53.2816	
LMW-16	100.167	-2.80208	74.2352	
LMW-15	104.444	1.47569	64.6135	
LMW-14R		133.6	30.6312	79.4509
LMW-13	72.5	-30.4688	60.7379	
LMW-12	72.5	-30.4688	60.7379	
LMW-11	72.5	-30.4688	60.7379	
LMW-10	85.1923	-17.7764	57.9031	

Mann-Kendall Trend Analysis

Parameter: Nickel

Location: LMW-3S

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

95% Confidence Level

Xj	Xk	Xj - Xk		Positives	Negatives
4 J	2 J	2	1	0	
5 J	2 J	3	2	0	
3 J	2 J	1	3	0	
3 J	2 J	1	4	0	
2.6	2 J	0.6	5	0	
5 J	4 J	1	6	0	
3 J	4 J	-1	6	1	
3 J	4 J	-1	6	2	
2.6	4 J	-1.4	6	3	
3 J	5 J	-2	6	4	
3 J	5 J	-2	6	5	
2.6	5 J	-2.4	6	6	
3 J	3 J	0	6	6	
2.6	3 J	-0.4	6	7	
2.6	3 J	-0.4	6	8	

S Statistic = 6 - 8 = -2
Comparing at 95% confidence level (upward trend)
Failed to calculate probability for S = -2
Table out of range

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Nickel

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 73.8462%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 16
Maximum Background Concentration = 30
Confidence Level = 66.7%
False Positive Rate = 33.3%

Location	Date	Samples	Mean	Significant
MW-5	11/20/2008	1	30	FALSE
LMW-9S	6/11/2009	1	1.2	FALSE
LMW-9D	6/11/2009	1	0.55	FALSE
LMW-9	6/11/2009	1	0.33	FALSE
LMW-8	6/11/2009	1	0.61	FALSE
LMW-7	6/11/2009	1	5.5	FALSE
LMW-6	6/11/2009	1	2.2	FALSE
LMW-3S	6/11/2009	1	2.6	FALSE
LMW-3	6/11/2009	1	0.54	FALSE
LMW-16	6/11/2009	1	0.72	FALSE
LMW-15	6/11/2009	1	3	FALSE
LMW-14R	6/11/2009	1	2.2	FALSE
LMW-13	11/20/2008	1	30	FALSE
LMW-12	11/20/2008	1	30	FALSE
LMW-11	11/20/2008	1	30	FALSE
LMW-10	6/11/2009	1	0.38	FALSE

Concentrations (ppb)

Parameter: Selenium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 174
Percent Non-Detects: 89.2308%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	16 (100%)	1/16/1998	ND<2	ND<2
			3/16/1999	ND<2	ND<2
			9/23/1999	ND<2	ND<2
			3/14/2000	ND<2	ND<2
			9/23/2003	ND<2	ND<2
			3/10/2004	ND<2	ND<2
			10/12/2004	ND<2	ND<2
			4/1/2005	ND<2	ND<2
			10/26/2005	ND<2	ND<2
			6/19/2006	ND<2	ND<2
			11/18/2006	ND<2	ND<2
			6/2/2007	ND<2	ND<2
			11/15/2007	ND<2	ND<2
			5/20/2008	ND<2	ND<2
			11/20/2008	ND<2	ND<2
			6/11/2009	ND<0.21 U	ND<0.21 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	13 (100%)	1/16/1998	ND<2	ND<2
			3/16/1999	ND<2	ND<2
			9/23/1999	ND<2	ND<2
			3/14/2000	ND<2	ND<2
			9/23/2003	ND<2	ND<2
			3/10/2004	ND<2	ND<2
			10/12/2004	ND<2	ND<2
			4/1/2005	ND<2	ND<2
			10/26/2005	ND<2	ND<2
			6/19/2006	ND<2	ND<2
			11/15/2007	ND<2	ND<2
			5/20/2008	ND<2	ND<2
			11/20/2008	ND<2	ND<2
LMW-9S	6	4 (66.6667%)	11/18/2006	4	4
			6/2/2007	4	4
			11/15/2007	ND<2	ND<2
			5/20/2008	ND<2	ND<2
			11/20/2008	ND<2	ND<2
			6/11/2009	ND<0.21 U	ND<0.21 U
LMW-9D	6	5 (83.3333%)	11/18/2006	ND<2	ND<2
			6/2/2007	ND<2	ND<2
			11/15/2007	4	4
			5/20/2008	ND<2	ND<2

			11/20/2008	ND<2	ND<2	
			6/11/2009	ND<0.21 U		ND<0.21 U
LMW-9	16	15 (93.75%)	1/16/1998	ND<2	ND<2	
			3/16/1999	ND<2	ND<2	
			9/23/1999	ND<2	ND<2	
			3/14/2000	ND<2	ND<2	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	
			10/12/2004	ND<2	ND<2	
			4/1/2005	ND<2	ND<2	
			10/26/2005	ND<2	ND<2	
			6/19/2006	ND<2	ND<2	
			11/18/2006	ND<2	ND<2	
			6/2/2007	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			6/11/2009	0.28 J	0.28 J	
LMW-8	16	9 (56.25%)	1/16/1998	ND<2	ND<2	
			3/16/1999	ND<2	ND<2	
			9/23/1999	ND<2	ND<2	
			3/14/2000	ND<2	ND<2	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	
			10/12/2004	ND<2	ND<2	
			4/1/2005	3	3	
			10/26/2005	1 J	1 J	
			6/19/2006	1 J	1 J	
			11/18/2006	1 J	1 J	
			6/2/2007	1 J	1 J	
			11/15/2007	3	3	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			6/11/2009	0.64	0.64	
LMW-7	16	16 (100%)	1/16/1998	ND<2	ND<2	
			3/16/1999	ND<2	ND<2	
			9/23/1999	ND<2	ND<2	
			3/14/2000	ND<2	ND<2	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	
			10/12/2004	ND<2	ND<2	
			4/1/2005	ND<2	ND<2	
			10/26/2005	ND<2	ND<2	
			6/19/2006	ND<2	ND<2	
			11/18/2006	ND<2	ND<2	
			6/2/2007	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			6/11/2009	ND<0.21 U		ND<0.21 U
LMW-6	16	8 (50%)	1/16/1998	ND<2	ND<2	
			3/16/1999	ND<2	ND<2	
			9/23/1999	ND<2	ND<2	
			3/14/2000	ND<2	ND<2	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	
			10/12/2004	ND<2	ND<2	
			4/1/2005	ND<2	ND<2	

			10/26/2005	1 J	1 J	
			6/19/2006	2	2	
			11/18/2006	2	2	
			6/2/2007	2	2	
			11/15/2007	4	4	
			5/20/2008	2	2	
			11/20/2008	2	2	
			6/11/2009	3.2	3.2	
LMW-3S	6	6 (100%)	11/18/2006	ND<2	ND<2	
			6/2/2007	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			6/11/2009	ND<0.21 U		ND<0.21 U
LMW-3	18	18 (100%)	11/19/1996	ND<2	ND<2	
			3/24/1997	ND<2	ND<2	
			1/16/1998	ND<2	ND<2	
			3/16/1999	ND<2	ND<2	
			9/23/1999	ND<2	ND<2	
			3/14/2000	ND<2	ND<2	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	
			10/12/2004	ND<2	ND<2	
			4/1/2005	ND<2	ND<2	
			10/26/2005	ND<2	ND<2	
			6/19/2006	ND<2	ND<2	
			11/18/2006	ND<2	ND<2	
			6/2/2007	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			6/11/2009	ND<0.21 U		ND<0.21 U
LMW-16	6	5 (83.3333%)	11/18/2006	ND<2	ND<2	
			6/2/2007	ND<2	ND<2	
			11/15/2007	2	2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			6/11/2009	ND<0.21 U		ND<0.21 U
LMW-15	9	8 (88.8889%)	11/18/2006	ND<2	ND<2	
			6/2/2007	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			6/11/2009	0.24 J	0.24 J	
LMW-14R	5	5 (100%)	6/2/2007	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			6/11/2009	ND<0.21 U		ND<0.21 U
LMW-13	11	11 (100%)	3/14/2000	ND<2	ND<2	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	

		10/12/2004	ND<2	ND<2	
		4/1/2005	ND<2	ND<2	
		10/26/2005	ND<2	ND<2	
		6/19/2006	ND<2	ND<2	
		6/2/2007	ND<2	ND<2	
		11/15/2007	ND<2	ND<2	
		5/20/2008	ND<2	ND<2	
		11/20/2008	ND<2	ND<2	
LMW-12	11	11 (100%)	3/14/2000	ND<2	ND<2
		9/23/2003	ND<2	ND<2	
		3/10/2004	ND<2	ND<2	
		10/12/2004	ND<2	ND<2	
		4/1/2005	ND<2	ND<2	
		10/26/2005	ND<2	ND<2	
		6/19/2006	ND<2	ND<2	
		6/2/2007	ND<2	ND<2	
		11/15/2007	ND<2	ND<2	
		5/20/2008	ND<2	ND<2	
		11/20/2008	ND<2	ND<2	
LMW-11	11	11 (100%)	3/14/2000	ND<2	ND<2
		9/23/2003	ND<2	ND<2	
		3/10/2004	ND<2	ND<2	
		10/12/2004	ND<2	ND<2	
		4/1/2005	ND<2	ND<2	
		10/26/2005	ND<2	ND<2	
		6/19/2006	ND<2	ND<2	
		6/2/2007	ND<2	ND<2	
		11/15/2007	ND<2	ND<2	
		5/20/2008	ND<2	ND<2	
		11/20/2008	ND<2	ND<2	
LMW-10	13	13 (100%)	3/14/2000	ND<2	ND<2
		9/23/2003	ND<2	ND<2	
		3/10/2004	ND<2	ND<2	
		10/12/2004	ND<2	ND<2	
		4/1/2005	ND<2	ND<2	
		10/26/2005	ND<2	ND<2	
		6/19/2006	ND<2	ND<2	
		11/18/2006	ND<2	ND<2	
		6/2/2007	ND<2	ND<2	
		11/15/2007	ND<2	ND<2	
		5/20/2008	ND<2	ND<2	
		11/20/2008	ND<2	ND<2	
		6/11/2009	ND<0.21 U	ND<0.21 U	

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Kruskal-Wallis Non-Parametric Test

Parameter: Selenium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	ND<2	87.5
	3/16/1999	ND<2	87.5
	9/23/1999	ND<2	87.5
	3/14/2000	ND<2	87.5
	9/23/2003	ND<2	87.5
	3/10/2004	ND<2	87.5
	10/12/2004	ND<2	87.5
	4/1/2005	ND<2	87.5
	10/26/2005	ND<2	87.5
	6/19/2006	ND<2	87.5
	11/18/2006	ND<2	87.5
	6/2/2007	ND<2	87.5
	11/15/2007	ND<2	87.5
	5/20/2008	ND<2	87.5
	11/20/2008	ND<2	87.5
	6/11/2009	ND<0.21 U	87.5

Rank Sum = 1400
Rank Mean = 87.5

Background Rank Sum = 1400
Background Rank Mean = 87.5

Compliance Wells

Well ID	Date	Result	Rank
MW-5	1/16/1998	ND<2	87.5
	3/16/1999	ND<2	87.5
	9/23/1999	ND<2	87.5
	3/14/2000	ND<2	87.5
	9/23/2003	ND<2	87.5
	3/10/2004	ND<2	87.5
	10/12/2004	ND<2	87.5
	4/1/2005	ND<2	87.5
	10/26/2005	ND<2	87.5
	6/19/2006	ND<2	87.5
	11/15/2007	ND<2	87.5
	5/20/2008	ND<2	87.5
	11/20/2008	ND<2	87.5

Rank Sum = 1137.5
Rank Mean = 87.5

LMW-9S	11/18/2006	4	192
	6/2/2007	4	193
	11/15/2007	ND<2	87.5
	5/20/2008	ND<2	87.5
	11/20/2008	ND<2	87.5

	6/11/2009	ND<0.21 U	87.5

Rank Sum = 735
Rank Mean = 122.5

LMW-9D	11/18/2006	ND<2	87.5
	6/2/2007	ND<2	87.5
	11/15/2007	4	194
	5/20/2008	ND<2	87.5
	11/20/2008	ND<2	87.5
	6/11/2009	ND<0.21 U	87.5

Rank Sum = 631.5
Rank Mean = 105.25

LMW-9	1/16/1998	ND<2	87.5
	3/16/1999	ND<2	87.5
	9/23/1999	ND<2	87.5
	3/14/2000	ND<2	87.5
	9/23/2003	ND<2	87.5
	3/10/2004	ND<2	87.5
	10/12/2004	ND<2	87.5
	4/1/2005	ND<2	87.5
	10/26/2005	ND<2	87.5
	6/19/2006	ND<2	87.5
	11/18/2006	ND<2	87.5
	6/2/2007	ND<2	87.5
	11/15/2007	ND<2	87.5
	5/20/2008	ND<2	87.5
	11/20/2008	ND<2	87.5
	6/11/2009	0.28 J	176

