FINAL
JUNE 2010 (N=20) 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

NOVEMBER 2010

FINAL
JUNE 2010 (N=20) 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
100 W. Oglethorpe Avenue
Savannah, GA 31401

NOVEMBER 2010

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

FINAL
JUNE 2010 (N=20) 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
100 W. Oglethorpe Avenue
Savannah, GA 31401

NOVEMBER 2010

TABLE OF CONTENTS

SECTION **PAGE**

1.0 INTRODUCTION 1

1.1 Project Background 1

1.2 Project Scope 1

2.0 PROJECT HISTORY 3

2.1 Site Description and History 3

2.2 General Site Geology and Hydrology 3

2.3 Previous Investigation and Results 4

3.0 METHODS 5

3.1 Methane Monitoring 5

3.2 Water-Level Gauging 5

3.3 Groundwater Sampling 5

3.4 Investigation Derived Wastes Handling 6

4.0 ANALYTICAL RESULTS AND STATISTICAL ANALYSIS 8

4.1 Analytical Data Summary 8

4.2 Statistical Analysis Results 9

4.3 Methane Monitoring Results 10

CONCLUSIONS AND RECOMMENATIONS 11

5.0 REFERENCES 12

In Order
Following
Page 11

FIGURES

Figure 1 Site Map – Ft. Bragg, NC

Figure 2 Location Map – Lamont Street Landfill, Ft. Bragg, NC

Figure 3 Methane Monitoring Results

Figure 4 Potentiometric Map

Figure 5 Groundwater Analytical Results

TABLES

Table 1 Methane Monitoring Results

Table 2 Groundwater Elevation Data

Table 3 Field Parameter Measurements

Table 4 Summary of Groundwater Detections

APPENDICES

Appendix A – Groundwater Sampling Logs

Appendix B – Data-Validation Reports

Appendix C – Chains of Custody and Laboratory Analytical Reports – Electronic Only

Appendix D – Statistical Reports – Electronic Only

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

DRAFT
JUNE 2010 (N=20) 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

1.0 INTRODUCTION

This is the Report for the June, 2010 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, 2010. The monitoring is required by the North Carolina Department of Environmental and Natural Resources (NCDENR) Solid Waste Management Division. This was the twentieth (N=20) 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 at three additional buildings, 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.

.

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 2009 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 at three additional buildings. The monitoring included measuring levels of methane, carbon dioxide, and oxygen at each location. 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 2010 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 second 2010 sampling event indicated that some VOCs and inorganics were detected at low levels, and all detections were below NC2L standards (Table 4).

Three wells had detections exceeding the NC2L standards: wells LMW-8, LMW-9S, and LMW-15R. The analytical results for each of those wells are shown below:

- Well LMW-8

  Two compounds were estimated or detected above the 2L standard as listed below:

Compound	2L	Concentration
Iron	300 µg/L	9,400 µg/L
Manganese	50 µg/L	150 µg/L

- Well LMW-9S

  One compound was estimated or detected above the 2L standard as listed below:

Compound	2L	Concentration
Iron	300 µg/L	360 µg/L

- Well SLMW-15R

  One compound was estimated or detected above the 2L standard as listed below:

Compound	2L	Concentration
Nitrate as NO3	10,000 µg/L	21,000 µg/L

No other constituents were above their 2L standard.

Though wells had constituent detections above method detection limits, all other detections were 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 16 locations at Lamont Landfill. The results of the monitoring are summarized in Table 1 and are also presented on Figure 3. All but one of the methane wells that were sampled were below 1% Methane by volume, Methane monitoring well 13 was measured at 23.4 % Methane by volume.

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=19 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 and/or were below NC2L standards. Iron was detected above its NC2L standard in two wells, while Manganese and Nitrate as NO3 were detected above their NC2L standards in one well.

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.

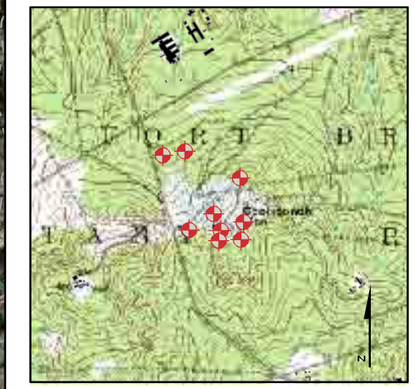
The methane levels were measured at 16 locations around Lamont landfill. One methane monitoring well showed a high concentration of methane by volume of 23.4%.

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



LEGEND

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

1 inch = 256 feet

0 125 250 500'

N

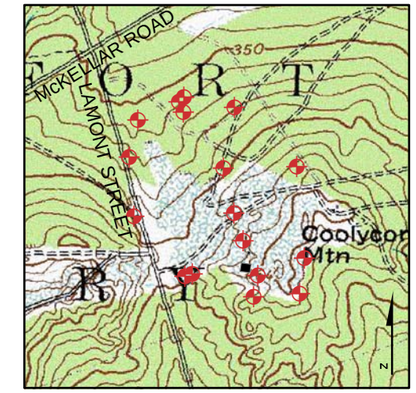
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

LOCATION MAP- LAMONT STREET LANDFILL

FT. BRAGG, NC

DATE: SEPT 2010 | FIGURE 2

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)



LEGEND

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

1 inch = 251 feet

0 125 250 500'

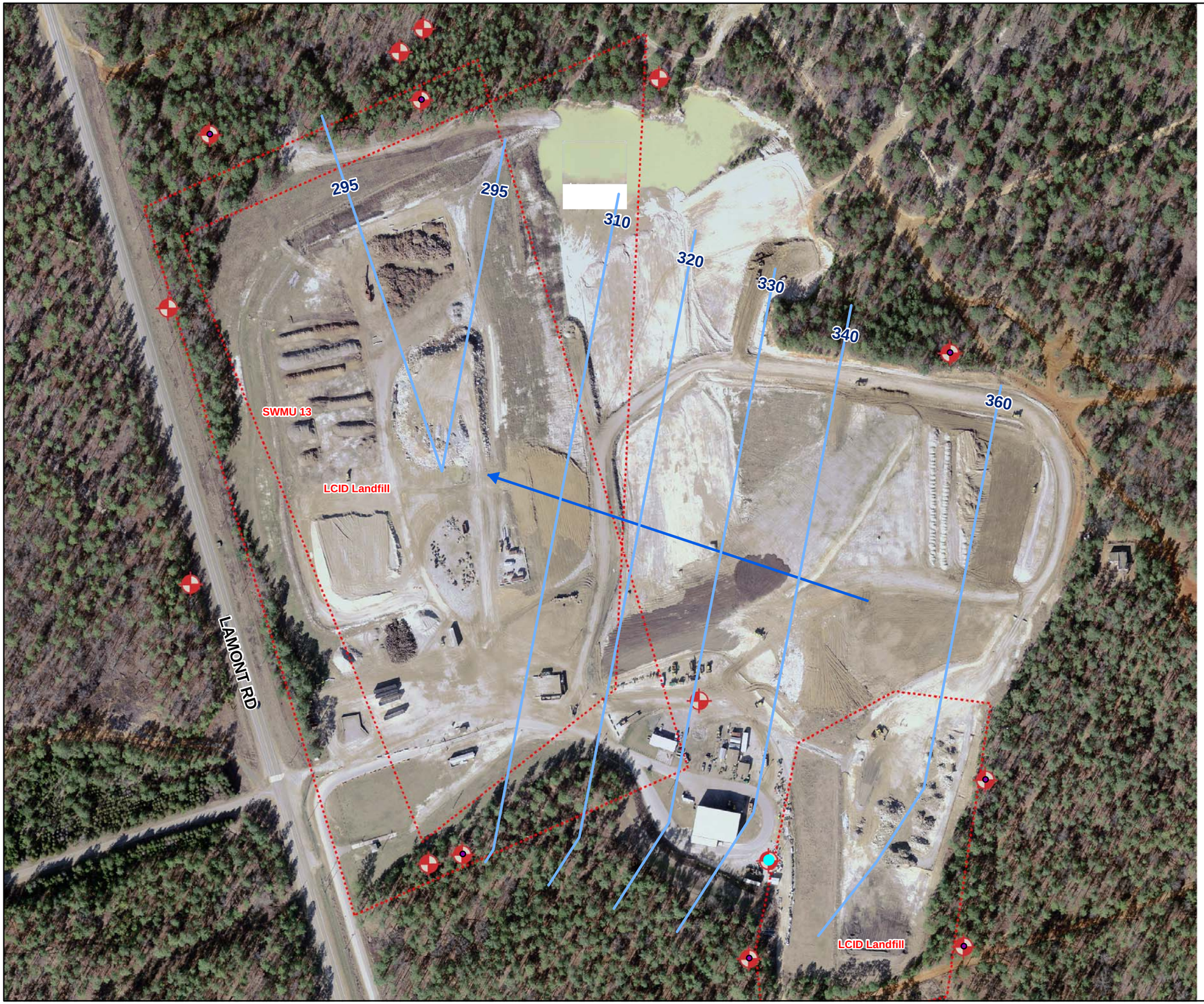
N

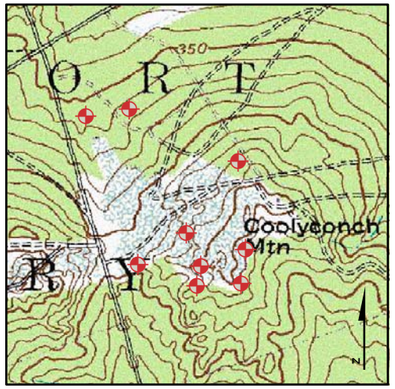
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

METHANE MONITORING RESULTS

LAMONT STREET LANDFILL
FT. BRAGG, NC

DATE: SEPT2010 | FIGURE 3





LEGEND

- Groundwater Flow
- Groundwater Contour
- 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 = 223 feet

0 110 220 440'

N

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

LAMONT ST LANDFILL, FORT BRAGG, NC

POTENTIOMETRIC MAP

DATE: SEPT 2010

FIGURE 4

LMW-8-06-10	
VOCs	**(µg/L)**
cis-1,2-dichloroethene	1.1
tetrachloroethene	0.25 J
trichloroethene	0.29 J
Appendix I Metals	**(µg/L)**
Arsenic	0.43 J
Barium	30
Cobalt	0.78
Chromium	0.35 J
Copper	1.3
Iron	**9400**
Manganese	**150**
Nickel	0.69 J
Selenium	.33 J
Zinc	8.2 J
Nitrate/Nitrite	**(µg/L)**
NO3	450 J

LMW-9S-06-10	
Appendix II Inorganics	**(µg/L)**
Arsenic	0.57 J
Barium	38
Cobalt	0.16 J
Chromium	0.58 J
Copper	1.7
Iron	**360**
Lead	0.11 J
Manganese	13
Zinc	3.5 J
Nitrate/Nitrite	**(µg/L)**
NO3	600 J

LMW-9D -06-10	
Appendix II Inorganics	**(µg/L)**
Arsenic	1.8
Barium	2.1
Chromium	0.5 J
Copper	0.9 J
Iron	150
Lead	0.23 J
Manganese	1.5 J
Nickel	0.53 J
Vanadium	1.8 J
Zinc	5.6
Nitrate/Nitrite	**(µg/L)**
NO3	580 J

LMW-9-06-10	
Appendix II Inorganics	**(µg/L)**
Arsenic	0.58 J
Barium	2.8
Cobalt	0.13 J
Chromium	0.44 J
Copper	2.4
Iron	200
Lead	0.16 J
Manganese	1.4 J
Zinc	4.4 J
Nitrate/Nitrite	**(µg/L)**
NO3	450 J

LMW-16-06-10	
Appendix II Inorganics	**(µg/L)**
Arsenic	0.5 J
Barium	8.8
Cobalt	0.098 J
Chromium	0.56 J
Iron	150
Lead	0.26 J
Manganese	1.1 J
Nickel	0.97 J
Zinc	7.9 J

LMW-10-06-10	
VOCs	**(µg/L)**
Trichloroethene	1.1
Trichlorofluoromethane	5.8
Appendix II Inorganics	**(µg/L)**
Barium	12
Cobalt	0.2
Chromium	0.36 J
Copper	1.9
Iron	41 J
Lead	0.11 J
Manganese	1.1 J
Zinc	3.6 J
Nitrate/Nitrite	**(µg/L)**
NO3	3,700

LMW-15R-06-10	
Appendix II Inorganics	**(µg/L)**
Barium	36
Cobalt	0.7
Chromium	0.51 J
Iron	110
Lead	0.08 J
Manganese	1.6 J
Nickel	1
Zinc	6.6 J
Nitrate/Nitrite	**(µg/L)**
NO3	**21,000**

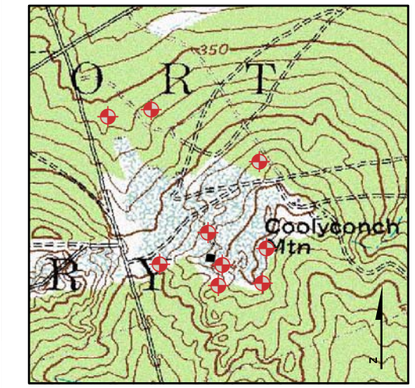
LMW-14R-06-10	
Appendix II Inorganics	**(µg/L)**
Barium	13
Cobalt	0.17 J
Chromium	0.49 J
Iron	43 J
Lead	0.10 J
Manganese	1.3 J
Nickel	0.84 J
Zinc	4.9 J

LMW-4 -06-10	
Appendix II Inorganics	**(µg/L)**
Barium	15
Cobalt	0.27
Chromium	0.72 J
Copper	1.3
Iron	130
Lead	0.19 J
Nickel	0.76 J
Zinc	6.9 J
Nitrate/Nitrite	**(µg/L)**
NO3	840 J

LMW-3 -06-10	
VOCs	**(µg/L)**
Chloroform	0.31 J
Trichlorofluoromethane	0.58 J
Appendix II Inorganics	**(µg/L)**
Barium	5
Cobalt	0.17 J
Chromium	0.76 J
Iron	53
Lead	0.17 J
Manganese	1.1 J
Nickel	1.3 J
Zinc	8.5 J
Nitrate/Nitrite	**(µg/L)**
NO3	780 J

LMW-3S -06-10	
VOCs	**(µg/L)**
Dichlorodifluoromethane	4
Trichlorofluoromethane	1.4
Appendix II Inorganics	**(µg/L)**
Barium	12
Cobalt	0.57
Chromium	0.37 J
Iron	41 J
Lead	0.093 J
Manganese	23
Nickel	4.1

LMW-6 -06-10	
VOCs	**(µg/L)**
Trichlorofluoromethane	0.72 J
Appendix II Inorganics	**(µg/L)**
Arsenic	0.46 J
Barium	77
Beryllium	0.13 J
Cobalt	1.2
Chromium	0.57 J
Copper	3
Iron	52
Lead	0.14 J
Manganese	5.6
Nickel	1.9
Selenium	3.2
Zinc	11
Nitrate/Nitrite	**(µg/L)**
NO3	8,800



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

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

LAMONT ST LANDFILL, FORT BRAGG, NC

GROUNDWATER ANALYTICAL RESULTS

DATE: SEPT 2010 | 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	June 10	1105	0.0 %	21.4 %	8.4 %
Gas-MW-2	June 10	1128	0.0 %	17.7 %	5.5 %
Gas-MW-3	June 10	1135	0.0 %	21.0 %	2.5 %
Gas-MW-4	June 10	1238	0.0 %	20.9 %	0.8 %
Gas-MW-5	June 10	1313	0.0 %	21.6 %	1.5 %
Gas-MW-6	June 10	1244	0.0 %	21.0 %	2.0 %
Gas-MW-7	June 10	1225	0.0%		1.9
Gas-MW-8	June 10	1221	0.0 %	20.9 %	1.4%
Gas-MW-9	June 10	1142	0.3 %	21.1 %	5.4%
Gas-MW-10	June 10	1209	0.3 %	21.0 %	18.8%
Gas-MW-11	June 10	1115	0.0 %	20.9 %	1.3%
Gas-MW-12	June 10	1112	0.1 %	21.6 %	8.6%
Gas-MW-13	June 10	1109	23.4 %	21.0 %	22.4%
Bldg 0-3533	June 10	--	N/A	N/A	N/A
Workshop	June 10	1132	0.0	20.0	0.0
Equipment Shed	June 10	--	N/A	N/A	N/A
Office	June 10	1130	0.0	19.9	0.0
Gear House	June 10	1125	0.0	20.0	0.0
Trailer	June 10	--	N/A	N/A	N/A

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) 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	Water Level (ft. btoc) 11/09	Water Elev. (ft. amsl) 11/09	Water Level (ft. btoc) 06/10	Water Elev. (ft. amsl) 06/10
LMW-3	408.32	102.95	305.37	101.3	307.02	102.18	306.14	103.2	305.12	102.21	306.11	87.27	321.05	102.13	306.19
LMW-3s	*	NA	NA	58.1	NA	59.19	NA	60.4	NA	59.12	NA	59.61	NA	58.91	NA
LMW-4	441.79	75.12	366.67	74.71	367.08	75.42	366.37	74.65	367.14	74.74	367.05	75.39	366.4	74.83	366.96
LMW-6	431.45	81.25	350.2	79.12	352.33	80.3	351.15	81.65	349.8	80.15	351.3	80.75	350.7	80.04	351.41
LMW-7	436.62	125.86	310.76	125.42	311.2	125.87	310.75	125.63	310.99	124.78	311.84	128.8	307.82	124.54	312.08
LMW-8	354.07	47.08	306.99	45.48	308.59	48.68	305.39	76.66	277.41	46.85	307.22	304.86	49.21	46.86	307.21
LMW-9	364.79	83.15	281.64	84.71	280.08	82.16	282.63	80	284.79	80.71	284.08	87.27	277.52	80.73	284.06
LMW-9s	*	NA	NA	49.46	NA	52.46	NA	49.01	NA	51.01	NA	53.35	NA	51	NA
LMW-9d	*	NA	NA	74.51	NA	76.95	NA	76.66	NA	75.41	NA	77.03	NA	75.48	NA
LMW-10	428.68	76.22	352.46	75.13	353.55	76.81	351.87	76.48	352.2	76.38	352.3	72.11	356.57	NA	NA
LMW-14R	*	NA	NA	48.82	NA	50.07	NA	49	NA	48.97	NA	50.06	NA	48.99	NA
LMW-15R	*	NA	NA	37.85	NA	40.89	NA	37	NA	37.55	NA	40.31	NA	38.19	NA
LMW-16	*	NA	NA	37.2	NA	86.02	NA	36.48	NA	37.5	NA	37.28	NA	36.61	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-3-06-10	4.05	0.014	19.7	1.95	5.9	112.4
LMW-3s	GW-LMW-3s-06-10	4.49	0.025	19.6	5.6	3.6	106.8
LMW-4	GW-LMW-4-06-10	3.85	0.021	25.6	9.59	2.54	74.8
LMW-6	GW-LMW-6-06-10	4.74	0.318	19.3	9.74	0.86	5.5
LMW-7	GW-LMW-7-06-10	5.34	0.015	27.7	22.7	6.81	56.6
LMW-8	GW-LMW-8-06-10	6.07	0.259	18.8	6.69	0.71	17.6
LMW-9	GW-LMW-9-06-10	3.97	0.013	20.2	10	8.52	194.1
LMW-9s	GW-LMW-9s-06-10	5.78	0.187	20.2	40.0	0.19	15.2
LMW-9d	GW-LMW-9d-06-10	5.47	0.022	21.1	24.3	7.89	100.7
LMW-10	GW-LMW-10-06-10	3.71	0.025	27.8	7.12	5.14	107.2
LMW-14R	GW-LMW-14R-06-10	3.83	0.013	24.9	6.10	5.4	132.4
LMW-15R	GW-LMW-15R-06-10	3.82	0.035	21.9	10.0	7.54	132
LMW-16	GW-LMW-16-06-10	6.29	0.246	24	9.57	3.12	52.7

==========

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 | | |

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 | | |

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-9S 11/09	LMW-9S 06/10	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	LMW-16 11/09	LMW-16 06/10	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	LMW-14R 11/09	LMW-14R 06/10	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	LMW-15R 11/09	LMW-15R 06/10	GW-LMW-35R 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	<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	<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	<2	<2	<2
1,2,3-trichloropropane	0.005	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	<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	<2	<2	0.3 J	<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	NS	<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	NS	<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	NS	<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	NS	<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	NS	<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	NS	<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	<2	<2	<2	<2	<2	NS	<2	<2	<2	<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	<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	<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	<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	<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	<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	<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	<2	<2	1.8	<2	<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	<2	<2	<2
dibromochloromethane	0.41	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	<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	<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	<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	<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	<2	<2	0.47 J	<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	NS	<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	NS	<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	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.24 J	<2	<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	<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	<2	<2	<2
toluene	1000	1000	<2	<2	<2	0.240J	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.29 J	<2	<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	<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	<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	<2	<2	<2
Total Xylenes	530	0.01	<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	<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	<2	<2	<2
Appendix I Metals (EPA 6010B/6020A)																																			
Arsenic	10	10	0.47 J	0.57 J	<2	<2	2.13	<2	<2	9.27	0.56 J	0.59 J	0.5 J	<2	11	1.11 J	<2	<2	9.08	0.41 J	<2	<2	NS	<2	<2	<2	**12.7**	2.5	<2	<2	9.47	<2	NS	**10.4**	<2	<2
Barium	2000	2000	48	38	37.4	23.1	41.3	35	22.9	23	14	13	8.8	29	4 J	14.6	12	9.72	133	13	12	13	NS	38.5	27	24.3	37.6	42	14	36	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	NA	NA	0.29	NA	0.17 J	NA	NA		NA	NA	NA
Cadmium	5	5	<1	<1	<1	<1	<1	<1	<1	0.002 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1
Cobalt	NA	NA	0.25	0.16 J	<2	<2	<2	<2	<2	<4	<4	0.08 J	0.098 J	<2	<4	<2	<2	0.51 J	<4	0.24	0.3	0.17 J	NS	<2	<2	0.65 J	<4	0.83	0.26	0.7	<4	<2	NS	<4	<2	<4
Chromium	50	100	0.44 J	0.58 J	<20	<20	20.7	<20	<20	<10	0.83 J	0.53 J	0.56 J	<20	<10	<20	<20	<20	<10	1.6	0.53 J	0.49 J	NS	<20	<20	<20	<10	5.5	0.16 J	0.51 J	<10	<20	NS	<10	<20	<10
Copper	1000	1000	1.7	1.7	3.66J	<20	7.37 J	6	<20	5 J	0.36 J	0.59 J	<20	6	<20	<20	<20	<20	<20	0.81 J	0.92 J	<20	NS	5.33 J	5 J	<20	5.2 J	3.7	0.57 J	<20	<20	<20	NS	<20	<20	<20
Iron	300	NA	<1	**360**	<1	<1	<1	<1	<1	<1	<1	<1	150	<1	<1	<1	<1	<1	<1	<1	<1	43 J	<1	<1	<1	<1	<1	<1	<1	110	<1	<1	<1	<1	<1	<1
Lead	15	15	0.21 J	0.11 J	0.559J	0.643J	5.28	2.62	<1	<1	<1	0.099 J	0.26 J	4.21	<1	4.42	<1	<1	<1	0.22 J	0.14 J	0.10 J	NS	<1	<1	<1	1.08	0.89	<1	0.08 J	<1	<1	NS	<1	<1	<1
Manganese	50	NA	<1	13	<1	<1	<1	<1	<1	<1	<1	<1	1.1 J	<1	<1	<1	<1	<1	<1	<1	<1	1.3J	<1	<1	<1	<1	<1	<1	<1	1.6 J	<1	<1	<1	<1	<1	<1
Nickel	100	730*	0.97 J	<50	1.80J	1.03J	<50	<50	<50	<6	0.72	0.66	0.97 J	<50	<6	<50	<50	2.39	3.2 J	2.2	1.6 J	0.84 J	NS	<50	<50	1.12 J	<6	3	0.8 J	1	<6	<50	NS	<6	<50	<6
Selenium	50	50	<2	<2	<2	<2	<2	2.20 J	<2	<4	<4	<2	<2	2.50 J	<4	<2	<2	<2	<4	<4	<2	<2	NS	<2	<2	<2	<4	0.24 J	<2	<2	<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	<10	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Thallium	NA	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.17 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tin	NA	NA	<10	<10	<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	<10	<10
Vanadium	NA	260*	<20	<20	<20	<20	41.9	69	<20	<8	<8	<20	<20	26	<8	2.30 J	<20	<20	<8	<8	<20	<20	NS	<20	<20	<20	<8	7.5	<20	<20	<8	<20	NS	<8	<20	<8
Zinc	2100	5000	15 B	3.5 J	14.0	<60	16.5 J	<60	15.8	<50	<50	9.3 J	7.9 J	<60	<50	15.4 J	<60	18.2	<50	6.3 J	26 B	4.9 J	NS	<60	<60	39.3	<50	6.5 J	9.1 J	6.6 J	<50	<60	NS	<50	<60	<50
Other Analyses																																			
Nitrate/Nitrite as N (SM 4500)	10,000	10,000	770 J	600 J	4.78	0.0520	166	1020	380	33 J	NA	<40	< 40	1010	< 40	326	143	370	960	NA	<40	<40	2260	1,400	1620	<40	1460	NA	7,300 H	**21000**	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: 6/15/2010 TIME:1310
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,chilly

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

PRESERVATIVE: HCL, HNO3,H2SO4,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: XYES ☐ 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**

Flow Rate : 500 (ml/min) Purge vol: 0.80 (gallons)
Length of Time Purged: 60 (minutes) Purge time: 1210
Amount Purged= 5.5 (gallons) Pump depth:

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter –YSI 556	☒
Conductivity Meter – YSI 556	☒
Temperature – YSI 556	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – YSI 556	☒
ORP Meter – YSI 556	☒
CO_2– Hach Digital Titrator	☐

Time	1229	1241	1250	1300	1305	
pH	3.46	3.69	3.65	3.57	3.71	
Sp. Cond	.025	.025	.025	.025	.025	
Temp. °C	27	27.4	27.1	27.6	27.8	
Turbidity	71.9	23.9	18.4	11.4	7.12	
DO	5.61	4.75	5.19	5.34	5.14	
ORP	111.7	103.4	106.9	105.1	107.2	
Water Level						

5.

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

1. CLIENT:Ft. Bragg, NC
DATE: 06/14/2010 TIME: 1125
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,warm

Location: Lamont Landfill	**Sample ID:GW-LMW-14R-06-10**

PRESERVATIVE: HCL, HNO3,H2SO4,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: XYES ☐ 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): 57.14 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 50.04 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × 48.99 1.2 (gallons)
Flow Rate : 500 (ml/min) Purge vol: 0.80 (gallons)
Length of Time Purged: 35 (minutes) Purge time: 1125
Amount Purged= 2.0 (gallons) Pump depth:

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter –YSI 556	☒
Conductivity Meter – YSI 556	☒
Temperature – YSI 556	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – YSI 556	☒
ORP Meter – YSI 556	☒
CO_2– Hach Digital Titrator	☐

Time	1105	1115	1120			
pH	4.04	3.78	3.83			
Sp. Cond	.013	.013	.013			
Temp. °C	24.8	25.0	24.9			
Turbidity	18.1	7.53	6.10			
DO	5.46	5.57	5.40			
ORP	111.4	128.9	132.4			
Water Level						

5.

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

1. CLIENT:Ft. Bragg, NC
DATE: 06/14/2010 TIME: 1030
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,chilly

Location: Lamont Landfill	**Sample ID:GW-LMW-15R-06-10**

PRESERVATIVE: HCL, HNO3,H2SO4,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: XYES ☐ 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): 46.60 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 38.19 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 1.4 (gallons)
Flow Rate : 500 (ml/min) Purge vol: 0.80 (gallons)
Length of Time Purged: 65 (minutes) Purge time: 830
Amount Purged= 5.0 (gallons) Pump depth:

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter –YSI 556	☒
Conductivity Meter – YSI 556	☒
Temperature – YSI 556	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – YSI 556	☒
ORP Meter – YSI 556	☒
CO_2– Hach Digital Titrator	☐

Time	0940	1000	1010	1025		
pH	3.91	3.87	3.80	3.82		
Sp. Cond	.034	.035	.035	.035		
Temp. °C	20.7	21.8	21.9	21.9		
Turbidity	57.2	21.6	16.6	10.0		
DO	7.78	7.32	7.53	7.54		
ORP	117.7	126.0	129.1	132.0		
Water Level						

5.

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

1. CLIENT:Ft. Bragg, NC
DATE: 06/14/2010 TIME: 1425
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,warm

Location: Lamont Landfill	**Sample ID:GW-LMW-16-06-10**

PRESERVATIVE: HCL, HNO3,H2SO4,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: XYES ☐ 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): 44.02 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 36.61 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 1.2 (gallons)
Flow Rate : 500 (ml/min) Purge vol: 0.80 (gallons)
Length of Time Purged: 155 (minutes) Purge time: 1155
Amount Purged= 4.0 (gallons) Pump depth:

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter –YSI 556	☒
Conductivity Meter – YSI 556	☒
Temperature – YSI 556	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – YSI 556	☒
ORP Meter – YSI 556	☒
CO_2– Hach Digital Titrator	☐

Time	1215	1230	1300	1320	1400	1420
pH	4.66	5.76	6.00	6.17	6.26	6.27
Sp. Cond	.234	2.38	.244	.244	.244	.246
Temp. °C	20.6	21.9	22.9	22.9	23.1	24.0
Turbidity	129	64	58	38.5	34.7	9.57
DO	.93	1.55	3.06	2.97	3.00	3.12
ORP	50.2	28	46.2	47.9	48.8	52.3
Water Level						

5. Changed nitrogen cylinder

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

1. CLIENT:Ft. Bragg, NC
DATE: 06/14/2010 TIME: 1005
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,Warm

Location: Lamont Landfill	**Sample ID:GW-LMW-3-06-10**

PRESERVATIVE: HCL, HNO3,H2SO4,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: XYES ☐ 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**
Amount Purged= 5.0 (gallons) Pump depth:

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter –YSI 556	☒
Conductivity Meter – YSI 556	☒
Temperature – YSI 556	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – YSI 556	☒
ORP Meter – YSI 556	☒
CO_2– Hach Digital Titrator	☐

Time	0820	0840	0850			
pH	4.52	4.32	4.05			
Sp. Cond	.015	.014	.014			
Temp. °C	19.8	19.7	19.7			
Turbidity	5.15	2.30	1.95			
DO	6.41	6.19	5.90			
ORP	97.8	108.5	112.4			
Water Level						

5. LMW-Dup1 taken at 1000

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

1. CLIENT:Ft. Bragg, NC
DATE: 06/14/2010 TIME: 0758
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,warm

Location: Lamont Landfill	**Sample ID:GW-LMW-3s-06-10**

PRESERVATIVE: HCL, HNO3,H2SO4,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: XYES ☐ 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): 70.53 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 58.91 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 1.9 (gallons)
Flow Rate : 500 (ml/min) Purge vol: 0.80 (gallons)
Length of Time Purged: 108 (minutes) Purge time: 1340
Amount Purged= 7.5 (gallons) Pump depth:

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter –YSI 556	☒
Conductivity Meter – YSI 556	☒
Temperature – YSI 556	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – YSI 556	☒
ORP Meter – YSI 556	☒
CO_2– Hach Digital Titrator	☐

Time	1418	1430	1450	1525	1555	0745
pH	3.85	2.76	2.76	2.68	2.58	4.49
Sp. Cond	.038	.034	.031	.027	.026	.025
Temp. °C	27.1	28.8	27.8	26.2	29.6	19.6
Turbidity	406	336	165	67.7	47.2	5.60
DO	3.72	2.78	2.85	2.94	2.87	3.60
ORP	201.6	198.1	203.9	212.9	231.1	106.8
Water Level						

5.

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

1. CLIENT:Ft. Bragg, NC
DATE: 06/15/2010 TIME: 0957
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,warm

Location: Lamont Landfill	**Sample ID:GW-LMW-4-06-10**

PRESERVATIVE: HCL, HNO3,H2SO4,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: XYES ☐ 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): 83.51 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 74.83 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 1.4 (gallons)
Flow Rate : 500 (ml/min) Purge vol: 0.80 (gallons)
Length of Time Purged: 150 (minutes) Purge time: 727
Amount Purged= 8.5 (gallons) Pump depth:

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter –YSI 556	☒
Conductivity Meter – YSI 556	☒
Temperature – YSI 556	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – YSI 556	☒
ORP Meter – YSI 556	☒
CO_2– Hach Digital Titrator	☐

Time	0803	0818	0835	0847	0933	0955
pH	2.84	3.57	3.30	3.58	3.72	3.85
Sp. Cond	0.022	.022	.022	.022	.022	.021
Temp. °C	21.1	22.0	21.7	22.4	23.7	25.6
Turbidity	28.8	22.3	14.6	29.5	25.1	9.59
DO	3.61	3.85	3.83	3.85	3.72	2.54
ORP	93.1	83.4	95.5	87.1	84.7	74.8
Water Level						

5.

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

1. CLIENT:Ft. Bragg, NC
DATE: 06/17/2010 TIME: 1030
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,warm

Location: Lamont Landfill	**Sample ID:GW-LMW-6-06-10**

PRESERVATIVE: HCL, HNO3,H2SO4,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: XYES ☐ 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): 96.13 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 80.04 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 2.6 (gallons)
Flow Rate : 500 (ml/min) Purge vol: 0.80 (gallons)
Length of Time Purged: 70 (minutes) Purge time: 920
Amount Purged= 6.0 (gallons) Pump depth:

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter –YSI 556	☒
Conductivity Meter – YSI 556	☒
Temperature – YSI 556	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – YSI 556	☒
ORP Meter – YSI 556	☒
CO_2– Hach Digital Titrator	☐

Time	0945	1000	1015	1025		
pH	4.71	4.73	4.71	4.74		
Sp. Cond	.306	.313	.315	.318		
Temp. °C	19.7	19.7	19.5	19.3		
Turbidity	31.2	15.0	11.0	9.74		
DO	.52	.96	.87	.86		
ORP	26.0	19.6	10.4	5.5		
Water Level						

5.

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

1. CLIENT:Ft. Bragg, NC
DATE: 06/15/2010 TIME:
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,warm

Location: Lamont Landfill	**Sample ID:GW-LMW-7-06-10**

PRESERVATIVE: HCL, HNO3,H2SO4,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: XYES ☐ 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): 131.38 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 124.54 (ft) Diameter (d): 0.167 (ft)
Well Volume = $(5.904 \times d^2 (wd\text{-}dw))$ = 1.1 (gallons)
Flow Rate : 500 (ml/min) Purge vol: 0.80 (gallons)
Length of Time Purged: 0 (minutes) Purge time: 1030
Amount Purged= 0.0 (gallons) Pump depth:

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter –YSI 556	☒
Conductivity Meter – YSI 556	☒
Temperature – YSI 556	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – YSI 556	☒
ORP Meter – YSI 556	☒
CO_2– Hach Digital Titrator	☐

Time	1052	1112	1127			
pH	4.92	5.34	Dry			
Sp. Cond	.015	.015	Dry			
Temp. °C	24.0	27.7	Dry			
Turbidity	30.8	22.7	Dry			
DO	7.42	6.81	Dry			
ORP	72.1	56.6	dry			
Water Level						

5. Well went dry, got approx 1 liter with sand. PM was notified, samples not taken!

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

1. CLIENT:Ft. Bragg, NC
DATE: 06/17/2010 TIME: 0820
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,chilly

Location: Lamont Landfill	**Sample ID:GW-LMW-8-6-10**

PRESERVATIVE: HCL, HNO3,H2SO4,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: XYES ☐ 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): 62.70 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 46.86 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 2.6 (gallons)
Flow Rate : 500 (ml/min) Purge vol: 0.80 (gallons)
Length of Time Purged: 65 (minutes) Purge time: 820
Amount Purged= 7.5 (gallons) Pump depth:

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter –YSI 556	☒
Conductivity Meter – YSI 556	☒
Temperature – YSI 556	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – YSI 556	☒
ORP Meter – YSI 556	☒
CO_2– Hach Digital Titrator	☐

Time	0730	0745	0755	0805	0815	
pH	6.44	5.45	5.91	6.01	6.07	
Sp. Cond	.146	.203	.239	.249	.259	
Temp. °C	19.2	18.7	18.9	18.7	18.8	
Turbidity	15.3	13.1	9.70	6.26	6.69	
DO	4.39	1.22	1.02	.89	.71	
ORP	55.4	51.2	24.8	22.1	17.6	
Water Level						

5.