Rank Sum = 1488.5
Rank Mean = 93.0313

LMW-8	1/16/1998	ND<2	87.5
	3/16/1999	ND<2	87.5
	9/23/1999	ND<2	87.5
	3/14/2000	ND<2	87.5
	9/23/2003	ND<2	87.5
	3/10/2004	ND<2	87.5
	10/12/2004	ND<2	87.5
	4/1/2005	3	189
	10/26/2005	1 J	178
	6/19/2006	1 J	179
	11/18/2006	1 J	180
	6/2/2007	1 J	181
	11/15/2007	3	190
	5/20/2008	ND<2	87.5
	11/20/2008	ND<2	87.5
	6/11/2009	0.64	177

Rank Sum = 2061.5
Rank Mean = 128.844

LMW-7	1/16/1998	ND<2	87.5
	3/16/1999	ND<2	87.5
	9/23/1999	ND<2	87.5
	3/14/2000	ND<2	87.5
	9/23/2003	ND<2	87.5
	3/10/2004	ND<2	87.5
	10/12/2004	ND<2	87.5
	4/1/2005	ND<2	87.5
	10/26/2005	ND<2	87.5
	6/19/2006	ND<2	87.5
	11/18/2006	ND<2	87.5

	6/2/2007	ND<2	87.5	
	11/15/2007	ND<2	87.5	
	5/20/2008	ND<2	87.5	
	11/20/2008	ND<2	87.5	
	6/11/2009	ND<0.21 U		87.5

Rank Sum = 1400
Rank Mean = 87.5

LMW-6	1/16/1998	ND<2	87.5	
	3/16/1999	ND<2	87.5	
	9/23/1999	ND<2	87.5	
	3/14/2000	ND<2	87.5	
	9/23/2003	ND<2	87.5	
	3/10/2004	ND<2	87.5	
	10/12/2004	ND<2	87.5	
	4/1/2005	ND<2	87.5	
	10/26/2005	1 J	182	
	6/19/2006	2	183	
	11/18/2006	2	184	
	6/2/2007	2	185	
	11/15/2007	4	195	
	5/20/2008	2	186	
	11/20/2008	2	187	
	6/11/2009	3.2	191	

Rank Sum = 2193
Rank Mean = 137.063

LMW-3S	11/18/2006	ND<2	87.5	
	6/2/2007	ND<2	87.5	
	11/15/2007	ND<2	87.5	
	5/20/2008	ND<2	87.5	
	11/20/2008	ND<2	87.5	
	6/11/2009	ND<0.21 U		87.5

Rank Sum = 525
Rank Mean = 87.5

LMW-3	11/19/1996	ND<2	87.5	
	3/24/1997	ND<2	87.5	
	1/16/1998	ND<2	87.5	
	3/16/1999	ND<2	87.5	
	9/23/1999	ND<2	87.5	
	3/14/2000	ND<2	87.5	
	9/23/2003	ND<2	87.5	
	3/10/2004	ND<2	87.5	
	10/12/2004	ND<2	87.5	
	4/1/2005	ND<2	87.5	
	10/26/2005	ND<2	87.5	
	6/19/2006	ND<2	87.5	
	11/18/2006	ND<2	87.5	
	6/2/2007	ND<2	87.5	
	11/15/2007	ND<2	87.5	
	5/20/2008	ND<2	87.5	
	11/20/2008	ND<2	87.5	
	6/11/2009	ND<0.21 U		87.5

Rank Sum = 1575
Rank Mean = 87.5

LMW-16	11/18/2006	ND<2	87.5	
	6/2/2007	ND<2	87.5	
	11/15/2007	2	188	
	5/20/2008	ND<2	87.5	
	11/20/2008	ND<2	87.5	

	6/11/2009	ND<0.21 U	87.5

Rank Sum = 625.5
Rank Mean = 104.25

LMW-15	11/18/2006	ND<2	87.5
	6/2/2007	ND<2	87.5
	11/15/2007	ND<2	87.5
	11/15/2007	ND<2	87.5
	5/20/2008	ND<2	87.5
	5/20/2008	ND<2	87.5
	11/20/2008	ND<2	87.5
	11/20/2008	ND<2	87.5
	6/11/2009	0.24 J	175

Rank Sum = 875
Rank Mean = 97.2222

LMW-14R	6/2/2007	ND<2	87.5
	11/15/2007	ND<2	87.5
	5/20/2008	ND<2	87.5
	11/20/2008	ND<2	87.5
	6/11/2009	ND<0.21 U	87.5

Rank Sum = 437.5
Rank Mean = 87.5

LMW-13	3/14/2000	ND<2	87.5
	9/23/2003	ND<2	87.5
	3/10/2004	ND<2	87.5
	10/12/2004	ND<2	87.5
	4/1/2005	ND<2	87.5
	10/26/2005	ND<2	87.5
	6/19/2006	ND<2	87.5
	6/2/2007	ND<2	87.5
	11/15/2007	ND<2	87.5
	5/20/2008	ND<2	87.5
	11/20/2008	ND<2	87.5

Rank Sum = 962.5
Rank Mean = 87.5

LMW-12	3/14/2000	ND<2	87.5
	9/23/2003	ND<2	87.5
	3/10/2004	ND<2	87.5
	10/12/2004	ND<2	87.5
	4/1/2005	ND<2	87.5
	10/26/2005	ND<2	87.5
	6/19/2006	ND<2	87.5
	6/2/2007	ND<2	87.5
	11/15/2007	ND<2	87.5
	5/20/2008	ND<2	87.5
	11/20/2008	ND<2	87.5

Rank Sum = 962.5
Rank Mean = 87.5

LMW-11	3/14/2000	ND<2	87.5
	9/23/2003	ND<2	87.5
	3/10/2004	ND<2	87.5
	10/12/2004	ND<2	87.5
	4/1/2005	ND<2	87.5
	10/26/2005	ND<2	87.5
	6/19/2006	ND<2	87.5
	6/2/2007	ND<2	87.5
	11/15/2007	ND<2	87.5
	5/20/2008	ND<2	87.5

	11/20/2008	ND<2	87.5

Rank Sum = 962.5
Rank Mean = 87.5

LMW-10	3/14/2000	ND<2	87.5
	9/23/2003	ND<2	87.5
	3/10/2004	ND<2	87.5
	10/12/2004	ND<2	87.5
	4/1/2005	ND<2	87.5
	10/26/2005	ND<2	87.5
	6/19/2006	ND<2	87.5
	11/18/2006	ND<2	87.5
	6/2/2007	ND<2	87.5
	11/15/2007	ND<2	87.5
	5/20/2008	ND<2	87.5
	11/20/2008	ND<2	87.5
	6/11/2009	ND<0.21 U	87.5

Rank Sum = 1137.5
Rank Mean = 87.5

Calculation Results:

Kruskal-Wallis H Statistic = 18.0274
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 62.2626
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
18.0274 < 26.2962 indicating no significant group difference at 5% significance level
62.2626 > 26.2962 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634
Mean background rank is 87.5

Well	Mean Rank	Dif from Bkg	Critical Value
MW-5	87.5	0	49.0225
LMW-9S	122.5	35	62.8498
LMW-9D	105.25	17.75	62.8498
LMW-9	93.0313	5.53125	46.4177
LMW-8	128.844	41.3438	46.4177
LMW-7	87.5	0	46.4177
LMW-6	137.063	49.5625	46.4177
LMW-3S	87.5	0	62.8498
LMW-3	87.5	0	45.1099
LMW-16	104.25	16.75	62.8498
LMW-15	97.2222	9.72222	54.7037
LMW-14R	87.5	0	67.2656
LMW-13	87.5	0	51.4226
LMW-12	87.5	0	51.4226
LMW-11	87.5	0	51.4226
LMW-10	87.5	0	49.0225

Individual Well Comparisons at Groupwise 5% Significance Level (0.3125% Significance Level per comparison)

0.3125% Z score is 2.74777
Mean background rank is 87.5

Well	Mean Rank	Dif from Bkg	Critical Value
MW-5	87.5	0	57.9031
LMW-9S	122.5	35	74.2352
LMW-9D	105.25	17.75	74.2352
LMW-9	93.0313	5.53125	54.8264
LMW-8	128.844	41.3438	54.8264

LMW-7	87.5	0	54.8264	
LMW-6	137.063	49.5625	54.8264	
LMW-3S	87.5	0	74.2352	
LMW-3	87.5	0	53.2816	
LMW-16	104.25	16.75	74.2352	
LMW-15	97.2222	9.72222	64.6135	
LMW-14R		87.5	0	79.4509
LMW-13	87.5	0	60.7379	
LMW-12	87.5	0	60.7379	
LMW-11	87.5	0	60.7379	
LMW-10	87.5	0	57.9031	

Mann-Kendall Trend Analysis

Parameter: Selenium

Location: LMW-6

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

95% Confidence Level

Xj	Xk	Xj - Xk		Positives	Negatives
ND<2	ND<2	0	0	0	
ND<2	ND<2	0	0	0	
ND<2	ND<2	0	0	0	
ND<2	ND<2	0	0	0	
ND<2	ND<2	0	0	0	
ND<2	ND<2	0	0	0	
ND<2	ND<2	0	0	0	
1 J	ND<2	-1	0	1	
2	ND<2	0	0	1	
2	ND<2	0	0	1	
2	ND<2	0	0	1	
4	ND<2	2	1	1	
2	ND<2	0	1	1	
2	ND<2	0	1	1	
3.2	ND<2	1.2	2	1	
ND<2	ND<2	0	2	1	
ND<2	ND<2	0	2	1	
ND<2	ND<2	0	2	1	
ND<2	ND<2	0	2	1	
ND<2	ND<2	0	2	1	
ND<2	ND<2	0	2	1	
1 J	ND<2	-1	2	2	
2	ND<2	0	2	2	
2	ND<2	0	2	2	
2	ND<2	0	2	2	
4	ND<2	2	3	2	
2	ND<2	0	3	2	
2	ND<2	0	3	2	
3.2	ND<2	1.2	4	2	
ND<2	ND<2	0	4	2	
ND<2	ND<2	0	4	2	
ND<2	ND<2	0	4	2	
ND<2	ND<2	0	4	2	
ND<2	ND<2	0	4	2	
1 J	ND<2	-1	4	3	
2	ND<2	0	4	3	
2	ND<2	0	4	3	
2	ND<2	0	4	3	
4	ND<2	2	5	3	
2	ND<2	0	5	3	
2	ND<2	0	5	3	
3.2	ND<2	1.2	6	3	
ND<2	ND<2	0	6	3	
ND<2	ND<2	0	6	3	
ND<2	ND<2	0	6	3	

ND<2	ND<2	0	6	3
1 J	ND<2	-1	6	4
2	ND<2	0	6	4
2	ND<2	0	6	4
2	ND<2	0	6	4
4	ND<2	2	7	4
2	ND<2	0	7	4
2	ND<2	0	7	4
3.2	ND<2	1.2	8	4
ND<2	ND<2	0	8	4
ND<2	ND<2	0	8	4
ND<2	ND<2	0	8	4
1 J	ND<2	-1	8	5
2	ND<2	0	8	5
2	ND<2	0	8	5
2	ND<2	0	8	5
4	ND<2	2	9	5
2	ND<2	0	9	5
2	ND<2	0	9	5
3.2	ND<2	1.2	10	5
ND<2	ND<2	0	10	5
ND<2	ND<2	0	10	5
1 J	ND<2	-1	10	6
2	ND<2	0	10	6
2	ND<2	0	10	6
2	ND<2	0	10	6
4	ND<2	2	11	6
2	ND<2	0	11	6
2	ND<2	0	11	6
3.2	ND<2	1.2	12	6
ND<2	ND<2	0	12	6
1 J	ND<2	-1	12	7
2	ND<2	0	12	7
2	ND<2	0	12	7
2	ND<2	0	12	7
4	ND<2	2	13	7
2	ND<2	0	13	7
2	ND<2	0	13	7
3.2	ND<2	1.2	14	7
1 J	ND<2	-1	14	8
2	ND<2	0	14	8
2	ND<2	0	14	8
2	ND<2	0	14	8
4	ND<2	2	15	8
2	ND<2	0	15	8
2	ND<2	0	15	8
3.2	ND<2	1.2	16	8
2	1 J	1	17	8
2	1 J	1	18	8
2	1 J	1	19	8
4	1 J	3	20	8
2	1 J	1	21	8
2	1 J	1	22	8
3.2	1 J	2.2	23	8
2	2	0	23	8

2	2	0	23	8
4	2	2	24	8
2	2	0	24	8
2	2	0	24	8
3.2	2	1.2	25	8
2	2	0	25	8
4	2	2	26	8
2	2	0	26	8
2	2	0	26	8
3.2	2	1.2	27	8
4	2	2	28	8
2	2	0	28	8
2	2	0	28	8
3.2	2	1.2	29	8
2	4	-2	29	9
2	4	-2	29	10
3.2	4	-0.8	29	11
2	2	0	29	11
3.2	2	1.2	30	11
3.2	2	1.2	31	11

S Statistic = 31 - 11 = 20

Tied Group	Value	Members
1	2	13

Time Period		Observations
1/16/1998		1
3/16/1999		1
9/23/1999		1
3/14/2000		1
9/23/2003		1
3/10/2004		1
10/12/2004		1
4/1/2005	1	
10/26/2005		1
6/19/2006		1
11/18/2006		1
6/2/2007	1	
11/15/2007		1
5/20/2008		1
11/20/2008		1
6/11/2009		1

There are 0 time periods with multiple data

A = 4836
B = 0
C = 1716
D = 0
E = 156
F = 0
a = 8880
b = 30240
c = 480

Group Variance = 224.667
Z-Score = 1.26761
Comparison Level at 95% confidence level = 1.65463 (upward trend)
1.26761 <= 1.65463 indicating no evidence of an upward trend

Concentrations (ppb)

Parameter: Tetrachloroethylene

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 194
Percent Non-Detects: 99.4872%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	16 (100%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.15 U	ND<0.15 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	13 (100%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
LMW-9S	6	6 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.15 U	ND<0.15 U
LMW-9D	6	6 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1

			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.15 U		ND<0.15 U
LMW-9	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.15 U		ND<0.15 U
LMW-8	16	15 (93.75%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<0 J	ND<0 J	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<0 J	ND<0 J	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<0 J	ND<0 J	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<0 J	ND<0 J	
			6/11/2009	0.31 J	0.31 J	
LMW-7	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.15 U		ND<0.15 U
LMW-6	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	

			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.15 U		ND<0.15 U
LMW-3S	6	6 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.15 U		ND<0.15 U
LMW-3	18	18 (100%)	11/19/1996	ND<1	ND<1	
			3/24/1997	ND<1	ND<1	
			1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.15 U		ND<0.15 U
LMW-16	6	6 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.15 U		ND<0.15 U
LMW-15	9	9 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.15 U		ND<0.15 U
LMW-14R	5	5 (100%)	6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.15 U		ND<0.15 U
LMW-13	11	11 (100%)	3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	

		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-12	11	11 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-11	11	11 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-10	13	13 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		11/18/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
		6/11/2009	ND<0.15 U		ND<0.15 U

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Tetrachloroethylene

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 99.4872%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 16
Maximum Background Concentration = 1
Confidence Level = 66.7%
False Positive Rate = 33.3%

Location	Date	Samples	Mean	Significant
MW-5	11/20/2008	1	1	FALSE
LMW-9S	6/11/2009	1	0.15	FALSE
LMW-9D	6/11/2009	1	0.15	FALSE
LMW-9	6/11/2009	1	0.15	FALSE
LMW-8	6/11/2009	1	0.31	FALSE
LMW-7	6/11/2009	1	0.15	FALSE
LMW-6	6/11/2009	1	0.15	FALSE
LMW-3S	6/11/2009	1	0.15	FALSE
LMW-3	6/11/2009	1	0.15	FALSE
LMW-16	6/11/2009	1	0.15	FALSE
LMW-15	6/11/2009	1	0.15	FALSE
LMW-14R	6/11/2009	1	0.15	FALSE
LMW-13	11/20/2008	1	1	FALSE
LMW-12	11/20/2008	1	1	FALSE
LMW-11	11/20/2008	1	1	FALSE
LMW-10	6/11/2009	1	0.15	FALSE

Concentrations (ppb)

Parameter: Thallium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 194
Percent Non-Detects: 99.4872%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	16 (100%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.1 U	ND<0.1 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	13 (100%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
LMW-9S	6	6 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.1 U	ND<0.1 U
LMW-9D	6	6 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1

			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.1 U		ND<0.1 U
LMW-9	16	15 (93.75%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	0.13 J	0.13 J	
LMW-8	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.1 U		ND<0.1 U
LMW-7	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.1 U		ND<0.1 U
LMW-6	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	

			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.1 U		ND<0.1 U
LMW-3S	6	6 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.1 U		ND<0.1 U
LMW-3	18	18 (100%)	11/19/1996	ND<1	ND<1	
			3/24/1997	ND<1	ND<1	
			1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.1 U		ND<0.1 U
LMW-16	6	6 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.1 U		ND<0.1 U
LMW-15	9	9 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.1 U		ND<0.1 U
LMW-14R	5	5 (100%)	6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.1 U		ND<0.1 U
LMW-13	11	11 (100%)	3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	

		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-12	11	11 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-11	11	11 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-10	13	13 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		11/18/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
		6/11/2009	ND<0.1 U		ND<0.1 U

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Thallium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 99.4872%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 16
Maximum Background Concentration = 1
Confidence Level = 66.7%
False Positive Rate = 33.3%

Location	Date	Samples	Mean	Significant
MW-5	11/20/2008	1	1	FALSE
LMW-9S	6/11/2009	1	0.1	FALSE
LMW-9D	6/11/2009	1	0.1	FALSE
LMW-9	6/11/2009	1	0.13	FALSE
LMW-8	6/11/2009	1	0.1	FALSE
LMW-7	6/11/2009	1	0.1	FALSE
LMW-6	6/11/2009	1	0.1	FALSE
LMW-3S	6/11/2009	1	0.1	FALSE
LMW-3	6/11/2009	1	0.1	FALSE
LMW-16	6/11/2009	1	0.1	FALSE
LMW-15	6/11/2009	1	0.1	FALSE
LMW-14R	6/11/2009	1	0.1	FALSE
LMW-13	11/20/2008	1	1	FALSE
LMW-12	11/20/2008	1	1	FALSE
LMW-11	11/20/2008	1	1	FALSE
LMW-10	6/11/2009	1	0.1	FALSE

Concentrations (ppb)

Parameter: Toluene

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 191
Percent Non-Detects: 97.9487%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	15 (93.75%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<0 J	ND<0 J
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<0 J	ND<0 J
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<0 J	ND<0 J
			6/11/2009	0.56 J	0.56 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	13 (100%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
LMW-9S	6	6 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<0 J	ND<0 J
			6/11/2009	ND<0.33 U	ND<0.33 U
LMW-9D	6	6 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1

			11/20/2008	ND<0 J	ND<0 J	
			6/11/2009	ND<0.33 U		ND<0.33 U
LMW-9	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<0 J	ND<0 J	
			6/11/2009	ND<0.33 U		ND<0.33 U
LMW-8	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<0 J	ND<0 J	
			6/11/2009	ND<0.33 U		ND<0.33 U
LMW-7	16	14 (87.5%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	1	1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<0 J	ND<0 J	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	0.5 J	0.5 J	
LMW-6	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	

			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<0 J	ND<0 J	
			6/11/2009	ND<0.33 U		ND<0.33 U
LMW-3S	6	5 (83.3333%)	11/18/2006	ND<1	ND<1	
			6/2/2007	1	1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<0 J	ND<0 J	
			6/11/2009	ND<0.33 U		ND<0.33 U
LMW-3	18	18 (100%)	11/19/1996	ND<1	ND<1	
			3/24/1997	ND<1	ND<1	
			1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<0 J	ND<0 J	
			6/11/2009	ND<0.33 U		ND<0.33 U
LMW-16	6	6 (100%)	11/18/2006	ND<0 J	ND<0 J	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.33 U		ND<0.33 U
LMW-15	9	9 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<0 J	ND<0 J	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.33 U		ND<0.33 U
LMW-14R	5	5 (100%)	6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.33 U		ND<0.33 U
LMW-13	11	11 (100%)	3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	

		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-12	11	11 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-11	11	11 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-10	13	13 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<0 J	ND<0 J	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		11/18/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<0 J	ND<0 J	
		6/11/2009	ND<0.33 U		ND<0.33 U

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Toluene

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 97.9487%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 16
Maximum Background Concentration = 1
Confidence Level = 66.7%
False Positive Rate = 33.3%

Location	Date	Samples	Mean	Significant
MW-5	11/20/2008	1	1	FALSE
LMW-9S	6/11/2009	1	0.33	FALSE
LMW-9D	6/11/2009	1	0.33	FALSE
LMW-9	6/11/2009	1	0.33	FALSE
LMW-8	6/11/2009	1	0.33	FALSE
LMW-7	6/11/2009	1	0.5	FALSE
LMW-6	6/11/2009	1	0.33	FALSE
LMW-3S	6/11/2009	1	0.33	FALSE
LMW-3	6/11/2009	1	0.33	FALSE
LMW-16	6/11/2009	1	0.33	FALSE
LMW-15	6/11/2009	1	0.33	FALSE
LMW-14R	6/11/2009	1	0.33	FALSE
LMW-13	11/20/2008	1	1	FALSE
LMW-12	11/20/2008	1	1	FALSE
LMW-11	11/20/2008	1	1	FALSE
LMW-10	6/11/2009	1	0.33	FALSE

Concentrations (ppb)

Parameter: Trichloroethylene

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 193
Percent Non-Detects: 98.9744%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	16 (100%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.13 U	ND<0.13 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	13 (100%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/15/2007	ND<0 J	ND<0 J
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
LMW-9S	6	6 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.13 U	ND<0.13 U
LMW-9D	6	6 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1

			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.13 U		ND<0.13 U
LMW-9	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.13 U		ND<0.13 U
LMW-8	16	15 (93.75%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<0 J	ND<0 J	
			6/19/2006	ND<0 J	ND<0 J	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	0.41 J	0.41 J	
LMW-7	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.13 U		ND<0.13 U
LMW-6	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	

			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.13 U		ND<0.13 U
LMW-3S	6	6 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.13 U		ND<0.13 U
LMW-3	18	18 (100%)	11/19/1996	ND<1	ND<1	
			3/24/1997	ND<1	ND<1	
			1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.13 U		ND<0.13 U
LMW-16	6	6 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.13 U		ND<0.13 U
LMW-15	9	9 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.13 U		ND<0.13 U
LMW-14R	5	5 (100%)	6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.13 U		ND<0.13 U
LMW-13	11	11 (100%)	3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	

		10/12/2004	ND<1	ND<1	
		4/1/2005 ND<1	ND<1		
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007 ND<1	ND<1		
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-12 11	11 (100%)	3/14/2000		ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005 ND<1	ND<1		
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007 ND<1	ND<1		
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-11 11	11 (100%)	3/14/2000		ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005 ND<1	ND<1		
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007 ND<1	ND<1		
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-10 13	12 (92.3077%)	3/14/2000		ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005 ND<0 J	ND<0 J		
		10/26/2005	ND<0 J	ND<0 J	
		6/19/2006	ND<0 J	ND<0 J	
		11/18/2006	ND<0 J	ND<0 J	
		6/2/2007 ND<1	ND<1		
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<0 J	ND<0 J	
		6/11/2009	0.88 J	0.88 J	

There are 0 unused locations

Loc.	Meas. ND	Date	Conc.	Original

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Trichloroethylene

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 98.9744%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 16
Maximum Background Concentration = 1
Confidence Level = 66.7%
False Positive Rate = 33.3%

Location	Date	Samples	Mean	Significant
MW-5	11/20/2008	1	1	FALSE
LMW-9S	6/11/2009	1	0.13	FALSE
LMW-9D	6/11/2009	1	0.13	FALSE
LMW-9	6/11/2009	1	0.13	FALSE
LMW-8	6/11/2009	1	0.41	FALSE
LMW-7	6/11/2009	1	0.13	FALSE
LMW-6	6/11/2009	1	0.13	FALSE
LMW-3S	6/11/2009	1	0.13	FALSE
LMW-3	6/11/2009	1	0.13	FALSE
LMW-16	6/11/2009	1	0.13	FALSE
LMW-15	6/11/2009	1	0.13	FALSE
LMW-14R	6/11/2009	1	0.13	FALSE
LMW-13	11/20/2008	1	1	FALSE
LMW-12	11/20/2008	1	1	FALSE
LMW-11	11/20/2008	1	1	FALSE
LMW-10	6/11/2009	1	0.88	FALSE

Concentrations (ppb)

Parameter: Trichlorofluoromethane

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 172
Percent Non-Detects: 88.2051%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	9 (56.25%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	2	2
			10/26/2005	ND<0 J	ND<0 J
			6/19/2006	2	2
			11/18/2006	2	2
			6/2/2007	3	3
			11/15/2007	ND<1	ND<1
			5/20/2008	3	3
			11/20/2008	2	2
			6/11/2009	0.82 J	0.82 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	12 (92.3077%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/15/2007	7	7
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
LMW-9S	6	6 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.25 U	ND<0.25 U
LMW-9D	6	6 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1