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

1. CLIENT:Ft. Bragg, NC
DATE: 06/15/2010 TIME: 1300
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunnywarm

Location: Lamont Landfill	**Sample ID:GW-LMW-9-06-10**

PRESERVATIVE: HCL, HNO3,H2SO4,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: XYES ☐ 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): 137.35 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 87.27 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × 80.73 8.2 (gallons)
Flow Rate : 500 (ml/min) Purge vol: 0.80 (gallons)
Length of Time Purged: 60 (minutes) Purge time: 1200
Amount Purged= 5.5 (gallons) Pump depth:

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter –YSI 556	☒
Conductivity Meter – YSI 556	☒
Temperature – YSI 556	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – YSI 556	☒
ORP Meter – YSI 556	☒
CO_2– Hach Digital Titrator	☐

Time	1210	1215	1230	1250		
pH	5.46	4.39	4.14	3.97		
Sp. Cond	.013	.013	.013	.013		
Temp. °C	10.3	20.4	20.2	20.2		
Turbidity	19.4	14.1	15.1	10.0		
DO	8.50	8.49	9.21	8.52		
ORP	168.8	179.9	185.4	194.1		
Water Level						

5. LMW-DUP2-6-10 taken @ 1100

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

1. CLIENT:Ft. Bragg, NC
DATE: 06/16/2010 TIME: 1640
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,warm

Location: Lamont Landfill	**Sample ID:GW-LMW-9d-06-10**

PRESERVATIVE: HCL, HNO3,H2SO4,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: XYES ☐ 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): 88.17 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 75.48 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 2.1 (gallons)
Flow Rate : 500 (ml/min) Purge vol: 0.80 (gallons)
Length of Time Purged: 80 (minutes) Purge time: 1520
Amount Purged= 10.5 (gallons) Pump depth:

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter –YSI 556	☒
Conductivity Meter – YSI 556	☒
Temperature – YSI 556	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – YSI 556	☒
ORP Meter – YSI 556	☒
CO_2– Hach Digital Titrator	☐

Time	1540	1555	1610	1630	1635	
pH	6.51	5.37	5.52	5.48	5.47	
Sp. Cond	.043	.030	.024	.023	.022	
Temp. °C	21.1	20.9	20.8	20.9	21.1	
Turbidity	21.0	33.0	34.0	26.6	24.3	
DO	7.69	7.79	7.46	8.06	7.89	
ORP	78.5	168.2	115.9	106.9	100.7	
Water Level						

5. Purged 5x volume

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

1. CLIENT:Ft. Bragg, NC
DATE: 06/16/2010 TIME: 1435
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,warm

Location: Lamont Landfill	**Sample ID:GW-LMW-9s-06-10**

PRESERVATIVE: HCL, HNO3,H2SO4,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: XYES ☐ 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): 60.00 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 53.35 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 1.1 (gallons)
Flow Rate : 500 (ml/min) Purge vol: 0.80 (gallons)
Length of Time Purged: 52 (minutes) Purge time: 830
Amount Purged= 3.5 (gallons) Pump depth:

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter –YSI 556	☒
Conductivity Meter – YSI 556	☒
Temperature – YSI 556	☒
Turbidity Meter – Hach 2100 P	☒
DO Meter – YSI 556	☒
ORP Meter – YSI 556	☒
CO_2– Hach Digital Titrator	☐

Time	1340	1355	1410	1430		
pH	5.74	5.83	5.84	5.78		
Sp. Cond	.234	.192	.19	.187		
Temp. °C	20.6	20.4	20.3	20.2		
Turbidity	34.8	77.5	50.4	40.0		
DO	.60	.56	.38	.19		
ORP	50.2	32.2	23.7	15.2		
Water Level						

5. More than five times volume sampled

APPENDIX B

DATA VALIDATION REPORTS

QA LEVEL II - DATA EVALUATION CHECKLIST

Company Name: USACE
Project Manager: Z. Kidwai
Project Name: LAMONT LANDFILL
Project Number:
Reviewer: F. Burwell
Validation Date: 07 - SEPT - 2010

Laboratory: TEST AMERICA
SDG #: 680-58599-1
Analytical Method (type and no.): 8260 B, 6020A, 7470A, EPA 300
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐

Sample Names
LMW-4-6-10
Trip Blank
LMW-10-6-10

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	☒	☐	☐	Grab sample indicated
b) Sampling team indicated?	☐	☒	☐	on COC
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	pH, Conductivity, Temperature
e) Sample type indicated (grab/composite)?	☐	☒	☐	dissolved Oxygen, ORP, Turbid.
f) Field QC noted?	☒	☐	☐	
g) Field parameters collected (note types)?	☒	☐	☐	
h) Field Calibration within control limits?	☒	☐	☐	
i) Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j) Does the laboratory narrative indicate deficiencies:	☒	☐	☐	

Note Deficiencies:

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
k) Was the COC properly completed?	☒	☐	☐	
l) Was the COC signed by both field and laboratory personnel?	☒	☐	☐	
m) Were samples received in good condition?	☒	☐	☐	

General (Reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	☐	☐	☒	Sample dilutions done on
b) Were hold times met for sample analysis?	☒	☐	☐	300.0 method for Method Blank
c) Were the correct preservatives used?	☐	☐	☐	Lab Control Sample + Matrix Spi
d) Was the correct method used?	☒	☐	☐	
e) Were appropriate reporting limits achieved?	☐	☐	☐	
f) Were any sample dilutions noted?	☒	☐	☐	
g) Were any matrix problems noted?	☐	☒	☐	

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☒	☐	☐	Chromium 0.21 J ug/L / Copper 0.219 J ug/L
b) Were analytes detected in the field blank(s)?	☐	☐	☒	
c) Were analytes detected in the equipment blank(s)?	☐	☐	☒	
d) Were analytes detected in the trip blank(s)?	☐	☒	☐	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	☒	☐	☐	
b) Were the proper compounds included in the LCS?	☒	☐	☐	
c) Was the LCS accuracy criteria met?	☒	☐	☐	

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	☐	☒	☐	
b) Were field dup. precision criteria met (note RPD)?	☐	☐	☒	
c) Were lab duplicates analyzed (note original and duplicate samples)?	☐	☒	☐	
d) Were lab dup. precision criteria met (note RPD)?	☐	☐	☒	

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, compounds included and concentrations)?	☐	☐	☒	
b) Was the %D within control limits?	☐	☐	☒	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	☒	☐	☐	
b) Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
c) Was MSD accuracy criteria met?	☒	☐	☐	
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
d) Were MS/MSD precision criteria met?	☒	☐	☐	

Reagent Water Spike and Duplicate (RWS & RWSD)	YES	NO	NA	COMMENTS
a) Was RWS accuracy criteria met?	☐	☐	☒	
b) Was RWSD accuracy criteria met?	☐	☐	☒	
c) Was RWS/RWSD precision criteria met (RPD)?	☐	☐	☒	

Surrogate Spikes	YES	NO	NA	COMMENTS
a) Were surrogate recoveries within control limits?	☒	☐	☒ FB	
b) Were surrogate recoveries not calculated due to dilutions?	☐	☒	☒ FB	

Comments/Notes:

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: _____ Date: _____

QA LEVEL II - DATA EVALUATION CHECKLIST

Company Name: USACE
Project Name: LAMONT LANDFILL
Reviewer: F. Burwell

Project Manager: Z. Kidwai
Project Number:
Validation Date: 07-SEPT-2010

Laboratory: TEST AMERICA
SDG #: 680-58695-1
Analytical Method (type and no.): 8260B, 6020A, 7470A, EPA 300.0
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐
Sample Names LMW-8-6-10, LMW-6-6-10, LMW-Bik-6-10
Trip Blank

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	☒	☐	☐	Grab sample indicated
b) Sampling team indicated?	☐	☒	☐	on ~~COC~~ COC
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	pH, Conductivity, Temperat
e) Sample type indicated (grab/composite)?	☐	☒	☐	dissolved Oxygen, ORP,
f) Field QC noted?	☒	☐	☐	Turbidity
g) Field parameters collected (note types)?	☒	☐	☐	
h) Field Calibration within control limits?	☒	☐	☐	
i) Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j) Does the laboratory narrative indicate deficiencies:	☒	☐	☐	

Note Deficiencies:

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
k) Was the COC properly completed?	☒	☐	☐	
l) Was the COC signed by both field and laboratory personnel?	☒	☐	☐	
m) Were samples received in good condition?	☒	☐	☐	

General (Reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	☒	☐	☐	- Dilution for Method 300.0
b) Were hold times met for sample analysis?	☒	☐	☐	- Dilution for Method Blank,
c) Were the correct preservatives used?	☒	☐	☐	LAB Control Sample, + Matrix Spik
d) Was the correct method used?	☒	☐	☐	
e) Were appropriate reporting limits achieved?	☐	☐	☐	
f) Were any sample dilutions noted?	☒	☐	☐	
g) Were any matrix problems noted?	☐	☒	☐	

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☒	☐	☐	Total, Xylenes 0.235 ug/L,
b) Were analytes detected in the field blank(s)?	☐	☒	☒	
c) Were analytes detected in the equipment blank(s)?	☐	☐	☒	
d) Were analytes detected in the trip blank(s)?	☐	☒	☐	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	☒	☐	☐	
b) Were the proper compounds included in the LCS?	☒	☐	☐	
c) Was the LCS accuracy criteria met?	☒	☐	☐	

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	☐	☒	☐	
b) Were field dup. precision criteria met (note RPD)?	☐	☐	☒	
c) Were lab duplicates analyzed (note original and duplicate samples)?	☐	☒	☐	
d) Were lab dup. precision criteria met (note RPD)?	☐	☐	☒	

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, compounds included and concentrations)?	☐	☒	☐	
b) Was the %D within control limits?	☐	☐	☒	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	☒	☐	☐	
b) Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
c) Was MSD accuracy criteria met?	☐	☐	☒	
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
d) Were MS/MSD precision criteria met?	☐	☐	☒	

Reagent Water Spike and Duplicate (RWS & RWSD)	YES	NO	NA	COMMENTS
a) Was RWS accuracy criteria met?	☐	☐	☒	
b) Was RWSD accuracy criteria met?	☐	☐	☒	
c) Was RWS/RWSD precision criteria met (RPD)?	☐	☐	☒	

Surrogate Spikes	YES	NO	NA	COMMENTS
a) Were surrogate recoveries within control limits?	☒	☐	☒ FB	
b) Were surrogate recoveries not calculated due to dilutions?	☐	☒	☒ FB	

Comments/Notes:

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: _____ Date: _____

QA LEVEL II - DATA EVALUATION CHECKLIST

Company Name: USACE
Project Name: LAMONT LANDFILL
Reviewer: F. Burwell

Project Manager: Z. Kidwai
Project Number:
Validation Date: 22-SEPT-2010

Laboratory: TEST AMERICA
SDG #: 680-58549-1
Analytical Method (type and no.): 8260B, 6020A, 7470A, E 300
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐
Sample Names
LMW-35-6-10, Trip Blank, LMW-DUP-1-6-10, LMW-3-6-10, LMW-15R-6-10, LMW-14R-6-10, LMW-16-6-10

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information

		YES	NO	NA	COMMENTS
a)	Sampling dates noted?	☒	☐	☐	Grab samples indicated
b)	Sampling team indicated?	☐	☒	☐	on COC
c)	Sample location noted?	☒	☐	☐	
d)	Sample depth indicated (Soils)?	☐	☐	☒	pH, conductivity, Temperature
e)	Sample type indicated (grab/composite)?	☐	☒	☐	dissolved oxygen, ORP
f)	Field QC noted?	☒	☐	☐	Turbidity
g)	Field parameters collected (note types)?	☒	☐	☐	
h)	Field Calibration within control limits?	☒	☐	☐	
i)	Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j)	Does the laboratory narrative indicate deficiencies:	☒	☐	☐	

Note Deficiencies:

Chain-of-Custody (COC)

		YES	NO	NA	COMMENTS
k)	Was the COC properly completed?	☒	☐	☐	
l)	Was the COC signed by both field and laboratory personnel?	☒	☐	☐	
m)	Were samples received in good condition?	☒	☐	☐	

General (Reference QAPP or Method)

		YES	NO	NA	COMMENTS
a)	Were hold times met for sample pretreatment?	☒	☐	☐	
b)	Were hold times met for sample analysis?	☒	☐	☐	Dilution for Nitrate
c)	Were the correct preservatives used?	☒	☐	☐	5X
d)	Was the correct method used?	☒	☐	☐	
e)	Were appropriate reporting limits achieved?	☒	☐	☐	
f)	Were any sample dilutions noted?	☒	☐	☐	
g)	Were any matrix problems noted?	☐	☒	☐	

Blanks

	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☐	☒	☐	
b) Were analytes detected in the field blank(s)?	☐	☐	☒	
c) Were analytes detected in the equipment blank(s)?	☐	☐	☒	
d) Were analytes detected in the trip blank(s)?	☐	☒	☐	

Laboratory Control Sample (LCS)

	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	☒	☐	☐	
b) Were the proper compounds included in the LCS?	☒	☐	☐	
c) Was the LCS accuracy criteria met?	☒	☐	☐	

Duplicates

	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	☒	☐	☐	LMW-DUP1-6-10 taken at LMW-3.
b) Were field dup. precision criteria met (note RPD)?	☒	☐	☐	
c) Were lab duplicates analyzed (note original and duplicate samples)?	☐	☒	☐	
d) Were lab dup. precision criteria met (note RPD)?	☐	☐	☒	

Blind Standards

	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, compounds included and concentrations)?	☐	☒	☒	
b) Was the %D within control limits?	☐	☐	☒	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	☒	☐	☐	
b) Recovery could not be calculated since sample contained high concentration of analyte?	☐	☒	☐	
c) Was MSD accuracy criteria met?	☒	☐	☐	
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☒	☐	
d) Were MS/MSD precision criteria met?	☒	☐	☐	

Reagent Water Spike and Duplicate (RWS & RWSD)

	YES	NO	NA	COMMENTS
a) Was RWS accuracy criteria met?	☐	☐	☒	
b) Was RWSD accuracy criteria met?	☐	☐	☒	
c) Was RWS/RWSD precision criteria met (RPD)?	☐	☐	☒	

Surrogate Spikes

	YES	NO	NA	COMMENTS
a) Were surrogate recoveries within control limits?	☒	☐	☐	
b) Were surrogate recoveries not calculated due to dilutions?	☐	☒	☐	

Comments/Notes:

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: _____ Date: _____

QA LEVEL II - DATA EVALUATION CHECKLIST

Company Name: USACE
Project Name: LAMONT LANDFILL
Reviewer: F. Burwell

Project Manager: Z. Kidwai
Project Number:
Validation Date: 7- Sept - 2010

Laboratory: TEST AMERICA
SDG #: 680 - 58643
Analytical Method (type and no.): 8260B, 6020A, 7470A, EPA 300
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐
Sample Names: LMW-9-6-10, LMW-95-6-10, LMW-9D-6-10
Trip Blank, LMW-DUP-2-6-10

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	☒	☐	☐	Grab sample indicated
b) Sampling team indicated?	☐	☒	☐	on COC
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	pH, Conductivity, Temperature,
e) Sample type indicated (grab/composite)?	☐	☒	☐	Dissolved Oxygen, ORP
f) Field QC noted?	☒	☐	☐	Turbidity
g) Field parameters collected (note types)?	☒	☐	☐	
h) Field Calibration within control limits?	☒	☐	☐	
i) Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j) Does the laboratory narrative indicate deficiencies:	☒	☐	☐	

Note Deficiencies:

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
k) Was the COC properly completed?	☒	☐	☐	
l) Was the COC signed by both field and laboratory personnel?	☒	☐	☐	
m) Were samples received in good condition?	☒	☐	☐	

General (Reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	☒	☐	☐	-Dilution for method 300.00 5x
b) Were hold times met for sample analysis?	☒	☐	☐	(Nitrate)
c) Were the correct preservatives used?	☒	☐	☐	
d) Was the correct method used?	☒	☐	☐	
e) Were appropriate reporting limits achieved?	☒	☐	☐	
f) Were any sample dilutions noted?	☒	☐	☐	
g) Were any matrix problems noted?	☐	☒	☐	

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☐	☒	☐	
b) Were analytes detected in the field blank(s)?	☐	☐	☒	
c) Were analytes detected in the equipment blank(s)?	☐	☐	☒	Dup 2 taken at
d) Were analytes detected in the trip blank(s)?	☐	☒	☐	LMW-9-6-10

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	☒	☐	☐	
b) Were the proper compounds included in the LCS?	☒	☐	☐	
c) Was the LCS accuracy criteria met?	☒	☐	☐	

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	☒	☐	☒	
b) Were field dup. precision criteria met (note RPD)?	☐	☐	☐	
c) Were lab duplicates analyzed (note original and duplicate samples)?	☐	☐	☐	
d) Were lab dup. precision criteria met (note RPD)?	☐	☐	☐	

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, compounds included and concentrations)?	☐	☐	☒	
b) Was the %D within control limits?	☐	☐	☒	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	☑	☐	☐	
b) Recovery could not be calculated since sample contained high concentration of analyte?	☐	☒	☐	
c) Was MSD accuracy criteria met?	☑	☐	☐	
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☒	☐	
d) Were MS/MSD precision criteria met?	☑	☐	☐	

Reagent Water Spike and Duplicate (RWS & RWSD)	YES	NO	NA	COMMENTS
a) Was RWS accuracy criteria met?	☐	☐	☒	
b) Was RWSD accuracy criteria met?	☐	☐	☒	
c) Was RWS/RWSD precision criteria met (RPD)?	☐	☐	☒	

Surrogate Spikes	YES	NO	NA	COMMENTS
a) Were surrogate recoveries within control limits?	☒	☐	☐	
b) Were surrogate recoveries not calculated due to dilutions?	☐	☒	☐	

Comments/Notes:

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: ABH

Date: 07-SEPT-2010

APPENDIX C

CHAIN OF CUSTODY AND LABORATORY ANALYTICAL REPORTS

(Electronic Only)

ANALYTICAL REPORT

Job Number: 680-58549-1

Job Description: Ft. Bragg Lamont Landfill

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

Attention: Mr. Kevin Haborak

Approved for release.
Kathryn Smith
Project Manager I
7/8/2010 11:34 AM

Kathryn Smith
Project Manager I
kathye.smith@testamericainc.com
07/08/2010

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

Comments
No additional comments.

Receipt
All 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.

General Chemistry
No analytical or quality issues were noted.

VOA Prep
No analytical or quality issues were noted.

METHOD SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Description	Lab Location	Method	Preparation Method
Matrix Water			
Volatile Organic Compounds (GC/MS)	TAL SAV	SW846 8260B	
Purge and Trap	TAL SAV		SW846 5030B
Metals (ICP/MS)	TAL SAV	SW846 6020A	
Preparation, Extractable Metals	TAL SAV		SM 3030C
Mercury (CVAA)	TAL SAV	SW846 7470A	
Preparation, Mercury	TAL SAV		SW846 7470A
Anions, Ion Chromatography	TAL SAV	MCAWW 300.0	

Lab References:

TAL SAV = TestAmerica Savannah

Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Method	Analyst	Analyst ID
SW846 8260B	Bearden, Robert	RB
SW846 6020A	Robertson, Bryn	BR
SW846 7470A	Eaton, Cliff	CE
MCAWW 300.0	Brazell, Connie	CB

SAMPLE SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-58549-1	LMW-3S-6-10	Water	06/14/2010 0758	06/15/2010 0914
680-58549-2	Trip Blank	Water	06/14/2010 0000	06/15/2010 0914
680-58549-3	LMW-DUP1-6-10	Water	06/14/2010 1000	06/15/2010 0914
680-58549-4	LMW-3-6-10	Water	06/14/2010 0855	06/15/2010 0914
680-58549-5	LMW-15R-6-10	Water	06/14/2010 1030	06/15/2010 0914
680-58549-5MS	LMW-15R-6-10	Water	06/14/2010 1030	06/15/2010 0914
680-58549-5MSD	LMW-15R-6-10	Water	06/14/2010 1030	06/15/2010 0914
680-58549-6	LMW-14R-6-10	Water	06/14/2010 1125	06/15/2010 0914
680-58549-7	LMW-16-6-10	Water	06/14/2010 1425	06/15/2010 0914

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-3S-6-10**

Lab Sample ID: 680-58549-1

Client Matrix: Water

Date Sampled: 06/14/2010 0758

Date Received: 06/15/2010 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/16/2010 1846

Date Prepared: 06/16/2010 1846

Analysis Batch: 680-171718

Instrument ID: MSO

Lab File ID: o0101.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	4.0		0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	1.4		0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-3S-6-10**

Lab Sample ID: 680-58549-1

Client Matrix: Water

Date Sampled: 06/14/2010 0758

Date Received: 06/15/2010 0914

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-171718	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0101.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1846		Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1846			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	100		75 - 120
4-Bromofluorobenzene	96		75 - 120
Dibromofluoromethane	107		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-58549-2

Client Matrix: Water

Date Sampled: 06/14/2010 0000

Date Received: 06/15/2010 0914

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-171718	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0103.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1915		Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1915			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-58549-2

Client Matrix: Water

Date Sampled: 06/14/2010 0000

Date Received: 06/15/2010 0914

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-171718	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0103.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1915		Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1915			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	101		75 - 120
4-Bromofluorobenzene	95		75 - 120
Dibromofluoromethane	105		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-DUP1-6-10**

Lab Sample ID: 680-58549-3

Client Matrix: Water

Date Sampled: 06/14/2010 1000

Date Received: 06/15/2010 0914

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-171718	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0105.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1944		Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1944			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.28	J	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.52	J	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-DUP1-6-10**

Lab Sample ID: 680-58549-3

Client Matrix: Water

Date Sampled: 06/14/2010 1000

Date Received: 06/15/2010 0914

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-171718	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0105.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1944		Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1944			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	100		75 - 120
4-Bromofluorobenzene	97		75 - 120
Dibromofluoromethane	108		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-3-6-10**

Lab Sample ID: 680-58549-4

Client Matrix: Water

Date Sampled: 06/14/2010 0855

Date Received: 06/15/2010 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/16/2010 1832

Date Prepared: 06/16/2010 1832

Analysis Batch: 680-171720

Instrument ID: MSO2

Lab File ID: o0100.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.31	J	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.58	J	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-3-6-10**

Lab Sample ID: 680-58549-4

Client Matrix: Water

Date Sampled: 06/14/2010 0855

Date Received: 06/15/2010 0914

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-171720	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0100.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1832		Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1832			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	100		75 - 120
4-Bromofluorobenzene	92		75 - 120
Dibromofluoromethane	103		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-15R-6-10**

Lab Sample ID: 680-58549-5

Client Matrix: Water

Date Sampled: 06/14/2010 1030

Date Received: 06/15/2010 0914

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-171720	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0102.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1901		Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1901			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-15R-6-10**

Lab Sample ID: 680-58549-5

Client Matrix: Water

Date Sampled: 06/14/2010 1030

Date Received: 06/15/2010 0914

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-171720	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0102.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1901		Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1901			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	99		75 - 120
4-Bromofluorobenzene	92		75 - 120
Dibromofluoromethane	102		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-14R-6-10**

Lab Sample ID: 680-58549-6

Client Matrix: Water

Date Sampled: 06/14/2010 1125

Date Received: 06/15/2010 0914

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/16/2010 1930

Date Prepared: 06/16/2010 1930

Analysis Batch: 680-171720

Instrument ID: MSO2

Lab File ID: o0104.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-14R-6-10**

Lab Sample ID: 680-58549-6

Client Matrix: Water

Date Sampled: 06/14/2010 1125

Date Received: 06/15/2010 0914

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-171720	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0104.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1930		Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1930			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	99		75 - 120
4-Bromofluorobenzene	93		75 - 120
Dibromofluoromethane	104		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-16-6-10**

Lab Sample ID: 680-58549-7

Client Matrix: Water

Date Sampled: 06/14/2010 1425

Date Received: 06/15/2010 0914

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-171720	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0106.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1959		Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1959			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-16-6-10**

Lab Sample ID: 680-58549-7

Client Matrix: Water

Date Sampled: 06/14/2010 1425

Date Received: 06/15/2010 0914

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-171720	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0106.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1959		Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1959			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	98		75 - 120
4-Bromofluorobenzene	93		75 - 120
Dibromofluoromethane	105		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-3S-6-10**

Lab Sample ID: 680-58549-1

Client Matrix: Water

Date Sampled: 06/14/2010 0758

Date Received: 06/15/2010 0914

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-171856		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171592		Lab File ID:	171592.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/17/2010 0219			Final Weight/Volume:	50 mL
Date Prepared:	06/15/2010 1443				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.40	U Q	0.40	1.0
Barium	12		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.37	J	0.16	1.0
Cobalt	0.57		0.078	0.20
Iron	41	J	20	50
Lead	0.093	J	0.080	0.30
Manganese	23		0.84	2.0
Nickel	4.1		0.40	1.0
Selenium	0.21	U Q	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	14	Q	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-172629		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-172235		Lab File ID:	b062410.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/24/2010 1553			Final Weight/Volume:	50 mL
Date Prepared:	06/22/2010 1453				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.091	U	0.091	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-DUP1-6-10**

Lab Sample ID: 680-58549-3

Client Matrix: Water

Date Sampled: 06/14/2010 1000

Date Received: 06/15/2010 0914

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-171856		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171592		Lab File ID:	171592.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/17/2010 0226			Final Weight/Volume:	50 mL
Date Prepared:	06/15/2010 1443				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.40	U	0.40	1.0
Barium	5.1		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	1.4		0.16	1.0
Cobalt	0.19	J	0.078	0.20
Iron	58		20	50
Lead	0.19	J	0.080	0.30
Manganese	1.2	J	0.84	2.0
Nickel	1.6		0.40	1.0
Selenium	0.21	U	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	8.6	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-172629		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-172235		Lab File ID:	b062410.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/24/2010 1556			Final Weight/Volume:	50 mL
Date Prepared:	06/22/2010 1453				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.091	U	0.091	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-3-6-10**

Lab Sample ID: 680-58549-4

Client Matrix: Water

Date Sampled: 06/14/2010 0855

Date Received: 06/15/2010 0914

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-171856		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171592		Lab File ID:	171592.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/17/2010 0233			Final Weight/Volume:	50 mL
Date Prepared:	06/15/2010 1443				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.40	U	0.40	1.0
Barium	5.0		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.76	J	0.16	1.0
Cobalt	0.17	J	0.078	0.20
Iron	53		20	50
Lead	0.17	J	0.080	0.30
Manganese	1.1	J	0.84	2.0
Nickel	1.3		0.40	1.0
Selenium	0.21	U	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	8.5	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-172629		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-172235		Lab File ID:	b062410.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/24/2010 1559			Final Weight/Volume:	50 mL
Date Prepared:	06/22/2010 1453				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.091	U	0.091	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-15R-6-10**

Lab Sample ID: 680-58549-5

Client Matrix: Water

Date Sampled: 06/14/2010 1030

Date Received: 06/15/2010 0914

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-171856		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171592		Lab File ID:	171592.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/17/2010 0241			Final Weight/Volume:	50 mL
Date Prepared:	06/15/2010 1443				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.40	U	0.40	1.0
Barium	36		0.15	1.0
Beryllium	0.17	J	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.51	J	0.16	1.0
Cobalt	0.70		0.078	0.20
Iron	110		20	50
Lead	0.080	J	0.080	0.30
Manganese	1.6	J	0.84	2.0
Nickel	1.0		0.40	1.0
Selenium	0.21	U	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	6.6	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-172629		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-172235		Lab File ID:	b062410.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/24/2010 1602			Final Weight/Volume:	50 mL
Date Prepared:	06/22/2010 1453				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.091	U	0.091	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-14R-6-10**

Lab Sample ID: 680-58549-6

Client Matrix: Water

Date Sampled: 06/14/2010 1125

Date Received: 06/15/2010 0914

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-171856		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171592		Lab File ID:	171592.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/17/2010 0332			Final Weight/Volume:	50 mL
Date Prepared:	06/15/2010 1443				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.40	U	0.40	1.0
Barium	13		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.49	J	0.16	1.0
Cobalt	0.17	J	0.078	0.20
Iron	43	J	20	50
Lead	0.10	J	0.080	0.30
Manganese	1.3	J	0.84	2.0
Nickel	0.84	J	0.40	1.0
Selenium	0.21	U	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	4.9	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-172629		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-172235		Lab File ID:	b062410.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/24/2010 1611			Final Weight/Volume:	50 mL
Date Prepared:	06/22/2010 1453				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.091	U	0.091	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Client Sample ID: **LMW-16-6-10**

Lab Sample ID: 680-58549-7

Client Matrix: Water

Date Sampled: 06/14/2010 1425

Date Received: 06/15/2010 0914

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-171856		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171592		Lab File ID:	171592.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/17/2010 0339			Final Weight/Volume:	50 mL
Date Prepared:	06/15/2010 1443				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.50	J	0.40	1.0
Barium	8.8		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.56	J	0.16	1.0
Cobalt	0.098	J	0.078	0.20
Iron	150		20	50
Lead	0.26	J	0.080	0.30
Manganese	1.1	J	0.84	2.0
Nickel	0.97	J	0.40	1.0
Selenium	0.21	U	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	7.9	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-172629		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-172235		Lab File ID:	b062410.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/24/2010 1620			Final Weight/Volume:	50 mL
Date Prepared:	06/22/2010 1453				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.091	U	0.091	0.20

General Chemistry

Client Sample ID: **LMW-3S-6-10**

Lab Sample ID: 680-58549-1

Client Matrix: Water

Date Sampled: 06/14/2010 0758

Date Received: 06/15/2010 0914

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.36	U M	mg/L	0.36	1.1	5.0	300.0

Analysis Batch: 680-171642 Date Analyzed: 06/15/2010 1725

General Chemistry

Client Sample ID: **LMW-DUP1-6-10**

Lab Sample ID: 680-58549-3

Client Matrix: Water

Date Sampled: 06/14/2010 1000

Date Received: 06/15/2010 0914

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	1.0	J M	mg/L	0.36	1.1	5.0	300.0

Analysis Batch: 680-171642 Date Analyzed: 06/15/2010 1750

General Chemistry

Client Sample ID: **LMW-3-6-10**

Lab Sample ID: 680-58549-4

Client Matrix: Water

Date Sampled: 06/14/2010 0855

Date Received: 06/15/2010 0914

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.78	J M	mg/L	0.36	1.1	5.0	300.0

Analysis Batch: 680-171642 Date Analyzed: 06/15/2010 1802

General Chemistry

Client Sample ID: **LMW-15R-6-10**

Lab Sample ID: 680-58549-5

Client Matrix: Water

Date Sampled: 06/14/2010 1030

Date Received: 06/15/2010 0914

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	21		mg/L	0.36	1.1	5.0	300.0

Analysis Batch: 680-171642 Date Analyzed: 06/15/2010 1815

General Chemistry

Client Sample ID: **LMW-14R-6-10**

Lab Sample ID: 680-58549-6

Client Matrix: Water

Date Sampled: 06/14/2010 1125

Date Received: 06/15/2010 0914

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.36	U M	mg/L	0.36	1.1	5.0	300.0

Analysis Batch: 680-171642 Date Analyzed: 06/15/2010 1852

General Chemistry

Client Sample ID: **LMW-16-6-10**

Lab Sample ID: 680-58549-7

Client Matrix: Water

Date Sampled: 06/14/2010 1425

Date Received: 06/15/2010 0914

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.36	U M	mg/L	0.36	1.1	5.0	300.0

Analysis Batch: 680-171642 Date Analyzed: 06/15/2010 1904

DATA REPORTING QUALIFIERS

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

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
	Q	One or more quality control criteria failed.
	U	Undetected at the Limit of Detection.
General Chemistry		
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	M	Manual integrated compound.
	U	Undetected at the Limit of Detection.