			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.25 U		ND<0.25 U
LMW-9	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.25 U		ND<0.25 U
LMW-8	16	16 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.25 U		ND<0.25 U
LMW-7	16	14 (87.5%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	2	2	
			11/15/2007	4	4	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.25 U		ND<0.25 U
LMW-6	16	12 (75%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<0 J	ND<0 J	

			10/26/2005	1	1	
			6/19/2006	1	1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<0 J	ND<0 J	
			5/20/2008	1	1	
			11/20/2008	ND<0 J	ND<0 J	
			6/11/2009	0.95 J	0.95 J	
LMW-3S	6	4 (66.6667%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	1	1	
			5/20/2008	ND<0 J	ND<0 J	
			11/20/2008	ND<0 J	ND<0 J	
			6/11/2009	1.1	1.1	
LMW-3	18	17 (94.4444%)	11/19/1996	ND<1	ND<1	
			3/24/1997	ND<1	ND<1	
			1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<0 J	ND<0 J	
			10/26/2005	ND<0 J	ND<0 J	
			6/19/2006	ND<0 J	ND<0 J	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<0 J	ND<0 J	
			5/20/2008	ND<0 J	ND<0 J	
			11/20/2008	ND<0 J	ND<0 J	
			6/11/2009	0.84 J	0.84 J	
LMW-16	6	6 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.25 U	ND<0.25 U	
LMW-15	9	9 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.25 U	ND<0.25 U	
LMW-14R	5	5 (100%)	6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.25 U	ND<0.25 U	
LMW-13	11	11 (100%)	3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	

		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-12	11	11 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-11	11	11 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-10	13	7 (53.8462%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<0 J	ND<0 J	
		6/19/2006	2	2	
		11/18/2006	7	7	
		6/2/2007	3	3	
		11/15/2007	ND<1	ND<1	
		5/20/2008	10	10	
		11/20/2008	3	3	
		6/11/2009	6.6	6.6	

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Kruskal-Wallis Non-Parametric Test

Parameter: Trichlorofluoromethane

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	ND<1	86.5
	3/16/1999	ND<1	86.5
	9/23/1999	ND<1	86.5
	3/14/2000	ND<1	86.5
	9/23/2003	ND<1	86.5
	3/10/2004	ND<1	86.5
	10/12/2004	ND<1	86.5
	4/1/2005	2	181
	10/26/2005	ND<0 J	86.5
	6/19/2006	2	182
	11/18/2006	2	183
	6/2/2007	3	187
	11/15/2007	ND<1	86.5
	5/20/2008	3	188
	11/20/2008	2	184
	6/11/2009	0.82 J	173

Rank Sum = 2056.5
Rank Mean = 128.531

Background Rank Sum = 2056.5
Background Rank Mean = 128.531

Compliance Wells

Well ID	Date	Result	Rank
MW-5	1/16/1998	ND<1	86.5
	3/16/1999	ND<1	86.5
	9/23/1999	ND<1	86.5
	3/14/2000	ND<1	86.5
	9/23/2003	ND<1	86.5
	3/10/2004	ND<1	86.5
	10/12/2004	ND<1	86.5
	4/1/2005	ND<1	86.5
	10/26/2005	ND<1	86.5
	6/19/2006	ND<1	86.5
	11/15/2007	7	193
	5/20/2008	ND<1	86.5
	11/20/2008	ND<1	86.5

Rank Sum = 1231
Rank Mean = 94.6923

LMW-9S	11/18/2006	ND<1	86.5
	6/2/2007	ND<1	86.5
	11/15/2007	ND<1	86.5
	5/20/2008	ND<1	86.5
	11/20/2008	ND<1	86.5

	6/11/2009	ND<0.25 U		86.5

Rank Sum = 519
Rank Mean = 86.5

LMW-9D	11/18/2006	ND<1	86.5
	6/2/2007	ND<1	86.5
	11/15/2007	ND<1	86.5
	5/20/2008	ND<1	86.5
	11/20/2008	ND<1	86.5
	6/11/2009	ND<0.25 U	86.5

Rank Sum = 519
Rank Mean = 86.5

LMW-9	1/16/1998	ND<1	86.5
	3/16/1999	ND<1	86.5
	9/23/1999	ND<1	86.5
	3/14/2000	ND<1	86.5
	9/23/2003	ND<1	86.5
	3/10/2004	ND<1	86.5
	10/12/2004	ND<1	86.5
	4/1/2005	ND<1	86.5
	10/26/2005	ND<1	86.5
	6/19/2006	ND<1	86.5
	11/18/2006	ND<1	86.5
	6/2/2007	ND<1	86.5
	11/15/2007	ND<1	86.5
	5/20/2008	ND<1	86.5
	11/20/2008	ND<1	86.5
	6/11/2009	ND<0.25 U	86.5

Rank Sum = 1384
Rank Mean = 86.5

LMW-8	1/16/1998	ND<1	86.5
	3/16/1999	ND<1	86.5
	9/23/1999	ND<1	86.5
	3/14/2000	ND<1	86.5
	9/23/2003	ND<1	86.5
	3/10/2004	ND<1	86.5
	10/12/2004	ND<1	86.5
	4/1/2005	ND<1	86.5
	10/26/2005	ND<1	86.5
	6/19/2006	ND<1	86.5
	11/18/2006	ND<1	86.5
	6/2/2007	ND<1	86.5
	11/15/2007	ND<1	86.5
	5/20/2008	ND<1	86.5
	11/20/2008	ND<1	86.5
	6/11/2009	ND<0.25 U	86.5

Rank Sum = 1384
Rank Mean = 86.5

LMW-7	1/16/1998	ND<1	86.5
	3/16/1999	ND<1	86.5
	9/23/1999	ND<1	86.5
	3/14/2000	ND<1	86.5
	9/23/2003	ND<1	86.5
	3/10/2004	ND<1	86.5
	10/12/2004	ND<1	86.5
	4/1/2005	ND<1	86.5
	10/26/2005	ND<1	86.5
	6/19/2006	ND<1	86.5
	11/18/2006	ND<1	86.5

	6/2/2007	2	185	
	11/15/2007	4	191	
	5/20/2008	ND<1	86.5	
	11/20/2008	ND<1	86.5	
	6/11/2009	ND<0.25 U		86.5

Rank Sum = 1587
Rank Mean = 99.1875

LMW-6	1/16/1998	ND<1	86.5
	3/16/1999	ND<1	86.5
	9/23/1999	ND<1	86.5
	3/14/2000	ND<1	86.5
	9/23/2003	ND<1	86.5
	3/10/2004	ND<1	86.5
	10/12/2004	ND<1	86.5
	4/1/2005	ND<0 J	86.5
	10/26/2005	1	176
	6/19/2006	1	177
	11/18/2006	ND<1	86.5
	6/2/2007	ND<1	86.5
	11/15/2007	ND<0 J	86.5
	5/20/2008	1	178
	11/20/2008	ND<0 J	86.5
	6/11/2009	0.95 J	175

Rank Sum = 1744
Rank Mean = 109

LMW-3S	11/18/2006	ND<1	86.5
	6/2/2007	ND<1	86.5
	11/15/2007	1	179
	5/20/2008	ND<0 J	86.5
	11/20/2008	ND<0 J	86.5
	6/11/2009	1.1	180

Rank Sum = 705
Rank Mean = 117.5

LMW-3	11/19/1996	ND<1	86.5
	3/24/1997	ND<1	86.5
	1/16/1998	ND<1	86.5
	3/16/1999	ND<1	86.5
	9/23/1999	ND<1	86.5
	3/14/2000	ND<1	86.5
	9/23/2003	ND<1	86.5
	3/10/2004	ND<1	86.5
	10/12/2004	ND<1	86.5
	4/1/2005	ND<0 J	86.5
	10/26/2005	ND<0 J	86.5
	6/19/2006	ND<0 J	86.5
	11/18/2006	ND<1	86.5
	6/2/2007	ND<1	86.5
	11/15/2007	ND<0 J	86.5
	5/20/2008	ND<0 J	86.5
	11/20/2008	ND<0 J	86.5
	6/11/2009	0.84 J	174

Rank Sum = 1644.5
Rank Mean = 91.3611

LMW-16	11/18/2006	ND<1	86.5
	6/2/2007	ND<1	86.5
	11/15/2007	ND<1	86.5
	5/20/2008	ND<1	86.5
	11/20/2008	ND<1	86.5

	6/11/2009	ND<0.25	U	86.5

Rank Sum = 519
Rank Mean = 86.5

LMW-15	11/18/2006	ND<1	86.5
	6/2/2007	ND<1	86.5
	11/15/2007	ND<1	86.5
	11/15/2007	ND<1	86.5
	5/20/2008	ND<1	86.5
	5/20/2008	ND<1	86.5
	11/20/2008	ND<1	86.5
	11/20/2008	ND<1	86.5
	6/11/2009	ND<0.25	U 86.5

Rank Sum = 778.5
Rank Mean = 86.5

LMW-14R	6/2/2007	ND<1	86.5
	11/15/2007	ND<1	86.5
	5/20/2008	ND<1	86.5
	11/20/2008	ND<1	86.5
	6/11/2009	ND<0.25	U 86.5

Rank Sum = 432.5
Rank Mean = 86.5

LMW-13	3/14/2000	ND<1	86.5
	9/23/2003	ND<1	86.5
	3/10/2004	ND<1	86.5
	10/12/2004	ND<1	86.5
	4/1/2005	ND<1	86.5
	10/26/2005	ND<1	86.5
	6/19/2006	ND<1	86.5
	6/2/2007	ND<1	86.5
	11/15/2007	ND<1	86.5
	5/20/2008	ND<1	86.5
	11/20/2008	ND<1	86.5

Rank Sum = 951.5
Rank Mean = 86.5

LMW-12	3/14/2000	ND<1	86.5
	9/23/2003	ND<1	86.5
	3/10/2004	ND<1	86.5
	10/12/2004	ND<1	86.5
	4/1/2005	ND<1	86.5
	10/26/2005	ND<1	86.5
	6/19/2006	ND<1	86.5
	6/2/2007	ND<1	86.5
	11/15/2007	ND<1	86.5
	5/20/2008	ND<1	86.5
	11/20/2008	ND<1	86.5

Rank Sum = 951.5
Rank Mean = 86.5

LMW-11	3/14/2000	ND<1	86.5
	9/23/2003	ND<1	86.5
	3/10/2004	ND<1	86.5
	10/12/2004	ND<1	86.5
	4/1/2005	ND<1	86.5
	10/26/2005	ND<1	86.5
	6/19/2006	ND<1	86.5
	6/2/2007	ND<1	86.5
	11/15/2007	ND<1	86.5
	5/20/2008	ND<1	86.5

	11/20/2008	ND<1	86.5

Rank Sum = 951.5
Rank Mean = 86.5

LMW-10	3/14/2000	ND<1	86.5
	9/23/2003	ND<1	86.5
	3/10/2004	ND<1	86.5
	10/12/2004	ND<1	86.5
	4/1/2005	ND<1	86.5
	10/26/2005	ND<0 J	86.5
	6/19/2006	2	186
	11/18/2006	7	194
	6/2/2007	3	189
	11/15/2007	ND<1	86.5
	5/20/2008	10	195
	11/20/2008	3	190
	6/11/2009	6.6	192

Rank Sum = 1751.5
Rank Mean = 134.731

Calculation Results:

Kruskal-Wallis H Statistic = 15.8422
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 50.492
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
15.8422 < 26.2962 indicating no significant group difference at 5% significance level
50.492 > 26.2962 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634
Mean background rank is 128.531

Well	Mean Rank	Dif from Bkg	Critical Value
MW-5	94.6923	-33.8389	49.0225
LMW-9S	86.5	-42.0313	62.8498
LMW-9D	86.5	-42.0313	62.8498
LMW-9	86.5	-42.0313	46.4177
LMW-8	86.5	-42.0313	46.4177
LMW-7	99.1875	-29.3438	46.4177
LMW-6	109	-19.5313	46.4177
LMW-3S	117.5	-11.0313	62.8498
LMW-3	91.3611	-37.1701	45.1099
LMW-16	86.5	-42.0313	62.8498
LMW-15	86.5	-42.0313	54.7037
LMW-14R	86.5	-42.0313	67.2656
LMW-13	86.5	-42.0313	51.4226
LMW-12	86.5	-42.0313	51.4226
LMW-11	86.5	-42.0313	51.4226
LMW-10	134.731	6.19952	49.0225

Individual Well Comparisons at Groupwise 5% Significance Level (0.3125% Significance Level per comparison)