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Method Blank - Batch: 680-171718

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-171718/11	Analysis Batch:	680-171718	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq061.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1135			Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1135				

Analyte	Result	Qual	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.0
Vinyl acetate	0.28	U	0.28	2.0
Vinyl chloride	0.18	U	0.18	1.0

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Method Blank - Batch: 680-171718

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-171718/11	Analysis Batch:	680-171718	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq061.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1135			Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1135				

Analyte	Result	Qual	MDL	RL
Xylenes, Total	0.20	U	0.20	2.0
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	% Rec	Acceptance Limits
Toluene-d8 (Surr)	102	75 - 120
4-Bromofluorobenzene	97	75 - 120
Dibromofluoromethane	105	75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-171718

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-171718/8	Analysis Batch:	680-171718	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq053.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 0941			Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 0941				

LCSD Lab Sample ID:	LCSD 680-171718/9	Analysis Batch:	680-171718	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq055.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1009			Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1009				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Acetone	100	103	17 - 175	3	50		
Benzene	98	98	77 - 119	0	30		
Dichlorobromomethane	103	103	78 - 127	1	30		
Bromomethane	87	82	12 - 184	7	50		
Carbon disulfide	116	114	55 - 131	1	30		
Chlorobenzene	94	97	85 - 116	3	30		
Chlorodibromomethane	101	104	75 - 133	3	30		
Chloroethane	151	129	40 - 165	16	50		
Chloromethane	99	99	48 - 142	1	50		
Chloroform	105	108	82 - 120	2	30		
1,2-Dibromo-3-Chloropropane	94	95	49 - 140	1	30		
Ethylene Dibromide	98	98	80 - 121	0	30		
Dichlorodifluoromethane	121	121	34 - 154	0	30		
1,1-Dichloroethane	108	108	74 - 127	0	30		
1,2-Dichloroethane	95	95	66 - 132	0	30		
trans-1,2-Dichloroethene	105	105	72 - 131	0	30		
1,1-Dichloroethene	115	115	62 - 141	0	30		
Methylene Chloride	112	113	70 - 125	1	30		
1,2-Dichloropropane	100	99	73 - 124	1	30		
cis-1,3-Dichloropropene	104	105	76 - 126	0	30		
trans-1,3-Dichloropropene	103	101	73 - 128	1	30		
Ethylbenzene	100	101	86 - 116	1	30		
2-Butanone (MEK)	90	92	33 - 157	2	30		
4-Methyl-2-pentanone (MIBK)	88	90	40 - 151	2	30		
Styrene	97	98	82 - 122	1	30		
1,1,1,2-Tetrachloroethane	102	102	81 - 128	0	30		
1,1,2,2-Tetrachloroethane	87	89	69 - 129	2	30		
Tetrachloroethene	95	97	76 - 126	2	30		
Carbon tetrachloride	106	104	71 - 135	3	30		
Toluene	99	100	81 - 117	1	30		
Bromoform	100	102	62 - 133	1	30		
1,1,2-Trichloroethane	95	95	75 - 121	0	30		
1,1,1-Trichloroethane	104	103	76 - 127	1	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-171718

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-171718/8	Analysis Batch:	680-171718	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq053.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 0941			Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 0941				

LCSD Lab Sample ID:	LCSD 680-171718/9	Analysis Batch:	680-171718	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq055.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1009			Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1009				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Trichloroethene	100	100	84 - 115	0	30		
Trichlorofluoromethane	104	101	58 - 149	2	50		
1,2,3-Trichloropropane	90	89	70 - 130	1	30		
Vinyl acetate	110	111	10 - 217	1	30		
Vinyl chloride	101	98	59 - 144	3	50		
Xylenes, Total	98	99	84 - 118	2	30		
2-Hexanone	85	88	34 - 161	4	30		
Chlorobromomethane	101	99	10 - 150	2	30		
cis-1,2-Dichloroethene	106	105	69 - 134	0	30		
1,3-Dichloropropane	95	96	75 - 120	1	30		
2,2-Dichloropropane	117	117	55 - 157	0	30		
1,1-Dichloropropene	100	101	77 - 122	0	30		
1,2-Dichlorobenzene	97	96	79 - 124	1	30		
1,3-Dichlorobenzene	98	97	78 - 125	0	30		
1,4-Dichlorobenzene	96	96	81 - 122	0	30		
1,2,4-Trichlorobenzene	99	102	60 - 135	3	30		
Dibromomethane	95	98	78 - 119	3	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	100	99	75 - 120
4-Bromofluorobenzene	97	97	75 - 120
Dibromofluoromethane	106	107	75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Method Blank - Batch: 680-171720

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-171720/9	Analysis Batch:	680-171720	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq062.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1149			Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1149				

Analyte	Result	Qual	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.0
Vinyl acetate	0.28	U	0.28	2.0
Vinyl chloride	0.18	U	0.18	1.0

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Method Blank - Batch: 680-171720

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-171720/9	Analysis Batch:	680-171720	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq062.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1149			Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1149				

Analyte	Result	Qual	MDL	RL
Xylenes, Total	0.20	U	0.20	2.0
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	% Rec	Acceptance Limits
Toluene-d8 (Surr)	100	75 - 120
4-Bromofluorobenzene	92	75 - 120
Dibromofluoromethane	101	75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-171720

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-171720/6	Analysis Batch:	680-171720	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq054.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 0955			Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 0955				

LCSD Lab Sample ID:	LCSD 680-171720/7	Analysis Batch:	680-171720	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq056.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1023			Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1023				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Acetone	90	88	17 - 175	3	50		
Benzene	98	99	77 - 119	1	30		
Dichlorobromomethane	102	103	78 - 127	1	30		
Bromomethane	99	97	12 - 184	2	50		
Carbon disulfide	110	109	55 - 131	1	30		
Chlorobenzene	96	96	85 - 116	0	30		
Chlorodibromomethane	104	103	75 - 133	1	30		
Chloroethane	103	100	40 - 165	3	50		
Chloromethane	100	97	48 - 142	3	50		
Chloroform	106	103	82 - 120	3	30		
1,2-Dibromo-3-Chloropropane	95	95	49 - 140	1	30		
Ethylene Dibromide	96	98	80 - 121	2	30		
Dichlorodifluoromethane	116	113	34 - 154	2	30		
1,1-Dichloroethane	105	104	74 - 127	2	30		
1,2-Dichloroethane	94	95	66 - 132	1	30		
trans-1,2-Dichloroethene	101	100	72 - 131	2	30		
1,1-Dichloroethene	111	108	62 - 141	3	30		
Methylene Chloride	102	99	70 - 125	3	30		
1,2-Dichloropropane	99	100	73 - 124	1	30		
cis-1,3-Dichloropropene	101	102	76 - 126	1	30		
trans-1,3-Dichloropropene	106	105	73 - 128	0	30		
Ethylbenzene	101	100	86 - 116	0	30		
2-Butanone (MEK)	90	86	33 - 157	5	30		
4-Methyl-2-pentanone (MIBK)	84	84	40 - 151	0	30		
Styrene	99	98	82 - 122	1	30		
1,1,1,2-Tetrachloroethane	101	97	81 - 128	4	30		
1,1,2,2-Tetrachloroethane	88	87	69 - 129	2	30		
Tetrachloroethene	97	98	76 - 126	0	30		
Carbon tetrachloride	102	103	71 - 135	2	30		
Toluene	100	102	81 - 117	1	30		
Bromoform	100	97	62 - 133	3	30		
1,1,2-Trichloroethane	96	94	75 - 121	2	30		
1,1,1-Trichloroethane	102	104	76 - 127	2	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-171720

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-171720/6	Analysis Batch:	680-171720	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq054.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 0955			Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 0955				

LCSD Lab Sample ID:	LCSD 680-171720/7	Analysis Batch:	680-171720	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq056.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/16/2010 1023			Final Weight/Volume:	5 mL
Date Prepared:	06/16/2010 1023				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Trichloroethene	98	100	84 - 115	1	30		
Trichlorofluoromethane	98	96	58 - 149	2	50		
1,2,3-Trichloropropane	93	91	70 - 130	2	30		
Vinyl acetate	109	104	10 - 217	5	30		
Vinyl chloride	101	98	59 - 144	2	50		
Xylenes, Total	99	98	84 - 118	0	30		
2-Hexanone	87	87	34 - 161	1	30		
Chlorobromomethane	99	97	10 - 150	2	30		
cis-1,2-Dichloroethene	106	104	69 - 134	2	30		
1,3-Dichloropropane	94	97	75 - 120	3	30		
2,2-Dichloropropane	120	115	55 - 157	4	30		
1,1-Dichloropropene	101	100	77 - 122	1	30		
1,2-Dichlorobenzene	100	98	79 - 124	2	30		
1,3-Dichlorobenzene	100	98	78 - 125	2	30		
1,4-Dichlorobenzene	99	99	81 - 122	0	30		
1,2,4-Trichlorobenzene	99	99	60 - 135	0	30		
Dibromomethane	96	97	78 - 119	1	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	98	100	75 - 120
4-Bromofluorobenzene	98	98	75 - 120
Dibromofluoromethane	106	102	75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Method Blank - Batch: 680-171851

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-171851/14	Analysis Batch:	680-171851	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq076.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 1219			Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 1219				

Analyte	Result	Qual	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.0
Vinyl acetate	0.28	U	0.28	2.0
Vinyl chloride	0.18	U	0.18	1.0

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Method Blank - Batch: 680-171851

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-171851/14
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/17/2010 1219
Date Prepared: 06/17/2010 1219

Analysis Batch: 680-171851
Prep Batch: N/A
Units: ug/L

Instrument ID: MSO2
Lab File ID: oq076.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Xylenes, Total	0.20	U	0.20	2.0
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	% Rec	Acceptance Limits
Toluene-d8 (Surr)	99	75 - 120
4-Bromofluorobenzene	93	75 - 120
Dibromofluoromethane	104	75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-171851

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-171851/11	Analysis Batch:	680-171851	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq068.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 1025			Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 1025				

LCSD Lab Sample ID:	LCSD 680-171851/12	Analysis Batch:	680-171851	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq070.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 1053			Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 1053				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Acetone	86	88	17 - 175	2	50		
Benzene	98	99	77 - 119	0	30		
Dichlorobromomethane	99	100	78 - 127	0	30		
Bromomethane	89	96	12 - 184	7	50		
Carbon disulfide	107	104	55 - 131	2	30		
Chlorobenzene	91	90	85 - 116	1	30		
Chlorodibromomethane	95	95	75 - 133	0	30		
Chloroethane	98	98	40 - 165	0	50		
Chloromethane	95	102	48 - 142	6	50		
Chloroform	103	100	82 - 120	2	30		
1,2-Dibromo-3-Chloropropane	89	85	49 - 140	5	30		
Ethylene Dibromide	95	98	80 - 121	2	30		
Dichlorodifluoromethane	111	111	34 - 154	0	30		
1,1-Dichloroethane	103	103	74 - 127	0	30		
1,2-Dichloroethane	95	95	66 - 132	1	30		
trans-1,2-Dichloroethene	99	100	72 - 131	1	30		
1,1-Dichloroethene	109	105	62 - 141	3	30		
Methylene Chloride	99	98	70 - 125	0	30		
1,2-Dichloropropane	99	98	73 - 124	1	30		
cis-1,3-Dichloropropene	99	99	76 - 126	0	30		
trans-1,3-Dichloropropene	103	105	73 - 128	1	30		
Ethylbenzene	95	95	86 - 116	1	30		
2-Butanone (MEK)	87	86	33 - 157	2	30		
4-Methyl-2-pentanone (MIBK)	85	84	40 - 151	1	30		
Styrene	92	93	82 - 122	0	30		
1,1,1,2-Tetrachloroethane	93	93	81 - 128	0	30		
1,1,2,2-Tetrachloroethane	84	84	69 - 129	0	30		
Tetrachloroethene	92	90	76 - 126	3	30		
Carbon tetrachloride	99	99	71 - 135	1	30		
Toluene	102	103	81 - 117	1	30		
Bromoform	90	90	62 - 133	0	30		
1,1,2-Trichloroethane	93	94	75 - 121	1	30		
1,1,1-Trichloroethane	100	101	76 - 127	1	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-171851

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-171851/11	Analysis Batch:	680-171851	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq068.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 1025			Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 1025				

LCSD Lab Sample ID:	LCSD 680-171851/12	Analysis Batch:	680-171851	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq070.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 1053			Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 1053				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Trichloroethene	96	96	84 - 115	0	30		
Trichlorofluoromethane	98	94	58 - 149	4	50		
1,2,3-Trichloropropane	86	89	70 - 130	4	30		
Vinyl acetate	106	105	10 - 217	0	30		
Vinyl chloride	100	97	59 - 144	2	50		
Xylenes, Total	94	93	84 - 118	1	30		
2-Hexanone	82	82	34 - 161	0	30		
Chlorobromomethane	95	96	10 - 150	0	30		
cis-1,2-Dichloroethene	103	103	69 - 134	0	30		
1,3-Dichloropropane	95	95	75 - 120	1	30		
2,2-Dichloropropane	111	110	55 - 157	1	30		
1,1-Dichloropropene	99	98	77 - 122	0	30		
1,2-Dichlorobenzene	93	92	79 - 124	2	30		
1,3-Dichlorobenzene	95	94	78 - 125	1	30		
1,4-Dichlorobenzene	94	93	81 - 122	1	30		
1,2,4-Trichlorobenzene	93	92	60 - 135	1	30		
Dibromomethane	92	93	78 - 119	0	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	99	100	75 - 120
4-Bromofluorobenzene	91	92	75 - 120
Dibromofluoromethane	102	102	75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-171851

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	680-58549-5	Analysis Batch:	680-171851	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	o0138.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 1957			Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 1957				

MSD Lab Sample ID:	680-58549-5	Analysis Batch:	680-171851	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	o0140.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 2025			Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 2025				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Acetone	90	95	17 - 175	5	50		
Benzene	97	103	77 - 119	6	30		
Dichlorobromomethane	96	102	78 - 127	6	30		
Bromomethane	89	114	12 - 184	24	50		
Carbon disulfide	114	120	55 - 131	5	30		
Chlorobenzene	91	96	85 - 116	6	30		
Chlorodibromomethane	92	97	75 - 133	6	30		
Chloroethane	105	124	40 - 165	17	50		
Chloromethane	93	104	48 - 142	11	50		
Chloroform	102	111	82 - 120	8	30		
1,2-Dibromo-3-Chloropropane	85	91	49 - 140	7	30		
Ethylene Dibromide	93	99	80 - 121	6	30		
Dichlorodifluoromethane	116	121	34 - 154	4	30		
1,1-Dichloroethane	108	116	74 - 127	7	30		
1,2-Dichloroethane	90	95	66 - 132	6	30		
trans-1,2-Dichloroethene	107	115	72 - 131	7	30		
1,1-Dichloroethene	112	121	62 - 141	7	30		
Methylene Chloride	106	114	70 - 125	7	30		
1,2-Dichloropropane	97	100	73 - 124	3	30		
cis-1,3-Dichloropropene	94	99	76 - 126	5	30		
trans-1,3-Dichloropropene	96	101	73 - 128	6	30		
Ethylbenzene	97	104	86 - 116	6	30		
2-Butanone (MEK)	87	91	33 - 157	4	30		
4-Methyl-2-pentanone (MIBK)	82	84	40 - 151	2	30		
Styrene	95	100	82 - 122	5	30		
1,1,1,2-Tetrachloroethane	94	99	81 - 128	6	30		
1,1,2,2-Tetrachloroethane	84	89	69 - 129	5	30		
Tetrachloroethene	94	99	76 - 126	4	30		
Carbon tetrachloride	103	107	71 - 135	4	30		
Toluene	101	108	81 - 117	7	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-171851

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	680-58549-5	Analysis Batch:	680-171851	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	o0138.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 1957			Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 1957				

MSD Lab Sample ID:	680-58549-5	Analysis Batch:	680-171851	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	o0140.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 2025			Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 2025				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Bromoform	89	93	62 - 133	4	30		
1,1,2-Trichloroethane	89	96	75 - 121	7	30		
1,1,1-Trichloroethane	100	106	76 - 127	5	30		
Trichloroethene	96	99	84 - 115	3	30		
Trichlorofluoromethane	104	115	58 - 149	11	50		
1,2,3-Trichloropropane	85	88	70 - 130	4	30		
Vinyl acetate	113	120	10 - 217	6	30		
Vinyl chloride	103	112	59 - 144	8	50		
Xylenes, Total	95	102	84 - 118	7	30		
2-Hexanone	79	82	34 - 161	5	30		
Chlorobromomethane	100	110	10 - 150	9	30		
cis-1,2-Dichloroethene	105	112	69 - 134	6	30		
1,3-Dichloropropane	92	96	75 - 120	5	30		
2,2-Dichloropropane	109	115	55 - 157	5	30		
1,1-Dichloropropene	98	103	77 - 122	5	30		
1,2-Dichlorobenzene	91	100	79 - 124	9	30		
1,3-Dichlorobenzene	95	101	78 - 125	5	30		
1,4-Dichlorobenzene	93	101	81 - 122	8	30		
1,2,4-Trichlorobenzene	90	98	60 - 135	9	30		
Dibromomethane	92	96	78 - 119	4	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	100	104	75 - 120
4-Bromofluorobenzene	92	98	75 - 120
Dibromofluoromethane	103	112	75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Method Blank - Batch: 680-171592

Method: 6020A
Preparation: 3030C

Lab Sample ID:	MB 680-171592/7-A	Analysis Batch:	680-171856	Instrument ID:	ICPMSA
Client Matrix:	Water	Prep Batch:	680-171592	Lab File ID:	171592.chr
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	50 mL
Date Analyzed:	06/17/2010 0204			Final Weight/Volume:	50 mL
Date Prepared:	06/15/2010 1443				

Analyte	Result	Qual	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.40	U	0.40	1.0
Barium	0.15	U	0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.16	U	0.16	1.0
Cobalt	0.078	U	0.078	0.20
Iron	20	U	20	50
Lead	0.080	U	0.080	0.30
Manganese	0.84	U	0.84	2.0
Nickel	0.40	U	0.40	1.0
Selenium	0.21	U	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	2.6	U	2.6	10

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Lab Control Sample - Batch: 680-171592

Method: 6020A
Preparation: 3030C

Lab Sample ID: LCS 680-171592/8-A
Client Matrix: Water
Dilution: 100
Date Analyzed: 06/17/2010 0211
Date Prepared: 06/15/2010 1443

Analysis Batch: 680-171856
Prep Batch: 680-171592
Units: ug/L

Instrument ID: ICPMSA
Lab File ID: 171592.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	500	538	108	75 - 125	
Arsenic	2000	2140	107	75 - 125	
Manganese	500	494	99	75 - 125	
Selenium	2000	2400	120	75 - 125	
Tin	1000	958	96	75 - 125	
Zinc	500	596	119	75 - 125	J

Lab Control Sample - Batch: 680-171592

Method: 6020A
Preparation: 3030C

Lab Sample ID: LCS 680-171592/8-A
Client Matrix: Water
Dilution: 50
Date Analyzed: 06/17/2010 1427
Date Prepared: 06/15/2010 1443

Analysis Batch: 680-171856
Prep Batch: 680-171592
Units: ug/L

Instrument ID: ICPMSA
Lab File ID: 171592.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Barium	2000	2340	117	75 - 125	
Beryllium	50.0	56.4	113	75 - 125	
Cadmium	50.0	61.0	122	75 - 125	
Chromium	200	239	120	75 - 125	
Cobalt	500	556	111	75 - 125	
Iron	1000	1240	124	75 - 125	J
Lead	500	594	119	75 - 125	
Nickel	500	604	121	75 - 125	
Silver	50.0	57.6	115	75 - 125	
Vanadium	500	580	116	75 - 125	

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Lab Control Sample - Batch: 680-171592

Method: 6020A
Preparation: 3030C

Lab Sample ID:	LCS 680-171592/8-A	Analysis Batch:	680-173170	Instrument ID:	ICPMSB
Client Matrix:	Water	Prep Batch:	680-171592	Lab File ID:	171592.chr
Dilution:	200	Units:	ug/L	Initial Weight/Volume:	50 mL
Date Analyzed:	07/01/2010 1327			Final Weight/Volume:	50 mL
Date Prepared:	06/15/2010 1443				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Thallium	2000	2120	106	75 - 125	

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-171592

Method: 6020A
Preparation: 3030C

MS Lab Sample ID:	680-58549-5	Analysis Batch:	680-171856	Instrument ID:	ICPMSA
Client Matrix:	Water	Prep Batch:	680-171592	Lab File ID:	171592.chr
Dilution:	50			Initial Weight/Volume:	50 mL
Date Analyzed:	06/17/2010 1434			Final Weight/Volume:	50 mL
Date Prepared:	06/15/2010 1443				

MSD Lab Sample ID:	680-58549-5	Analysis Batch:	680-171856	Instrument ID:	ICPMSA
Client Matrix:	Water	Prep Batch:	680-171592	Lab File ID:	171592.chr
Dilution:	50			Initial Weight/Volume:	50 mL
Date Analyzed:	06/17/2010 1442			Final Weight/Volume:	50 mL
Date Prepared:	06/15/2010 1443				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Antimony	107	105	75 - 125	2	20		
Arsenic	106	105	75 - 125	1	20		
Barium	100	99	75 - 125	1	20		
Beryllium	96	99	75 - 125	3	20		
Cadmium	107	106	75 - 125	1	20		
Chromium	97	97	75 - 125	1	20		
Cobalt	94	94	75 - 125	0	20		
Iron	99	104	75 - 125	5	20	J	J
Lead	101	100	75 - 125	0	20		
Manganese	121	122	75 - 125	1	20		
Nickel	100	99	75 - 125	1	20		
Selenium	118	116	75 - 125	1	20		
Silver	98	97	75 - 125	1	20		
Tin	97	96	75 - 125	1	20		
Vanadium	95	94	75 - 125	2	20		
Zinc	116	116	75 - 125	1	20		

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-171592

Method: 6020A
Preparation: 3030C

MS Lab Sample ID:	680-58549-5	Analysis Batch:	680-173170	Instrument ID:	ICPMSB
Client Matrix:	Water	Prep Batch:	680-171592	Lab File ID:	171592.chr
Dilution:	200			Initial Weight/Volume:	50 mL
Date Analyzed:	07/01/2010 1334			Final Weight/Volume:	50 mL
Date Prepared:	06/15/2010 1443				

MSD Lab Sample ID:	680-58549-5	Analysis Batch:	680-173170	Instrument ID:	ICPMSB
Client Matrix:	Water	Prep Batch:	680-171592	Lab File ID:	171592.chr
Dilution:	200			Initial Weight/Volume:	50 mL
Date Analyzed:	07/01/2010 1342			Final Weight/Volume:	50 mL
Date Prepared:	06/15/2010 1443				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Thallium	105	104	75 - 125	1	20		

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Method Blank - Batch: 680-172235

Method: 7470A
Preparation: 7470A

Lab Sample ID: MB 680-172235/23-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/24/2010 1547
Date Prepared: 06/22/2010 1453

Analysis Batch: 680-172629
Prep Batch: 680-172235
Units: ug/L

Instrument ID: LEEMAN1
Lab File ID: b062410.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Mercury	0.091	U	0.091	0.20

Lab Control Sample - Batch: 680-172235

Method: 7470A
Preparation: 7470A

Lab Sample ID: LCS 680-172235/24-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/24/2010 1550
Date Prepared: 06/22/2010 1453

Analysis Batch: 680-172629
Prep Batch: 680-172235
Units: ug/L

Instrument ID: LEEMAN1
Lab File ID: b062410.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	2.50	2.55	102	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-172235

Method: 7470A
Preparation: 7470A

MS Lab Sample ID: 680-58549-5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/24/2010 1605
Date Prepared: 06/22/2010 1453

Analysis Batch: 680-172629
Prep Batch: 680-172235

Instrument ID: LEEMAN1
Lab File ID: b062410.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 680-58549-5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/24/2010 1608
Date Prepared: 06/22/2010 1453

Analysis Batch: 680-172629
Prep Batch: 680-172235

Instrument ID: LEEMAN1
Lab File ID: b062410.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Mercury	105	103	80 - 120	2	20		

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Method Blank - Batch: 680-171642

Method: 300.0
Preparation: N/A

Lab Sample ID: MB 680-171642/2
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 06/15/2010 1700
Date Prepared: N/A

Analysis Batch: 680-171642
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0026.d
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Nitrate as NO3	0.36	U	0.36	1.1

Lab Control Sample - Batch: 680-171642

Method: 300.0
Preparation: N/A

Lab Sample ID: LCS 680-171642/3
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 06/15/2010 1713
Date Prepared: N/A

Analysis Batch: 680-171642
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0027.d
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 5 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as NO3	11.0	10.6	96	90 - 110	

Matrix Spike - Batch: 680-171642

Method: 300.0
Preparation: N/A

Lab Sample ID: 680-58549-1
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 06/15/2010 1738
Date Prepared: N/A

Analysis Batch: 680-171642
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0029.d
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 5 mL
1 uL

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as NO3	0.36	U	22.1	22.5	102	90 - 110	

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-171642

Method: 300.0
Preparation: N/A

MS Lab Sample ID:	680-58549-5	Analysis Batch:	680-171642	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0033.d
Dilution:	5.0			Initial Weight/Volume:	1.0 mL
Date Analyzed:	06/15/2010 1827			Final Weight/Volume:	5 mL
Date Prepared:	N/A				1 uL

MSD Lab Sample ID:	680-58549-5	Analysis Batch:	680-171642	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0034.d
Dilution:	5.0			Initial Weight/Volume:	1.0 mL
Date Analyzed:	06/15/2010 1840			Final Weight/Volume:	5 mL
Date Prepared:	N/A				1 uL

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrate as NO3	97	97	90 - 110	0	30		

Serial Number 027569

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
Ft Bragg (Lamont)	0008	NC

TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Kathy Smith	W912HN-10-T-0001	

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Kevin Haborok	9126526083	

CLIENT NAME	CLIENT E-MAIL
USACE	

CLIENT ADDRESS: 100 West Oglethorpe Savannah GA 31402

COMPANY CONTRACTING THIS WORK (if applicable): N/A

PAGE ___ OF ___

STANDARD REPORT DELIVERY ◯

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSIS / NUMBER OF CONTAINERS SUBMITTED

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	8260B (ICE)	Metals Fe, Mn (HNO3)	Nitrate (ICE)								REMARKS
14 JUNE 2010	0758	LMW-3S-6-10	G	W				3	1	1								
	1000	Trip Blank						2										
14 JUNE 2010	~~0855~~	LMW-DUP1-6-10						3	1	1								
14 JUNE 2010	0855	LMW-3-6-10						3	1	1								
14 JUNE 2010	1030	LMW-15R-6-10						6	2	2								MS/MSD Taken
14 JUNE 2010	1125	LMW-14R-6-10						3	1	1								
14 JUNE 2010	1425	LMW-16-6-10						3	1	1								

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	14 JUNE 2010	1700	Shipped via Fedex					

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
Beth A Daughty	6/15/10	2914	YES ◯ NO ◯		L80-58549	Temp 1.2

TAL8240-680 (1207)

Login Sample Receipt Check List

Client: U.S. Army Corps of Engineers

Job Number: 680-58549-1

Login Number: 58549

List Source: TestAmerica Savannah

Creator: Daughtry, Beth

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.	True	
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	
Is the Field Sampler's name present on COC?	False	
Sample Preservation Verified	True	

ANALYTICAL REPORT

Job Number: 680-58599-1

Job Description: Ft. Bragg Lamont Landfill

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

Attention: Mr. Kevin Haborak

Approved for release.
Kathryn Smith
Project Manager I
6/30/2010 3:11 PM

Kathryn Smith
Project Manager I
kathye.smith@testamericainc.com
06/30/2010

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

Comments
No additional comments.

Receipt
All 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.

General Chemistry
No analytical or quality issues were noted.

VOA Prep
No analytical or quality issues were noted.

METHOD SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Description	Lab Location	Method	Preparation Method
Matrix Water			
Volatile Organic Compounds (GC/MS)	TAL SAV	SW846 8260B	
Purge and Trap	TAL SAV		SW846 5030B
Metals (ICP/MS)	TAL SAV	SW846 6020A	
Preparation, Extractable Metals	TAL SAV		SM 3030C
Mercury (CVAA)	TAL SAV	SW846 7470A	
Preparation, Mercury	TAL SAV		SW846 7470A
Anions, Ion Chromatography	TAL SAV	MCAWW 300.0	

Lab References:

TAL SAV = TestAmerica Savannah

Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Method	Analyst	Analyst ID
SW846 8260B	Bearden, Robert	RB
SW846 6020A	Robertson, Bryn	BR
SW846 7470A	Eaton, Cliff	CE
MCAWW 300.0	Brazell, Connie	CB

SAMPLE SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-58599-1	LMW-4-6-10	Water	06/15/2010 0957	06/16/2010 1126
680-58599-2	Trip Blank	Water	06/15/2010 0000	06/16/2010 1126
680-58599-3	LMW-10-6-10	Water	06/15/2010 1310	06/16/2010 1126

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Client Sample ID: **LMW-4-6-10**

Lab Sample ID: 680-58599-1

Client Matrix: Water

Date Sampled: 06/15/2010 0957

Date Received: 06/16/2010 1126

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-171848	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0113.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 1359		Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 1359			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	2.0		0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Client Sample ID: **LMW-4-6-10**

Lab Sample ID: 680-58599-1

Client Matrix: Water

Date Sampled: 06/15/2010 0957

Date Received: 06/16/2010 1126

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-171848	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0113.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 1359		Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 1359			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	102		75 - 120
4-Bromofluorobenzene	96		75 - 120
Dibromofluoromethane	110		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-58599-2

Client Matrix: Water

Date Sampled: 06/15/2010 0000

Date Received: 06/16/2010 1126

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/17/2010 1330

Date Prepared: 06/17/2010 1330

Analysis Batch: 680-171848

Instrument ID: MSO

Lab File ID: o0111.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-58599-2

Client Matrix: Water

Date Sampled: 06/15/2010 0000

Date Received: 06/16/2010 1126

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-171848	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0111.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 1330		Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 1330			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	101		75 - 120
4-Bromofluorobenzene	96		75 - 120
Dibromofluoromethane	105		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Client Sample ID: **LMW-10-6-10**

Lab Sample ID: 680-58599-3

Client Matrix: Water

Date Sampled: 06/15/2010 1310

Date Received: 06/16/2010 1126

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-171848	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0115.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 1428		Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 1428			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	1.1		0.13	1.0
Trichlorofluoromethane	5.8		0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Client Sample ID: **LMW-10-6-10**

Lab Sample ID: 680-58599-3

Client Matrix: Water

Date Sampled: 06/15/2010 1310

Date Received: 06/16/2010 1126

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-171848	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0115.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 1428		Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 1428			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	102		75 - 120
4-Bromofluorobenzene	96		75 - 120
Dibromofluoromethane	107		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Client Sample ID: **LMW-4-6-10**

Lab Sample ID: 680-58599-1

Client Matrix: Water

Date Sampled: 06/15/2010 0957

Date Received: 06/16/2010 1126

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-171803		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171734		Lab File ID:	061710.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/16/2010 2014			Final Weight/Volume:	50 mL
Date Prepared:	06/16/2010 1444				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.40	U	0.40	1.0
Barium	15		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.72	J	0.16	1.0
Cobalt	0.27		0.078	0.20
Copper	1.3		0.21	1.0
Iron	130		20	50
Lead	0.19	J	0.080	0.30
Manganese	0.84	U	0.84	2.0
Nickel	0.76	J	0.40	1.0
Selenium	0.21	U	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	6.9	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-172629		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-172235		Lab File ID:	b062410.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/24/2010 1628			Final Weight/Volume:	50 mL
Date Prepared:	06/22/2010 1453				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.091	U	0.091	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Client Sample ID: **LMW-10-6-10**

Lab Sample ID: 680-58599-3

Client Matrix: Water

Date Sampled: 06/15/2010 1310

Date Received: 06/16/2010 1126

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-171803		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171734		Lab File ID:	061710.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/16/2010 2051			Final Weight/Volume:	50 mL
Date Prepared:	06/16/2010 1444				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.40	U	0.40	1.0
Barium	12		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.36	J	0.16	1.0
Cobalt	0.20		0.078	0.20
Copper	1.9		0.21	1.0
Iron	41	J	20	50
Lead	0.11	J	0.080	0.30
Manganese	1.1	J	0.84	2.0
Nickel	0.40	U	0.40	1.0
Selenium	0.21	U	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	3.6	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-172629		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-172235		Lab File ID:	b062410.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/24/2010 1631			Final Weight/Volume:	50 mL
Date Prepared:	06/22/2010 1453				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.091	U	0.091	0.20

General Chemistry

Client Sample ID: **LMW-4-6-10**

Lab Sample ID: 680-58599-1

Client Matrix: Water

Date Sampled: 06/15/2010 0957

Date Received: 06/16/2010 1126

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.84	J	mg/L	0.36	1.1	5.0	300.0

Analysis Batch: 680-172250 Date Analyzed: 06/16/2010 1349

General Chemistry

Client Sample ID: **LMW-10-6-10**

Lab Sample ID: 680-58599-3

Client Matrix: Water

Date Sampled: 06/15/2010 1310

Date Received: 06/16/2010 1126

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	3.7		mg/L	0.36	1.1	5.0	300.0

Analysis Batch: 680-172250 Date Analyzed: 06/16/2010 1402

DATA REPORTING QUALIFIERS

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Lab Section	Qualifier	Description
GC/MS VOA		
	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.
General Chemistry		
	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: 680-58599-1

Method Blank - Batch: 680-171848

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-171848/14	Analysis Batch:	680-171848	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq075.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 1205			Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 1205				

Analyte	Result	Qual	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.0
Vinyl acetate	0.28	U	0.28	2.0
Vinyl chloride	0.18	U	0.18	1.0

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Method Blank - Batch: 680-171848

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-171848/14
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/17/2010 1205
Date Prepared: 06/17/2010 1205

Analysis Batch: 680-171848
Prep Batch: N/A
Units: ug/L

Instrument ID: MSO
Lab File ID: oq075.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Xylenes, Total	0.20	U	0.20	2.0
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	% Rec	Acceptance Limits
Toluene-d8 (Surr)	101	75 - 120
4-Bromofluorobenzene	97	75 - 120
Dibromofluoromethane	110	75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-171848

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-171848/11	Analysis Batch:	680-171848	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq067.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 1011			Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 1011				

LCSD Lab Sample ID:	LCSD 680-171848/12	Analysis Batch:	680-171848	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq069.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 1039			Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 1039				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Acetone	103	103	17 - 175	0	50		
Benzene	98	102	77 - 119	4	30		
Dichlorobromomethane	100	102	78 - 127	1	30		
Bromomethane	79	82	12 - 184	5	50		
Carbon disulfide	114	114	55 - 131	0	30		
Chlorobenzene	91	96	85 - 116	5	30		
Chlorodibromomethane	96	98	75 - 133	2	30		
Chloroethane	112	127	40 - 165	13	50		
Chloromethane	101	100	48 - 142	1	50		
Chloroform	104	107	82 - 120	3	30		
1,2-Dibromo-3-Chloropropane	86	87	49 - 140	2	30		
Ethylene Dibromide	95	99	80 - 121	4	30		
Dichlorodifluoromethane	117	119	34 - 154	2	30		
1,1-Dichloroethane	109	110	74 - 127	1	30		
1,2-Dichloroethane	96	96	66 - 132	0	30		
trans-1,2-Dichloroethene	106	108	72 - 131	2	30		
1,1-Dichloroethene	116	116	62 - 141	0	30		
Methylene Chloride	112	112	70 - 125	0	30		
1,2-Dichloropropane	99	105	73 - 124	6	30		
cis-1,3-Dichloropropene	102	106	76 - 126	4	30		
trans-1,3-Dichloropropene	100	103	73 - 128	4	30		
Ethylbenzene	96	100	86 - 116	4	30		
2-Butanone (MEK)	92	92	33 - 157	0	30		
4-Methyl-2-pentanone (MIBK)	89	90	40 - 151	1	30		
Styrene	94	97	82 - 122	4	30		
1,1,1,2-Tetrachloroethane	97	101	81 - 128	4	30		
1,1,2,2-Tetrachloroethane	84	87	69 - 129	4	30		
Tetrachloroethene	91	96	76 - 126	5	30		
Carbon tetrachloride	103	106	71 - 135	3	30		
Toluene	101	105	81 - 117	4	30		
Bromoform	97	96	62 - 133	1	30		
1,1,2-Trichloroethane	93	99	75 - 121	6	30		
1,1,1-Trichloroethane	102	104	76 - 127	2	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-171848

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-171848/11	Analysis Batch:	680-171848	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq067.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 1011			Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 1011				

LCSD Lab Sample ID:	LCSD 680-171848/12	Analysis Batch:	680-171848	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq069.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/17/2010 1039			Final Weight/Volume:	5 mL
Date Prepared:	06/17/2010 1039				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Trichloroethene	99	101	84 - 115	2	30		
Trichlorofluoromethane	103	103	58 - 149	0	50		
1,2,3-Trichloropropane	88	89	70 - 130	1	30		
Vinyl acetate	112	110	10 - 217	2	30		
Vinyl chloride	98	101	59 - 144	3	50		
Xylenes, Total	94	98	84 - 118	4	30		
2-Hexanone	83	86	34 - 161	3	30		
Chlorobromomethane	98	104	10 - 150	6	30		
cis-1,2-Dichloroethene	105	105	69 - 134	0	30		
1,3-Dichloropropane	94	95	75 - 120	1	30		
2,2-Dichloropropane	117	117	55 - 157	1	30		
1,1-Dichloropropene	98	103	77 - 122	5	30		
1,2-Dichlorobenzene	90	93	79 - 124	3	30		
1,3-Dichlorobenzene	93	97	78 - 125	4	30		
1,4-Dichlorobenzene	91	96	81 - 122	5	30		
1,2,4-Trichlorobenzene	93	98	60 - 135	5	30		
Dibromomethane	93	98	78 - 119	5	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	101	105	75 - 120
4-Bromofluorobenzene	93	97	75 - 120
Dibromofluoromethane	104	107	75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Method Blank - Batch: 680-171734

Method: 6020A
Preparation: 3030C

Lab Sample ID: MB 680-171734/3-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/16/2010 1832
Date Prepared: 06/16/2010 1444

Analysis Batch: 680-171803
Prep Batch: 680-171734
Units: ug/L

Instrument ID: ICPMSA
Lab File ID: 061710.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.40	U	0.40	1.0
Barium	0.15	U	0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.210	J	0.16	1.0
Cobalt	0.078	U	0.078	0.20
Copper	0.249	J	0.21	1.0
Iron	20	U	20	50
Lead	0.080	U	0.080	0.30
Manganese	0.84	U	0.84	2.0
Nickel	0.40	U	0.40	1.0
Selenium	0.21	U	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	2.6	U	2.6	10