0.3125% Z score is 2.74777
Mean background rank is 128.531

Well	Mean Rank	Dif from Bkg	Critical Value
MW-5	94.6923	-33.8389	57.9031
LMW-9S	86.5	-42.0313	74.2352
LMW-9D	86.5	-42.0313	74.2352
LMW-9	86.5	-42.0313	54.8264
LMW-8	86.5	-42.0313	54.8264

LMW-7	99.1875	-29.3438	54.8264
LMW-6	109	-19.5313	54.8264
LMW-3S	117.5	-11.0313	74.2352
LMW-3	91.3611	-37.1701	53.2816
LMW-16	86.5	-42.0313	74.2352
LMW-15	86.5	-42.0313	64.6135
LMW-14R	86.5	-42.0313	79.4509
LMW-13	86.5	-42.0313	60.7379
LMW-12	86.5	-42.0313	60.7379
LMW-11	86.5	-42.0313	60.7379
LMW-10	134.731	6.19952	57.9031

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Trichlorofluoromethane

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 88.2051%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 16
Maximum Background Concentration = 3
Confidence Level = 66.7%
False Positive Rate = 33.3%

Location	Date	Samples	Mean	Significant
MW-5	11/20/2008	1	1	FALSE
LMW-9S	6/11/2009	1	0.25	FALSE
LMW-9D	6/11/2009	1	0.25	FALSE
LMW-9	6/11/2009	1	0.25	FALSE
LMW-8	6/11/2009	1	0.25	FALSE
LMW-7	6/11/2009	1	0.25	FALSE
LMW-6	6/11/2009	1	0.95	FALSE
LMW-3S	6/11/2009	1	1.1	FALSE
LMW-3	6/11/2009	1	0.84	FALSE
LMW-16	6/11/2009	1	0.25	FALSE
LMW-15	6/11/2009	1	0.25	FALSE
LMW-14R	6/11/2009	1	0.25	FALSE
LMW-13	11/20/2008	1	1	FALSE
LMW-12	11/20/2008	1	1	FALSE
LMW-11	11/20/2008	1	1	FALSE
LMW-10	6/11/2009	1	6.6	TRUE

Non-Parametric Tolerance Interval

Parameter: Trichlorofluoromethane

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 88.2051%
Background measurements (n) = 16
Maximum Background Concentration = 3
Minimum Coverage = 82.9%
Average Coverage = 94.1176%

Location	Date	Value	Significant
MW-5	1/16/1998	ND<1	FALSE
MW-5	3/16/1999	ND<1	FALSE
MW-5	9/23/1999	ND<1	FALSE
MW-5	3/14/2000	ND<1	FALSE
MW-5	9/23/2003	ND<1	FALSE
MW-5	3/10/2004	ND<1	FALSE
MW-5	10/12/2004	ND<1	FALSE
MW-5	4/1/2005	ND<1	FALSE
MW-5	10/26/2005	ND<1	FALSE
MW-5	6/19/2006	ND<1	FALSE
MW-5	11/15/2007	7	TRUE
MW-5	5/20/2008	ND<1	FALSE
MW-5	11/20/2008	ND<1	FALSE
LMW-9S	11/18/2006	ND<1	FALSE
LMW-9S	6/2/2007	ND<1	FALSE
LMW-9S	11/15/2007	ND<1	FALSE
LMW-9S	5/20/2008	ND<1	FALSE
LMW-9S	11/20/2008	ND<1	FALSE
LMW-9S	6/11/2009	ND<0.25 U	FALSE
LMW-9D	11/18/2006	ND<1	FALSE
LMW-9D	6/2/2007	ND<1	FALSE
LMW-9D	11/15/2007	ND<1	FALSE
LMW-9D	5/20/2008	ND<1	FALSE
LMW-9D	11/20/2008	ND<1	FALSE
LMW-9D	6/11/2009	ND<0.25 U	FALSE
LMW-9	1/16/1998	ND<1	FALSE
LMW-9	3/16/1999	ND<1	FALSE
LMW-9	9/23/1999	ND<1	FALSE
LMW-9	3/14/2000	ND<1	FALSE
LMW-9	9/23/2003	ND<1	FALSE
LMW-9	3/10/2004	ND<1	FALSE
LMW-9	10/12/2004	ND<1	FALSE
LMW-9	4/1/2005	ND<1	FALSE
LMW-9	10/26/2005	ND<1	FALSE
LMW-9	6/19/2006	ND<1	FALSE
LMW-9	11/18/2006	ND<1	FALSE
LMW-9	6/2/2007	ND<1	FALSE
LMW-9	11/15/2007	ND<1	FALSE
LMW-9	5/20/2008	ND<1	FALSE

LMW-9	11/20/2008	ND<1	FALSE	
LMW-9	6/11/2009	ND<0.25 U		FALSE

LMW-8	1/16/1998	ND<1	FALSE	
LMW-8	3/16/1999	ND<1	FALSE	
LMW-8	9/23/1999	ND<1	FALSE	
LMW-8	3/14/2000	ND<1	FALSE	
LMW-8	9/23/2003	ND<1	FALSE	
LMW-8	3/10/2004	ND<1	FALSE	
LMW-8	10/12/2004	ND<1	FALSE	
LMW-8	4/1/2005	ND<1	FALSE	
LMW-8	10/26/2005	ND<1	FALSE	
LMW-8	6/19/2006	ND<1	FALSE	
LMW-8	11/18/2006	ND<1	FALSE	
LMW-8	6/2/2007	ND<1	FALSE	
LMW-8	11/15/2007	ND<1	FALSE	
LMW-8	5/20/2008	ND<1	FALSE	
LMW-8	11/20/2008	ND<1	FALSE	
LMW-8	6/11/2009	ND<0.25 U		FALSE

LMW-7	1/16/1998	ND<1	FALSE	
LMW-7	3/16/1999	ND<1	FALSE	
LMW-7	9/23/1999	ND<1	FALSE	
LMW-7	3/14/2000	ND<1	FALSE	
LMW-7	9/23/2003	ND<1	FALSE	
LMW-7	3/10/2004	ND<1	FALSE	
LMW-7	10/12/2004	ND<1	FALSE	
LMW-7	4/1/2005	ND<1	FALSE	
LMW-7	10/26/2005	ND<1	FALSE	
LMW-7	6/19/2006	ND<1	FALSE	
LMW-7	11/18/2006	ND<1	FALSE	
LMW-7	6/2/2007	2	FALSE	
LMW-7	11/15/2007	4	TRUE	
LMW-7	5/20/2008	ND<1	FALSE	
LMW-7	11/20/2008	ND<1	FALSE	
LMW-7	6/11/2009	ND<0.25 U		FALSE

LMW-6	1/16/1998	ND<1	FALSE	
LMW-6	3/16/1999	ND<1	FALSE	
LMW-6	9/23/1999	ND<1	FALSE	
LMW-6	3/14/2000	ND<1	FALSE	
LMW-6	9/23/2003	ND<1	FALSE	
LMW-6	3/10/2004	ND<1	FALSE	
LMW-6	10/12/2004	ND<1	FALSE	
LMW-6	4/1/2005	ND<0 J	FALSE	
LMW-6	10/26/2005	1	FALSE	
LMW-6	6/19/2006	1	FALSE	
LMW-6	11/18/2006	ND<1	FALSE	
LMW-6	6/2/2007	ND<1	FALSE	
LMW-6	11/15/2007	ND<0 J	FALSE	
LMW-6	5/20/2008	1	FALSE	
LMW-6	11/20/2008	ND<0 J	FALSE	
LMW-6	6/11/2009	0.95 J	FALSE	

LMW-3S	11/18/2006	ND<1	FALSE	
LMW-3S	6/2/2007	ND<1	FALSE	
LMW-3S	11/15/2007	1	FALSE	

LMW-3S	5/20/2008	ND<0 J	FALSE
LMW-3S	11/20/2008	ND<0 J	FALSE
LMW-3S	6/11/2009	1.1	FALSE
LMW-3	11/19/1996	ND<1	FALSE
LMW-3	3/24/1997	ND<1	FALSE
LMW-3	1/16/1998	ND<1	FALSE
LMW-3	3/16/1999	ND<1	FALSE
LMW-3	9/23/1999	ND<1	FALSE
LMW-3	3/14/2000	ND<1	FALSE
LMW-3	9/23/2003	ND<1	FALSE
LMW-3	3/10/2004	ND<1	FALSE
LMW-3	10/12/2004	ND<1	FALSE
LMW-3	4/1/2005	ND<0 J	FALSE
LMW-3	10/26/2005	ND<0 J	FALSE
LMW-3	6/19/2006	ND<0 J	FALSE
LMW-3	11/18/2006	ND<1	FALSE
LMW-3	6/2/2007	ND<1	FALSE
LMW-3	11/15/2007	ND<0 J	FALSE
LMW-3	5/20/2008	ND<0 J	FALSE
LMW-3	11/20/2008	ND<0 J	FALSE
LMW-3	6/11/2009	0.84 J	FALSE
LMW-16	11/18/2006	ND<1	FALSE
LMW-16	6/2/2007	ND<1	FALSE
LMW-16	11/15/2007	ND<1	FALSE
LMW-16	5/20/2008	ND<1	FALSE
LMW-16	11/20/2008	ND<1	FALSE
LMW-16	6/11/2009	ND<0.25 U	FALSE
LMW-15	11/18/2006	ND<1	FALSE
LMW-15	6/2/2007	ND<1	FALSE
LMW-15	11/15/2007	ND<1	FALSE
LMW-15	11/15/2007	ND<1	FALSE
LMW-15	5/20/2008	ND<1	FALSE
LMW-15	5/20/2008	ND<1	FALSE
LMW-15	11/20/2008	ND<1	FALSE
LMW-15	11/20/2008	ND<1	FALSE
LMW-15	6/11/2009	ND<0.25 U	FALSE
LMW-14R	6/2/2007	ND<1	FALSE
LMW-14R	11/15/2007	ND<1	FALSE
LMW-14R	5/20/2008	ND<1	FALSE
LMW-14R	11/20/2008	ND<1	FALSE
LMW-14R	6/11/2009	ND<0.25 U	FALSE
LMW-13	3/14/2000	ND<1	FALSE
LMW-13	9/23/2003	ND<1	FALSE
LMW-13	3/10/2004	ND<1	FALSE
LMW-13	10/12/2004	ND<1	FALSE
LMW-13	4/1/2005	ND<1	FALSE
LMW-13	10/26/2005	ND<1	FALSE
LMW-13	6/19/2006	ND<1	FALSE
LMW-13	6/2/2007	ND<1	FALSE
LMW-13	11/15/2007	ND<1	FALSE
LMW-13	5/20/2008	ND<1	FALSE

LMW-13	11/20/2008	ND<1	FALSE
LMW-12	3/14/2000	ND<1	FALSE
LMW-12	9/23/2003	ND<1	FALSE
LMW-12	3/10/2004	ND<1	FALSE
LMW-12	10/12/2004	ND<1	FALSE
LMW-12	4/1/2005	ND<1	FALSE
LMW-12	10/26/2005	ND<1	FALSE
LMW-12	6/19/2006	ND<1	FALSE
LMW-12	6/2/2007	ND<1	FALSE
LMW-12	11/15/2007	ND<1	FALSE
LMW-12	5/20/2008	ND<1	FALSE
LMW-12	11/20/2008	ND<1	FALSE
LMW-11	3/14/2000	ND<1	FALSE
LMW-11	9/23/2003	ND<1	FALSE
LMW-11	3/10/2004	ND<1	FALSE
LMW-11	10/12/2004	ND<1	FALSE
LMW-11	4/1/2005	ND<1	FALSE
LMW-11	10/26/2005	ND<1	FALSE
LMW-11	6/19/2006	ND<1	FALSE
LMW-11	6/2/2007	ND<1	FALSE
LMW-11	11/15/2007	ND<1	FALSE
LMW-11	5/20/2008	ND<1	FALSE
LMW-11	11/20/2008	ND<1	FALSE
LMW-10	3/14/2000	ND<1	FALSE
LMW-10	9/23/2003	ND<1	FALSE
LMW-10	3/10/2004	ND<1	FALSE
LMW-10	10/12/2004	ND<1	FALSE
LMW-10	4/1/2005	ND<1	FALSE
LMW-10	10/26/2005	ND<0 J	FALSE
LMW-10	6/19/2006	2	FALSE
LMW-10	11/18/2006	7	TRUE
LMW-10	6/2/2007	3	FALSE
LMW-10	11/15/2007	ND<1	FALSE
LMW-10	5/20/2008	10	TRUE
LMW-10	11/20/2008	3	FALSE
LMW-10	6/11/2009	6.6	TRUE

Concentrations (ppb)