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Lab Control Sample - Batch: 680-171734

Method: 6020A
Preparation: 3030C

Lab Sample ID: LCS 680-171734/4-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/16/2010 1839
Date Prepared: 06/16/2010 1444

Analysis Batch: 680-171803
Prep Batch: 680-171734
Units: ug/L

Instrument ID: ICPMSA
Lab File ID: 061710.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	10.0	10.7	107	75 - 125	
Arsenic	20.0	17.8	89	75 - 125	
Barium	20.0	19.7	99	75 - 125	
Beryllium	10.0	9.97	100	75 - 125	
Cadmium	10.0	9.82	98	75 - 125	
Chromium	20.0	18.4	92	75 - 125	
Cobalt	10.0	8.38	84	75 - 125	
Copper	20.0	19.0	95	75 - 125	
Iron	1000	989	99	75 - 125	
Lead	10.0	9.50	95	75 - 125	
Manganese	100	89.4	89	75 - 125	
Nickel	20.0	18.7	93	75 - 125	
Selenium	20.0	18.0	90	75 - 125	
Silver	10.0	9.84	98	75 - 125	
Thallium	8.00	7.53	94	75 - 125	
Tin	20.0	19.5	97	75 - 125	
Vanadium	20.0	18.2	91	75 - 125	
Zinc	20.0	17.9	89	75 - 125	

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-171734

Method: 6020A
Preparation: 3030C

MS Lab Sample ID:	680-58599-1	Analysis Batch:	680-171803	Instrument ID:	ICPMSA
Client Matrix:	Water	Prep Batch:	680-171734	Lab File ID:	061710.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/16/2010 2036			Final Weight/Volume:	50 mL
Date Prepared:	06/16/2010 1444				

MSD Lab Sample ID:	680-58599-1	Analysis Batch:	680-171803	Instrument ID:	ICPMSA
Client Matrix:	Water	Prep Batch:	680-171734	Lab File ID:	061710.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/16/2010 2043			Final Weight/Volume:	50 mL
Date Prepared:	06/16/2010 1444				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Antimony	107	107	75 - 125	0	20		
Arsenic	95	91	75 - 125	4	20		
Barium	101	102	75 - 125	1	20		
Beryllium	103	104	75 - 125	1	20		
Cadmium	101	102	75 - 125	0	20		
Chromium	99	96	75 - 125	3	20		
Cobalt	90	87	75 - 125	4	20		
Copper	99	95	75 - 125	4	20		
Iron	102	102	75 - 125	0	20		
Lead	98	99	75 - 125	1	20		
Manganese	98	94	75 - 125	4	20		
Nickel	98	95	75 - 125	3	20		
Selenium	95	91	75 - 125	4	20		
Silver	100	100	75 - 125	0	20		
Thallium	98	96	75 - 125	2	20		
Tin	101	100	75 - 125	1	20		
Vanadium	98	94	75 - 125	4	20		
Zinc	87	82	75 - 125	3	20		

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Method Blank - Batch: 680-172235

Method: 7470A
Preparation: 7470A

Lab Sample ID:	MB 680-172235/23-A	Analysis Batch:	680-172629	Instrument ID:	LEEMAN1
Client Matrix:	Water	Prep Batch:	680-172235	Lab File ID:	b062410.chr
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	50 mL
Date Analyzed:	06/24/2010 1547			Final Weight/Volume:	50 mL
Date Prepared:	06/22/2010 1453				

Analyte	Result	Qual	MDL	RL
Mercury	0.091	U	0.091	0.20

Lab Control Sample - Batch: 680-172235

Method: 7470A
Preparation: 7470A

Lab Sample ID:	LCS 680-172235/24-A	Analysis Batch:	680-172629	Instrument ID:	LEEMAN1
Client Matrix:	Water	Prep Batch:	680-172235	Lab File ID:	b062410.chr
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	50 mL
Date Analyzed:	06/24/2010 1550			Final Weight/Volume:	50 mL
Date Prepared:	06/22/2010 1453				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	2.50	2.55	102	80 - 120	

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Method Blank - Batch: 680-172250

Method: 300.0
Preparation: N/A

Lab Sample ID: MB 680-172250/2
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 06/16/2010 1312
Date Prepared: N/A

Analysis Batch: 680-172250
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0005.d
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Nitrate as NO3	0.36	U	0.36	1.1

Lab Control Sample - Batch: 680-172250

Method: 300.0
Preparation: N/A

Lab Sample ID: LCS 680-172250/3
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 06/16/2010 1325
Date Prepared: N/A

Analysis Batch: 680-172250
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0006.d
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 5 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as NO3	11.0	10.6	96	90 - 110	

Matrix Spike - Batch: 680-172250

Method: 300.0
Preparation: N/A

Lab Sample ID: 680-58599-3
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 06/16/2010 1414
Date Prepared: N/A

Analysis Batch: 680-172250
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0010.d
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 5 mL
1 uL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as NO3	3.7	22.1	26.6	104	90 - 110	

Serial Number 030367

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

◯ TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

◯ Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: Ft Bragg Lamont	PROJECT NO.: 0008	PROJECT LOCATION (STATE): NC	PAGE / OF
TAL (LAB) PROJECT MANAGER: Kathy Smith	P.O. NUMBER: W912HN-10-1-01	CONTRACT NO.	STANDARD REPORT DELIVERY ◯
CLIENT (SITE) PM: Kevin Haborak	CLIENT PHONE: 912 652-6083	CLIENT FAX	DATE DUE _____
CLIENT NAME: USACE	CLIENT E-MAIL		EXPEDITED REPORT DELIVERY (SURCHARGE) ◯
CLIENT ADDRESS: 100 W. oglethorpe			DATE DUE _____
COMPANY CONTRACTING THIS WORK (if applicable)			NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS: 8260B VOC; Metals, Fe, Mn; Nitrate

PRESERVATIVE: Ice; HNO3; Ice

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	8260B VOC	Metals, Fe, Mn	Nitrate	REMARKS
15 June 2010	0957	LMW-4-6-10	3	1	1	
		Trip Blank	2			
15 June 2010	1310	LMW-10-6-10	3	1	1	

NUMBER OF CONTAINERS SUBMITTED

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	15 June 2010	1705	Stephanie Tidex					
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	6/16/10	0927	YES ◯ NO ◯		680-58549	0.6

TAL8240-680 (1207)

Login Sample Receipt Check List

Client: U.S. Army Corps of Engineers

Job Number: 680-58599-1

Login Number: 58599

List Source: TestAmerica Savannah

Creator: Conner, Keaton

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.	True	
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	
Is the Field Sampler's name present on COC?	N/A	
Sample Preservation Verified	True	

ANALYTICAL REPORT

Job Number: 680-58643-1

Job Description: Ft. Bragg Lamont Landfill

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

Attention: Mr. Kevin Haborak

Approved for release.
Kathryn Smith
Project Manager I
6/30/2010 3:16 PM

Kathryn Smith
Project Manager I
kathye.smith@testamericainc.com
06/30/2010

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

Comments
No additional comments.

Receipt
All 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.

General Chemistry
No analytical or quality issues were noted.

VOA Prep
No analytical or quality issues were noted.

METHOD SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Description	Lab Location	Method	Preparation Method
Matrix Water			
Volatile Organic Compounds (GC/MS)	TAL SAV	SW846 8260B	
Purge and Trap	TAL SAV		SW846 5030B
Metals (ICP/MS)	TAL SAV	SW846 6020A	
Preparation, Extractable Metals	TAL SAV		SM 3030C
Mercury (CVAA)	TAL SAV	SW846 7470A	
Preparation, Mercury	TAL SAV		SW846 7470A
Anions, Ion Chromatography	TAL SAV	MCAWW 300.0	

Lab References:

TAL SAV = TestAmerica Savannah

Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Method	Analyst	Analyst ID
SW846 8260B	Bearden, Robert	RB
SW846 6020A	Robertson, Bryn	BR
SW846 7470A	Eaton, Cliff	CE
MCAWW 300.0	Brazell, Connie	CB

SAMPLE SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-58643-1	LMW-9-6-10	Water	06/16/2010 1300	06/17/2010 0917
680-58643-2	LMW-9S-6-10	Water	06/16/2010 1455	06/17/2010 0917
680-58643-3	LMW-9D-6-10	Water	06/16/2010 1640	06/17/2010 0917
680-58643-4TB	Trip Blank	Water	06/16/2010 0000	06/17/2010 0917
680-58643-5	LMW-Dup 2-6-10	Water	06/16/2010 1100	06/17/2010 0917

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Client Sample ID: **LMW-9-6-10**

Lab Sample ID: 680-58643-1

Client Matrix: Water

Date Sampled: 06/16/2010 1300

Date Received: 06/17/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2010 1700

Date Prepared: 06/18/2010 1700

Analysis Batch: 680-172098

Instrument ID: MSO

Lab File ID: o0159.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Client Sample ID: **LMW-9-6-10**

Lab Sample ID: 680-58643-1

Client Matrix: Water

Date Sampled: 06/16/2010 1300

Date Received: 06/17/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-172098	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0159.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/18/2010 1700		Final Weight/Volume:	5 mL
Date Prepared:	06/18/2010 1700			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	100		75 - 120
4-Bromofluorobenzene	95		75 - 120
Dibromofluoromethane	109		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Client Sample ID: **LMW-9S-6-10**

Lab Sample ID: 680-58643-2

Client Matrix: Water

Date Sampled: 06/16/2010 1455

Date Received: 06/17/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-172098	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0161.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/18/2010 1728		Final Weight/Volume:	5 mL
Date Prepared:	06/18/2010 1728			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Client Sample ID: **LMW-9S-6-10**

Lab Sample ID: 680-58643-2

Client Matrix: Water

Date Sampled: 06/16/2010 1455

Date Received: 06/17/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-172098	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0161.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/18/2010 1728		Final Weight/Volume:	5 mL
Date Prepared:	06/18/2010 1728			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	101		75 - 120
4-Bromofluorobenzene	97		75 - 120
Dibromofluoromethane	106		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Client Sample ID: **LMW-9D-6-10**

Lab Sample ID: 680-58643-3

Client Matrix: Water

Date Sampled: 06/16/2010 1640

Date Received: 06/17/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2010 1757

Date Prepared: 06/18/2010 1757

Analysis Batch: 680-172098

Instrument ID: MSO

Lab File ID: o0163.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Client Sample ID: **LMW-9D-6-10**

Lab Sample ID: 680-58643-3

Client Matrix: Water

Date Sampled: 06/16/2010 1640

Date Received: 06/17/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-172098	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0163.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/18/2010 1757		Final Weight/Volume:	5 mL
Date Prepared:	06/18/2010 1757			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	101		75 - 120
4-Bromofluorobenzene	93		75 - 120
Dibromofluoromethane	107		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-58643-4TB

Client Matrix: Water

Date Sampled: 06/16/2010 0000

Date Received: 06/17/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-172098	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0157.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/18/2010 1631		Final Weight/Volume:	5 mL
Date Prepared:	06/18/2010 1631			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-58643-4TB

Client Matrix: Water

Date Sampled: 06/16/2010 0000

Date Received: 06/17/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-172098	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0157.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/18/2010 1631		Final Weight/Volume:	5 mL
Date Prepared:	06/18/2010 1631			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	101		75 - 120
4-Bromofluorobenzene	95		75 - 120
Dibromofluoromethane	106		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Client Sample ID: **LMW-Dup 2-6-10**

Lab Sample ID: 680-58643-5

Client Matrix: Water

Date Sampled: 06/16/2010 1100

Date Received: 06/17/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/18/2010 1826

Date Prepared: 06/18/2010 1826

Analysis Batch: 680-172098

Instrument ID: MSO

Lab File ID: o0165.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Client Sample ID: **LMW-Dup 2-6-10**

Lab Sample ID: 680-58643-5

Client Matrix: Water

Date Sampled: 06/16/2010 1100

Date Received: 06/17/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-172098	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0165.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/18/2010 1826		Final Weight/Volume:	5 mL
Date Prepared:	06/18/2010 1826			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	101		75 - 120
4-Bromofluorobenzene	96		75 - 120
Dibromofluoromethane	109		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Client Sample ID: **LMW-9-6-10**

Lab Sample ID: 680-58643-1

Client Matrix: Water

Date Sampled: 06/16/2010 1300

Date Received: 06/17/2010 0917

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-172176		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171906		Lab File ID:	171906171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/19/2010 0236			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1055				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	0.58	J	0.40	1.0
Barium	2.8		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.44	J	0.16	1.0
Cobalt	0.13	J	0.078	0.20
Copper	2.4		0.21	1.0
Iron	200		20	50
Lead	0.16	J	0.080	0.30
Manganese	1.4	J	0.84	2.0
Nickel	0.40	U	0.40	1.0
Selenium	0.21	U	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	4.4	J	2.6	10

Method:	6020A	Analysis Batch: 680-172169		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171906		Lab File ID:	171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/21/2010 2154			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1055				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-172629		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-172235		Lab File ID:	b062410.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/24/2010 1635			Final Weight/Volume:	50 mL
Date Prepared:	06/22/2010 1453				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.091	U	0.091	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Client Sample ID: **LMW-9S-6-10**

Lab Sample ID: 680-58643-2

Client Matrix: Water

Date Sampled: 06/16/2010 1455

Date Received: 06/17/2010 0917

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-172176		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171906		Lab File ID:	171906171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/19/2010 0312			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1055				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	0.57	J	0.40	1.0
Barium	38		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.58	J	0.16	1.0
Cobalt	0.16	J	0.078	0.20
Copper	1.7		0.21	1.0
Iron	360		20	50
Lead	0.11	J	0.080	0.30
Manganese	13		0.84	2.0
Nickel	0.40	U	0.40	1.0
Selenium	0.21	U	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	3.5	J	2.6	10

Method:	6020A	Analysis Batch: 680-172169		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171906		Lab File ID:	171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/21/2010 2231			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1055				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-172897		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-172752		Lab File ID:	b062910.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/29/2010 1044			Final Weight/Volume:	50 mL
Date Prepared:	06/28/2010 1112				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.22		0.091	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Client Sample ID: **LMW-9D-6-10**

Lab Sample ID: 680-58643-3

Client Matrix: Water

Date Sampled: 06/16/2010 1640

Date Received: 06/17/2010 0917

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-172176		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171906		Lab File ID:	171906171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/19/2010 0319			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1055				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	1.8		0.40	1.0
Barium	2.1		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.50	J	0.16	1.0
Cobalt	0.078	U	0.078	0.20
Copper	0.90	J	0.21	1.0
Iron	150		20	50
Lead	0.23	J	0.080	0.30
Manganese	1.5	J	0.84	2.0
Nickel	0.53	J	0.40	1.0
Selenium	0.21	U	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.8	J	1.4	5.0
Zinc	5.6	J	2.6	10

Method:	6020A	Analysis Batch: 680-172169		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171906		Lab File ID:	171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/21/2010 2238			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1055				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-172629		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-172235		Lab File ID:	b062410.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/24/2010 1637			Final Weight/Volume:	50 mL
Date Prepared:	06/22/2010 1453				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.091	U	0.091	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Client Sample ID: **LMW-Dup 2-6-10**

Lab Sample ID: 680-58643-5

Client Matrix: Water

Date Sampled: 06/16/2010 1100

Date Received: 06/17/2010 0917

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-172176		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171906		Lab File ID:	171906171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/19/2010 0327			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1055				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	0.40	U	0.40	1.0
Barium	2.8		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.31	J	0.16	1.0
Cobalt	0.11	J	0.078	0.20
Copper	2.4		0.21	1.0
Iron	100		20	50
Lead	0.13	J	0.080	0.30
Manganese	1.2	J	0.84	2.0
Nickel	0.44	J	0.40	1.0
Selenium	0.21	U	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	3.6	J	2.6	10

Method:	6020A	Analysis Batch: 680-172169		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171906		Lab File ID:	171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/21/2010 2245			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1055				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-172629		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-172235		Lab File ID:	b062410.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/24/2010 1640			Final Weight/Volume:	50 mL
Date Prepared:	06/22/2010 1453				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.091	U	0.091	0.20

General Chemistry

Client Sample ID: **LMW-9-6-10**

Lab Sample ID: 680-58643-1

Client Matrix: Water

Date Sampled: 06/16/2010 1300

Date Received: 06/17/2010 0917

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.45	J	mg/L	0.36	1.1	5.0	300.0

Analysis Batch: 680-172472 Date Analyzed: 06/17/2010 1324

General Chemistry

Client Sample ID: **LMW-9S-6-10**

Lab Sample ID: 680-58643-2

Client Matrix: Water

Date Sampled: 06/16/2010 1455

Date Received: 06/17/2010 0917

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.60	J	mg/L	0.36	1.1	5.0	300.0

Analysis Batch: 680-172472 Date Analyzed: 06/17/2010 1337

General Chemistry

Client Sample ID: **LMW-9D-6-10**

Lab Sample ID: 680-58643-3

Client Matrix: Water

Date Sampled: 06/16/2010 1640

Date Received: 06/17/2010 0917

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.58	J	mg/L	0.36	1.1	5.0	300.0

Analysis Batch: 680-172472 Date Analyzed: 06/17/2010 1349

General Chemistry

Client Sample ID: **LMW-Dup 2-6-10**

Lab Sample ID: 680-58643-5

Client Matrix: Water

Date Sampled: 06/16/2010 1100

Date Received: 06/17/2010 0917

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.39	J	mg/L	0.36	1.1	5.0	300.0

Analysis Batch: 680-172472 Date Analyzed: 06/17/2010 1402

DATA REPORTING QUALIFIERS

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

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

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Method Blank - Batch: 680-172098

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-172098/9	Analysis Batch:	680-172098	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq091.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/18/2010 1155			Final Weight/Volume:	5 mL
Date Prepared:	06/18/2010 1155				

Analyte	Result	Qual	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.0
Vinyl acetate	0.28	U	0.28	2.0
Vinyl chloride	0.18	U	0.18	1.0

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Method Blank - Batch: 680-172098

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-172098/9	Analysis Batch:	680-172098	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq091.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/18/2010 1155			Final Weight/Volume:	5 mL
Date Prepared:	06/18/2010 1155				

Analyte	Result	Qual	MDL	RL
Xylenes, Total	0.20	U	0.20	2.0
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	% Rec	Acceptance Limits
Toluene-d8 (Surr)	101	75 - 120
4-Bromofluorobenzene	97	75 - 120
Dibromofluoromethane	108	75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-172098

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID: LCS 680-172098/6
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2010 0958
Date Prepared: 06/18/2010 0958

Analysis Batch: 680-172098
Prep Batch: N/A
Units: ug/L

Instrument ID: MSO
Lab File ID: oq083.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

LCSD Lab Sample ID: LCSD 680-172098/7
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/18/2010 1029
Date Prepared: 06/18/2010 1029

Analysis Batch: 680-172098
Prep Batch: N/A
Units: ug/L

Instrument ID: MSO
Lab File ID: oq085.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Acetone	108	105	17 - 175	2	50		
Benzene	100	101	77 - 119	1	30		
Dichlorobromomethane	102	102	78 - 127	0	30		
Bromomethane	81	83	12 - 184	3	50		
Carbon disulfide	119	116	55 - 131	3	30		
Chlorobenzene	92	103	85 - 116	12	30		
Chlorodibromomethane	94	104	75 - 133	10	30		
Chloroethane	150	147	40 - 165	2	50		
Chloromethane	100	93	48 - 142	7	50		
Chloroform	111	106	82 - 120	4	30		
1,2-Dibromo-3-Chloropropane	84	93	49 - 140	10	30		
Ethylene Dibromide	101	102	80 - 121	1	30		
Dichlorodifluoromethane	119	116	34 - 154	3	30		
1,1-Dichloroethane	113	109	74 - 127	3	30		
1,2-Dichloroethane	96	94	66 - 132	2	30		
trans-1,2-Dichloroethene	110	107	72 - 131	3	30		
1,1-Dichloroethene	113	109	62 - 141	4	30		
Methylene Chloride	116	112	70 - 125	4	30		
1,2-Dichloropropane	101	103	73 - 124	2	30		
cis-1,3-Dichloropropene	105	107	76 - 126	2	30		
trans-1,3-Dichloropropene	102	105	73 - 128	3	30		
Ethylbenzene	96	107	86 - 116	11	30		
2-Butanone (MEK)	93	93	33 - 157	0	30		
4-Methyl-2-pentanone (MIBK)	89	93	40 - 151	5	30		
Styrene	94	104	82 - 122	11	30		
1,1,1,2-Tetrachloroethane	96	106	81 - 128	10	30		
1,1,2,2-Tetrachloroethane	84	98	69 - 129	15	30		
Tetrachloroethene	91	101	76 - 126	11	30		
Carbon tetrachloride	102	103	71 - 135	1	30		
Toluene	105	104	81 - 117	1	30		
Bromoform	93	104	62 - 133	11	30		
1,1,2-Trichloroethane	94	98	75 - 121	4	30		
1,1,1-Trichloroethane	101	102	76 - 127	1	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-172098

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-172098/6	Analysis Batch:	680-172098	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq083.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/18/2010 0958			Final Weight/Volume:	5 mL
Date Prepared:	06/18/2010 0958				

LCSD Lab Sample ID:	LCSD 680-172098/7	Analysis Batch:	680-172098	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq085.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/18/2010 1029			Final Weight/Volume:	5 mL
Date Prepared:	06/18/2010 1029				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Trichloroethene	99	99	84 - 115	1	30		
Trichlorofluoromethane	102	100	58 - 149	2	50		
1,2,3-Trichloropropane	88	99	70 - 130	11	30		
Vinyl acetate	115	116	10 - 217	1	30		
Vinyl chloride	101	95	59 - 144	6	50		
Xylenes, Total	93	105	84 - 118	12	30		
2-Hexanone	79	90	34 - 161	13	30		
Chlorobromomethane	106	101	10 - 150	4	30		
cis-1,2-Dichloroethene	111	105	69 - 134	6	30		
1,3-Dichloropropane	97	98	75 - 120	1	30		
2,2-Dichloropropane	122	120	55 - 157	2	30		
1,1-Dichloropropene	100	101	77 - 122	1	30		
1,2-Dichlorobenzene	90	104	79 - 124	15	30		
1,3-Dichlorobenzene	93	106	78 - 125	13	30		
1,4-Dichlorobenzene	93	106	81 - 122	14	30		
1,2,4-Trichlorobenzene	96	109	60 - 135	13	30		
Dibromomethane	95	99	78 - 119	3	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	103	103	75 - 120
4-Bromofluorobenzene	94	106	75 - 120
Dibromofluoromethane	110	107	75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Method Blank - Batch: 680-171906

Method: 6020A
Preparation: 3030C

Lab Sample ID: MB 680-171906/5-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/19/2010 0221
Date Prepared: 06/18/2010 1055

Analysis Batch: 680-172176
Prep Batch: 680-171906
Units: ug/L

Instrument ID: ICPMSA
Lab File ID: 171906171906.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Arsenic	0.40	U	0.40	1.0
Barium	0.15	U	0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.16	U	0.16	1.0
Cobalt	0.078	U	0.078	0.20
Copper	0.21	U	0.21	1.0
Iron	20	U	20	50
Lead	0.080	U	0.080	0.30
Manganese	0.84	U	0.84	2.0
Nickel	0.40	U	0.40	1.0
Selenium	0.21	U	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	2.6	U	2.6	10

Method Blank - Batch: 680-171906

Method: 6020A
Preparation: 3030C

Lab Sample ID: MB 680-171906/5-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/21/2010 2139
Date Prepared: 06/18/2010 1055

Analysis Batch: 680-172169
Prep Batch: 680-171906
Units: ug/L

Instrument ID: ICPMSA
Lab File ID: 171906.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Antimony	0.99	U	0.99	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Lab Control Sample - Batch: 680-171906

Method: 6020A
Preparation: 3030C

Lab Sample ID: LCS 680-171906/6-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/19/2010 0228
Date Prepared: 06/18/2010 1055

Analysis Batch: 680-172176
Prep Batch: 680-171906
Units: ug/L

Instrument ID: ICPMSA
Lab File ID: 171906171906.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	20.0	19.9	100	75 - 125	
Barium	20.0	19.8	99	75 - 125	
Beryllium	10.0	9.84	98	75 - 125	
Cadmium	10.0	10.1	101	75 - 125	
Chromium	20.0	20.2	101	75 - 125	
Cobalt	10.0	9.70	97	75 - 125	
Copper	20.0	20.9	105	75 - 125	
Iron	1000	1010	101	75 - 125	
Lead	10.0	9.73	97	75 - 125	
Manganese	100	104	104	75 - 125	
Nickel	20.0	20.5	103	75 - 125	
Selenium	20.0	19.6	98	75 - 125	
Silver	10.0	9.85	98	75 - 125	
Thallium	8.00	7.81	98	75 - 125	
Tin	20.0	19.8	99	75 - 125	
Vanadium	20.0	19.8	99	75 - 125	
Zinc	20.0	21.1	105	75 - 125	

Lab Control Sample - Batch: 680-171906

Method: 6020A
Preparation: 3030C

Lab Sample ID: LCS 680-171906/6-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/21/2010 2147
Date Prepared: 06/18/2010 1055

Analysis Batch: 680-172169
Prep Batch: 680-171906
Units: ug/L

Instrument ID: ICPMSA
Lab File ID: 171906.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	10.0	10.9	109	75 - 125	

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-171906

Method: 6020A
Preparation: 3030C

MS Lab Sample ID:	680-58643-1	Analysis Batch:	680-172176	Instrument ID:	ICPMSA
Client Matrix:	Water	Prep Batch:	680-171906	Lab File ID:	171906171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/19/2010 0258			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1055				

MSD Lab Sample ID:	680-58643-1	Analysis Batch:	680-172176	Instrument ID:	ICPMSA
Client Matrix:	Water	Prep Batch:	680-171906	Lab File ID:	171906171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/19/2010 0305			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1055				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Arsenic	101	101	75 - 125	1	20		
Barium	100	97	75 - 125	3	20		
Beryllium	103	100	75 - 125	3	20		
Cadmium	102	102	75 - 125	0	20		
Chromium	101	98	75 - 125	3	20		
Cobalt	93	92	75 - 125	1	20		
Copper	110	104	75 - 125	6	20		
Iron	106	108	75 - 125	2	20		
Lead	99	96	75 - 125	2	20		
Manganese	100	99	75 - 125	2	20		
Nickel	106	103	75 - 125	3	20		
Selenium	101	104	75 - 125	3	20		
Silver	98	96	75 - 125	3	20		
Thallium	98	97	75 - 125	2	20		
Tin	100	98	75 - 125	2	20		
Vanadium	104	101	75 - 125	3	20		
Zinc	103	105	75 - 125	2	20		

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-171906

Method: 6020A
Preparation: 3030C

MS Lab Sample ID:	680-58643-1	Analysis Batch:	680-172169	Instrument ID:	ICPMSA
Client Matrix:	Water	Prep Batch:	680-171906	Lab File ID:	171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/21/2010 2216			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1055				

MSD Lab Sample ID:	680-58643-1	Analysis Batch:	680-172169	Instrument ID:	ICPMSA
Client Matrix:	Water	Prep Batch:	680-171906	Lab File ID:	171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/21/2010 2223			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1055				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Antimony	111	109	75 - 125	1	20		

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Method Blank - Batch: 680-172235

Method: 7470A
Preparation: 7470A

Lab Sample ID: MB 680-172235/23-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/24/2010 1547
Date Prepared: 06/22/2010 1453

Analysis Batch: 680-172629
Prep Batch: 680-172235
Units: ug/L

Instrument ID: LEEMAN1
Lab File ID: b062410.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Mercury	0.091	U	0.091	0.20

Lab Control Sample - Batch: 680-172235

Method: 7470A
Preparation: 7470A

Lab Sample ID: LCS 680-172235/24-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/24/2010 1550
Date Prepared: 06/22/2010 1453

Analysis Batch: 680-172629
Prep Batch: 680-172235
Units: ug/L

Instrument ID: LEEMAN1
Lab File ID: b062410.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	2.50	2.55	102	80 - 120	

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Method Blank - Batch: 680-172752

Method: 7470A
Preparation: 7470A

Lab Sample ID:	MB 680-172752/25-A	Analysis Batch:	680-172897	Instrument ID:	LEEMAN1
Client Matrix:	Water	Prep Batch:	680-172752	Lab File ID:	b062910.chr
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	50 mL
Date Analyzed:	06/29/2010 1035			Final Weight/Volume:	50 mL
Date Prepared:	06/28/2010 1132				

Analyte	Result	Qual	MDL	RL
Mercury	0.091	U	0.091	0.20

Lab Control Sample - Batch: 680-172752

Method: 7470A
Preparation: 7470A

Lab Sample ID:	LCS 680-172752/26-A	Analysis Batch:	680-172897	Instrument ID:	LEEMAN1
Client Matrix:	Water	Prep Batch:	680-172752	Lab File ID:	b062910.chr
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	50 mL
Date Analyzed:	06/29/2010 1038			Final Weight/Volume:	50 mL
Date Prepared:	06/28/2010 1132				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	2.50	2.42	97	80 - 120	

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Method Blank - Batch: 680-172472

Method: 300.0
Preparation: N/A

Lab Sample ID: MB 680-172472/2
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 06/17/2010 1222
Date Prepared: N/A

Analysis Batch: 680-172472
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0005.d
Initial Weight/Volume: 1 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Nitrate as NO3	0.36	U M	0.36	1.1

Lab Control Sample - Batch: 680-172472

Method: 300.0
Preparation: N/A

Lab Sample ID: LCS 680-172472/3
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 06/17/2010 1235
Date Prepared: N/A

Analysis Batch: 680-172472
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0006.d
Initial Weight/Volume: 1 mL
Final Weight/Volume: 5 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as NO3	11.0	10.9	99	90 - 110	

Matrix Spike - Batch: 680-172472

Method: 300.0
Preparation: N/A

Lab Sample ID: 680-58643-5
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 06/17/2010 1414
Date Prepared: N/A

Analysis Batch: 680-172472
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0014.d
Initial Weight/Volume: 1 mL
Final Weight/Volume: 5 mL
1 uL

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as NO3	0.39	J	22.1	23.1	103	90 - 110	

Serial Number 027567

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: Ft Bragg Lamont	PROJECT NO.: W912HN-10-1-2021	PROJECT LOCATION (STATE):
TAL (LAB) PROJECT MANAGER: Kathy Smith	P.O. NUMBER: 0008	CONTRACT NO.:
CLIENT (SITE) PM: ~~Kathy Smith~~ J. R. Habrak	CLIENT PHONE: 912 652 6083	CLIENT FAX:
CLIENT NAME: JOINT ACE	CLIENT E-MAIL:	
CLIENT ADDRESS: 100 West Oglethorpe Ave, Savannah, GA 31402		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE ___ OF ___

STANDARD REPORT DELIVERY ◯

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: 8260B	8260C VOC	Metals Hg	Nitrate	NUMBER OF CONTAINERS SUBMITTED			REMARKS
								PRESERVATIVE: ICE	HNO3	ICE					
16 JUNE 2010	1300	LMW-9-6-10	G	W								3	1	1	
16 JUNE 2010	1455	LMW-95-6-10	G	W								3	1	1	
16 JUNE 2010	1640	LMW-99-6-10 GKC 6/17/10	G	W								3	1	1	
		Trip Blank		W								2			
16 JUNE 2010	1100	LMW-Dup 2-6-10	G	W								3	1	1	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	16 JUNE	1810	Shipped by Fedex					
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	6/17/10	0917	YES ◯ NO ◯		680-58643	3.8°C

TAL8240-680 (1207)

Login Sample Receipt Check List

Client: U.S. Army Corps of Engineers

Job Number: 680-58643-1

Login Number: 58643

List Source: TestAmerica Savannah

Creator: Conner, Keaton

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.	False	-3 ID left off COC--filled in by custody
There are no discrepancies between the sample IDs on the containers and the COC.	True	
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	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified	True	

ANALYTICAL REPORT

Job Number: 680-58695-1

Job Description: Ft. Bragg Lamont Landfill

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

Attention: Mr. Kevin Haborak

Approved for release.
Kathryn Smith
Project Manager I
6/30/2010 3:16 PM

Kathryn Smith
Project Manager I
kathye.smith@testamericainc.com
06/30/2010

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

Comments
No additional comments.

Receipt
All 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.

General Chemistry
No analytical or quality issues were noted.

VOA Prep
No analytical or quality issues were noted.