Parameter: Vanadium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 165
Percent Non-Detects: 84.6154%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	15 (93.75%)	1/16/1998	ND<20	ND<20
			3/16/1999	ND<20	ND<20
			9/23/1999	ND<20	ND<20
			3/14/2000	ND<20	ND<20
			9/23/2003	ND<20	ND<20
			3/10/2004	ND<20	ND<20
			10/12/2004	ND<20	ND<20
			4/1/2005	ND<20	ND<20
			10/26/2005	ND<20	ND<20
			6/19/2006	ND<20	ND<20
			11/18/2006	ND<20	ND<20
			6/2/2007	15	15
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
			6/11/2009	ND<1.4 U	ND<1.4 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	13 (100%)	1/16/1998	ND<20	ND<20
			3/16/1999	ND<20	ND<20
			9/23/1999	ND<20	ND<20
			3/14/2000	ND<20	ND<20
			9/23/2003	ND<20	ND<20
			3/10/2004	ND<20	ND<20
			10/12/2004	ND<20	ND<20
			4/1/2005	ND<20	ND<20
			10/26/2005	ND<20	ND<20
			6/19/2006	ND<20	ND<20
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
LMW-9S	6	5 (83.3333%)	11/18/2006	ND<20	ND<20
			6/2/2007	5	5
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
			6/11/2009	ND<1.4 U	ND<1.4 U
LMW-9D	6	1 (16.6667%)	11/18/2006	10 J	10 J
			6/2/2007	5	5
			11/15/2007	ND<20	ND<20
			5/20/2008	5 J	5 J

			11/20/2008	5 J	5 J	
			6/11/2009	2.5 J	2.5 J	
LMW-9	16	10 (62.5%)	1/16/1998	ND<20	ND<20	
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	8 J	8 J	
			10/26/2005	11 J	11 J	
			6/19/2006	30	30	
			11/18/2006	ND<20	ND<20	
			6/2/2007	7	7	
			11/15/2007	ND<20	ND<20	
			5/20/2008	2 J	2 J	
			11/20/2008	ND<20	ND<20	
			6/11/2009	2.6 J	2.6 J	
LMW-8	16	15 (93.75%)	1/16/1998	ND<20	ND<20	
			3/16/1999	ND<20	ND<20	
			9/23/1999	7 J	7 J	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<1.4 U		ND<1.4 U
LMW-7	16	8 (50%)	1/16/1998	ND<20	ND<20	
			3/16/1999	7 J	7 J	
			9/23/1999	49	49	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	12 J	12 J	
			10/26/2005	18 J	18 J	
			6/19/2006	8 J	8 J	
			11/18/2006	3 J	3 J	
			6/2/2007	14	14	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	2.9 J	2.9 J	
LMW-6	16	15 (93.75%)	1/16/1998	ND<20	ND<20	
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	

			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	3	3	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<1.4 U		ND<1.4 U
LMW-3S	6	4 (66.6667%)	11/18/2006	ND<20		ND<20
			6/2/2007	9	9	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	2.1 J	2.1 J	
LMW-3	18	18 (100%)	11/19/1996	ND<20		ND<20
			3/24/1997	ND<20	ND<20	
			1/16/1998	ND<20	ND<20	
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<1.4 U		ND<1.4 U
LMW-16	6	5 (83.3333%)	11/18/2006	ND<20		ND<20
			6/2/2007	41	41	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<1.4 U		ND<1.4 U
LMW-15	9	8 (88.8889%)	11/18/2006	ND<20		ND<20
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	7.5	7.5	
LMW-14R	5	4 (80%)	6/2/2007	2 J	2 J	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<1.4 U		ND<1.4 U
LMW-13	11	11 (100%)	3/14/2000	ND<20		ND<20
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	

		10/12/2004		ND<20	ND<20
		4/1/2005	ND<20	ND<20	
		10/26/2005		ND<20	ND<20
		6/19/2006		ND<20	ND<20
		6/2/2007	ND<20	ND<20	
		11/15/2007		ND<20	ND<20
		5/20/2008		ND<20	ND<20
		11/20/2008		ND<20	ND<20
LMW-12 11	11 (100%)	3/14/2000		ND<20	ND<20
		9/23/2003		ND<20	ND<20
		3/10/2004		ND<20	ND<20
		10/12/2004		ND<20	ND<20
		4/1/2005	ND<20	ND<20	
		10/26/2005		ND<20	ND<20
		6/19/2006		ND<20	ND<20
		6/2/2007	ND<20	ND<20	
		11/15/2007		ND<20	ND<20
		5/20/2008		ND<20	ND<20
		11/20/2008		ND<20	ND<20
LMW-11 11	11 (100%)	3/14/2000		ND<20	ND<20
		9/23/2003		ND<20	ND<20
		3/10/2004		ND<20	ND<20
		10/12/2004		ND<20	ND<20
		4/1/2005	ND<20	ND<20	
		10/26/2005		ND<20	ND<20
		6/19/2006		ND<20	ND<20
		6/2/2007	ND<20	ND<20	
		11/15/2007		ND<20	ND<20
		5/20/2008		ND<20	ND<20
		11/20/2008		ND<20	ND<20
LMW-10 13	11 (84.6154%)	3/14/2000		ND<20	ND<20
		9/23/2003		ND<20	ND<20
		3/10/2004		ND<20	ND<20
		10/12/2004		ND<20	ND<20
		4/1/2005	ND<20	ND<20	
		10/26/2005		ND<20	ND<20
		6/19/2006		8 J	8 J
		11/18/2006		ND<20	ND<20
		6/2/2007	3 J	3 J	
		11/15/2007		ND<20	ND<20
		5/20/2008		ND<20	ND<20
		11/20/2008		ND<20	ND<20
		6/11/2009		ND<1.4 U	ND<1.4 U

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Kruskal-Wallis Non-Parametric Test

Parameter: Vanadium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	ND<20	83
	3/16/1999	ND<20	83
	9/23/1999	ND<20	83
	3/14/2000	ND<20	83
	9/23/2003	ND<20	83
	3/10/2004	ND<20	83
	10/12/2004	ND<20	83
	4/1/2005	ND<20	83
	10/26/2005	ND<20	83
	6/19/2006	ND<20	83
	11/18/2006	ND<20	83
	6/2/2007	15	191
	11/15/2007	ND<20	83
	5/20/2008	ND<20	83
	11/20/2008	ND<20	83
	6/11/2009	ND<1.4 U	83

Rank Sum = 1436
Rank Mean = 89.75

Background Rank Sum = 1436
Background Rank Mean = 89.75

Compliance Wells

Well ID	Date	Result	Rank
MW-5	1/16/1998	ND<20	83
	3/16/1999	ND<20	83
	9/23/1999	ND<20	83
	3/14/2000	ND<20	83
	9/23/2003	ND<20	83
	3/10/2004	ND<20	83
	10/12/2004	ND<20	83
	4/1/2005	ND<20	83
	10/26/2005	ND<20	83
	6/19/2006	ND<20	83
	11/15/2007	ND<20	83
	5/20/2008	ND<20	83
	11/20/2008	ND<20	83

Rank Sum = 1079
Rank Mean = 83

LMW-9S	11/18/2006	ND<20	83
	6/2/2007	5	175
	11/15/2007	ND<20	83
	5/20/2008	ND<20	83
	11/20/2008	ND<20	83

	6/11/2009	ND<1.4 U	83

Rank Sum = 590
Rank Mean = 98.3333

LMW-9D	11/18/2006	10 J	187
	6/2/2007	5	176
	11/15/2007	ND<20	83
	5/20/2008	5 J	177
	11/20/2008	5 J	178
	6/11/2009	2.5 J	169

Rank Sum = 970
Rank Mean = 161.667

LMW-9	1/16/1998	ND<20	83
	3/16/1999	ND<20	83
	9/23/1999	ND<20	83
	3/14/2000	ND<20	83
	9/23/2003	ND<20	83
	3/10/2004	ND<20	83
	10/12/2004	ND<20	83
	4/1/2005	8 J	183
	10/26/2005	11 J	188
	6/19/2006	30	193
	11/18/2006	ND<20	83
	6/2/2007	7	179
	11/15/2007	ND<20	83
	5/20/2008	2 J	166
	11/20/2008	ND<20	83
	6/11/2009	2.6 J	170

Rank Sum = 1909
Rank Mean = 119.313

LMW-8	1/16/1998	ND<20	83
	3/16/1999	ND<20	83
	9/23/1999	7 J	180
	3/14/2000	ND<20	83
	9/23/2003	ND<20	83
	3/10/2004	ND<20	83
	10/12/2004	ND<20	83
	4/1/2005	ND<20	83
	10/26/2005	ND<20	83
	6/19/2006	ND<20	83
	11/18/2006	ND<20	83
	6/2/2007	ND<20	83
	11/15/2007	ND<20	83
	5/20/2008	ND<20	83
	11/20/2008	ND<20	83
	6/11/2009	ND<1.4 U	83

Rank Sum = 1425
Rank Mean = 89.0625

LMW-7	1/16/1998	ND<20	83
	3/16/1999	7 J	181
	9/23/1999	49	195
	3/14/2000	ND<20	83
	9/23/2003	ND<20	83
	3/10/2004	ND<20	83
	10/12/2004	ND<20	83
	4/1/2005	12 J	189
	10/26/2005	18 J	192
	6/19/2006	8 J	184
	11/18/2006	3 J	172

	6/2/2007	14	190
	11/15/2007	ND<20	83
	5/20/2008	ND<20	83
	11/20/2008	ND<20	83
	6/11/2009	2.9 J	171

Rank Sum = 2138
Rank Mean = 133.625

LMW-6	1/16/1998	ND<20	83
	3/16/1999	ND<20	83
	9/23/1999	ND<20	83
	3/14/2000	ND<20	83
	9/23/2003	ND<20	83
	3/10/2004	ND<20	83
	10/12/2004	ND<20	83
	4/1/2005	ND<20	83
	10/26/2005	ND<20	83
	6/19/2006	ND<20	83
	11/18/2006	ND<20	83
	6/2/2007	3	173
	11/15/2007	ND<20	83
	5/20/2008	ND<20	83
	11/20/2008	ND<20	83
	6/11/2009	ND<1.4 U	83

Rank Sum = 1418
Rank Mean = 88.625

LMW-3S	11/18/2006	ND<20	83
	6/2/2007	9	186
	11/15/2007	ND<20	83
	5/20/2008	ND<20	83
	11/20/2008	ND<20	83
	6/11/2009	2.1 J	168

Rank Sum = 686
Rank Mean = 114.333

LMW-3	11/19/1996	ND<20	83
	3/24/1997	ND<20	83
	1/16/1998	ND<20	83
	3/16/1999	ND<20	83
	9/23/1999	ND<20	83
	3/14/2000	ND<20	83
	9/23/2003	ND<20	83
	3/10/2004	ND<20	83
	10/12/2004	ND<20	83
	4/1/2005	ND<20	83
	10/26/2005	ND<20	83
	6/19/2006	ND<20	83
	11/18/2006	ND<20	83
	6/2/2007	ND<20	83
	11/15/2007	ND<20	83
	5/20/2008	ND<20	83
	11/20/2008	ND<20	83
	6/11/2009	ND<1.4 U	83

Rank Sum = 1494
Rank Mean = 83

LMW-16	11/18/2006	ND<20	83
	6/2/2007	41	194
	11/15/2007	ND<20	83
	5/20/2008	ND<20	83
	11/20/2008	ND<20	83

	6/11/2009	ND<1.4 U	83

Rank Sum = 609
Rank Mean = 101.5

LMW-15	11/18/2006	ND<20	83
	6/2/2007	ND<20	83
	11/15/2007	ND<20	83
	11/15/2007	ND<20	83
	5/20/2008	ND<20	83
	5/20/2008	ND<20	83
	11/20/2008	ND<20	83
	11/20/2008	ND<20	83
	6/11/2009	7.5	182

Rank Sum = 846
Rank Mean = 94

LMW-14R	6/2/2007	2 J	167
	11/15/2007	ND<20	83
	5/20/2008	ND<20	83
	11/20/2008	ND<20	83
	6/11/2009	ND<1.4 U	83

Rank Sum = 499
Rank Mean = 99.8

LMW-13	3/14/2000	ND<20	83
	9/23/2003	ND<20	83
	3/10/2004	ND<20	83
	10/12/2004	ND<20	83
	4/1/2005	ND<20	83
	10/26/2005	ND<20	83
	6/19/2006	ND<20	83
	6/2/2007	ND<20	83
	11/15/2007	ND<20	83
	5/20/2008	ND<20	83
	11/20/2008	ND<20	83