METHOD SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Description	Lab Location	Method	Preparation Method
Matrix Water			
Volatile Organic Compounds (GC/MS)	TAL SAV	SW846 8260B	
Purge and Trap	TAL SAV		SW846 5030B
Metals (ICP/MS)	TAL SAV	SW846 6020A	
Preparation, Extractable Metals	TAL SAV		SM 3030C
Mercury (CVAA)	TAL SAV	SW846 7470A	
Preparation, Mercury	TAL SAV		SW846 7470A
Anions, Ion Chromatography	TAL SAV	MCAWW 300.0	

Lab References:

TAL SAV = TestAmerica Savannah

Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Method	Analyst	Analyst ID
SW846 8260B	Bearden, Robert	RB
SW846 6020A	Robertson, Bryn	BR
SW846 7470A	Eaton, Cliff	CE
MCAWW 300.0	Brazell, Connie	CB

SAMPLE SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-58695-1	LMW-8-6-10	Water	06/17/2010 0820	06/18/2010 0916
680-58695-2	LMW-6-6-10	Water	06/17/2010 1030	06/18/2010 0916
680-58695-3	LMW-Blk-6-10	Water	06/17/2010 1100	06/18/2010 0916
680-58695-4TB	Trip Blank	Water	06/17/2010 0000	06/18/2010 0916

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Client Sample ID: **LMW-8-6-10**

Lab Sample ID: 680-58695-1

Client Matrix: Water

Date Sampled: 06/17/2010 0820

Date Received: 06/18/2010 0916

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/21/2010 1904

Date Prepared: 06/21/2010 1904

Analysis Batch: 680-172179

Instrument ID: MSO2

Lab File ID: o0234.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.25	J	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.29	J	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Client Sample ID: **LMW-8-6-10**

Lab Sample ID: 680-58695-1

Client Matrix: Water

Date Sampled: 06/17/2010 0820

Date Received: 06/18/2010 0916

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Analysis Batch: 680-172179

Instrument ID: MSO2

Preparation: 5030B

Lab File ID: o0234.d

Dilution: 1.0

Initial Weight/Volume: 5 mL

Date Analyzed: 06/21/2010 1904

Final Weight/Volume: 5 mL

Date Prepared: 06/21/2010 1904

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	1.1		0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	99		75 - 120
4-Bromofluorobenzene	92		75 - 120
Dibromofluoromethane	103		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Client Sample ID: **LMW-6-6-10**

Lab Sample ID: 680-58695-2

Client Matrix: Water

Date Sampled: 06/17/2010 1030

Date Received: 06/18/2010 0916

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-172179	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0236.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/21/2010 1933		Final Weight/Volume:	5 mL
Date Prepared:	06/21/2010 1933			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.72	J	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Client Sample ID: **LMW-6-6-10**

Lab Sample ID: 680-58695-2

Client Matrix: Water

Date Sampled: 06/17/2010 1030

Date Received: 06/18/2010 0916

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-172179	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0236.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/21/2010 1933		Final Weight/Volume:	5 mL
Date Prepared:	06/21/2010 1933			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	100		75 - 120
4-Bromofluorobenzene	92		75 - 120
Dibromofluoromethane	105		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Client Sample ID: **LMW-Blk-6-10**

Lab Sample ID: 680-58695-3

Client Matrix: Water

Date Sampled: 06/17/2010 1100

Date Received: 06/18/2010 0916

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/21/2010 2001

Date Prepared: 06/21/2010 2001

Analysis Batch: 680-172179

Instrument ID: MSO2

Lab File ID: o0238.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.4	J	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Client Sample ID: **LMW-Blk-6-10**

Lab Sample ID: 680-58695-3

Client Matrix: Water

Date Sampled: 06/17/2010 1100

Date Received: 06/18/2010 0916

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-172179	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0238.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/21/2010 2001		Final Weight/Volume:	5 mL
Date Prepared:	06/21/2010 2001			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	98		75 - 120
4-Bromofluorobenzene	92		75 - 120
Dibromofluoromethane	102		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-58695-4TB

Client Matrix: Water

Date Sampled: 06/17/2010 0000

Date Received: 06/18/2010 0916

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 06/21/2010 1709

Date Prepared: 06/21/2010 1709

Analysis Batch: 680-172179

Instrument ID: MSO2

Lab File ID: o0226.d

Initial Weight/Volume: 5 mL

Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	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
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-58695-4TB

Client Matrix: Water

Date Sampled: 06/17/2010 0000

Date Received: 06/18/2010 0916

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-172179	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0226.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/21/2010 1709		Final Weight/Volume:	5 mL
Date Prepared:	06/21/2010 1709			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	102		75 - 120
4-Bromofluorobenzene	93		75 - 120
Dibromofluoromethane	104		75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Client Sample ID: **LMW-8-6-10**

Lab Sample ID: 680-58695-1

Client Matrix: Water

Date Sampled: 06/17/2010 0820

Date Received: 06/18/2010 0916

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-172176		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171906		Lab File ID:	171906171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/19/2010 0410			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1210				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	0.43	J	0.40	1.0
Barium	30		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.35	J	0.16	1.0
Cobalt	0.78		0.078	0.20
Copper	1.3		0.21	1.0
Iron	9400		20	50
Lead	0.080	U	0.080	0.30
Manganese	150		0.84	2.0
Nickel	0.69	J	0.40	1.0
Selenium	0.33	J	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	4.5	J	2.6	10

Method:	6020A	Analysis Batch: 680-172169		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171906		Lab File ID:	171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/21/2010 2329			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1210				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-172629		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-172235		Lab File ID:	b062410.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/24/2010 1701			Final Weight/Volume:	50 mL
Date Prepared:	06/22/2010 1453				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.18	J	0.091	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Client Sample ID: **LMW-6-6-10**

Lab Sample ID: 680-58695-2

Client Matrix: Water

Date Sampled: 06/17/2010 1030

Date Received: 06/18/2010 0916

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-172176		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171906		Lab File ID:	171906171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/19/2010 0418			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1210				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	0.46	J	0.40	1.0
Barium	77		0.15	1.0
Beryllium	0.13	J	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.57	J	0.16	1.0
Cobalt	1.2		0.078	0.20
Copper	3.0		0.21	1.0
Iron	52		20	50
Lead	0.14	J	0.080	0.30
Manganese	5.6		0.84	2.0
Nickel	1.9		0.40	1.0
Selenium	3.2		0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	11		2.6	10

Method:	6020A	Analysis Batch: 680-172169		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171906		Lab File ID:	171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/21/2010 2337			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1210				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-172629		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-172235		Lab File ID:	b062410.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/24/2010 1704			Final Weight/Volume:	50 mL
Date Prepared:	06/22/2010 1453				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.091	U	0.091	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Client Sample ID: **LMW-Blk-6-10**

Lab Sample ID: 680-58695-3

Client Matrix: Water

Date Sampled: 06/17/2010 1100

Date Received: 06/18/2010 0916

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-172176		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171906		Lab File ID:	171906171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/19/2010 0425			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1210				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	0.40	U	0.40	1.0
Barium	0.31	J	0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.23	J	0.16	1.0
Cobalt	0.078	U	0.078	0.20
Copper	2.2		0.21	1.0
Iron	20	U	20	50
Lead	0.11	J	0.080	0.30
Manganese	0.84	U	0.84	2.0
Nickel	0.40	U	0.40	1.0
Selenium	0.21	U	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	4.7	J	2.6	10

Method:	6020A	Analysis Batch: 680-172169		Instrument ID:	ICPMSA
Preparation:	3030C	Prep Batch: 680-171906		Lab File ID:	171906.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/21/2010 2344			Final Weight/Volume:	50 mL
Date Prepared:	06/18/2010 1210				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-172629		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-172235		Lab File ID:	b062410.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	06/24/2010 1707			Final Weight/Volume:	50 mL
Date Prepared:	06/22/2010 1453				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.091	U	0.091	0.20

General Chemistry

Client Sample ID: **LMW-8-6-10**

Lab Sample ID: 680-58695-1

Client Matrix: Water

Date Sampled: 06/17/2010 0820

Date Received: 06/18/2010 0916

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.45	J	mg/L	0.36	1.1	5.0	300.0

Analysis Batch: 680-172461 Date Analyzed: 06/18/2010 2020

General Chemistry

Client Sample ID: **LMW-6-6-10**

Lab Sample ID: 680-58695-2

Client Matrix: Water

Date Sampled: 06/17/2010 1030

Date Received: 06/18/2010 0916

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	8.8		mg/L	0.36	1.1	5.0	300.0

Analysis Batch: 680-172461 Date Analyzed: 06/18/2010 2045

General Chemistry

Client Sample ID: **LMW-Blk-6-10**

Lab Sample ID: 680-58695-3

Client Matrix: Water

Date Sampled: 06/17/2010 1100

Date Received: 06/18/2010 0916

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.36	U M	mg/L	0.36	1.1	5.0	300.0

Analysis Batch: 680-172461 Date Analyzed: 06/18/2010 2109

DATA REPORTING QUALIFIERS

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

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.
General Chemistry		
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	M	Manual integrated compound.
	U	Undetected at the Limit of Detection.

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Method Blank - Batch: 680-172179

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-172179/23
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/21/2010 1203
Date Prepared: 06/21/2010 1203

Analysis Batch: 680-172179
Prep Batch: N/A
Units: ug/L

Instrument ID: MSO2
Lab File ID: oq134.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.0	U	5.0	25
Benzene	0.25	U	0.25	1.0
Dichlorobromomethane	0.25	U	0.25	1.0
Bromomethane	0.80	U	0.80	1.0
Carbon disulfide	0.60	U	0.60	2.0
Chlorobenzene	0.25	U	0.25	1.0
Chlorodibromomethane	0.10	U	0.10	1.0
Chloroethane	1.0	U	1.0	1.0
Chloromethane	0.33	U	0.33	1.0
Chloroform	0.14	U	0.14	1.0
3-Chloro-1-propene	0.20	U	0.20	1.0
1,2-Dibromo-3-Chloropropane	0.44	U	0.44	1.0
Ethylene Dibromide	0.25	U	0.25	1.0
trans-1,4-Dichloro-2-butene	0.50	U	0.50	2.0
Dichlorodifluoromethane	0.25	U	0.25	1.0
1,1-Dichloroethane	0.25	U	0.25	1.0
1,2-Dichloroethane	0.10	U	0.10	1.0
trans-1,2-Dichloroethene	0.20	U	0.20	1.0
1,1-Dichloroethene	0.11	U	0.11	1.0
Methylene Chloride	1.0	U	1.0	5.0
1,2-Dichloropropane	0.13	U	0.13	1.0
cis-1,3-Dichloropropene	0.11	U	0.11	1.0
trans-1,3-Dichloropropene	0.21	U	0.21	1.0
Ethylbenzene	0.11	U	0.11	1.0
2-Butanone (MEK)	1.0	U	1.0	10
Iodomethane	1.0	U	1.0	5.0
Methacrylonitrile	3.3	U	3.3	20
4-Methyl-2-pentanone (MIBK)	1.0	U	1.0	10
Styrene	0.11	U	0.11	1.0
1,1,1,2-Tetrachloroethane	0.33	U	0.33	1.0
1,1,2,2-Tetrachloroethane	0.18	U	0.18	1.0
Tetrachloroethene	0.15	U	0.15	1.0
Carbon tetrachloride	0.50	U	0.50	1.0
Toluene	0.33	U	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	0.13	U	0.13	1.0
Trichlorofluoromethane	0.25	U	0.25	1.0
1,2,3-Trichloropropane	0.41	U	0.41	1.0
Vinyl acetate	0.28	U	0.28	2.0
Vinyl chloride	0.18	U	0.18	1.0

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Method Blank - Batch: 680-172179

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-172179/23
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/21/2010 1203
Date Prepared: 06/21/2010 1203

Analysis Batch: 680-172179
Prep Batch: N/A
Units: ug/L

Instrument ID: MSO2
Lab File ID: oq134.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Xylenes, Total	0.235	J	0.20	2.0
2-Hexanone	1.0	U	1.0	10
Propionitrile	4.6	U	4.6	20
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
1,3-Dichloropropane	0.13	U	0.13	1.0
2,2-Dichloropropane	0.12	U	0.12	1.0
1,1-Dichloropropene	0.25	U	0.25	1.0
2-Chloro-1,3-butadiene	0.30	U	0.30	1.0
1,2-Dichlorobenzene	0.21	U	0.21	1.0
1,3-Dichlorobenzene	0.25	U	0.25	1.0
1,4-Dichlorobenzene	0.28	U	0.28	1.0
1,2,4-Trichlorobenzene	0.25	U	0.25	1.0
Dibromomethane	0.20	U	0.20	1.0

Surrogate	% Rec	Acceptance Limits
Toluene-d8 (Surr)	102	75 - 120
4-Bromofluorobenzene	92	75 - 120
Dibromofluoromethane	105	75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-172179

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-172179/20	Analysis Batch:	680-172179	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq126.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/21/2010 1002			Final Weight/Volume:	5 mL
Date Prepared:	06/21/2010 1002				

LCSD Lab Sample ID:	LCSD 680-172179/21	Analysis Batch:	680-172179	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq128.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/21/2010 1030			Final Weight/Volume:	5 mL
Date Prepared:	06/21/2010 1030				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Acetone	86	84	17 - 175	2	50		
Benzene	98	96	77 - 119	2	30		
Dichlorobromomethane	97	97	78 - 127	1	30		
Bromomethane	86	92	12 - 184	6	50		
Carbon disulfide	106	106	55 - 131	0	30		
Chlorobenzene	97	97	85 - 116	0	30		
Chlorodibromomethane	101	101	75 - 133	1	30		
Chloroethane	91	93	40 - 165	3	50		
Chloromethane	96	91	48 - 142	5	50		
Chloroform	101	101	82 - 120	1	30		
1,2-Dibromo-3-Chloropropane	91	92	49 - 140	1	30		
Ethylene Dibromide	94	95	80 - 121	1	30		
Dichlorodifluoromethane	110	109	34 - 154	1	30		
1,1-Dichloroethane	103	104	74 - 127	1	30		
1,2-Dichloroethane	90	89	66 - 132	2	30		
trans-1,2-Dichloroethene	103	104	72 - 131	1	30		
1,1-Dichloroethene	108	109	62 - 141	1	30		
Methylene Chloride	103	105	70 - 125	2	30		
1,2-Dichloropropane	96	95	73 - 124	1	30		
cis-1,3-Dichloropropene	97	97	76 - 126	0	30		
trans-1,3-Dichloropropene	101	101	73 - 128	0	30		
Ethylbenzene	99	101	86 - 116	3	30		
2-Butanone (MEK)	86	87	33 - 157	0	30		
4-Methyl-2-pentanone (MIBK)	81	80	40 - 151	2	30		
Styrene	98	99	82 - 122	1	30		
1,1,1,2-Tetrachloroethane	97	97	81 - 128	0	30		
1,1,2,2-Tetrachloroethane	87	88	69 - 129	0	30		
Tetrachloroethene	96	98	76 - 126	2	30		
Carbon tetrachloride	99	98	71 - 135	1	30		
Toluene	101	100	81 - 117	0	30		
Bromoform	95	93	62 - 133	2	30		
1,1,2-Trichloroethane	92	91	75 - 121	1	30		
1,1,1-Trichloroethane	100	97	76 - 127	2	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-172179

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-172179/20	Analysis Batch:	680-172179	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq126.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/21/2010 1002			Final Weight/Volume:	5 mL
Date Prepared:	06/21/2010 1002				

LCSD Lab Sample ID:	LCSD 680-172179/21	Analysis Batch:	680-172179	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq128.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	06/21/2010 1030			Final Weight/Volume:	5 mL
Date Prepared:	06/21/2010 1030				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Trichloroethene	94	95	84 - 115	1	30		
Trichlorofluoromethane	89	89	58 - 149	0	50		
1,2,3-Trichloropropane	90	90	70 - 130	0	30		
Vinyl acetate	107	106	10 - 217	1	30		
Vinyl chloride	90	90	59 - 144	0	50		
Xylenes, Total	99	100	84 - 118	1	30		
2-Hexanone	86	85	34 - 161	1	30		
Chlorobromomethane	100	97	10 - 150	3	30		
cis-1,2-Dichloroethene	102	105	69 - 134	3	30		
1,3-Dichloropropane	94	95	75 - 120	1	30		
2,2-Dichloropropane	113	113	55 - 157	0	30		
1,1-Dichloropropene	97	95	77 - 122	2	30		
1,2-Dichlorobenzene	98	100	79 - 124	2	30		
1,3-Dichlorobenzene	99	101	78 - 125	2	30		
1,4-Dichlorobenzene	99	100	81 - 122	1	30		
1,2,4-Trichlorobenzene	97	99	60 - 135	2	30		
Dibromomethane	93	90	78 - 119	4	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	98	98	75 - 120
4-Bromofluorobenzene	98	100	75 - 120
Dibromofluoromethane	101	105	75 - 121

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Method Blank - Batch: 680-171906

Method: 6020A
Preparation: 3030C

Lab Sample ID: MB 680-171906/5-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/19/2010 0221
Date Prepared: 06/18/2010 1055

Analysis Batch: 680-172176
Prep Batch: 680-171906
Units: ug/L

Instrument ID: ICPMSA
Lab File ID: 171906171906.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Arsenic	0.40	U	0.40	1.0
Barium	0.15	U	0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.16	U	0.16	1.0
Cobalt	0.078	U	0.078	0.20
Copper	0.21	U	0.21	1.0
Iron	20	U	20	50
Lead	0.080	U	0.080	0.30
Manganese	0.84	U	0.84	2.0
Nickel	0.40	U	0.40	1.0
Selenium	0.21	U	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.10	U	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	1.4	U	1.4	5.0
Zinc	2.6	U	2.6	10

Method Blank - Batch: 680-171906

Method: 6020A
Preparation: 3030C

Lab Sample ID: MB 680-171906/5-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/21/2010 2139
Date Prepared: 06/18/2010 1055

Analysis Batch: 680-172169
Prep Batch: 680-171906
Units: ug/L

Instrument ID: ICPMSA
Lab File ID: 171906.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Antimony	0.99	U	0.99	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Lab Control Sample - Batch: 680-171906

Method: 6020A
Preparation: 3030C

Lab Sample ID: LCS 680-171906/6-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/19/2010 0228
Date Prepared: 06/18/2010 1055

Analysis Batch: 680-172176
Prep Batch: 680-171906
Units: ug/L

Instrument ID: ICPMSA
Lab File ID: 171906171906.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	20.0	19.9	100	75 - 125	
Barium	20.0	19.8	99	75 - 125	
Beryllium	10.0	9.84	98	75 - 125	
Cadmium	10.0	10.1	101	75 - 125	
Chromium	20.0	20.2	101	75 - 125	
Cobalt	10.0	9.70	97	75 - 125	
Copper	20.0	20.9	105	75 - 125	
Iron	1000	1010	101	75 - 125	
Lead	10.0	9.73	97	75 - 125	
Manganese	100	104	104	75 - 125	
Nickel	20.0	20.5	103	75 - 125	
Selenium	20.0	19.6	98	75 - 125	
Silver	10.0	9.85	98	75 - 125	
Thallium	8.00	7.81	98	75 - 125	
Tin	20.0	19.8	99	75 - 125	
Vanadium	20.0	19.8	99	75 - 125	
Zinc	20.0	21.1	105	75 - 125	

Lab Control Sample - Batch: 680-171906

Method: 6020A
Preparation: 3030C

Lab Sample ID: LCS 680-171906/6-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/21/2010 2147
Date Prepared: 06/18/2010 1055

Analysis Batch: 680-172169
Prep Batch: 680-171906
Units: ug/L

Instrument ID: ICPMSA
Lab File ID: 171906.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	10.0	10.9	109	75 - 125	

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Method Blank - Batch: 680-172235

Method: 7470A
Preparation: 7470A

Lab Sample ID: MB 680-172235/23-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/24/2010 1547
Date Prepared: 06/22/2010 1453

Analysis Batch: 680-172629
Prep Batch: 680-172235
Units: ug/L

Instrument ID: LEEMAN1
Lab File ID: b062410.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Mercury	0.091	U	0.091	0.20

Lab Control Sample - Batch: 680-172235

Method: 7470A
Preparation: 7470A

Lab Sample ID: LCS 680-172235/24-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/24/2010 1550
Date Prepared: 06/22/2010 1453

Analysis Batch: 680-172629
Prep Batch: 680-172235
Units: ug/L

Instrument ID: LEEMAN1
Lab File ID: b062410.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	2.50	2.55	102	80 - 120	

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Method Blank - Batch: 680-172461

Method: 300.0
Preparation: N/A

Lab Sample ID: MB 680-172461/2
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 06/18/2010 1649
Date Prepared: N/A

Analysis Batch: 680-172461
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0005.d
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Nitrate as NO3	0.36	U	0.36	1.1

Lab Control Sample - Batch: 680-172461

Method: 300.0
Preparation: N/A

Lab Sample ID: LCS 680-172461/3
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 06/18/2010 1701
Date Prepared: N/A

Analysis Batch: 680-172461
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0006.d
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 5 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as NO3	11.0	10.9	99	90 - 110	

Matrix Spike - Batch: 680-172461

Method: 300.0
Preparation: N/A

Lab Sample ID: 680-58695-3
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 06/18/2010 2122
Date Prepared: N/A

Analysis Batch: 680-172461
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0027.d
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 5 mL
1 uL

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as NO3	0.36	U	22.1	22.9	104	90 - 110	

Serial Number 031185

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: Fort Bragg LaMont	PROJECT NO.: 0008	PROJECT LOCATION (STATE):
TAL (LAB) PROJECT MANAGER: Kathy Smith	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Kevin Halbrook	CLIENT PHONE: 912652 6083	CLIENT FAX:
CLIENT NAME: USACE	CLIENT E-MAIL:	
CLIENT ADDRESS: 100 W Oglethorpe Avenue Savannah GA 31401		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE ___ OF ___

STANDARD REPORT DELIVERY ◯

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: 8260B VOC	Nitrate	Metals RCRA								REMARKS
								HCl	HCl	HNO3	PRESERVATIVE							
								NUMBER OF CONTAINERS SUBMITTED										
17 JUNE 2010	0820	LMW-8-6-10	G	W				3	1	1								
17 JUNE 2010	1030	LMW-6-6-10	G	W				3	1	1								
17 JUNE 2010	1100	LMW-BIK-6-10	G	W				3	1	1								
		Trip Blank						2										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	17 June 2010		Shipped via Fedex					
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
George K Conner	6/18/10	0916	YES ◯ NO ◯		680-58695	2.8°C

TAL8240-680 (1207)

Login Sample Receipt Check List

Client: U.S. Army Corps of Engineers

Job Number: 680-58695-1

Login Number: 58695

List Source: TestAmerica Savannah

Creator: Conner, Keaton

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.	True	
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	
Is the Field Sampler's name present on COC?	N/A	
Sample Preservation Verified	True	

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 N20

Permit No. 26G and 26-08

NOVEMBER 2010

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 N20

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, 2010. 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 1,2-cis-dichloroethene data using the Non-Parametric Prediction Limit test indicated that the data for LMW-8 possibly contained a SSI. The SSI was not confirmed by either the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the data in monitoring well LMW-8 are not SSIs.

Analysis of the arsenic data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-9D. 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 barium data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-9S. 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 cobalt 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 cobalt data in monitoring well LMW-9S are not SSIs.

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 dichlorodifluoromethane data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-3S. 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 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 wells LMW-6 and LMW-8. The SSIs were not confirmed by the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the data are not SSIs.

Analysis of the trichloroethene data using the Non-Parametric Prediction Limit test indicated that the data for LMW-10 possibly contained a SSI. The SSI was not confirmed by either the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the trichloroethene data in monitoring well LMW-10 are not SSIs.

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 did not indicate that the data contained SSIs for any of the wells.

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.

The arsenic, barium, and dichlorofluoromethane 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.

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: November 2010

TABLE OF CONTENTS

SECTION Page

EXECUTIVE SUMMARY i

1.0 BACKGROUND 1

2.0 DETERMINATION OF APPROPRIATE DISTRIBUTIONAL MODEL 1

3.0 SELECTION OF STATISTICAL METHOD 2

4.0 FIELD ACTIVITIES 4

5.0 RESULTS 5

6.0 CONCLUSIONS 7

7.0 REFERENCES 7

LIST OF TABLES

Table 1 Ground-Water Monitoring Network 2

FIGURES

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=20) were conducted during June 2010. 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-4	**Active - Compliance Monitoring Well (Background)**
MW-1	**Active - Compliance Monitoring Well**
MW-3	**Active - Compliance Monitoring Well**
MW-3S	**Active - 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-9D	**Active - Compliance Monitoring Well**
MW-9S	**Active - Compliance Monitoring Well**
MW-10	**Active - Compliance Monitoring Well**
MW-14R	**Active - Compliance Monitoring Well**
MW-15R	**Active - Compliance Monitoring Well**
MW-16	**Active - Compliance Monitoring Well**
MW-5	**Abandoned - Compliance Monitoring Well**
MW-11	**Abandoned - Compliance Monitoring Well**
MW-12	**Abandoned - Compliance Monitoring Well**
MW-13	**Abandoned - Compliance Monitoring Well**

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.

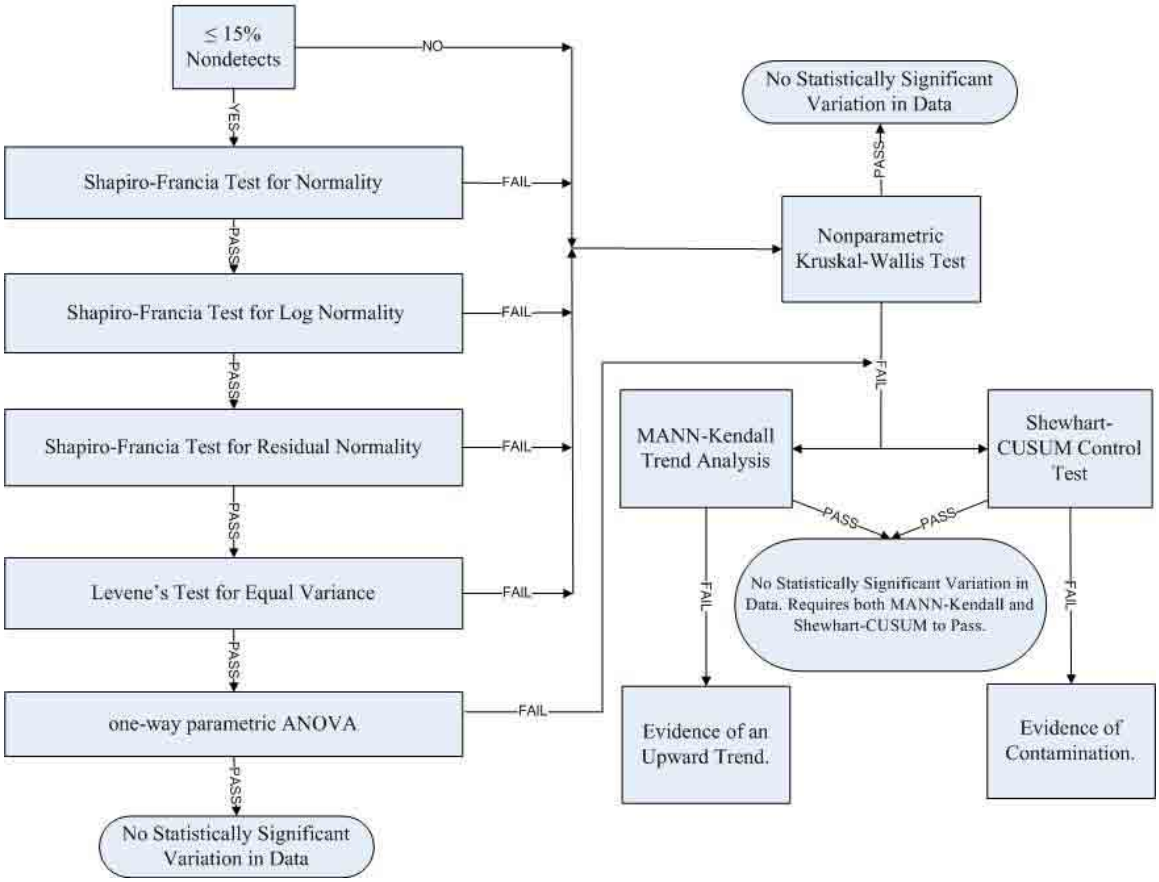
In this case, the Kruskal-Wallis Test performs post-hoc comparisons between background and compliance well data to determine which wells, if any, show evidence of contamination. If the difference between the average ranks and the mean background rank of any individual well exceeds the critical difference 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 1,2-cis-dichloroethene data using the Non-Parametric Prediction Limit test indicated that the data for LMW-8 possibly contained a SSI. The SSI was not confirmed by either the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the data in monitoring well LMW-8 are not SSIs.

Analysis of the arsenic data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-9D. 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 barium data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-9S. 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 cobalt 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 cobalt data in monitoring well LMW-9S are not SSIs.

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 dichlorodifluoromethane data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-3S. 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 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 wells LMW-6 and LMW-8. The SSIs were not confirmed by the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the data are not SSIs.

Analysis of the trichloroethene data using the Non-Parametric Prediction Limit test indicated that the data for LMW-10 possibly contained a SSI. The SSI was not confirmed by either the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the trichloroethene data in monitoring well LMW-10 are not SSIs.

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 did not indicate that the data contained SSIs for any of the wells.

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 arsenic, barium, and dichlorofluoromethane 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: 207
Total Non-Detect: 205
Percent Non-Detects: 99.0338%
Total Background Measurements: 17
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	17	17 (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
			6/30/2010	ND<0.15 U	ND<0.15 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-3	19	19 (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
			6/30/2010	ND<0.15 U	ND<0.15 U
LMW-8	17	15 (88.2353%)	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	
			6/30/2010	1.1	1.1	
LMW-9	17	17 (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	
			6/30/2010	ND<0.15 U	ND<0.15 U	
LMW-9D	7	7 (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	
			6/30/2010	ND<0.15 U	ND<0.15 U	
LMW-10	14	14 (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	
			6/30/2010	ND<0.15 U	ND<0.15 U	
LMW-6	17	17 (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	
			6/30/2010	ND<0.15 U	ND<0.15 U	
LMW-3S	7	7 (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	
			6/30/2010	ND<0.15 U	ND<0.15 U	
LMW-16	7	7 (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	
			6/30/2010	ND<0.15 U	ND<0.15 U	
LMW-15R	10	10 (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	
			6/30/2010	ND<0.15 U	ND<0.15 U	
LMW-14R	6	6 (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	
			6/30/2010	ND<0.15 U	ND<0.15 U	
LMW-9S	7	7 (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	
			6/30/2010	ND<0.15 U	ND<0.15 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<0.15 U	ND<0.15 U
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-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
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-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

There are 0 unused locations

Loc.	Meas. ND	Date	Conc. Original

Shapiro-Francia Test of Normality

Parameter: 1,2-cis-Dichloroethylene

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 207

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0	-2.65209	7.03356	0
2	0	-2.365	6.6297	0
3	0	-2.197	4.4578	0
4	0	-2.074	1.7627	0
5	0.075	-1.977	3.6727	-0.148303
6	0.075	-1.911	0.3248	-0.29163
7	0.075	-1.838	3.7046	-0.429512
8	0.075	-1.774	3.853	-0.56259
9	0.075	-1.716	8.8007	-0.691357
10	0.075	-1.664	5.5715	-0.816199
11	0.075	-1.625	7.2146	-0.938131
12	0.075	-1.580	6.7124	-1.05667
13	0.075	-1.538	9.0785	-1.17203
14	0.075	-1.498	5.324	-1.28442
15	0.075	-1.461	3.4587	-1.394
16	0.075	-1.432	5.5108	-1.50144
17	0.075	-1.398	7.4663	-1.60631
18	0.075	-1.365	9.3317	-1.70875
19	0.075	-1.334	6.1129	-1.80885
20	0.075	-1.304	2.8151	-1.9067
21	0.075	-1.281	5.4575	-2.00281
22	0.075	-1.253	6.0289	-2.09683
23	0.075	-1.226	7.5333	-2.18882
24	0.075	-1.200	8.9741	-2.27885
25	0.075	-1.174	9.3547	-2.36697
26	0.075	-1.150	7.678	-2.45325
27	0.075	-1.131	2.9575	-2.53808
28	0.5	-1.107	6.1845	-3.09192
29	0.5	-1.084	5.3613	-3.63434
30	0.5	-1.062	5.4903	-4.1656
31	0.5	-1.040	7.5734	-4.68596
32	0.5	-1.023	6.6212	-5.19779
33	0.5	-1.002	7.6267	-5.69914
34	0.5	-0.982	202	80.5914 -6.19024
35	0.5	-0.962	1.517	-6.67129
36	0.5	-0.942	375	82.4051 -7.14248
37	0.5	-0.926	859	83.2642 -7.60591
38	0.5	-0.907	769	84.0882 -8.0598
39	0.5	-0.889	006	84.8785 -8.5043
40	0.5	-0.870	5585.6364	-8.93957
41	0.5	-0.852	385	86.363 -9.36577
42	0.5	-0.838	054	87.0653 -9.78479
43	0.5	-0.820	379	87.7383 -10.195
44	0.5	-0.802	956	88.3831 -10.5965
45	0.5	-0.785	774	89.0005 -10.9893
46	0.5	-0.768	821	89.5916 -11.3738
47	0.5	-0.755	415	90.1622 -11.7515
48	0.5	-0.738	846	90.7081 -12.1209
49	0.5	-0.722	479	91.2301 -12.4821

50	0.5	-0.706302	91.729	-12.8353
51	0.5	-0.690309	92.2055	-13.1804
52	0.5	-0.6744992.6604	-13.5177	
53	0.5	-0.661955	93.0986	-13.8487
54	0.5	-0.646431	93.5165	-14.1719
55	0.5	-0.631062	93.9147	-14.4874
56	0.5	-0.615839	94.294	-14.7953
57	0.5	-0.6007694.6549	-15.0957	
58	0.5	-0.588793	95.0016	-15.3901
59	0.5	-0.573953	95.331	-15.6771
60	0.5	-0.559237	95.6437	-15.9567
61	0.5	-0.544642	95.9404	-16.229
62	0.5	-0.530162	96.2214	-16.4941
63	0.5	-0.518658	96.4905	-16.7534
64	0.5	-0.504372	96.7448	-17.0056
65	0.5	-0.490189	96.9851	-17.2507
66	0.5	-0.476105	97.2118	-17.4888
67	0.5	-0.462114	97.4254	-17.7198
68	0.5	-0.450985	97.6287	-17.9453
69	0.5	-0.437153	97.8198	-18.1639
70	0.5	-0.423405	97.9991	-18.3756
71	0.5	-0.409735	98.167	-18.5805
72	0.5	-0.396142	98.3239	-18.7785
73	0.5	-0.385321	98.4724	-18.9712
74	0.5	-0.371856	98.6107	-19.1571
75	0.5	-0.358459	98.7392	-19.3363
76	0.5	-0.345126	98.8583	-19.5089
77	0.5	-0.331854	98.9684	-19.6748
78	0.5	-0.318639	99.0699	-19.8342
79	0.5	-0.308108	99.1649	-19.9882
80	0.5	-0.294992	99.2519	-20.1357
81	0.5	-0.281926	99.3314	-20.2767
82	0.5	-0.268908	99.4037	-20.4111
83	0.5	-0.255936	99.4692	-20.5391
84	0.5	-0.2455999.5295	-20.6619	
85	0.5	-0.232693	99.5836	-20.7782
86	0.5	-0.219834	99.632	-20.8881
87	0.5	-0.207012	99.6748	-20.9917
88	0.5	-0.194225	99.7126	-21.0888
89	0.5	-0.184017	99.7464	-21.1808
90	0.5	-0.171285	99.7758	-21.2664
91	0.5	-0.158579	99.8009	-21.3457
92	0.5	-0.1459 99.8222	-21.4187	
93	0.5	-0.133244	99.8399	-21.4853
94	0.5	-0.123135	99.8551	-21.5468
95	0.5	-0.110516	99.8673	-21.6021
96	0.5	-0.0979139	99.8769	-21.6511
97	0.5	-0.0853288	99.8842	-21.6937
98	0.5	-0.0727562	99.8895	-21.7301
99	0.5	-0.0627062	99.8934	-21.7615
100	0.5	-0.0501541	99.8959	-21.7865
101	0.5	-0.0376076	99.8973	-21.8053
102	0.5	-0.0250691	99.898	-21.8179
103	0.5	-0.0125328	99.8981	-21.8241
104	0.5	0 99.8981	-21.8241	
105	0.5	0.0125328	99.8983	-21.8179
106	0.5	0.0250691	99.8989	-21.8053
107	0.5	0.0376076	99.9003	-21.7865
108	0.5	0.0501541	99.9028	-21.7615
109	0.5	0.0627062	99.9068	-21.7301
110	0.5	0.0727562	99.9121	-21.6937
111	0.5	0.0853288	99.9193	-21.6511

112	0.5	0.0979139	99.9289	-21.6021
113	0.5	0.110516	99.9411	-21.5468
114	0.5	0.123135	99.9563	-21.4853
115	0.5	0.133244	99.9741	-21.4187
116	0.5	0.1459	99.9954	-21.3457
117	0.5	0.158579	100.02	-21.2664
118	0.5	0.171285	100.05	-21.1808
119	0.5	0.184017	100.084	-21.0888
120	0.5	0.194225	100.121	-20.9917
121	0.5	0.207012	100.164	-20.8881
122	0.5	0.219834	100.213	-20.7782
123	0.5	0.232693	100.267	-20.6619
124	0.5	0.24559	100.327	-20.5391
125	0.5	0.255936	100.393	-20.4111
126	0.5	0.268908	100.465	-20.2767
127	0.5	0.281926	100.544	-20.1357
128	0.5	0.294992	100.631	-19.9882
129	0.5	0.308108	100.726	-19.8342
130	0.5	0.318639	100.828	-19.6748
131	0.5	0.331854	100.938	-19.5089
132	0.5	0.345126	101.057	-19.3363
133	0.5	0.358459	101.186	-19.1571
134	0.5	0.371856	101.324	-18.9712
135	0.5	0.385321	101.472	-18.7785
136	0.5	0.396142	101.629	-18.5805
137	0.5	0.409735	101.797	-18.3756
138	0.5	0.423405	101.976	-18.1639
139	0.5	0.437153	102.168	-17.9453
140	0.5	0.450985	102.371	-17.7198
141	0.5	0.462114	102.584	-17.4888
142	0.5	0.476105	102.811	-17.2507
143	0.5	0.490189	103.051	-17.0056
144	0.5	0.504372	103.306	-16.7534
145	0.5	0.518658	103.575	-16.4941
146	0.5	0.530162	103.856	-16.229
147	0.5	0.544642	104.153	-15.9567
148	0.5	0.559237	104.465	-15.6771
149	0.5	0.573953	104.795	-15.3901
150	0.5	0.588793	105.141	-15.0957
151	0.5	0.60076	105.502	-14.7953
152	0.5	0.615839	105.882	-14.4874
153	0.5	0.631062	106.28	-14.1719
154	0.5	0.646431	106.698	-13.8487
155	0.5	0.661955	107.136	-13.5177
156	0.5	0.67449	107.591	-13.1804
157	0.5	0.690309	108.067	-12.8353
158	0.5	0.706302	108.566	-12.4821
159	0.5	0.722479	109.088	-12.1209
160	0.5	0.738846	109.634	-11.7515
161	0.5	0.755415	110.205	-11.3738
162	0.5	0.768821	110.796	-10.9893
163	0.5	0.785774	111.413	-10.5965
164	0.5	0.802956	112.058	-10.195
165	0.5	0.820379	112.731	-9.78479
166	0.5	0.838054	113.433	-9.36577
167	0.5	0.852385	114.16	-8.93957
168	0.5	0.87055	114.918	-8.5043
169	0.5	0.889006	115.708	-8.0598
170	0.5	0.907769	116.532	-7.60591
171	0.5	0.926859	117.391	-7.14248
172	0.5	0.942375	118.279	-6.67129
173	0.5	0.9621	119.205	-6.19024