Rank Sum = 913
Rank Mean = 83

LMW-12	3/14/2000	ND<20	83
	9/23/2003	ND<20	83
	3/10/2004	ND<20	83
	10/12/2004	ND<20	83
	4/1/2005	ND<20	83
	10/26/2005	ND<20	83
	6/19/2006	ND<20	83
	6/2/2007	ND<20	83
	11/15/2007	ND<20	83
	5/20/2008	ND<20	83
	11/20/2008	ND<20	83

Rank Sum = 913
Rank Mean = 83

LMW-11	3/14/2000	ND<20	83
	9/23/2003	ND<20	83
	3/10/2004	ND<20	83
	10/12/2004	ND<20	83
	4/1/2005	ND<20	83
	10/26/2005	ND<20	83
	6/19/2006	ND<20	83
	6/2/2007	ND<20	83
	11/15/2007	ND<20	83
	5/20/2008	ND<20	83

	11/20/2008	ND<20	83

Rank Sum = 913
Rank Mean = 83

LMW-10	3/14/2000	ND<20	83
	9/23/2003	ND<20	83
	3/10/2004	ND<20	83
	10/12/2004	ND<20	83
	4/1/2005	ND<20	83
	10/26/2005	ND<20	83
	6/19/2006	8 J	185
	11/18/2006	ND<20	83
	6/2/2007	3 J	174
	11/15/2007	ND<20	83
	5/20/2008	ND<20	83
	11/20/2008	ND<20	83
	6/11/2009	ND<1.4 U	83

Rank Sum = 1272
Rank Mean = 97.8462

Calculation Results:

Kruskal-Wallis H Statistic = 22.5756
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 57.2722
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
22.5756 < 26.2962 indicating no significant group difference at 5% significance level
57.2722 > 26.2962 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634
Mean background rank is 89.75

Well	Mean Rank	Dif from Bkg	Critical Value
MW-5	83	-6.75	49.0225
LMW-9S	98.3333	8.58333	62.8498
LMW-9D	161.667	71.9167	62.8498
LMW-9	119.313	29.5625	46.4177
LMW-8	89.0625	-0.6875	46.4177
LMW-7	133.625	43.875	46.4177
LMW-6	88.625	-1.125	46.4177
LMW-3S	114.333	24.5833	62.8498
LMW-3	83	-6.75	45.1099
LMW-16	101.5	11.75	62.8498
LMW-15	94	4.25	54.7037
LMW-14R		99.8	10.05	67.2656
LMW-13	83	-6.75	51.4226
LMW-12	83	-6.75	51.4226
LMW-11	83	-6.75	51.4226
LMW-10	97.8462	8.09615	49.0225

Individual Well Comparisons at Groupwise 5% Significance Level (0.3125% Significance Level per comparison)

0.3125% Z score is 2.74777
Mean background rank is 89.75

Well	Mean Rank	Dif from Bkg	Critical Value
MW-5	83	-6.75	57.9031
LMW-9S	98.3333	8.58333	74.2352
LMW-9D	161.667	71.9167	74.2352
LMW-9	119.313	29.5625	54.8264
LMW-8	89.0625	-0.6875	54.8264

LMW-7	133.625	43.875	54.8264	
LMW-6	88.625	-1.125	54.8264	
LMW-3S	114.333	24.5833	74.2352	
LMW-3	83	-6.75	53.2816	
LMW-16	101.5	11.75	74.2352	
LMW-15	94	4.25	64.6135	
LMW-14R		99.8	10.05	79.4509
LMW-13	83	-6.75	60.7379	
LMW-12	83	-6.75	60.7379	
LMW-11	83	-6.75	60.7379	
LMW-10	97.8462	8.09615	57.9031	

Mann-Kendall Trend Analysis

Parameter: Vanadium

Location: LMW-9D

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

95% Confidence Level

Xj	Xk	Xj - Xk		Positives	Negatives
5	10 J	-5	0	1	
ND<20	10 J	10	1	1	
5 J	10 J	-5	1	2	
5 J	10 J	-5	1	3	
2.5 J	10 J	-7.5	1	4	
ND<20	5	15	2	4	
5 J	5	0	2	4	
5 J	5	0	2	4	
2.5 J	5	-2.5	2	5	
5 J	ND<20	-15	2	6	
5 J	ND<20	-15	2	7	
2.5 J	ND<20	-17.5	2	8	
5 J	5 J	0	2	8	
2.5 J	5 J	-2.5	2	9	
2.5 J	5 J	-2.5	2	10	

S Statistic = 2 - 10 = -8
Comparing at 95% confidence level (upward trend)
Failed to calculate probability for S = -8
Table out of range

Concentrations (ppb)

Parameter: Zinc

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 195
Total Non-Detect: 139
Percent Non-Detects: 71.2821%
Total Background Measurements: 16
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	16	11 (68.75%)	1/16/1998	ND<60	ND<60
			3/16/1999	50 J	50 J
			9/23/1999	ND<60	ND<60
			3/14/2000	ND<60	ND<60
			9/23/2003	ND<60	ND<60
			3/10/2004	ND<60	ND<60
			10/12/2004	ND<60	ND<60
			4/1/2005	ND<60	ND<60
			10/26/2005	ND<60	ND<60
			6/19/2006	ND<60	ND<60
			11/18/2006	11 J	11 J
			6/2/2007	47	47
			11/15/2007	ND<60	ND<60
			5/20/2008	15 J	15 J
			11/20/2008	ND<60	ND<60
			6/11/2009	6.7 J	6.7 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-5	13	11 (84.6154%)	1/16/1998	ND<60	ND<60
			3/16/1999	40 J	40 J
			9/23/1999	36 J	36 J
			3/14/2000	ND<60	ND<60
			9/23/2003	ND<60	ND<60
			3/10/2004	ND<60	ND<60
			10/12/2004	ND<60	ND<60
			4/1/2005	ND<60	ND<60
			10/26/2005	ND<60	ND<60
			6/19/2006	ND<60	ND<60
			11/15/2007	ND<60	ND<60
			5/20/2008	ND<60	ND<60
			11/20/2008	ND<60	ND<60
LMW-9S	6	4 (66.6667%)	11/18/2006	ND<60	ND<60
			6/2/2007	ND<60	ND<60
			11/15/2007	ND<60	ND<60
			5/20/2008	32 J	32 J
			11/20/2008	ND<60	ND<60
			6/11/2009	5.2 J	5.2 J
LMW-9D	6	3 (50%)	11/18/2006	7 J	7 J
			6/2/2007	ND<60	ND<60
			11/15/2007	ND<60	ND<60
			5/20/2008	18 J	18 J

			11/20/2008	ND<60	ND<60	
			6/11/2009	3.5 J	3.5 J	
LMW-9	16	12 (75%)	1/16/1998		ND<60	ND<60
			3/16/1999	90	90	
			9/23/1999	ND<60	ND<60	
			3/14/2000	ND<60	ND<60	
			9/23/2003	ND<60	ND<60	
			3/10/2004	ND<60	ND<60	
			10/12/2004	ND<60	ND<60	
			4/1/2005	ND<60	ND<60	
			10/26/2005	ND<60	ND<60	
			6/19/2006	20 J	20 J	
			11/18/2006	ND<60	ND<60	
			6/2/2007	17 J	17 J	
			11/15/2007	ND<60	ND<60	
			5/20/2008	7 J	7 J	
			11/20/2008	ND<60	ND<60	
			6/11/2009	ND<2.6 U		ND<2.6 U
LMW-8	16	13 (81.25%)	1/16/1998		ND<60	ND<60
			3/16/1999	90	90	
			9/23/1999	ND<60	ND<60	
			3/14/2000	ND<60	ND<60	
			9/23/2003	ND<60	ND<60	
			3/10/2004	ND<60	ND<60	
			10/12/2004	ND<60	ND<60	
			4/1/2005	ND<60	ND<60	
			10/26/2005	ND<60	ND<60	
			6/19/2006	ND<60	ND<60	
			11/18/2006	ND<60	ND<60	
			6/2/2007	ND<60	ND<60	
			11/15/2007	ND<60	ND<60	
			5/20/2008	5 J	5 J	
			11/20/2008	ND<60	ND<60	
			6/11/2009	8.2 J	8.2 J	
LMW-7	16	7 (43.75%)	1/16/1998		ND<60	ND<60
			3/16/1999	20 J	20 J	
			9/23/1999	40 J	40 J	
			3/14/2000	ND<60	ND<60	
			9/23/2003	ND<60	ND<60	
			3/10/2004	ND<60	ND<60	
			10/12/2004	ND<60	ND<60	
			4/1/2005	27 J	27 J	
			10/26/2005	31 J	31 J	
			6/19/2006	40 J	40 J	
			11/18/2006	21 J	21 J	
			6/2/2007	51	51	
			11/15/2007	ND<60	ND<60	
			5/20/2008	10 J	10 J	
			11/20/2008	ND<60	ND<60	
			6/11/2009	29 B	29 B	
LMW-6	16	8 (50%)	1/16/1998	ND<60	ND<60	
			3/16/1999	30 J	30 J	
			9/23/1999	53 J	53 J	
			3/14/2000	ND<60	ND<60	
			9/23/2003	ND<60	ND<60	
			3/10/2004	ND<60	ND<60	
			10/12/2004	ND<60	ND<60	
			4/1/2005	ND<60	ND<60	

			10/26/2005	ND<60	ND<60	
			6/19/2006	20 J	20 J	
			11/18/2006	7 J	7 J	
			6/2/2007	17 J	17 J	
			11/15/2007	27 J	27 J	
			5/20/2008	10 J	10 J	
			11/20/2008	ND<60	ND<60	
			6/11/2009	8.2 J B	8.2 J B	
LMW-3S	6	1 (16.6667%)	11/18/2006		10 J	10 J
			6/2/2007	16 J	16 J	
			11/15/2007	48 J	48 J	
			5/20/2008	15 J	15 J	
			11/20/2008	ND<60	ND<60	
			6/11/2009	18 B	18 B	
LMW-3	18	13 (72.2222%)	11/19/1996		ND<60	ND<60
			3/24/1997	ND<60	ND<60	
			1/16/1998	ND<60	ND<60	
			3/16/1999	20 J	20 J	
			9/23/1999	ND<60	ND<60	
			3/14/2000	ND<60	ND<60	
			9/23/2003	ND<60	ND<60	
			3/10/2004	ND<60	ND<60	
			10/12/2004	ND<60	ND<60	
			4/1/2005	ND<60	ND<60	
			10/26/2005	ND<60	ND<60	
			6/19/2006	ND<60	ND<60	
			11/18/2006	6 J	6 J	
			6/2/2007	ND<60	ND<60	
			11/15/2007	66	66	
			5/20/2008	12 J	12 J	
			11/20/2008	ND<60	ND<60	
			6/11/2009	7.3 J B	7.3 J B	
LMW-16	6	3 (50%)	11/18/2006	ND<60	ND<60	
			6/2/2007	16 J	16 J	
			11/15/2007	69	69	
			5/20/2008	15 J	15 J	
			11/20/2008	ND<60	ND<60	
			6/11/2009	ND<2.6 U		ND<2.6 U
LMW-15	9	6 (66.6667%)	11/18/2006		14 J	14 J
			6/2/2007	ND<60	ND<60	
			11/15/2007	ND<60	ND<60	
			11/15/2007	ND<60	ND<60	
			5/20/2008	39 J	39 J	
			5/20/2008	ND<60	ND<60	
			11/20/2008	ND<60	ND<60	
			11/20/2008	ND<60	ND<60	
			6/11/2009	6.5 J	6.5 J	
LMW-14R	5	2 (40%)	6/2/2007	15 J	15 J	
			11/15/2007	ND<60	ND<60	
			5/20/2008	18 J	18 J	
			11/20/2008	ND<60	ND<60	
			6/11/2009	6.3 J	6.3 J	
LMW-13	11	11 (100%)	3/14/2000		ND<60	ND<60
			9/23/2003	ND<60	ND<60	
			3/10/2004	ND<60	ND<60	