174	0.5	0.982202	120.17	-5.69914
175	0.5	1.00271	121.175	-5.19779
176	0.5	1.02365	122.223	-4.68596
177	0.5	1.04073	123.306	-4.1656
178	0.5	1.06252	124.435	-3.63434
179	0.5	1.08482	125.612	-3.09192
180	0.5	1.10768	126.839	-2.53808
181	0.5	1.13113	128.118	-1.97252
182	0.5	1.15035	129.442	-1.39734
183	0.5	1.17499	130.822	-0.80985
184	0.5	1.20036	132.263	-0.20967
185	0.5	1.22653	133.767	0.403595
186	0.5	1.25357	135.339	1.03038
187	0.5	1.28155	136.981	1.67115
188	0.5	1.30469	138.683	2.3235
189	0.5	1.33462	140.465	2.99081
190	0.5	1.36581	142.33	3.67371
191	0.5	1.39838	144.285	4.3729
192	0.5	1.4325	146.338	5.08915
193	0.5	1.46106	148.472	5.81968
194	0.5	1.49852	150.718	6.56894
195	0.5	1.5382	153.084	7.33804
196	0.5	1.58047	155.582	8.12827
197	0.5	1.62576	158.225	8.94115
198	0.5	1.66456	160.996	9.77343
199	0.5	1.71688	163.943	10.6319
200	0.5	1.77438	167.092	11.5191
201	0.5	1.83843	170.471	12.4383
202	0.5	1.91103	174.124	13.3938
203	0.5	1.97737	178.034	14.3825
204	0.5	2.07485	182.339	15.4199
205	0.5	2.19728	187.167	16.5185
206	1.1	2.36561	192.763	19.1207
207	2.4	2.65209	199.796	25.4857

Data Set Standard Deviation = 0.205611
Numerator = 649.522
Denominator = 1739.98
W Statistic = 0.373292 = 649.522 / 1739.98

5% Critical value of 0.976 exceeds 0.373292
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.373292
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: 1,2-cis-Dichloroethylene

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 207

i	x(i)	m(i)	sum(m^2)	sum(mx)	
1	-2.59027	-2.65209	7.03356	6.86961	
2	-2.59027	-2.36561	12.6297	12.9972	
3	-2.59027	-2.19728	17.4578	18.6887	
4	-2.59027	-2.07485	21.7627	24.0632	
5	-2.59027	-1.97737	25.6727	29.1851	
6	-2.59027	-1.91103	29.3248	34.1351	
7	-2.59027	-1.83843	32.7046	38.8972	
8	-2.59027	-1.77438	35.853	43.4933	
9	-2.59027	-1.71688	38.8007	47.9405	
10	-2.59027	-1.66456	41.5715	52.2521	
11	-2.59027	-1.62576	44.2146	56.4633	
12	-2.59027	-1.58047	46.7124	60.5571	
13	-2.59027	-1.5382	49.0785	64.5415	
14	-2.59027	-1.49852	51.324	68.423	
15	-2.59027	-1.46106	53.4587	72.2075	
16	-2.59027	-1.4325	55.5108	75.9181	
17	-2.59027	-1.39838	57.4663	79.5403	
18	-2.59027	-1.36581	59.3317	83.0781	
19	-2.59027	-1.33462	61.1129	86.5351	
20	-2.59027	-1.30469	62.8151	89.9146	
21	-2.59027	-1.28155	64.4575	93.2342	
22	-2.59027	-1.25357	66.0289	96.4812	
23	-2.59027	-1.22653	67.5333	99.6583	
24	-0.693147	-1.20036	68.9741	100.49	
25	-0.693147	-1.17499	70.3547	101.305	
26	-0.693147	-1.15035	71.678	102.102	
27	-0.693147	-1.13113	72.9575	102.886	
28	-0.693147	-1.10768	74.1845	103.654	
29	-0.693147	-1.08482	75.3613	104.406	
30	-0.693147	-1.06252	76.4903	105.142	
31	-0.693147	-1.04073	77.5734	105.864	
32	-0.693147	-1.02365	78.6212	106.573	
33	-0.693147	-1.00271	79.6267	107.268	
34	-0.693147	-0.982202		80.5914	107.949
35	-0.693147	-0.9621	81.517	108.616	
36	-0.693147	-0.942375		82.4051	109.269
37	-0.693147	-0.926859		83.2642	109.912
38	-0.693147	-0.907769		84.0882	110.541
39	-0.693147	-0.889006		84.8785	111.157
40	-0.693147	-0.870558	85.6364	111.76	
41	-0.693147	-0.852385		86.363	112.351
42	-0.693147	-0.838054		87.0653	112.932
43	-0.693147	-0.820379		87.7383	113.501
44	-0.693147	-0.802956		88.3831	114.057
45	-0.693147	-0.785774		89.0005	114.602
46	-0.693147	-0.768821		89.5916	115.135
47	-0.693147	-0.755415		90.1622	115.659
48	-0.693147	-0.738846		90.7081	116.171
49	-0.693147	-0.722479		91.2301	116.672

50	-0.693147	-0.706302	91.729	117.161
51	-0.693147	-0.690309	92.2055	117.64
52	-0.693147	-0.674499	2.6604	118.107
53	-0.693147	-0.661955	93.0986	118.566
54	-0.693147	-0.646431	93.5165	119.014
55	-0.693147	-0.631062	93.9147	119.451
56	-0.693147	-0.615839	94.294	119.878
57	-0.693147	-0.600769	4.6549	120.295
58	-0.693147	-0.588793	95.0016	120.703
59	-0.693147	-0.573953	95.331	121.101
60	-0.693147	-0.559237	95.6437	121.488
61	-0.693147	-0.544642	95.9404	121.866
62	-0.693147	-0.530162	96.2214	122.233
63	-0.693147	-0.518658	96.4905	122.593
64	-0.693147	-0.504372	96.7448	122.942
65	-0.693147	-0.490189	96.9851	123.282
66	-0.693147	-0.476105	97.2118	123.612
67	-0.693147	-0.462114	97.4254	123.932
68	-0.693147	-0.450985	97.6287	124.245
69	-0.693147	-0.437153	97.8198	124.548
70	-0.693147	-0.423405	97.9991	124.842
71	-0.693147	-0.409735	98.167	125.126
72	-0.693147	-0.396142	98.3239	125.4
73	-0.693147	-0.385321	98.4724	125.667
74	-0.693147	-0.371856	98.6107	125.925
75	-0.693147	-0.358459	98.7392	126.173
76	-0.693147	-0.345126	98.8583	126.413
77	-0.693147	-0.331854	98.9684	126.643
78	-0.693147	-0.318639	99.0699	126.864
79	-0.693147	-0.308108	99.1649	127.077
80	-0.693147	-0.294992	99.2519	127.282
81	-0.693147	-0.281926	99.3314	127.477
82	-0.693147	-0.268908	99.4037	127.663
83	-0.693147	-0.255936	99.4692	127.841
84	-0.693147	-0.245599	9.5295	128.011
85	-0.693147	-0.232693	99.5836	128.172
86	-0.693147	-0.219834	99.632	128.325
87	-0.693147	-0.207012	99.6748	128.468
88	-0.693147	-0.194225	99.7126	128.603
89	-0.693147	-0.184017	99.7464	128.73
90	-0.693147	-0.171285	99.7758	128.849
91	-0.693147	-0.158579	99.8009	128.959
92	-0.693147	-0.1459	99.8222	129.06
93	-0.693147	-0.133244	99.8399	129.153
94	-0.693147	-0.123135	99.8551	129.238
95	-0.693147	-0.110516	99.8673	129.314
96	-0.693147	-0.0979139	99.8769	129.382
97	-0.693147	-0.0853288	99.8842	129.441
98	-0.693147	-0.0727562	99.8895	129.492
99	-0.693147	-0.0627062	99.8934	129.535
100	-0.693147	-0.0501541	99.8959	129.57
101	-0.693147	-0.0376076	99.8973	129.596
102	-0.693147	-0.0250691	99.898	129.614
103	-0.693147	-0.0125328	99.8981	129.622
104	-0.693147	0	99.8981	129.622
105	-0.693147	0.0125328	99.8983	129.614
106	-0.693147	0.0250691	99.8989	129.596
107	-0.693147	0.0376076	99.9003	129.57
108	-0.693147	0.0501541	99.9028	129.535
109	-0.693147	0.0627062	99.9068	129.492
110	-0.693147	0.0727562	99.9121	129.441
111	-0.693147	0.0853288	99.9193	129.382

112	-0.693147	0.0979139	99.9289	129.314
113	-0.693147	0.110516	99.9411	129.238
114	-0.693147	0.123135	99.9563	129.153
115	-0.693147	0.133244	99.9741	129.06
116	-0.693147	0.1459	99.9954	128.959
117	-0.693147	0.158579	100.02	128.849
118	-0.693147	0.171285	100.05	128.73
119	-0.693147	0.184017	100.084	128.603
120	-0.693147	0.194225	100.121	128.468
121	-0.693147	0.207012	100.164	128.325
122	-0.693147	0.219834	100.213	128.172
123	-0.693147	0.232693	100.267	128.011
124	-0.693147	0.24559	100.327	127.841
125	-0.693147	0.255936	100.393	127.663
126	-0.693147	0.268908	100.465	127.477
127	-0.693147	0.281926	100.544	127.282
128	-0.693147	0.294992	100.631	127.077
129	-0.693147	0.308108	100.726	126.864
130	-0.693147	0.318639	100.828	126.643
131	-0.693147	0.331854	100.938	126.413
132	-0.693147	0.345126	101.057	126.173
133	-0.693147	0.358459	101.186	125.925
134	-0.693147	0.371856	101.324	125.667
135	-0.693147	0.385321	101.472	125.4
136	-0.693147	0.396142	101.629	125.126
137	-0.693147	0.409735	101.797	124.842
138	-0.693147	0.423405	101.976	124.548
139	-0.693147	0.437153	102.168	124.245
140	-0.693147	0.450985	102.371	123.932
141	-0.693147	0.462114	102.584	123.612
142	-0.693147	0.476105	102.811	123.282
143	-0.693147	0.490189	103.051	122.942
144	-0.693147	0.504372	103.306	122.593
145	-0.693147	0.518658	103.575	122.233
146	-0.693147	0.530162	103.856	121.866
147	-0.693147	0.544642	104.153	121.488
148	-0.693147	0.559237	104.465	121.101
149	-0.693147	0.573953	104.795	120.703
150	-0.693147	0.588793	105.141	120.295
151	-0.693147	0.60076	105.502	119.878
152	-0.693147	0.615839	105.882	119.451
153	-0.693147	0.631062	106.28	119.014
154	-0.693147	0.646431	106.698	118.566
155	-0.693147	0.661955	107.136	118.107
156	-0.693147	0.67449	107.591	117.64
157	-0.693147	0.690309	108.067	117.161
158	-0.693147	0.706302	108.566	116.672
159	-0.693147	0.722479	109.088	116.171
160	-0.693147	0.738846	109.634	115.659
161	-0.693147	0.755415	110.205	115.135
162	-0.693147	0.768821	110.796	114.602
163	-0.693147	0.785774	111.413	114.057
164	-0.693147	0.802956	112.058	113.501
165	-0.693147	0.820379	112.731	112.932
166	-0.693147	0.838054	113.433	112.351
167	-0.693147	0.852385	114.16	111.76
168	-0.693147	0.87055	114.918	111.157
169	-0.693147	0.889006	115.708	110.541
170	-0.693147	0.907769	116.532	109.912
171	-0.693147	0.926859	117.391	109.269
172	-0.693147	0.942375	118.279	108.616
173	-0.693147	0.9621	119.205	107.949

174	-0.693147		0.982202	120.17	107.268
175	-0.693147		1.00271	121.175	106.573
176	-0.693147		1.02365	122.223	105.864
177	-0.693147		1.04073	123.306	105.142
178	-0.693147		1.06252	124.435	104.406
179	-0.693147		1.08482	125.612	103.654
180	-0.693147		1.10768	126.839	102.886
181	-0.693147		1.13113	128.118	102.102
182	-0.693147		1.15035	129.442	101.305
183	-0.693147		1.17499	130.822	100.49
184	-0.693147		1.20036	132.263	99.6583
185	-0.693147		1.22653	133.767	98.8081
186	-0.693147		1.25357	135.339	97.9392
187	-0.693147		1.28155	136.981	97.0509
188	-0.693147		1.30469	138.683	96.1466
189	-0.693147		1.33462	140.465	95.2215
190	-0.693147		1.36581	142.33	94.2748
191	-0.693147		1.39838	144.285	93.3055
192	-0.693147		1.4325	146.338	92.3125
193	-0.693147		1.46106	148.472	91.2998
194	-0.693147		1.49852	150.718	90.2611
195	-0.693147		1.5382	153.084	89.1949
196	-0.693147		1.58047	155.582	88.0994
197	-0.693147		1.62576	158.225	86.9725
198	-0.693147		1.66456	160.996	85.8187
199	-0.693147		1.71688	163.943	84.6287
200	-0.693147		1.77438	167.092	83.3988
201	-0.693147		1.83843	170.471	82.1245
202	0	1.91103	174.124	82.1245	
203	0	1.97737	178.034	82.1245	
204	0	2.07485	182.339	82.1245	
205	0	2.19728	187.167	82.1245	
206	0.0953102		2.36561	192.763	82.35
207	0.875469		2.65209	199.796	84.6718

Data Set Standard Deviation = 0.625588
Numerator = 7169.31
Denominator = 16107.6
W Statistic = 0.445087 = 7169.31 / 16107.6

5% Critical value of 0.976 exceeds 0.445087
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.445087
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: 1,2-cis-Dichloroethylene

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 99.0338%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 17
Maximum Background Concentration = 0
Confidence Level = 68%
False Positive Rate = 32%

Location	Date	Samples	Mean	Significant
LMW-3	6/30/2010	1	-2.59027	FALSE
LMW-8	6/30/2010	1	0.0953102	TRUE
LMW-9	6/30/2010	1	-2.59027	FALSE
LMW-9D	6/30/2010	1	-2.59027	FALSE
LMW-10	6/30/2010	1	-2.59027	FALSE
LMW-6	6/30/2010	1	-2.59027	FALSE
LMW-3S	6/30/2010	1	-2.59027	FALSE
LMW-16	6/30/2010	1	-2.59027	FALSE
LMW-15R	6/30/2010	1	-2.59027	FALSE
LMW-14R	6/30/2010	1	-2.59027	FALSE
LMW-9S	6/30/2010	1	-2.59027	FALSE
LMW-7	6/11/2009	1	-2.59027	FALSE
LMW-11	11/20/2008	1	-0.693147	FALSE
LMW-12	11/20/2008	1	-0.693147	FALSE
MW-5	11/20/2008	1	-0.693147	FALSE
LMW-13	11/20/2008	1	-0.693147	FALSE

Mann-Kendall Trend Analysis

Parameter: 1,2-cis-Dichloroethylene

Location: LMW-8

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
ND<-0.693147	ND<-0.693147	0	0	0
ND<-0.693147	ND<-0.693147	0	0	0
ND<-0.693147	ND<-0.693147	0	0	0
ND<-0.693147	ND<-0.693147	0	0	0
ND<-0.693147	ND<-0.693147	0	0	0
ND<-0.693147	ND<-0.693147	0	0	0
ND<-0.693147	ND<-0.693147	0	0	0
ND<0 J	ND<-0.693147	0.693147	1	0
ND<0 J	ND<-0.693147	0.693147	2	0
ND<0 J	ND<-0.693147	0.693147	3	0
ND<-0.693147	ND<-0.693147	0	3	0
ND<0 J	ND<-0.693147	0.693147	4	0
ND<-0.693147	ND<-0.693147	0	4	0
ND<-0.693147	ND<-0.693147	0	4	0
0.875469	ND<-0.693147	1.56862	5	0
0.0953102	ND<-0.693147	0.788457	6	0
ND<-0.693147	ND<-0.693147	0	6	0
ND<-0.693147	ND<-0.693147	0	6	0
ND<-0.693147	ND<-0.693147	0	6	0
ND<-0.693147	ND<-0.693147	0	6	0
ND<-0.693147	ND<-0.693147	0	6	0
ND<-0.693147	ND<-0.693147	0	6	0
ND<0 J	ND<-0.693147	0.693147	7	0
ND<0 J	ND<-0.693147	0.693147	8	0
ND<0 J	ND<-0.693147	0.693147	9	0
ND<-0.693147	ND<-0.693147	0	9	0
ND<0 J	ND<-0.693147	0.693147	10	0
ND<-0.693147	ND<-0.693147	0	10	0
ND<-0.693147	ND<-0.693147	0	10	0
0.875469	ND<-0.693147	1.56862	11	0
0.0953102	ND<-0.693147	0.788457	12	0
ND<-0.693147	ND<-0.693147	0	12	0
ND<-0.693147	ND<-0.693147	0	12	0
ND<-0.693147	ND<-0.693147	0	12	0
ND<-0.693147	ND<-0.693147	0	12	0
ND<-0.693147	ND<-0.693147	0	12	0
ND<0 J	ND<-0.693147	0.693147	13	0
ND<0 J	ND<-0.693147	0.693147	14	0
ND<0 J	ND<-0.693147	0.693147	15	0
ND<-0.693147	ND<-0.693147	0	15	0
ND<0 J	ND<-0.693147	0.693147	16	0
ND<-0.693147	ND<-0.693147	0	16	0
ND<-0.693147	ND<-0.693147	0	16	0
0.875469	ND<-0.693147	1.56862	17	0
0.0953102	ND<-0.693147	0.788457	18	0

ND<-0.693147	ND<-0.693147	0	18	0
ND<-0.693147	ND<-0.693147	0	18	0
ND<-0.693147	ND<-0.693147	0	18	0
ND<-0.693147	ND<-0.693147	0	18	0
ND<0 J	ND<-0.693147	0.693147	19	0
ND<0 J	ND<-0.693147	0.693147	20	0
ND<0 J	ND<-0.693147	0.693147	21	0
ND<-0.693147	ND<-0.693147	0	21	0
ND<0 J	ND<-0.693147	0.693147	22	0
ND<-0.693147	ND<-0.693147	0	22	0
ND<-0.693147	ND<-0.693147	0	22	0
0.875469	ND<-0.693147	1.56862	23	0
0.0953102	ND<-0.693147	0.788457	24	0
ND<-0.693147	ND<-0.693147	0	24	0
ND<-0.693147	ND<-0.693147	0	24	0
ND<-0.693147	ND<-0.693147	0	24	0
ND<0 J	ND<-0.693147	0.693147	25	0
ND<0 J	ND<-0.693147	0.693147	26	0
ND<0 J	ND<-0.693147	0.693147	27	0
ND<-0.693147	ND<-0.693147	0	27	0
ND<0 J	ND<-0.693147	0.693147	28	0
ND<-0.693147	ND<-0.693147	0	28	0
ND<-0.693147	ND<-0.693147	0	28	0
0.875469	ND<-0.693147	1.56862	29	0
0.0953102	ND<-0.693147	0.788457	30	0
ND<-0.693147	ND<-0.693147	0	30	0
ND<-0.693147	ND<-0.693147	0	30	0
ND<0 J	ND<-0.693147	0.693147	31	0
ND<0 J	ND<-0.693147	0.693147	32	0
ND<0 J	ND<-0.693147	0.693147	33	0
ND<-0.693147	ND<-0.693147	0	33	0
ND<0 J	ND<-0.693147	0.693147	34	0
ND<-0.693147	ND<-0.693147	0	34	0
ND<-0.693147	ND<-0.693147	0	34	0
0.875469	ND<-0.693147	1.56862	35	0
0.0953102	ND<-0.693147	0.788457	36	0
ND<-0.693147	ND<-0.693147	0	36	0
ND<0 J	ND<-0.693147	0.693147	37	0
ND<0 J	ND<-0.693147	0.693147	38	0
ND<0 J	ND<-0.693147	0.693147	39	0
ND<-0.693147	ND<-0.693147	0	39	0
ND<0 J	ND<-0.693147	0.693147	40	0
ND<-0.693147	ND<-0.693147	0	40	0
ND<-0.693147	ND<-0.693147	0	40	0
0.875469	ND<-0.693147	1.56862	41	0
0.0953102	ND<-0.693147	0.788457	42	0
ND<0 J	ND<-0.693147	0.693147	43	0
ND<0 J	ND<-0.693147	0.693147	44	0
ND<0 J	ND<-0.693147	0.693147	45	0
ND<-0.693147	ND<-0.693147	0	45	0
ND<0 J	ND<-0.693147	0.693147	46	0
ND<-0.693147	ND<-0.693147	0	46	0
ND<-0.693147	ND<-0.693147	0	46	0
0.875469	ND<-0.693147	1.56862	47	0
0.0953102	ND<-0.693147	0.788457	48	0
ND<0 J	ND<0 J	0	48	0
ND<0 J	ND<0 J	0	48	0

ND<-0.693147	ND<0 J	-0.693147	48	1
ND<0 J	ND<0 J	0	48	1
ND<-0.693147	ND<0 J	-0.693147	48	2
ND<-0.693147	ND<0 J	-0.693147	48	3
0.875469	ND<0 J	0.875469	49	3
0.0953102	ND<0 J	0.0953102	50	3
ND<0 J	ND<0 J	0	50	3
ND<-0.693147	ND<0 J	-0.693147	50	4
ND<0 J	ND<0 J	0	50	4
ND<-0.693147	ND<0 J	-0.693147	50	5
ND<-0.693147	ND<0 J	-0.693147	50	6
0.875469	ND<0 J	0.875469	51	6
0.0953102	ND<0 J	0.0953102	52	6
ND<-0.693147	ND<0 J	-0.693147	52	7
ND<0 J	ND<0 J	0	52	7
ND<-0.693147	ND<0 J	-0.693147	52	8
ND<-0.693147	ND<0 J	-0.693147	52	9
0.875469	ND<0 J	0.875469	53	9
0.0953102	ND<0 J	0.0953102	54	9
ND<0 J	ND<-0.693147	0.693147	55	9
ND<-0.693147	ND<-0.693147	0	55	9
ND<-0.693147	ND<-0.693147	0	55	9
0.875469	ND<-0.693147	1.56862	56	9
0.0953102	ND<-0.693147	0.788457	57	9
ND<-0.693147	ND<0 J	-0.693147	57	10
ND<-0.693147	ND<0 J	-0.693147	57	11
0.875469	ND<0 J	0.875469	58	11
0.0953102	ND<0 J	0.0953102	59	11
ND<-0.693147	ND<-0.693147	0	59	11
0.875469	ND<-0.693147	1.56862	60	11
0.0953102	ND<-0.693147	0.788457	61	11
0.875469	ND<-0.693147	1.56862	62	11
0.0953102	ND<-0.693147	0.788457	63	11
0.0953102	0.875469	-0.780159	63	12

S Statistic = 63 - 12 = 51

Tied Group	Value	Members
1	-0.693147	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
6/30/2010		1

There are 0 time periods with multiple data

A = 3126
B = 0
C = 1014
D = 0
E = 122
F = 0
a = 10608
b = 36720
c = 544
Group Variance = 415.667
Z-Score = 2.45243
Comparison Level at 1.0 - (0.05 / 2) = 97.5% confidence level = 1.97737 (two-tailed)
|2.45243| > 1.97737 indicating a trend

Concentrations (ppb)

Parameter: Arsenic

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 219
Total Non-Detect: 168
Percent Non-Detects: 76.7123%
Total Background Measurements: 18
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	18	16 (88.8889%)	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
			11/16/2009	ND<0.4 U	ND<0.4 U
			6/30/2010	ND<0.4 U	ND<0.4 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-16	8	3 (37.5%)	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
			11/16/2009	0.59 J	0.59 J
			6/30/2010	0.5 J	0.5 J
LMW-6	18	15 (83.3333%)	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	
			11/16/2009	ND<0.4 U		ND<0.4 U
			6/30/2010	0.46 J	0.46 J	
LMW-14R	9	5 (55.5556%)	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	
			11/16/2009	0.47 J	0.47 J	
			11/16/2009	ND<0.4 U		ND<0.4 U
			11/16/2009	ND<0.4 U		ND<0.4 U
			6/30/2010	ND<0.4 U		ND<0.4 U
LMW-9S	7	3 (42.8571%)	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	
			6/30/2010	0.57 J	0.57 J	
LMW-9D	8	1 (12.5%)	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	
			11/16/2009	2	2	
			6/30/2010	1.8	1.8	
LMW-9	18	11 (61.1111%)	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	
			11/16/2009	ND<0.4 U		ND<0.4 U
			6/30/2010	0.58 J	0.58 J	
LMW-8	18	15 (83.3333%)	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	
			11/16/2009	0.53 J	0.53 J	
			6/30/2010	0.43 J	0.43 J	
LMW-3	20	19 (95%)	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	
			11/16/2009	ND<0.4 U	ND<0.4 U	
			6/30/2010	ND<0.4 U	ND<0.4 U	
LMW-15R	10	9 (90%)	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	
			6/30/2010	ND<0.4 U	ND<0.4 U	
LMW-10	15	12 (80%)	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	
			11/16/2009	ND<0.4 U	ND<0.4 U	
			6/30/2010	ND<0.4 U	ND<0.4 U	
LMW-3S	8	7 (87.5%)	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	

			11/16/2009	ND<0.4 U	ND<0.4 U	
			6/30/2010	ND<0.4 U	ND<0.4 U	
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-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-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-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	
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

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Arsenic

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.2	-2.65209	7.03356	-0.530417
2	0.2	-2.36561	12.6297	-1.00354
3	0.2	-2.22621	17.5857	-1.44878
4	0.2	-2.09693	21.9828	-1.86817
5	0.2	-2.01409	26.0394	-2.27099
6	0.2	-1.92684	29.7521	-2.65635
7	0.2	-1.86629	33.2351	-3.02961
8	0.2	-1.79912	36.472	-3.38944
9	0.2	-1.75069	39.5369	-3.73957
10	0.2	-1.6954	42.4112	-4.07865
11	0.2	-1.64485	45.1168	-4.40762
12	0.2	-1.60725	47.7	-4.72907
13	0.2	-1.56322	50.1437	-5.04172
14	0.2	-1.53007	52.4848	-5.34773
15	0.2	-1.49085	54.7074	-5.6459
16	0.2	-1.46106	56.8421	-5.93811
17	0.41	-1.42554	58.8743	-6.52259
18	0.42	-1.39838	60.8297	-7.1099
19	0.43	-1.36581	62.6952	-7.6972
20	0.46	-1.34075	64.4928	-8.31395
21	0.46	-1.31058	66.2104	-8.91681
22	0.47	-1.28155	67.8528	-9.51914
23	0.49	-1.25908	69.4381	-10.1361
24	0.5	-1.23187	70.9556	-10.752
25	0.53	-1.21073	72.4214	-11.3937
26	0.56	-1.18504	73.8258	-12.0573
27	0.57	-1.16505	75.1831	-12.7214
28	0.58	-1.14069	76.4843	-13.383
29	0.59	-1.12168	77.7424	-14.0448
30	0.65	-1.09847	78.9491	-14.7588
31	0.73	-1.08032	80.1162	-15.5474
32	1	-1.05812	81.2358	-16.6056
33	1	-1.03643	82.31	-17.642
34	1	-1.01943	83.3492	-18.6614
35	1	-0.998575	84.3464	-19.66
36	1	-0.982202	85.3111	-20.6422
37	1	-0.9621	86.2367	-21.6043
38	1	-0.946291	87.1322	-22.5506
39	1	-0.926859	87.9912	-23.4775
40	1	-0.911562	88.8222	-24.389
41	1	-0.892733	89.6192	-25.2817
42	1	-0.877897	90.3899	-26.1596
43	1	-0.859618	91.1288	-27.0193
44	1	-0.841621	91.8371	-27.8609
45	1	-0.827417	92.5218	-28.6883
46	1	-0.809896	93.1777	-29.4982
47	1	-0.796056	93.8114	-30.2943
48	1	-0.778966	94.4182	-31.0732
49	1	-0.765456	95.0041	-31.8387

50	1	-0.748762	95.5647	-32.5874
51	1	-0.735557	96.1058	-33.323
52	1	-0.719228	96.6231	-34.0422
53	1	-0.706302	97.1219	-34.7485
54	1	-0.690309	97.5985	-35.4388
55	1	-0.674	998.0534	-36.1133
56	1	-0.661955	98.4916	-36.7753
57	1	-0.646431	98.9095	-37.4217
58	1	-0.634124	99.3116	-38.0558
59	1	-0.618872	99.6946	-38.6747
60	1	-0.606775	100.063	-39.2815
61	1	-0.591776	100.413	-39.8733
62	1	-0.579873	100.749	-40.4531
63	1	-0.565108	101.069	-41.0182
64	1	-0.553384	101.375	-41.5716
65	1	-0.538836	101.665	-42.1105
66	1	-0.524401	101.94	-42.6349
67	1	-0.51293	102.203	-43.1478
68	1	-0.498687	102.452	-43.6465
69	1	-0.487364	102.689	-44.1338
70	1	-0.473299	102.913	-44.6071
71	1	-0.462114	103.127	-45.0693
72	1	-0.448213	103.328	-45.5175
73	1	-0.437153	103.519	-45.9546
74	1	-0.423405	103.698	-46.378
75	1	-0.412463	103.868	-46.7905
76	1	-0.398855	104.027	-47.1893
77	1	-0.385321	104.176	-47.5747
78	1	-0.374544	104.316	-47.9492
79	1	-0.361133	104.447	-48.3103
80	1	-0.350451	104.569	-48.6608
81	1	-0.337155	104.683	-48.9979
82	1	-0.326561	104.79	-49.3245
83	1	-0.31337	104.888	-49.6379
84	1	-0.302855	104.98	-49.9407
85	1	-0.28976	105.064	-50.2305
86	1	-0.279319	105.142	-50.5098
87	1	-0.266311	105.213	-50.7761
88	1	-0.253347	105.277	-51.0295
89	1	-0.243007	105.336	-51.2725
90	1	-0.230118	105.389	-51.5026
91	1	-0.219834	105.437	-51.7224
92	1	-0.207012	105.48	-51.9294
93	1	-0.196779	105.519	-52.1262
94	1	-0.184017	105.553	-52.3102
95	1	-0.173829	105.583	-52.4841
96	1	-0.161119	105.609	-52.6452
97	1	-0.150969	105.632	-52.7962
98	1	-0.138305	105.651	-52.9345
99	1	-0.125661	105.666	-53.0601
100	1	-0.115562	105.68	-53.1757
101	1	-0.102953	105.69	-53.2786
102	1	-0.0928787	105.699	-53.3715
103	1	-0.0802981	105.705	-53.4518
104	1	-0.0702426	105.71	-53.5221
105	1	-0.0576847	105.714	-53.5797
106	1	-0.0476439	105.716	-53.6274
107	1	-0.0350997	105.717	-53.6625
108	1	-0.0250691	105.718	-53.6876
109	1	-0.0125328	105.718	-53.7001
110	1	0	105.718	-53.7001
111	1	0.0125328	105.718	-53.6876

112	1	0.0250691	105.719	-53.6625
113	1	0.0350997	105.72	-53.6274
114	1	0.0476439	105.722	-53.5797
115	1	0.0576847	105.726	-53.5221
116	1	0.0702426	105.731	-53.4518
117	1	0.0802981	105.737	-53.3715
118	1	0.0928787	105.746	-53.2786
119	1	0.102953	105.756	-53.1757
120	1	0.115562	105.77	-53.0601
121	1	0.125661	105.785	-52.9345
122	1	0.138305	105.805	-52.7962
123	1	0.150969	105.827	-52.6452
124	1	0.161119	105.853	-52.4841
125	1	0.173829	105.883	-52.3102
126	1	0.184017	105.917	-52.1262
127	1	0.196779	105.956	-51.9294
128	1	0.207012	105.999	-51.7224
129	1	0.219834	106.047	-51.5026
130	1	0.230118	106.1	-51.2725
131	1	0.243007	106.159	-51.0295
132	1	0.253347	106.223	-50.7761
133	1	0.266311	106.294	-50.5098
134	1	0.279319	106.372	-50.2305
135	1	0.28976	106.456	-49.9407
136	1	0.302855	106.548	-49.6379
137	1	0.31337	106.646	-49.3245
138	1	0.326561	106.753	-48.9979
139	1	0.337155	106.867	-48.6608
140	1	0.350451	106.989	-48.3103
141	1	0.361133	107.12	-47.9492
142	1	0.374544	107.26	-47.5747
143	1	0.385321	107.409	-47.1893
144	1	0.398855	107.568	-46.7905
145	1	0.412463	107.738	-46.378
146	1	0.423405	107.917	-45.9546
147	1	0.437153	108.108	-45.5175
148	1	0.448213	108.309	-45.0693
149	1	0.462114	108.523	-44.6071
150	1	0.473299	108.747	-44.1338
151	1	0.487364	108.984	-43.6465
152	1	0.498687	109.233	-43.1478
153	1	0.51293	109.496	-42.6349
154	1	0.524401	109.771	-42.1105
155	1	0.538836	110.061	-41.5716
156	1	0.553384	110.368	-41.0182
157	1	0.565108	110.687	-40.4531
158	1	0.579873	111.023	-39.8733
159	1	0.591776	111.373	-39.2815
160	1	0.606775	111.741	-38.6747
161	1	0.618872	112.124	-38.0558
162	1	0.634124	112.527	-37.4217
163	1	0.646431	112.944	-36.7753
164	1	0.661955	113.383	-36.1133
165	1	0.67449	113.838	-35.4388
166	1	0.690309	114.314	-34.7485
167	1	0.706302	114.813	-34.0422
168	1	0.719228	115.33	-33.323
169	1	0.735557	115.871	-32.5874
170	1	0.748762	116.432	-31.8387
171	1	0.765456	117.018	-31.0732
172	1	0.778966	117.625	-30.2943
173	1	0.796056	118.258	-29.4982

174	1	0.809896	118.914	-28.6883
175	1	0.827417	119.599	-27.8609
176	1	0.841621	120.307	-27.0193
177	1	0.859618	121.046	-26.1596
178	1	0.877897	121.817	-25.2817
179	1	0.892733	122.614	-24.389
180	1	0.911562	123.445	-23.4775
181	1	0.926859	124.304	-22.5506
182	1	0.946291	125.199	-21.6043
183	1	0.9621	126.125	-20.6422
184	1	0.982202	127.09	-19.66
185	1	0.998575	128.087	-18.6614
186	1	1.01943	129.126	-17.642
187	1	1.03643	130.2	-16.6056
188	1	1.05812	131.32	-15.5474
189	1	1.08032	132.487	-14.4671
190	1	1.09847	133.694	-13.3687
191	1	1.12168	134.952	-12.247
192	1	1.14069	136.253	-11.1063
193	1	1.16505	137.61	-9.94124
194	1.1	1.18504	139.015	-8.63769
195	1.1	1.21073	140.48	-7.30589
196	1.8	1.23187	141.998	-5.08853
197	2	1.25908	143.583	-2.57036
198	2	1.28155	145.226	-0.00726272
199	2.1	1.31058	146.943	2.74495
200	2.5	1.34075	148.741	6.09684
201	3	1.36581	150.606	10.1943
202	3	1.39838	152.562	14.3894
203	3	1.42554	154.594	18.666
204	4	1.46106	156.729	24.5102
205	7	1.49085	158.951	34.9462
206	7	1.53007	161.292	45.6567
207	8	1.56322	163.736	58.1624
208	9	1.60725	166.319	72.6277
209	9	1.64485	169.025	87.4314
210	10	1.6954	171.899	104.385
211	10	1.75069	174.964	121.892
212	12	1.79912	178.201	143.482
213	16	1.86629	181.684	173.342
214	18	1.92684	185.397	208.025
215	23	2.01409	189.453	254.35
216	25	2.09693	193.85	306.773
217	34	2.22621	198.806	382.464
218	57	2.36561	204.403	517.304
219	60	2.65209	211.436	676.429

Data Set Standard Deviation = 6.59542
Numerator = 457556
Denominator = 2.00503e+006
W Statistic = 0.228204 = 457556 / 2.00503e+006

5% Critical value of 0.976 exceeds 0.228204
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.228204
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Arsenic

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-1.60944	-2.65209	7.03356	4.26837
2	-1.60944	-2.36561	12.6297	8.07568
3	-1.60944	-2.22621	17.5857	11.6586
4	-1.60944	-2.09693	21.9828	15.0335
5	-1.60944	-2.01409	26.0394	18.2751
6	-1.60944	-1.92684	29.7521	21.3762
7	-1.60944	-1.86629	33.2351	24.3799
8	-1.60944	-1.79912	36.472	27.2754
9	-1.60944	-1.75069	39.5369	30.0931
10	-1.60944	-1.6954	42.4112	32.8217
11	-1.60944	-1.64485	45.1168	35.469
12	-1.60944	-1.60725	47.7	38.0557
13	-1.60944	-1.56322	50.1437	40.5717
14	-1.60944	-1.53007	52.4848	43.0342
15	-1.60944	-1.49085	54.7074	45.4336
16	-1.60944	-1.46106	56.8421	47.7851
17	-0.891598	-1.42554	58.8743	49.0561
18	-0.867501	-1.39838	60.8297	50.2692
19	-0.84397	-1.36581	62.6952	51.4219
20	-0.776529	-1.34075	64.4928	52.4631
21	-0.776529	-1.31058	66.2104	53.4808
22	-0.755023	-1.28155	67.8528	54.4484
23	-0.71335	-1.25908	69.4381	55.3465
24	-0.693147	-1.23187	70.9556	56.2004
25	-0.634878	-1.21073	72.4214	56.9691
26	-0.579818	-1.18504	73.8258	57.6562
27	-0.562119	-1.16505	75.1831	58.3111
28	-0.544727	-1.14069	76.4843	58.9324
29	-0.527633	-1.12168	77.7424	59.5243
30	-0.430783	-1.09847	78.9491	59.9975
31	-0.314711	-1.08032	80.1162	60.3374
32	0	-1.05812	81.2358	60.3374
33	0	-1.03643	82.31	60.3374
34	0	-1.01943	83.3492	60.3374
35	0	-0.998575	84.3464	60.3374
36	0	-0.982202	85.3111	60.3374
37	0	-0.9621	86.2367	60.3374
38	0	-0.946291	87.1322	60.3374
39	0	-0.926859	87.9912	60.3374
40	0	-0.911562	88.8222	60.3374
41	0	-0.892733	89.6192	60.3374
42	0	-0.877897	90.3899	60.3374
43	0	-0.859618	91.1288	60.3374
44	0	-0.841621	91.8371	60.3374
45	0	-0.827417	92.5218	60.3374
46	0	-0.809896	93.1777	60.3374
47	0	-0.796056	93.8114	60.3374
48	0	-0.778966	94.4182	60.3374
49	0	-0.765456	95.0041	60.3374

50	0	-0.748762	95.5647	60.3374
51	0	-0.735557	96.1058	60.3374
52	0	-0.719228	96.6231	60.3374
53	0	-0.706302	97.1219	60.3374
54	0	-0.690309	97.5985	60.3374
55	0	-0.674499	8.0534	60.3374
56	0	-0.661955	98.4916	60.3374
57	0	-0.646431	98.9095	60.3374
58	0	-0.634124	99.3116	60.3374
59	0	-0.618872	99.6946	60.3374
60	0	-0.606775	100.063	60.3374
61	0	-0.591776	100.413	60.3374
62	0	-0.579873	100.749	60.3374
63	0	-0.565108	101.069	60.3374
64	0	-0.553384	101.375	60.3374
65	0	-0.538836	101.665	60.3374
66	0	-0.524401	101.94	60.3374
67	0	-0.51293	102.203	60.3374
68	0	-0.498687	102.452	60.3374
69	0	-0.487364	102.689	60.3374
70	0	-0.473299	102.913	60.3374
71	0	-0.462114	103.127	60.3374
72	0	-0.448213	103.328	60.3374
73	0	-0.437153	103.519	60.3374
74	0	-0.423405	103.698	60.3374
75	0	-0.412463	103.868	60.3374
76	0	-0.398855	104.027	60.3374
77	0	-0.385321	104.176	60.3374
78	0	-0.374544	104.316	60.3374
79	0	-0.361133	104.447	60.3374
80	0	-0.350451	104.569	60.3374
81	0	-0.337155	104.683	60.3374
82	0	-0.326561	104.79	60.3374
83	0	-0.31337	104.888	60.3374
84	0	-0.302855	104.98	60.3374
85	0	-0.28976	105.064	60.3374
86	0	-0.279319	105.142	60.3374
87	0	-0.266311	105.213	60.3374
88	0	-0.253347	105.277	60.3374
89	0	-0.243007	105.336	60.3374
90	0	-0.230118	105.389	60.3374
91	0	-0.219834	105.437	60.3374
92	0	-0.207012	105.48	60.3374
93	0	-0.196779	105.519	60.3374
94	0	-0.184017	105.553	60.3374
95	0	-0.173829	105.583	60.3374
96	0	-0.161119	105.609	60.3374
97	0	-0.150969	105.632	60.3374
98	0	-0.138305	105.651	60.3374
99	0	-0.125661	105.666	60.3374
100	0	-0.115562	105.68	60.3374
101	0	-0.102953	105.69	60.3374
102	0	-0.0928787	105.699	60.3374
103	0	-0.0802981	105.705	60.3374
104	0	-0.0702426	105.71	60.3374
105	0	-0.0576847	105.714	60.3374
106	0	-0.0476439	105.716	60.3374
107	0	-0.0350997	105.717	60.3374
108	0	-0.0250691	105.718	60.3374
109	0	-0.0125328	105.718	60.3374
110	0	0	105.718	60.3374
111	0	0.0125328	105.718	60.3374

112	0	0.0250691	105.719	60.3374
113	0	0.0350997	105.72	60.3374
114	0	0.0476439	105.722	60.3374
115	0	0.0576847	105.726	60.3374
116	0	0.0702426	105.731	60.3374
117	0	0.0802981	105.737	60.3374
118	0	0.0928787	105.746	60.3374
119	0	0.102953	105.756	60.3374
120	0	0.115562	105.77	60.3374
121	0	0.125661	105.785	60.3374
122	0	0.138305	105.805	60.3374
123	0	0.150969	105.827	60.3374
124	0	0.161119	105.853	60.3374
125	0	0.173829	105.883	60.3374
126	0	0.184017	105.917	60.3374
127	0	0.196779	105.956	60.3374
128	0	0.207012	105.999	60.3374
129	0	0.219834	106.047	60.3374
130	0	0.230118	106.1	60.3374
131	0	0.243007	106.159	60.3374
132	0	0.253347	106.223	60.3374
133	0	0.266311	106.294	60.3374
134	0	0.279319	106.372	60.3374
135	0	0.28976	106.456	60.3374
136	0	0.302855	106.548	60.3374
137	0	0.31337	106.646	60.3374
138	0	0.326561	106.753	60.3374
139	0	0.337155	106.867	60.3374
140	0	0.350451	106.989	60.3374
141	0	0.361133	107.12	60.3374
142	0	0.374544	107.26	60.3374
143	0	0.385321	107.409	60.3374
144	0	0.398855	107.568	60.3374
145	0	0.412463	107.738	60.3374
146	0	0.423405	107.917	60.3374
147	0	0.437153	108.108	60.3374
148	0	0.448213	108.309	60.3374
149	0	0.462114	108.523	60.3374
150	0	0.473299	108.747	60.3374
151	0	0.487364	108.984	60.3374
152	0	0.498687	109.233	60.3374
153	0	0.51293	109.496	60.3374
154	0	0.524401	109.771	60.3374
155	0	0.538836	110.061	60.3374
156	0	0.553384	110.368	60.3374
157	0	0.565108	110.687	60.3374
158	0	0.579873	111.023	60.3374
159	0	0.591776	111.373	60.3374
160	0	0.606775	111.741	60.3374
161	0	0.618872	112.124	60.3374
162	0	0.634124	112.527	60.3374
163	0	0.646431	112.944	60.3374
164	0	0.661955	113.383	60.3374
165	0	0.67449	113.838	60.3374
166	0	0.690309	114.314	60.3374
167	0	0.706302	114.813	60.3374
168	0	0.719228	115.33	60.3374
169	0	0.735557	115.871	60.3374
170	0	0.748762	116.432	60.3374
171	0	0.765456	117.018	60.3374
172	0	0.778966	117.625	60.3374
173	0	0.796056	118.258	60.3374

174	0	0.809896		118.914	60.3374
175	0	0.827417		119.599	60.3374
176	0	0.841621		120.307	60.3374
177	0	0.859618		121.046	60.3374
178	0	0.877897		121.817	60.3374
179	0	0.892733		122.614	60.3374
180	0	0.911562		123.445	60.3374
181	0	0.926859		124.304	60.3374
182	0	0.946291		125.199	60.3374
183	0	0.9621	126.125	60.3374	
184	0	0.982202		127.09	60.3374
185	0	0.998575		128.087	60.3374
186	0	1.01943	129.126	60.3374	
187	0	1.03643	130.2	60.3374	
188	0	1.05812	131.32	60.3374	
189	0	1.08032	132.487	60.3374	
190	0	1.09847	133.694	60.3374	
191	0	1.12168	134.952	60.3374	
192	0	1.14069	136.253	60.3374	
193	0	1.16505	137.61	60.3374	
194	0.0953102		1.18504	139.015	60.4504
195	0.0953102		1.21073	140.48	60.5658
196	0.587787		1.23187	141.998	61.2899
197	0.693147		1.25908	143.583	62.1626
198	0.693147		1.28155	145.226	63.0509
199	0.741937		1.31058	146.943	64.0233
200	0.916291		1.34075	148.741	65.2518
201	1.09861	1.36581	150.606	66.7523	
202	1.09861	1.39838	152.562	68.2886	
203	1.09861	1.42554	154.594	69.8547	
204	1.38629	1.46106	156.729	71.8801	
205	1.94591	1.49085	158.951	74.7812	
206	1.94591	1.53007	161.292	77.7586	
207	2.07944	1.56322	163.736	81.0092	
208	2.19722	1.60725	166.319	84.5407	
209	2.19722	1.64485	169.025	88.1548	
210	2.30259	1.6954	171.899	92.0586	
211	2.30259	1.75069	174.964	96.0897	
212	2.48491	1.79912	178.201	100.56	
213	2.77259	1.86629	181.684	105.735	
214	2.89037	1.92684	185.397	111.304	
215	3.13549	2.01409	189.453	117.619	
216	3.21888	2.09693	193.85	124.369	
217	3.52636	2.22621	198.806	132.219	
218	4.04305	2.36561	204.403	141.784	
219	4.09434	2.65209	211.436	152.642	

Data Set Standard Deviation = 0.898164
Numerator = 23299.7
Denominator = 37183.2
W Statistic = 0.626618 = 23299.7 / 37183.2

5% Critical value of 0.976 exceeds 0.626618
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.626618
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Arsenic

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	ND<0	84.5
	3/16/1999	ND<0	84.5
	9/23/1999	ND<0	84.5
	3/14/2000	ND<0	84.5
	9/23/2003	ND<0	84.5
	3/10/2004	ND<0	84.5
	10/12/2004	ND<0	84.5
	4/1/2005	ND<0	84.5
	10/26/2005	ND<0	84.5
	6/19/2006	ND<0	84.5
	11/18/2006	ND<0	84.5
	6/2/2007	0 J	184
	11/15/2007	0 J	185
	5/20/2008	ND<0	84.5
	11/20/2008	ND<0	84.5
	6/11/2009	ND<-1.60944 U	84.5
	11/16/2009	ND<-1.60944 U	84.5
	6/30/2010	ND<-1.60944 U	84.5

Rank Sum = 1721
Rank Mean = 95.6111

Background Rank Sum = 1721
Background Rank Mean = 95.6111

Compliance Wells

Well ID	Date	Result	Rank
LMW-16	11/18/2006	ND<0	84.5
	6/2/2007	0.693147	197
	11/15/2007	ND<0	84.5
	5/20/2008	ND<0	84.5
	11/20/2008	2.19722	208
	6/11/2009	-0.579818 J	178
	11/16/2009	-0.527633 J	181
	6/30/2010	-0.693147 J	176

Rank Sum = 1193.5
Rank Mean = 149.188

LMW-6	1/16/1998	ND<0	84.5
	3/16/1999	ND<0	84.5
	9/23/1999	ND<0	84.5
	3/14/2000	ND<0	84.5
	9/23/2003	ND<0	84.5
	3/10/2004	ND<0	84.5
	10/12/2004	ND<0	84.5
	4/1/2005	ND<0	84.5

	10/26/2005	ND<0	84.5	
	6/19/2006	ND<0	84.5	
	11/18/2006	ND<0	84.5	
	6/2/2007	0 J	186	
	11/15/2007	ND<0	84.5	
	5/20/2008	ND<0	84.5	
	11/20/2008	ND<0	84.5	
	6/11/2009	-0.430783 J B		182
	11/16/2009	ND<-1.60944 U		84.5
	6/30/2010	-0.776529 J		172

Rank Sum = 1807.5
Rank Mean = 100.417

LMW-14R	6/2/2007	0 J	187	
	11/15/2007	ND<0	84.5	
	5/20/2008	ND<0	84.5	
	11/20/2008	2.19722		209
	6/11/2009	-0.891598 J		169
	11/16/2009	-0.755023 J		174
	11/16/2009	ND<-1.60944 U		84.5
	11/16/2009	ND<-1.60944 U		84.5
	6/30/2010	ND<-1.60944 U		84.5

Rank Sum = 1161.5
Rank Mean = 129.056

LMW-9S	11/18/2006	ND<0	84.5	
	6/2/2007	0 J	188	
	11/15/2007	1.38629		204
	5/20/2008	ND<0	84.5	
	11/20/2008	ND<0	84.5	
	6/11/2009	-0.776529 J		173
	6/30/2010	-0.562119 J		179

Rank Sum = 997.5
Rank Mean = 142.5

LMW-9D	11/18/2006	1.94591		205
	6/2/2007	1.94591	206	
	11/15/2007	ND<0	84.5	
	5/20/2008	1.09861		201
	11/20/2008	1.09861		202
	6/11/2009	0.741937		199
	11/16/2009	0.693147		198
	6/30/2010	0.587787		196

Rank Sum = 1491.5
Rank Mean = 186.438

LMW-9	1/16/1998	ND<0	84.5	
	3/16/1999	ND<0	84.5	
	9/23/1999	1.09861		203
	3/14/2000	ND<0	84.5	
	9/23/2003	ND<0	84.5	
	3/10/2004	ND<0	84.5	
	10/12/2004	ND<0	84.5	
	4/1/2005	0 J	189	
	10/26/2005	ND<0	84.5	
	6/19/2006	0 J	190	
	11/18/2006	ND<0	84.5	
	6/2/2007	0 J	191	
	11/15/2007	ND<0	84.5	
	5/20/2008	ND<0	84.5	
	11/20/2008	2.07944		207
	6/11/2009	0.0953102 J		194

	11/16/2009	ND<-1.60944 U	84.5
	6/30/2010	-0.544727 J	180

Rank Sum = 2283.5
Rank Mean = 126.861

LMW-8	1/16/1998	ND<0	84.5
	3/16/1999	ND<0	84.5
	9/23/1999	ND<0	84.5
	3/14/2000	ND<0	84.5
	9/23/2003	ND<0	84.5
	3/10/2004	ND<0	84.5
	10/12/2004	ND<0	84.5
	4/1/2005	ND<0	84.5
	10/26/2005	ND<0	84.5
	6/19/2006	ND<0	84.5
	11/18/2006	ND<0	84.5
	6/2/2007	ND<0	84.5
	11/15/2007	ND<0	84.5
	5/20/2008	ND<0	84.5
	11/20/2008	ND<0	84.5
	6/11/2009	-0.71335 J	175
	11/16/2009	-0.634878 J	177
	6/30/2010	-0.84397 J	171

Rank Sum = 1790.5
Rank Mean = 99.4722

LMW-3	11/19/1996	ND<0	84.5
	3/24/1997	ND<0	84.5
	1/16/1998	ND<0	84.5
	3/16/1999	ND<0	84.5
	9/23/1999	ND<0	84.5
	3/14/2000	ND<0	84.5
	9/23/2003	ND<0	84.5
	3/10/2004	ND<0	84.5
	10/12/2004	ND<0	84.5
	4/1/2005	ND<0	84.5
	10/26/2005	ND<0	84.5
	6/19/2006	ND<0	84.5
	11/18/2006	ND<0	84.5
	6/2/2007	ND<0	84.5
	11/15/2007	ND<0	84.5
	5/20/2008	ND<0	84.5
	11/20/2008	ND<0	84.5
	6/11/2009	-0.867501 J B	170
	11/16/2009	ND<-1.60944 U	84.5
	6/30/2010	ND<-1.60944 U	84.5

Rank Sum = 1775.5
Rank Mean = 88.775

LMW-15R	11/18/2006	ND<0	84.5
	6/2/2007	ND<0	84.5
	11/15/2007	ND<0	84.5
	11/15/2007	ND<0	84.5
	5/20/2008	ND<0	84.5
	5/20/2008	ND<0	84.5
	11/20/2008	ND<0	84.5
	11/20/2008	ND<0	84.5
	6/11/2009	0.916291	200
	6/30/2010	ND<-1.60944 U	84.5

Rank Sum = 960.5
Rank Mean = 96.05

LMW-10	3/14/2000	3.13549		215
	9/23/2003	ND<0	84.5	
	3/10/2004	3.21888		216
	10/12/2004	ND<0	84.5	
	4/1/2005	ND<0	84.5	
	10/26/2005	ND<0	84.5	
	6/19/2006	ND<0	84.5	
	11/18/2006	ND<0	84.5	
	6/2/2007	0 J	192	
	11/15/2007	ND<0	84.5	
	5/20/2008	ND<0	84.5	
	11/20/2008	ND<0	84.5	
	6/11/2009	ND<-1.60944 U		84.5
	11/16/2009	ND<-1.60944 U		84.5
	6/30/2010	ND<-1.60944 U		84.5

Rank Sum = 1637
Rank Mean = 109.133

LMW-3S	11/18/2006	ND<0	84.5	
	6/2/2007	ND<0	84.5	
	11/15/2007	ND<0	84.5	
	5/20/2008	ND<0	84.5	
	11/20/2008	ND<0	84.5	
	6/11/2009	-0.314711 J B		183
	11/16/2009	ND<-1.60944 U		84.5
	6/30/2010	ND<-1.60944 U		84.5

Rank Sum = 774.5
Rank Mean = 96.8125

LMW-7	1/16/1998	ND<0	84.5	
	3/16/1999	ND<0	84.5	
	9/23/1999	ND<0	84.5	
	3/14/2000	2.30259		210
	9/23/2003	ND<0	84.5	
	3/10/2004	ND<0	84.5	
	10/12/2004	ND<0	84.5	
	4/1/2005	ND<0	84.5	
	10/26/2005	ND<0	84.5	
	6/19/2006	ND<0	84.5	
	11/18/2006	ND<0	84.5	
	6/2/2007	0 J	193	
	11/15/2007	ND<0	84.5	
	5/20/2008	ND<0	84.5	
	11/20/2008	2.30259		211
	6/11/2009	0.0953102 J B		195

Rank Sum = 1823
Rank Mean = 113.938

LMW-11	3/14/2000	2.48491		212
	9/23/2003	ND<0	84.5	
	3/10/2004	2.89037		214
	10/12/2004	ND<0	84.5	
	4/1/2005	ND<0	84.5	
	10/26/2005	ND<0	84.5	
	6/19/2006	ND<0	84.5	
	6/2/2007	ND<0	84.5	
	11/15/2007	ND<0	84.5	
	5/20/2008	ND<0	84.5	
	11/20/2008	ND<0	84.5	

Rank Sum = 1186.5
Rank Mean = 107.864

LMW-12	3/14/2000	4.04305		218
	9/23/2003	ND<0	84.5	
	3/10/2004	ND<0	84.5	
	10/12/2004	ND<0	84.5	
	4/1/2005	ND<0	84.5	
	10/26/2005	ND<0	84.5	
	6/19/2006	ND<0	84.5	
	6/2/2007	ND<0	84.5	
	11/15/2007	ND<0	84.5	
	5/20/2008	ND<0	84.5	
	11/20/2008	ND<0	84.5	

Rank Sum = 1063
Rank Mean = 96.6364

LMW-13	3/14/2000	2.77259		213
	9/23/2003	ND<0	84.5	
	3/10/2004	ND<0	84.5	
	10/12/2004	ND<0	84.5	
	4/1/2005	ND<0	84.5	
	10/26/2005	ND<0	84.5	
	6/19/2006	ND<0	84.5	
	6/2/2007	ND<0	84.5	
	11/15/2007	ND<0	84.5	
	5/20/2008	ND<0	84.5	
	11/20/2008	ND<0	84.5	

Rank Sum = 1058
Rank Mean = 96.1818

MW-5	1/16/1998	ND<0	84.5	
	3/16/1999	ND<0	84.5	
	9/23/1999	ND<0	84.5	
	3/14/2000	3.52636		217
	9/23/2003	ND<0	84.5	
	3/10/2004	4.09434		219
	10/12/2004	ND<0	84.5	
	4/1/2005	ND<0	84.5	
	10/26/2005	ND<0	84.5	
	6/19/2006	ND<0	84.5	
	11/15/2007	ND<0	84.5	
	5/20/2008	ND<0	84.5	
	11/20/2008	ND<0	84.5	

Rank Sum = 1365.5
Rank Mean = 105.038

Calculation Results:

Kruskal-Wallis H Statistic = 24.7129
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 45.0497
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
24.7129 < 26.2962 indicating no significant group difference at 5% significance level
45.0497 > 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 95.6111

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-16	149.188	53.5764	62.6357
LMW-6	100.417	4.80556	49.1355
LMW-14R	129.056	33.4444	60.1784
LMW-9S	142.5	46.8889	65.66

LMW-9D	186.438	90.8264	62.6357		
LMW-9	126.861	31.25	49.1355		
LMW-8	99.4722	3.86111	49.1355		
LMW-3	88.775	-6.8361	47.8913		
LMW-15R		96.05	0.438889		58.1379
LMW-10	109.133	13.5222	51.5337		
LMW-3S	96.8125	1.20139	62.6357		
LMW-7	113.938	18.3264	50.6477		
LMW-11	107.864	12.2525	56.4135		
LMW-12	96.6364	1.02525	56.4135		
LMW-13	96.1818	0.570707		56.4135	
MW-5	105.038	9.42735	53.6524		

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 95.6111

Well	Mean Rank	Dif from Bkg			Critical Value
LMW-16	149.188	53.5764	73.9823		
LMW-6	100.417	4.80556	58.0365		
LMW-14R		129.056	33.4444	71.0799	
LMW-9S	142.5	46.8889	77.5545		
LMW-9D	186.438	90.8264	73.9823		
LMW-9	126.861	31.25	58.0365		
LMW-8	99.4722	3.86111	58.0365		
LMW-3	88.775	-6.8361	56.567		
LMW-15R		96.05	0.438889		68.6697
LMW-10	109.133	13.5222	60.8692		
LMW-3S	96.8125	1.20139	73.9823		
LMW-7	113.938	18.3264	59.8226		
LMW-11	107.864	12.2525	66.6329		
LMW-12	96.6364	1.02525	66.6329		
LMW-13	96.1818	0.570707		66.6329	
MW-5	105.038	9.42735	63.3717		

Mann-Kendall Trend Analysis

Parameter: Arsenic

Location: LMW-9D

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives	
1.94591	1.94591	0	0	0	
ND<0	1.94591	-1.94591	0	1	
1.09861	1.94591	-0.847298	0	2	
1.09861	1.94591	-0.847298	0	3	
0.741937	1.94591	-1.203970	4		
0.693147	1.94591	-1.252760	5		
0.587787	1.94591	-1.358120	6		
ND<0	1.94591	-1.94591	0	7	
1.09861	1.94591	-0.847298	0	8	
1.09861	1.94591	-0.847298	0	9	
0.741937	1.94591	-1.203970	10		
0.693147	1.94591	-1.252760	11		
0.587787	1.94591	-1.358120	12		
1.09861	ND<0	1.09861	1	12	
1.09861	ND<0	1.09861	2	12	
0.741937	ND<0	0.741937	3	12	
0.693147	ND<0	0.693147	4	12	
0.587787	ND<0	0.587787	5	12	
1.09861	1.09861	0	5	12	
0.741937	1.09861	-0.356675	5	13	
0.693147	1.09861	-0.405465	5	14	
0.587787	1.09861	-0.510826	5	15	
0.741937	1.09861	-0.356675	5	16	
0.693147	1.09861	-0.405465	5	17	
0.587787	1.09861	-0.510826	5	18	
0.693147	0.741937	-0.0487902	5	19	
0.587787	0.741937	-0.154151	5	20	
0.587787	0.693147	-0.105361	5	21	

S Statistic = 5 - 21 = -16
Comparing at 1.0 - (0.05 / 2) = 97.5% confidence level (two-tailed)
Probability of obtaining S >= |-16| is 0.062
0.062 >= 0.025 indicating no evidence of a trend

Concentrations (ppb)

Parameter: Barium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 219
Total Non-Detect: 88
Percent Non-Detects: 40.1826%
Total Background Measurements: 18
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	18	5 (27.7778%)	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
			11/16/2009	13	13
			6/30/2010	15	15

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9S	7	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
			6/30/2010	38	38
LMW-9D	8	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
			11/16/2009	2.9	2.9
			6/30/2010	2.1	2.1
LMW-9	18	7 (38.8889%)	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	
			11/16/2009	2.9	2.9	
			6/30/2010	2.8	2.8	
LMW-8	18	5 (27.7778%)	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	
			11/16/2009	40	40	
			6/30/2010	30	30	
LMW-6	18	5 (27.7778%)	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	
			11/16/2009	74	74	
			6/30/2010	77	77	
LMW-10	15	6 (40%)	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	
			11/16/2009	12	12	
			6/30/2010	12	12	
LMW-3	20	9 (45%)	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	
			11/16/2009	6.4	6.4	
			6/30/2010	5	5	
LMW-16	8	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	
			11/16/2009	13	13	
			6/30/2010	8.8	8.8	
LMW-15R		10	3 (30%)	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	ND<10	ND<10	
			11/20/2008	38	38	
			6/11/2009	42	42	
			6/30/2010	36	36	
LMW-14R		9	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	
			11/16/2009	48	48	
			11/16/2009	14	14	
			11/16/2009	12	12	
			6/30/2010	13	13	
LMW-3S	8	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	

			11/16/2009	10	10	
			6/30/2010	12	12	
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	
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-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

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Barium

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	2	-2.65209	7.03356	-5.30417
2	2	-2.36561	12.6297	-10.0354
3	2.1	-2.22621	17.5857	-14.7104
4	2.8	-2.09693	21.9828	-20.5818
5	2.9	-2.01409	26.0394	-26.4227
6	2.9	-1.92684	29.7521	-32.0105
7	3	-1.86629	33.2351	-37.6094
8	3	-1.79912	36.472	-43.0068
9	3	-1.75069	39.5369	-48.2588
10	3.1	-1.6954	42.4112	-53.5146
11	3.1	-1.64485	45.1168	-58.6136
12	4	-1.60725	47.7	-65.0426
13	5	-1.56322	50.1437	-72.8587
14	5	-1.53007	52.4848	-80.509
15	5	-1.49085	54.7074	-87.9633
16	5	-1.46106	56.8421	-95.2686
17	5	-1.42554	58.8743	-102.396
18	5	-1.39838	60.8297	-109.388
19	5	-1.36581	62.6952	-116.217
20	5	-1.34075	64.4928	-122.921
21	5	-1.31058	66.2104	-129.474
22	5	-1.28155	67.8528	-135.882
23	5	-1.25908	69.4381	-142.177
24	5	-1.23187	70.9556	-148.336
25	5	-1.21073	72.4214	-154.39
26	5	-1.18504	73.8258	-160.315
27	5	-1.16505	75.1831	-166.14
28	5	-1.14069	76.4843	-171.844
29	5	-1.12168	77.7424	-177.452
30	5	-1.09847	78.9491	-182.945
31	5	-1.08032	80.1162	-188.346
32	5	-1.05812	81.2358	-193.637
33	5	-1.03643	82.31	-198.819
34	5	-1.01943	83.3492	-203.916
35	5	-0.998575	84.3464	-208.909
36	5	-0.982202	85.3111	-213.82
37	5	-0.9621	86.2367	-218.631
38	5	-0.946291	87.1322	-223.362
39	5	-0.926859	87.9912	-227.996
40	5	-0.911562	88.8222	-232.554
41	5	-0.892733	89.6192	-237.018
42	5	-0.877897	90.3899	-241.407
43	5	-0.859618	91.1288	-245.705
44	5	-0.841621	91.8371	-249.913
45	5	-0.827417	92.5218	-254.051
46	5	-0.809896	93.1777	-258.1
47	5	-0.796056	93.8114	-262.08
48	5	-0.778966	94.4182	-265.975
49	5	-0.765456	95.0041	-269.802

50	5	-0.748762	95.5647	-273.546
51	5	-0.735557	96.1058	-277.224
52	5	-0.719228	96.6231	-280.82
53	5	-0.706302	97.1219	-284.352
54	5	-0.690309	97.5985	-287.803
55	5	-0.674499	8.0534	-291.176
56	5	-0.661955	98.4916	-294.485
57	5	-0.646431	98.9095	-297.718
58	5	-0.634124	99.3116	-300.888
59	5	-0.618872	99.6946	-303.983
60	5	-0.606775	100.063	-307.016
61	5	-0.591776	100.413	-309.975
62	5	-0.579873	100.749	-312.875
63	5	-0.565108	101.069	-315.7
64	5	-0.553384	101.375	-318.467
65	5	-0.538836	101.665	-321.161
66	5	-0.524401	101.94	-323.783
67	5	-0.51293	102.203	-326.348
68	5	-0.498687	102.452	-328.841
69	5	-0.487364	102.689	-331.278
70	5	-0.473299	102.913	-333.645
71	5	-0.462114	103.127	-335.955
72	5	-0.448213	103.328	-338.196
73	5	-0.437153	103.519	-340.382
74	5	-0.423405	103.698	-342.499
75	5	-0.412463	103.868	-344.561
76	5	-0.398855	104.027	-346.556
77	5	-0.385321	104.176	-348.482
78	5	-0.374544	104.316	-350.355
79	5	-0.361133	104.447	-352.161
80	5	-0.350451	104.569	-353.913
81	5	-0.337155	104.683	-355.599
82	5	-0.326561	104.79	-357.232
83	5	-0.31337	104.888	-358.798
84	5	-0.302855	104.98	-360.313
85	5	-0.28976	105.064	-361.762
86	5	-0.279319	105.142	-363.158
87	5	-0.266311	105.213	-364.49
88	5	-0.253347	105.277	-365.756
89	5	-0.243007	105.336	-366.971
90	5	-0.230118	105.389	-368.122
91	5	-0.219834	105.437	-369.221
92	5	-0.207012	105.48	-370.256
93	5	-0.196779	105.519	-371.24
94	5	-0.184017	105.553	-372.16
95	5	-0.173829	105.583	-373.029
96	5	-0.161119	105.609	-373.835
97	5	-0.150969	105.632	-374.59
98	5	-0.138305	105.651	-375.281
99	5	-0.125661	105.666	-375.91
100	5	-0.115562	105.68	-376.487
101	5	-0.102953	105.69	-377.002
102	5	-0.0928787	105.699	-377.467
103	5	-0.0802981	105.705	-377.868
104	5	-0.0702426	105.71	-378.219
105	5	-0.0576847	105.714	-378.508
106	5	-0.0476439	105.716	-378.746
107	5	-0.0350997	105.717	-378.921
108	5	-0.0250691	105.718	-379.047
109	6	-0.0125328	105.718	-379.122
110	6	0	105.718	-379.122
111	6.4	0.0125328	105.718	-379.042

112	7	0.0250691	105.719	-378.866
113	7	0.0350997	105.72	-378.621
114	7	0.0476439	105.722	-378.287
115	7	0.0576847	105.726	-377.883
116	7.2	0.0702426	105.731	-377.378
117	8	0.0802981	105.737	-376.735
118	8	0.0928787	105.746	-375.992
119	8	0.102953	105.756	-375.169
120	8	0.115562	105.77	-374.244
121	8.8	0.125661	105.785	-373.138
122	9	0.138305	105.805	-371.893
123	9	0.150969	105.827	-370.535
124	9	0.161119	105.853	-369.085
125	10	0.173829	105.883	-367.346
126	10	0.184017	105.917	-365.506
127	10	0.196779	105.956	-363.538
128	10	0.207012	105.999	-361.468
129	10	0.219834	106.047	-359.27
130	10	0.230118	106.1	-356.969
131	11	0.243007	106.159	-354.296
132	11	0.253347	106.223	-351.509
133	11	0.266311	106.294	-348.579
134	12	0.279319	106.372	-345.228
135	12	0.28976	106.456	-341.751
136	12	0.302855	106.548	-338.116
137	12	0.31337	106.646	-334.356
138	12	0.326561	106.753	-330.437
139	12	0.337155	106.867	-326.391
140	12	0.350451	106.989	-322.186
141	12	0.361133	107.12	-317.852
142	12	0.374544	107.26	-313.358
143	12	0.385321	107.409	-308.734
144	12	0.398855	107.568	-303.948
145	13	0.412463	107.738	-298.586
146	13	0.423405	107.917	-293.081
147	13	0.437153	108.108	-287.398
148	13	0.448213	108.309	-281.572
149	13	0.462114	108.523	-275.564
150	13	0.473299	108.747	-269.411
151	13	0.487364	108.984	-263.075
152	13	0.498687	109.233	-256.593
153	13	0.51293	109.496	-249.924
154	13	0.524401	109.771	-243.107
155	13	0.538836	110.061	-236.102
156	13	0.553384	110.368	-228.908
157	13	0.565108	110.687	-221.562
158	14	0.579873	111.023	-213.444
159	14	0.591776	111.373	-205.159
160	14	0.606775	111.741	-196.664
161	14	0.618872	112.124	-188
162	14	0.634124	112.527	-179.122
163	15	0.646431	112.944	-169.426
164	17	0.661955	113.383	-158.172
165	18	0.67449	113.838	-146.032
166	18	0.690309	114.314	-133.606
167	20	0.706302	114.813	-119.48
168	20	0.719228	115.33	-105.095
169	20	0.735557	115.871	-90.3842
170	20	0.748762	116.432	-75.409
171	20	0.765456	117.018	-60.0998
172	20	0.778966	117.625	-44.5205
173	21	0.796056	118.258	-27.8033