		10/12/2004		ND<60	ND<60
		4/1/2005	ND<60	ND<60	
		10/26/2005		ND<60	ND<60
		6/19/2006		ND<60	ND<60
		6/2/2007	ND<60	ND<60	
		11/15/2007		ND<60	ND<60
		5/20/2008		ND<60	ND<60
		11/20/2008		ND<60	ND<60
LMW-12 11	11 (100%)	3/14/2000		ND<60	ND<60
		9/23/2003		ND<60	ND<60
		3/10/2004		ND<60	ND<60
		10/12/2004		ND<60	ND<60
		4/1/2005	ND<60	ND<60	
		10/26/2005		ND<60	ND<60
		6/19/2006		ND<60	ND<60
		6/2/2007	ND<60	ND<60	
		11/15/2007		ND<60	ND<60
		5/20/2008		ND<60	ND<60
		11/20/2008		ND<60	ND<60
LMW-11 11	11 (100%)	3/14/2000		ND<60	ND<60
		9/23/2003		ND<60	ND<60
		3/10/2004		ND<60	ND<60
		10/12/2004		ND<60	ND<60
		4/1/2005	ND<60	ND<60	
		10/26/2005		ND<60	ND<60
		6/19/2006		ND<60	ND<60
		6/2/2007	ND<60	ND<60	
		11/15/2007		ND<60	ND<60
		5/20/2008		ND<60	ND<60
		11/20/2008		ND<60	ND<60
LMW-10 13	12 (92.3077%)	3/14/2000		ND<60	ND<60
		9/23/2003		ND<60	ND<60
		3/10/2004		ND<60	ND<60
		10/12/2004		ND<60	ND<60
		4/1/2005	ND<60	ND<60	
		10/26/2005		ND<60	ND<60
		6/19/2006		ND<60	ND<60
		11/18/2006		ND<60	ND<60
		6/2/2007	ND<60	ND<60	
		11/15/2007		ND<60	ND<60
		5/20/2008		40 J	40 J
		11/20/2008		ND<60	ND<60
		6/11/2009		ND<2.6 U	ND<2.6 U

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Kruskal-Wallis Non-Parametric Test

Parameter: Zinc

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	ND<60	70
	3/16/1999	50 J	189
	9/23/1999	ND<60	70
	3/14/2000	ND<60	70
	9/23/2003	ND<60	70
	3/10/2004	ND<60	70
	10/12/2004	ND<60	70
	4/1/2005	ND<60	70
	10/26/2005	ND<60	70
	6/19/2006	ND<60	70
	11/18/2006	11 J	156
	6/2/2007	47	187
	11/15/2007	ND<60	70
	5/20/2008	15 J	159
	11/20/2008	ND<60	70
	6/11/2009	6.7 J	146

Rank Sum = 1607
Rank Mean = 100.438

Background Rank Sum = 1607
Background Rank Mean = 100.438

Compliance Wells

Well ID	Date	Result	Rank
MW-5	1/16/1998	ND<60	70
	3/16/1999	40 J	183
	9/23/1999	36 J	181
	3/14/2000	ND<60	70
	9/23/2003	ND<60	70
	3/10/2004	ND<60	70
	10/12/2004	ND<60	70
	4/1/2005	ND<60	70
	10/26/2005	ND<60	70
	6/19/2006	ND<60	70
	11/15/2007	ND<60	70
	5/20/2008	ND<60	70
	11/20/2008	ND<60	70

Rank Sum = 1134
Rank Mean = 87.2308

LMW-9S	11/18/2006	ND<60	70
	6/2/2007	ND<60	70
	11/15/2007	ND<60	70
	5/20/2008	32 J	180
	11/20/2008	ND<60	70

	6/11/2009	5.2 J	142

Rank Sum = 602
Rank Mean = 100.333

LMW-9D	11/18/2006	7 J	147
	6/2/2007	ND<60	70
	11/15/2007	ND<60	70
	5/20/2008	18 J	167
	11/20/2008	ND<60	70
	6/11/2009	3.5 J	140

Rank Sum = 664
Rank Mean = 110.667

LMW-9	1/16/1998	ND<60	70
	3/16/1999	90	194
	9/23/1999	ND<60	70
	3/14/2000	ND<60	70
	9/23/2003	ND<60	70
	3/10/2004	ND<60	70
	10/12/2004	ND<60	70
	4/1/2005	ND<60	70
	10/26/2005	ND<60	70
	6/19/2006	20 J	170
	11/18/2006	ND<60	70
	6/2/2007	17 J	165
	11/15/2007	ND<60	70
	5/20/2008	7 J	148
	11/20/2008	ND<60	70
	6/11/2009	ND<2.6 U	70

Rank Sum = 1517
Rank Mean = 94.8125

LMW-8	1/16/1998	ND<60	70
	3/16/1999	90	195
	9/23/1999	ND<60	70
	3/14/2000	ND<60	70
	9/23/2003	ND<60	70
	3/10/2004	ND<60	70
	10/12/2004	ND<60	70
	4/1/2005	ND<60	70
	10/26/2005	ND<60	70
	6/19/2006	ND<60	70
	11/18/2006	ND<60	70
	6/2/2007	ND<60	70
	11/15/2007	ND<60	70
	5/20/2008	5 J	141
	11/20/2008	ND<60	70
	6/11/2009	8.2 J	151

Rank Sum = 1397
Rank Mean = 87.3125

LMW-7	1/16/1998	ND<60	70
	3/16/1999	20 J	171
	9/23/1999	40 J	184
	3/14/2000	ND<60	70
	9/23/2003	ND<60	70
	3/10/2004	ND<60	70
	10/12/2004	ND<60	70
	4/1/2005	27 J	175
	10/26/2005	31 J	179
	6/19/2006	40 J	185
	11/18/2006	21 J	174

	6/2/2007	51	190
	11/15/2007	ND<60	70
	5/20/2008	10 J	153
	11/20/2008	ND<60	70
	6/11/2009	29 B	177

Rank Sum = 2078
Rank Mean = 129.875

LMW-6	1/16/1998	ND<60	70
	3/16/1999	30 J	178
	9/23/1999	53 J	191
	3/14/2000	ND<60	70
	9/23/2003	ND<60	70
	3/10/2004	ND<60	70
	10/12/2004	ND<60	70
	4/1/2005	ND<60	70
	10/26/2005	ND<60	70
	6/19/2006	20 J	172
	11/18/2006	7 J	149
	6/2/2007	17 J	166
	11/15/2007	27 J	176
	5/20/2008	10 J	154
	11/20/2008	ND<60	70
	6/11/2009	8.2 J B	152

Rank Sum = 1898
Rank Mean = 118.625

LMW-3S	11/18/2006	10 J	155
	6/2/2007	16 J	163
	11/15/2007	48 J	188
	5/20/2008	15 J	160
	11/20/2008	ND<60	70
	6/11/2009	18 B	168

Rank Sum = 904
Rank Mean = 150.667

LMW-3	11/19/1996	ND<60	70
	3/24/1997	ND<60	70
	1/16/1998	ND<60	70
	3/16/1999	20 J	173
	9/23/1999	ND<60	70
	3/14/2000	ND<60	70
	9/23/2003	ND<60	70
	3/10/2004	ND<60	70
	10/12/2004	ND<60	70
	4/1/2005	ND<60	70
	10/26/2005	ND<60	70
	6/19/2006	ND<60	70
	11/18/2006	6 J	143
	6/2/2007	ND<60	70
	11/15/2007	66	192
	5/20/2008	12 J	157
	11/20/2008	ND<60	70
	6/11/2009	7.3 J B	150

Rank Sum = 1725
Rank Mean = 95.8333

LMW-16	11/18/2006	ND<60	70
	6/2/2007	16 J	164
	11/15/2007	69	193
	5/20/2008	15 J	161
	11/20/2008	ND<60	70

	6/11/2009	ND<2.6 U	70

Rank Sum = 728
Rank Mean = 121.333

LMW-15	11/18/2006	14 J	158
	6/2/2007	ND<60	70
	11/15/2007	ND<60	70
	11/15/2007	ND<60	70
	5/20/2008	39 J	182
	5/20/2008	ND<60	70
	11/20/2008	ND<60	70
	11/20/2008	ND<60	70
	6/11/2009	6.5 J	145

Rank Sum = 905
Rank Mean = 100.556

LMW-14R	6/2/2007	15 J	162
	11/15/2007	ND<60	70
	5/20/2008	18 J	169
	11/20/2008	ND<60	70
	6/11/2009	6.3 J	144

Rank Sum = 615
Rank Mean = 123

LMW-13	3/14/2000	ND<60	70
	9/23/2003	ND<60	70
	3/10/2004	ND<60	70
	10/12/2004	ND<60	70
	4/1/2005	ND<60	70
	10/26/2005	ND<60	70
	6/19/2006	ND<60	70
	6/2/2007	ND<60	70
	11/15/2007	ND<60	70
	5/20/2008	ND<60	70
	11/20/2008	ND<60	70

Rank Sum = 770
Rank Mean = 70

LMW-12	3/14/2000	ND<60	70
	9/23/2003	ND<60	70
	3/10/2004	ND<60	70
	10/12/2004	ND<60	70
	4/1/2005	ND<60	70
	10/26/2005	ND<60	70
	6/19/2006	ND<60	70
	6/2/2007	ND<60	70
	11/15/2007	ND<60	70
	5/20/2008	ND<60	70
	11/20/2008	ND<60	70

Rank Sum = 770
Rank Mean = 70

LMW-11	3/14/2000	ND<60	70
	9/23/2003	ND<60	70
	3/10/2004	ND<60	70
	10/12/2004	ND<60	70
	4/1/2005	ND<60	70
	10/26/2005	ND<60	70
	6/19/2006	ND<60	70
	6/2/2007	ND<60	70
	11/15/2007	ND<60	70
	5/20/2008	ND<60	70

	11/20/2008	ND<60	70

Rank Sum = 770
Rank Mean = 70

LMW-10	3/14/2000	ND<60	70
	9/23/2003	ND<60	70
	3/10/2004	ND<60	70
	10/12/2004	ND<60	70
	4/1/2005	ND<60	70
	10/26/2005	ND<60	70
	6/19/2006	ND<60	70
	11/18/2006	ND<60	70
	6/2/2007	ND<60	70
	11/15/2007	ND<60	70
	5/20/2008	40 J	186
	11/20/2008	ND<60	70
	6/11/2009	ND<2.6 U	70

Rank Sum = 1026
Rank Mean = 78.9231

Calculation Results:

Kruskal-Wallis H Statistic = 25.5672
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 40.0855
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
25.5672 < 26.2962 indicating no significant group difference at 5% significance level
40.0855 > 26.2962 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634
Mean background rank is 100.438

Well	Mean Rank	Dif from Bkg	Critical Value
MW-5	87.2308	-13.2067	49.0225
LMW-9S	100.333	-0.104167	62.8498
LMW-9D	110.667	10.2292	62.8498
LMW-9	94.8125	-5.625	46.4177
LMW-8	87.3125	-13.125	46.4177
LMW-7	129.875	29.4375	46.4177
LMW-6	118.625	18.1875	46.4177
LMW-3S	150.667	50.2292	62.8498
LMW-3	95.8333	-4.60417	45.1099
LMW-16	121.333	20.8958	62.8498
LMW-15	100.556	0.118056	54.7037
LMW-14R	123	22.5625	67.2656
LMW-13	70	-30.4375	51.4226
LMW-12	70	-30.4375	51.4226
LMW-11	70	-30.4375	51.4226
LMW-10	78.9231	-21.514	49.0225

Individual Well Comparisons at Groupwise 5% Significance Level (0.3125% Significance Level per comparison)

0.3125% Z score is 2.74777
Mean background rank is 100.438

Well	Mean Rank	Dif from Bkg	Critical Value
MW-5	87.2308	-13.2067	57.9031
LMW-9S	100.333	-0.104167	74.2352
LMW-9D	110.667	10.2292	74.2352
LMW-9	94.8125	-5.625	54.8264
LMW-8	87.3125	-13.125	54.8264

LMW-7	129.875	29.4375	54.8264	
LMW-6	118.625	18.1875	54.8264	
LMW-3S	150.667	50.2292	74.2352	
LMW-3	95.8333	-4.60417	53.2816	
LMW-16	121.333	20.8958	74.2352	
LMW-15	100.556	0.118056		64.6135
LMW-14R		123	22.5625	79.4509
LMW-13	70	-30.4375	60.7379	
LMW-12	70	-30.4375	60.7379	
LMW-11	70	-30.4375	60.7379	
LMW-10	78.9231	-21.5144	57.9031	

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Zinc

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 71.2821%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 16
Maximum Background Concentration = 60
Confidence Level = 66.7%
False Positive Rate = 33.3%

Location	Date	Samples	Mean	Significant
MW-5	11/20/2008	1	60	FALSE
LMW-9S	6/11/2009	1	5.2	FALSE
LMW-9D	6/11/2009	1	3.5	FALSE
LMW-9	6/11/2009	1	2.6	FALSE
LMW-8	6/11/2009	1	8.2	FALSE
LMW-7	6/11/2009	1	29	FALSE
LMW-6	6/11/2009	1	8.2	FALSE
LMW-3S	6/11/2009	1	18	FALSE
LMW-3	6/11/2009	1	7.3	FALSE
LMW-16	6/11/2009	1	2.6	FALSE
LMW-15	6/11/2009	1	6.5	FALSE
LMW-14R	6/11/2009	1	6.3	FALSE
LMW-13	11/20/2008	1	60	FALSE
LMW-12	11/20/2008	1	60	FALSE
LMW-11	11/20/2008	1	60	FALSE
LMW-10	6/11/2009	1	2.6	FALSE