174	22	0.809896		118.914	-9.98563
175	22	0.827417		119.599	8.21755
176	22	0.841621		120.307	26.7332
177	23	0.859618		121.046	46.5044
178	23	0.877897		121.817	66.6961
179	24	0.892733		122.614	88.1216
180	24	0.911562		123.445	109.999
181	27	0.926859		124.304	135.024
182	27	0.946291		125.199	160.574
183	28	0.9621	126.125	187.513	
184	29	0.982202		127.09	215.997
185	30	0.998575		128.087	245.954
186	30	1.01943	129.126	276.537	
187	31	1.03643	130.2	308.666	
188	32	1.05812	131.32	342.526	
189	33	1.08032	132.487	378.177	
190	34	1.09847	133.694	415.525	
191	34	1.12168	134.952	453.662	
192	35	1.14069	136.253	493.586	
193	36	1.16505	137.61	535.528	
194	37	1.18504	139.015	579.374	
195	38	1.21073	140.48	625.382	
196	38	1.23187	141.998	672.193	
197	38	1.25908	143.583	720.038	
198	38	1.28155	145.226	768.737	
199	40	1.31058	146.943	821.16	
200	40	1.34075	148.741	874.79	
201	40	1.36581	150.606	929.423	
202	41	1.39838	152.562	986.756	
203	41	1.42554	154.594	1045.2	
204	42	1.46106	156.729	1106.57	
205	42	1.49085	158.951	1169.18	
206	48	1.53007	161.292	1242.63	
207	48	1.56322	163.736	1317.66	
208	49	1.60725	166.319	1396.42	
209	52	1.64485	169.025	1481.95	
210	61	1.6954	171.899	1585.37	
211	73	1.75069	174.964	1713.17	
212	74	1.79912	178.201	1846.3	
213	75	1.86629	181.684	1986.27	
214	77	1.92684	185.397	2134.64	
215	77	2.01409	189.453	2289.73	
216	80	2.09693	193.85	2457.48	
217	92	2.22621	198.806	2662.29	
218	109	2.36561	204.403	2920.14	
219	120	2.65209	211.436	3238.39	

Data Set Standard Deviation = 19.0387
Numerator = 1.04872e+007
Denominator = 1.67074e+007
W Statistic = 0.627699 = 1.04872e+007 / 1.67074e+007

5% Critical value of 0.976 exceeds 0.627699
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.627699
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Barium

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.693147	-2.65209	7.03356	-1.83829
2	0.693147	-2.3656	12.6297	-3.478
3	0.741937	-2.2262	17.5857	-5.12971
4	1.02962	-2.0969	21.9828	-7.28875
5	1.06471	-2.0140	26.0394	-9.43318
6	1.06471	-1.9268	29.7521	-11.4847
7	1.09861	-1.8662	33.2351	-13.535
8	1.09861	-1.7991	36.472	-15.5116
9	1.09861	-1.7506	39.5369	-17.4349
10	1.1314	-1.6954	42.4112	-19.3531
11	1.1314	-1.6448	45.1168	-21.2141
12	1.38629	-1.6072	47.7	-23.4422
13	1.60944	-1.5632	50.1437	-25.9581
14	1.60944	-1.5300	52.4848	-28.4206
15	1.60944	-1.4908	54.7074	-30.8201
16	1.60944	-1.4610	56.8421	-33.1716
17	1.60944	-1.4255	58.8743	-35.4659
18	1.60944	-1.3983	60.8297	-37.7165
19	1.60944	-1.3658	62.6952	-39.9147
20	1.60944	-1.3407	64.4928	-42.0725
21	1.60944	-1.3105	66.2104	-44.1818
22	1.60944	-1.2815	67.8528	-46.2444
23	1.60944	-1.2590	69.4381	-48.2708
24	1.60944	-1.2318	70.9556	-50.2534
25	1.60944	-1.2107	72.4214	-52.202
26	1.60944	-1.1850	73.8258	-54.1093
27	1.60944	-1.1650	75.1831	-55.9843
28	1.60944	-1.1406	76.4843	-57.8202
29	1.60944	-1.1216	77.7424	-59.6255
30	1.60944	-1.0984	78.9491	-61.3934
31	1.60944	-1.0803	80.1162	-63.1321
32	1.60944	-1.0581	81.2358	-64.8351
33	1.60944	-1.0364	82.31	-66.5032
34	1.60944	-1.0194	83.3492	-68.1439
35	1.60944	-0.998575	84.3464	-69.751
36	1.60944	-0.982202	85.3111	-71.3318
37	1.60944	-0.9621	86.2367	-72.8802
38	1.60944	-0.946291	87.1322	-74.4032
39	1.60944	-0.926859	87.9912	-75.895
40	1.60944	-0.911562	88.8222	-77.3621
41	1.60944	-0.892733	89.6192	-78.7989
42	1.60944	-0.877897	90.3899	-80.2118
43	1.60944	-0.859618	91.1288	-81.5953
44	1.60944	-0.841621	91.8371	-82.9498
45	1.60944	-0.827417	92.5218	-84.2815
46	1.60944	-0.809896	93.1777	-85.585
47	1.60944	-0.796056	93.8114	-86.8662
48	1.60944	-0.778966	94.4182	-88.1199
49	1.60944	-0.765456	95.0041	-89.3518

50	1.60944	-0.748762	95.5647	-90.5569
51	1.60944	-0.735557	96.1058	-91.7407
52	1.60944	-0.719228	96.6231	-92.8983
53	1.60944	-0.706302	97.1219	-94.035
54	1.60944	-0.690309	97.5985	-95.1461
55	1.60944	-0.674499	8.0534	-96.2316
56	1.60944	-0.661955	98.4916	-97.297
57	1.60944	-0.646431	98.9095	-98.3374
58	1.60944	-0.634124	99.3116	-99.358
59	1.60944	-0.618872	99.6946	-100.354
60	1.60944	-0.606775	100.063	-101.331
61	1.60944	-0.591776	100.413	-102.283
62	1.60944	-0.579873	100.749	-103.216
63	1.60944	-0.565108	101.069	-104.126
64	1.60944	-0.553384	101.375	-105.016
65	1.60944	-0.538836	101.665	-105.884
66	1.60944	-0.524401	101.94	-106.728
67	1.60944	-0.51293	102.203	-107.553
68	1.60944	-0.498687	102.452	-108.356
69	1.60944	-0.487364	102.689	-109.14
70	1.60944	-0.473299	102.913	-109.902
71	1.60944	-0.462114	103.127	-110.646
72	1.60944	-0.448213	103.328	-111.367
73	1.60944	-0.437153	103.519	-112.071
74	1.60944	-0.423405	103.698	-112.752
75	1.60944	-0.412463	103.868	-113.416
76	1.60944	-0.398855	104.027	-114.058
77	1.60944	-0.385321	104.176	-114.678
78	1.60944	-0.374544	104.316	-115.281
79	1.60944	-0.361133	104.447	-115.862
80	1.60944	-0.350451	104.569	-116.426
81	1.60944	-0.337155	104.683	-116.969
82	1.60944	-0.326561	104.79	-117.494
83	1.60944	-0.31337	104.888	-117.999
84	1.60944	-0.302855	104.98	-118.486
85	1.60944	-0.28976	105.064	-118.952
86	1.60944	-0.279319	105.142	-119.402
87	1.60944	-0.266311	105.213	-119.83
88	1.60944	-0.253347	105.277	-120.238
89	1.60944	-0.243007	105.336	-120.629
90	1.60944	-0.230118	105.389	-121
91	1.60944	-0.219834	105.437	-121.353
92	1.60944	-0.207012	105.48	-121.687
93	1.60944	-0.196779	105.519	-122.003
94	1.60944	-0.184017	105.553	-122.3
95	1.60944	-0.173829	105.583	-122.579
96	1.60944	-0.161119	105.609	-122.839
97	1.60944	-0.150969	105.632	-123.082
98	1.60944	-0.138305	105.651	-123.304
99	1.60944	-0.125661	105.666	-123.506
100	1.60944	-0.115562	105.68	-123.692
101	1.60944	-0.102953	105.69	-123.858
102	1.60944	-0.0928787	105.699	-124.008
103	1.60944	-0.0802981	105.705	-124.137
104	1.60944	-0.0702426	105.71	-124.25
105	1.60944	-0.0576847	105.714	-124.343
106	1.60944	-0.0476439	105.716	-124.419
107	1.60944	-0.0350997	105.717	-124.476
108	1.60944	-0.0250691	105.718	-124.516
109	1.79176	-0.0125328	105.718	-124.539
110	1.79176	0	105.718	-124.539
111	1.8563	0.0125328	105.718	-124.515

112	1.94591	0.0250691	105.719	-124.467
113	1.94591	0.0350997	105.72	-124.398
114	1.94591	0.0476439	105.722	-124.306
115	1.94591	0.0576847	105.726	-124.193
116	1.97408	0.0702426	105.731	-124.055
117	2.07944	0.0802981	105.737	-123.888
118	2.07944	0.0928787	105.746	-123.695
119	2.07944	0.102953	105.756	-123.481
120	2.07944	0.115562	105.77	-123.24
121	2.17475	0.125661	105.785	-122.967
122	2.19722	0.138305	105.805	-122.663
123	2.19722	0.150969	105.827	-122.331
124	2.19722	0.161119	105.853	-121.977
125	2.30259	0.173829	105.883	-121.577
126	2.30259	0.184017	105.917	-121.153
127	2.30259	0.196779	105.956	-120.7
128	2.30259	0.207012	105.999	-120.224
129	2.30259	0.219834	106.047	-119.717
130	2.30259	0.230118	106.1	-119.188
131	2.3979	0.243007	106.159	-118.605
132	2.3979	0.253347	106.223	-117.997
133	2.3979	0.266311	106.294	-117.359
134	2.48491	0.279319	106.372	-116.665
135	2.48491	0.28976	106.456	-115.945
136	2.48491	0.302855	106.548	-115.192
137	2.48491	0.31337	106.646	-114.413
138	2.48491	0.326561	106.753	-113.602
139	2.48491	0.337155	106.867	-112.764
140	2.48491	0.350451	106.989	-111.893
141	2.48491	0.361133	107.12	-110.996
142	2.48491	0.374544	107.26	-110.065
143	2.48491	0.385321	107.409	-109.108
144	2.48491	0.398855	107.568	-108.117
145	2.56495	0.412463	107.738	-107.059
146	2.56495	0.423405	107.917	-105.973
147	2.56495	0.437153	108.108	-104.851
148	2.56495	0.448213	108.309	-103.702
149	2.56495	0.462114	108.523	-102.516
150	2.56495	0.473299	108.747	-101.302
151	2.56495	0.487364	108.984	-100.052
152	2.56495	0.498687	109.233	-98.7732
153	2.56495	0.51293	109.496	-97.4576
154	2.56495	0.524401	109.771	-96.1125
155	2.56495	0.538836	110.061	-94.7304
156	2.56495	0.553384	110.368	-93.311
157	2.56495	0.565108	110.687	-91.8616
158	2.63906	0.579873	111.023	-90.3313
159	2.63906	0.591776	111.373	-88.7695
160	2.63906	0.606775	111.741	-87.1682
161	2.63906	0.618872	112.124	-85.535
162	2.63906	0.634124	112.527	-83.8615
163	2.70805	0.646431	112.944	-82.1109
164	2.83321	0.661955	113.383	-80.2354
165	2.89037	0.67449	113.838	-78.2859
166	2.89037	0.690309	114.314	-76.2907
167	2.99573	0.706302	114.813	-74.1748
168	2.99573	0.719228	115.33	-72.0202
169	2.99573	0.735557	115.871	-69.8166
170	2.99573	0.748762	116.432	-67.5735
171	2.99573	0.765456	117.018	-65.2804
172	2.99573	0.778966	117.625	-62.9469
173	3.04452	0.796056	118.258	-60.5233

174	3.09104	0.809896		118.914	-58.0198
175	3.09104	0.827417		119.599	-55.4623
176	3.09104	0.841621		120.307	-52.8608
177	3.13549	0.859618		121.046	-50.1654
178	3.13549	0.877897		121.817	-47.4128
179	3.17805	0.892733		122.614	-44.5756
180	3.17805	0.911562		123.445	-41.6787
181	3.29584	0.926859		124.304	-38.6239
182	3.29584	0.946291		125.199	-35.5051
183	3.3322	0.9621	126.125	-32.2991	
184	3.3673	0.982202		127.09	-28.9918
185	3.4012	0.998575		128.087	-25.5954
186	3.4012	1.01943	129.126	-22.1282	
187	3.43399	1.03643	130.2	-18.5691	
188	3.46574	1.05812	131.32	-14.9019	
189	3.49651	1.08032	132.487	-11.1245	
190	3.52636	1.09847	133.694	-7.25094	
191	3.52636	1.12168	134.952	-3.2955	
192	3.55535	1.14069	136.253	0.760048	
193	3.58352	1.16505	137.61	4.93502	
194	3.61092	1.18504	139.015	9.21411	
195	3.63759	1.21073	140.48	13.6182	
196	3.63759	1.23187	141.998	18.0993	
197	3.63759	1.25908	143.583	22.6793	
198	3.63759	1.28155	145.226	27.341	
199	3.68888	1.31058	146.943	32.1756	
200	3.68888	1.34075	148.741	37.1215	
201	3.68888	1.36581	150.606	42.1598	
202	3.71357	1.39838	152.562	47.3527	
203	3.71357	1.42554	154.594	52.6466	
204	3.73767	1.46106	156.729	58.1076	
205	3.73767	1.49085	158.951	63.6799	
206	3.8712	1.53007	161.292	69.6031	
207	3.8712	1.56322	163.736	75.6546	
208	3.89182	1.60725	166.319	81.9097	
209	3.95124	1.64485	169.025	88.409	
210	4.11087	1.6954	171.899	95.3785	
211	4.29046	1.75069	174.964	102.89	
212	4.30407	1.79912	178.201	110.633	
213	4.31749	1.86629	181.684	118.691	
214	4.34381	1.92684	185.397	127.061	
215	4.34381	2.01409	189.453	135.81	
216	4.38203	2.09693	193.85	144.998	
217	4.52179	2.22621	198.806	155.065	
218	4.69135	2.36561	204.403	166.163	
219	4.78749	2.65209	211.436	178.86	

Data Set Standard Deviation = 0.891738
Numerator = 31990.8
Denominator = 36653.1
W Statistic = 0.872799 = 31990.8 / 36653.1

5% Critical value of 0.976 exceeds 0.872799
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.872799
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Barium

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	ND<1.60944	44.5
	3/16/1999	2.99573	167
	9/23/1999	2.07944 J	117
	3/14/2000	ND<1.60944	44.5
	9/23/2003	ND<1.60944	44.5
	3/10/2004	ND<1.60944	44.5
	10/12/2004	ND<1.60944	44.5
	4/1/2005	2.63906	158
	10/26/2005	2.48491	134
	6/19/2006	2.30259	125
	11/18/2006	2.56495	145
	6/2/2007	3.17805	179
	11/15/2007	2.56495	146
	5/20/2008	2.3979	131
	11/20/2008	2.63906	159
	6/11/2009	2.56495	147
	11/16/2009	2.56495	148
	6/30/2010	2.70805	163

Rank Sum = 2141.5
Rank Mean = 118.972

Background Rank Sum = 2141.5
Background Rank Mean = 118.972

Compliance Wells

Well ID	Date	Result	Rank
LMW-9S	11/18/2006	4.34381	214
	6/2/2007	4.38203	216
	11/15/2007	0.693147 J	89
	5/20/2008	4.31749	213
	11/20/2008	4.11087	210
	6/11/2009	3.3322	183
	6/30/2010	3.63759	195

Rank Sum = 1320
Rank Mean = 188.571

LMW-9D	11/18/2006	2.56495	149
	6/2/2007	1.60944	101
	11/15/2007	4.78749	219
	5/20/2008	2.30259	126
	11/20/2008	1.09861 J	95
	6/11/2009	1.1314	98
	11/16/2009	1.06471	93
	6/30/2010	0.741937	91

Rank Sum = 972

Rank Mean = 121.5

LMW-9	1/16/1998	ND<1.60944		44.5
	3/16/1999	2.30259		127
	9/23/1999	3.09104		174
	3/14/2000	ND<1.60944		44.5
	9/23/2003	ND<1.60944		44.5
	3/10/2004	ND<1.60944		44.5
	10/12/2004	ND<1.60944		44.5
	4/1/2005	ND<1.60944	44.5	
	10/26/2005	ND<1.60944		44.5
	6/19/2006	2.30259		128
	11/18/2006	1.09861	J	96
	6/2/2007	1.79176	109	
	11/15/2007	1.09861	J	97
	5/20/2008	0.693147	J	90
	11/20/2008	1.38629	J	100
	6/11/2009	1.1314	99	
	11/16/2009	1.06471		94
	6/30/2010	1.02962		92

Rank Sum = 1517.5
Rank Mean = 84.3056

LMW-8	1/16/1998	ND<1.60944		44.5
	3/16/1999	2.30259		129
	9/23/1999	4.69135		218
	3/14/2000	ND<1.60944		44.5
	9/23/2003	ND<1.60944		44.5
	3/10/2004	ND<1.60944		44.5
	10/12/2004	ND<1.60944		44.5
	4/1/2005	3.8712	206	
	10/26/2005	3.63759		196
	6/19/2006	3.68888		199
	11/18/2006	3.46574		188
	6/2/2007	3.52636	190	
	11/15/2007	3.71357		202
	5/20/2008	3.52636		191
	11/20/2008	3.3673	184	
	6/11/2009	3.68888		200
	11/16/2009	3.68888		201
	6/30/2010	3.4012	185	

Rank Sum = 2711.5
Rank Mean = 150.639

LMW-6	1/16/1998	ND<1.60944		44.5
	3/16/1999	2.07944	J	118
	9/23/1999	2.89037		165
	3/14/2000	ND<1.60944		44.5
	9/23/2003	ND<1.60944		44.5
	3/10/2004	ND<1.60944		44.5
	10/12/2004	ND<1.60944		44.5
	4/1/2005	2.19722	J	122
	10/26/2005	2.48491		135
	6/19/2006	2.99573		168
	11/18/2006	3.49651		189
	6/2/2007	3.95124	209	
	11/15/2007	3.73767		204
	5/20/2008	3.89182		208
	11/20/2008	4.29046		211
	6/11/2009	4.52179		217
	11/16/2009	4.30407		212
	6/30/2010	4.34381		215

Rank Sum = 2595.5
Rank Mean = 144.194

LMW-10	3/14/2000	ND<1.60944		44.5
	9/23/2003	ND<1.60944		44.5
	3/10/2004	ND<1.60944		44.5
	10/12/2004	ND<1.60944		44.5
	4/1/2005	2.56495		150
	10/26/2005	ND<1.60944		44.5
	6/19/2006	2.99573		169
	11/18/2006	2.3979		132
	6/2/2007	3.04452		173
	11/15/2007	ND<1.60944		44.5
	5/20/2008	2.48491		136
	11/20/2008	2.48491		137
	6/11/2009	2.56495		151
	11/16/2009	2.48491		138
	6/30/2010	2.48491		139

Rank Sum = 1592
Rank Mean = 106.133

LMW-3	11/19/1996	ND<1.60944		44.5
	3/24/1997	ND<1.60944		44.5
	1/16/1998	ND<1.60944		44.5
	3/16/1999	2.07944	J	119
	9/23/1999	1.94591	J	112
	3/14/2000	ND<1.60944		44.5
	9/23/2003	ND<1.60944		44.5
	3/10/2004	ND<1.60944		44.5
	10/12/2004	ND<1.60944		44.5
	4/1/2005	ND<1.60944		44.5
	10/26/2005	1.94591	J	113
	6/19/2006	1.60944	J	102
	11/18/2006	1.94591	J	114
	6/2/2007	1.60944		103
	11/15/2007	ND<1.60944		44.5
	5/20/2008	1.60944	J	104
	11/20/2008	1.60944	J	105
	6/11/2009	1.97408		116
	11/16/2009	1.8563		111
	6/30/2010	1.60944		106

Rank Sum = 1605.5
Rank Mean = 80.275

LMW-16	11/18/2006	3.13549		177
	6/2/2007	3.71357		203
	11/15/2007	3.55535		192
	5/20/2008	3.09104		175
	11/20/2008	3.13549		178
	6/11/2009	2.63906		160
	11/16/2009	2.56495		152
	6/30/2010	2.17475		121

Rank Sum = 1358
Rank Mean = 169.75

LMW-15R	11/18/2006	3.61092		194
	6/2/2007	3.63759		197
	11/15/2007	ND<1.60944		44.5
	11/15/2007	3.29584		181
	5/20/2008	ND<1.60944		44.5
	5/20/2008	3.17805		180
	11/20/2008	ND<1.60944		44.5

	11/20/2008	3.63759		198
	6/11/2009	3.73767		205
	6/30/2010	3.58352		193

Rank Sum = 1481.5
Rank Mean = 148.15

LMW-14R	6/2/2007	2.63906		161
	11/15/2007	2.48491		140
	5/20/2008	2.19722	J	123
	11/20/2008	2.56495		153
	6/11/2009	2.56495		154
	11/16/2009	3.8712	207	
	11/16/2009	2.63906		162
	11/16/2009	2.48491		141
	6/30/2010	2.56495		155

Rank Sum = 1396
Rank Mean = 155.111

LMW-3S	11/18/2006	1.60944	J	107
	6/2/2007	2.89037	166	
	11/15/2007	2.56495		156
	5/20/2008	2.07944	J	120
	11/20/2008	2.56495		157
	6/11/2009	2.48491		142
	11/16/2009	2.30259		130
	6/30/2010	2.48491		143

Rank Sum = 1121
Rank Mean = 140.125

LMW-7	1/16/1998	ND<1.60944		44.5
	3/16/1999	2.99573		170
	9/23/1999	3.09104		176
	3/14/2000	ND<1.60944		44.5
	9/23/2003	ND<1.60944		44.5
	3/10/2004	ND<1.60944		44.5
	10/12/2004	ND<1.60944		44.5
	4/1/2005	3.43399	187	
	10/26/2005	3.4012	186	
	6/19/2006	2.99573		171
	11/18/2006	2.3979	133	
	6/2/2007	3.29584	182	
	11/15/2007	1.79176	J	110
	5/20/2008	1.60944	J	108
	11/20/2008	1.94591	J	115
	6/11/2009	2.48491		144

Rank Sum = 1904.5
Rank Mean = 119.031

MW-5	1/16/1998	ND<1.60944		44.5
	3/16/1999	2.99573		172
	9/23/1999	2.19722	J	124
	3/14/2000	ND<1.60944		44.5
	9/23/2003	ND<1.60944		44.5
	3/10/2004	ND<1.60944		44.5
	10/12/2004	ND<1.60944		44.5
	4/1/2005	ND<1.60944	44.5	
	10/26/2005	ND<1.60944		44.5
	6/19/2006	ND<1.60944		44.5
	11/15/2007	2.83321		164
	5/20/2008	ND<1.60944		44.5
	11/20/2008	ND<1.60944		44.5

Rank Sum = 905

Rank Mean = 69.6154

LMW-13	3/14/2000	ND<1.60944	44.5
	9/23/2003	ND<1.60944	44.5
	3/10/2004	ND<1.60944	44.5
	10/12/2004	ND<1.60944	44.5
	4/1/2005	ND<1.60944	44.5
	10/26/2005	ND<1.60944	44.5
	6/19/2006	ND<1.60944	44.5
	6/2/2007	ND<1.60944	44.5
	11/15/2007	ND<1.60944	44.5
	5/20/2008	ND<1.60944	44.5
	11/20/2008	ND<1.60944	44.5

Rank Sum = 489.5
Rank Mean = 44.5

LMW-12	3/14/2000	ND<1.60944	44.5
	9/23/2003	ND<1.60944	44.5
	3/10/2004	ND<1.60944	44.5
	10/12/2004	ND<1.60944	44.5
	4/1/2005	ND<1.60944	44.5
	10/26/2005	ND<1.60944	44.5
	6/19/2006	ND<1.60944	44.5
	6/2/2007	ND<1.60944	44.5
	11/15/2007	ND<1.60944	44.5
	5/20/2008	ND<1.60944	44.5
	11/20/2008	ND<1.60944	44.5

Rank Sum = 489.5
Rank Mean = 44.5

LMW-11	3/14/2000	ND<1.60944	44.5
	9/23/2003	ND<1.60944	44.5
	3/10/2004	ND<1.60944	44.5
	10/12/2004	ND<1.60944	44.5
	4/1/2005	ND<1.60944	44.5
	10/26/2005	ND<1.60944	44.5
	6/19/2006	ND<1.60944	44.5
	6/2/2007	ND<1.60944	44.5
	11/15/2007	ND<1.60944	44.5
	5/20/2008	ND<1.60944	44.5
	11/20/2008	ND<1.60944	44.5

Rank Sum = 489.5
Rank Mean = 44.5

Calculation Results:

Kruskal-Wallis H Statistic = 89.4271
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 95.6311
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
89.4271 > 26.2962 indicating a significant group difference at 5% significance level
95.6311 > 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 118.972

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9S	188.571	69.5992	65.66
LMW-9D	121.5	2.52778	62.6357
LMW-9	84.3056	-34.6667	49.1355
LMW-8	150.639	31.6667	49.1355

LMW-6	144.194	25.2222	49.1355	
LMW-10	106.133	-12.8389	51.5337	
LMW-3	80.275	-38.697	47.8913	
LMW-16	169.75	50.7778	62.6357	
LMW-15R		148.15	29.1778	58.1379
LMW-14R		155.111	36.1389	60.1784
LMW-3S	140.125	21.1528	62.6357	
LMW-7	119.031	0.0590278		50.6477
MW-5	69.6154	-49.356	53.6524	
LMW-13	44.5	-74.472	56.4135	
LMW-12	44.5	-74.472	56.4135	
LMW-11	44.5	-74.472	56.4135	

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 118.972

Well	Mean Rank	Dif from Bkg	Critical Value	
LMW-9S	188.571	69.5992	77.5545	
LMW-9D	121.5	2.52778	73.9823	
LMW-9	84.3056	-34.666	58.0365	
LMW-8	150.639	31.6667	58.0365	
LMW-6	144.194	25.2222	58.0365	
LMW-10	106.133	-12.8389	60.8692	
LMW-3	80.275	-38.697	56.567	
LMW-16	169.75	50.7778	73.9823	
LMW-15R		148.15	29.1778	68.6697
LMW-14R		155.111	36.1389	71.0799
LMW-3S	140.125	21.1528	73.9823	
LMW-7	119.031	0.0590278		59.8226
MW-5	69.6154	-49.356	63.3717	
LMW-13	44.5	-74.472	66.6329	
LMW-12	44.5	-74.472	66.6329	
LMW-11	44.5	-74.472	66.6329	

Mann-Kendall Trend Analysis

Parameter: Barium

Location: LMW-9S

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives	
4.38203		4.34381	0.0382212	1	0
0.693147 J		4.34381	-3.650661	1	
4.31749		4.34381	-0.0263173	1	2
4.11087		4.34381	-0.232932	1	3
3.3322	4.34381	-1.0116	1	4	
3.63759		4.34381	-0.706219	1	5
0.693147 J		4.38203	-3.688881	6	
4.31749		4.38203	-0.0645385	1	7
4.11087		4.38203	-0.271153	1	8
3.3322	4.38203	-1.049821	9		
3.63759		4.38203	-0.744441	10	
4.31749		0.693147 J	3.62434 2	10	
4.11087		0.693147 J	3.41773 3	10	
3.3322	0.693147 J	2.63906	4	10	
3.63759		0.693147 J	2.94444 5	10	
4.11087		4.31749	-0.206614	5	11
3.3322	4.31749	-0.985284	5	12	
3.63759		4.31749	-0.679902	5	13
3.3322	4.11087	-0.778669	5	14	
3.63759		4.11087	-0.473288	5	15
3.63759		3.3322	0.305382	6	15

S Statistic = 6 - 15 = -9
Comparing at 1.0 - (0.05 / 2) = 97.5% confidence level (two-tailed)
Probability of obtaining S >= |-9| is 0.238
0.238 >= 0.025 indicating no evidence of a trend

Concentrations (ppb)

Parameter: Beryllium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 219
Total Non-Detect: 210
Percent Non-Detects: 95.8904%
Total Background Measurements: 18
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	18	17 (94.4444%)	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
			11/16/2009	0.07 J	0.07 J
			6/30/2010	ND<0.07 U	ND<0.07 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9	18	17 (94.4444%)	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	0.08 J	0.08 J
			11/16/2009	ND<0.07 U	ND<0.07 U
			6/30/2010	ND<0.07 U	ND<0.07 U
LMW-10	15	15 (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
			11/16/2009	ND<0.07 U	ND<0.07 U
			6/30/2010	ND<0.07 U	ND<0.07 U
LMW-15R	11	9 (81.8182%)	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
			11/16/2009	ND<0.07 U	ND<0.07 U
			6/30/2010	0.17 J	0.17 J
LMW-14R	8	8 (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
			11/16/2009	ND<0.07 U	ND<0.07 U
			11/16/2009	ND<0.07 U	ND<0.07 U
			6/30/2010	ND<0.07 U	ND<0.07 U
LMW-9D8	8 (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
			11/16/2009	ND<0.07 U	ND<0.07 U
			6/30/2010	ND<0.07 U	ND<0.07 U
LMW-8	18	18 (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
			11/16/2009	ND<0.07 U	ND<0.07 U
			6/30/2010	ND<0.07 U	ND<0.07 U
LMW-6	18	15 (83.3333%)	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	
			11/16/2009	0.15 J	0.15 J	
			6/30/2010	0.13 J	0.13 J	
LMW-3S	8	7 (87.5%)	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	0.07 J	0.07 J	
			11/16/2009	ND<0.07 U	ND<0.07 U	
			6/30/2010	ND<0.07 U	ND<0.07 U	
LMW-3	20	20 (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	
			11/16/2009	ND<0.07 U	ND<0.07 U	
			6/30/2010	ND<0.07 U	ND<0.07 U	
LMW-16	8	8 (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	
			11/16/2009	ND<0.07 U	ND<0.07 U	
			6/30/2010	ND<0.07 U	ND<0.07 U	
LMW-9S	7	7 (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
			6/30/2010	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-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-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-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
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

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Beryllium

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.035	-2.65209	7.03356	-0.092823
2	0.035	-2.36561	12.6297	-0.17562
3	0.035	-2.22621	17.5857	-0.253537
4	0.035	-2.09693	21.9828	-0.326929
5	0.035	-2.01409	26.0394	-0.397423
6	0.035	-1.92684	29.7521	-0.464862
7	0.035	-1.86629	33.2351	-0.530182
8	0.035	-1.79912	36.472	-0.593151
9	0.035	-1.75069	39.5369	-0.654425
10	0.035	-1.6954	42.4112	-0.713764
11	0.035	-1.64485	45.1168	-0.771334
12	0.035	-1.60725	47.7	-0.827588
13	0.035	-1.56322	50.1437	-0.882301
14	0.035	-1.53007	52.4848	-0.935853
15	0.035	-1.49085	54.7074	-0.988033
16	0.035	-1.46106	56.8421	-1.03917
17	0.035	-1.42554	58.8743	-1.08906
18	0.035	-1.39838	60.8297	-1.13801
19	0.035	-1.36581	62.6952	-1.18581
20	0.035	-1.34075	64.4928	-1.23274
21	0.035	-1.31058	66.2104	-1.27861
22	0.035	-1.28155	67.8528	-1.32346
23	0.035	-1.25908	69.4381	-1.36753
24	0.035	-1.23187	70.9556	-1.41064
25	0.035	-1.21073	72.4214	-1.45302
26	0.035	-1.18504	73.8258	-1.4945
27	0.035	-1.16505	75.1831	-1.53527
28	0.035	-1.14069	76.4843	-1.5752
29	0.07	-1.12168	77.7424	-1.65371
30	0.07	-1.09847	78.9491	-1.73061
31	0.08	-1.08032	80.1162	-1.81703
32	0.13	-1.05812	81.2358	-1.95459
33	0.15	-1.03643	82.31	-2.11005
34	0.15	-1.01943	83.3492	-2.26297
35	0.17	-0.998575	84.3464	-2.43273
36	0.19	-0.982202	85.3111	-2.61934
37	0.29	-0.9621	86.2367	-2.89835
38	5	-0.946291	87.1322	-7.62981
39	5	-0.926859	87.9912	-12.2641
40	5	-0.911562	88.8222	-16.8219
41	5	-0.892733	89.6192	-21.2856
42	5	-0.877897	90.3899	-25.6751
43	5	-0.859618	91.1288	-29.9731
44	5	-0.841621	91.8371	-34.1813
45	5	-0.827417	92.5218	-38.3183
46	5	-0.809896	93.1777	-42.3678
47	5	-0.796056	93.8114	-46.3481
48	5	-0.778966	94.4182	-50.2429
49	5	-0.765456	95.0041	-54.0702

50	5	-0.748762	95.5647	-57.814
51	5	-0.735557	96.1058	-61.4918
52	5	-0.719228	96.6231	-65.0879
53	5	-0.706302	97.1219	-68.6195
54	5	-0.690309	97.5985	-72.071
55	5	-0.674499	8.0534	-75.4435
56	5	-0.661955	98.4916	-78.7532
57	5	-0.646431	98.9095	-81.9854
58	5	-0.634124	99.3116	-85.156
59	5	-0.618872	99.6946	-88.2504
60	5	-0.606775	100.063	-91.2842
61	5	-0.591776	100.413	-94.2431
62	5	-0.579873	100.749	-97.1425
63	5	-0.565108	101.069	-99.968
64	5	-0.553384	101.375	-102.735
65	5	-0.538836	101.665	-105.429
66	5	-0.524401	101.94	-108.051
67	5	-0.51293	102.203	-110.616
68	5	-0.498687	102.452	-113.109
69	5	-0.487364	102.689	-115.546
70	5	-0.473299	102.913	-117.913
71	5	-0.462114	103.127	-120.223
72	5	-0.448213	103.328	-122.464
73	5	-0.437153	103.519	-124.65
74	5	-0.423405	103.698	-126.767
75	5	-0.412463	103.868	-128.829
76	5	-0.398855	104.027	-130.824
77	5	-0.385321	104.176	-132.75
78	5	-0.374544	104.316	-134.623
79	5	-0.361133	104.447	-136.429
80	5	-0.350451	104.569	-138.181
81	5	-0.337155	104.683	-139.867
82	5	-0.326561	104.79	-141.499
83	5	-0.31337	104.888	-143.066
84	5	-0.302855	104.98	-144.581
85	5	-0.28976	105.064	-146.029
86	5	-0.279319	105.142	-147.426
87	5	-0.266311	105.213	-148.757
88	5	-0.253347	105.277	-150.024
89	5	-0.243007	105.336	-151.239
90	5	-0.230118	105.389	-152.39
91	5	-0.219834	105.437	-153.489
92	5	-0.207012	105.48	-154.524
93	5	-0.196779	105.519	-155.508
94	5	-0.184017	105.553	-156.428
95	5	-0.173829	105.583	-157.297
96	5	-0.161119	105.609	-158.103
97	5	-0.150969	105.632	-158.858
98	5	-0.138305	105.651	-159.549
99	5	-0.125661	105.666	-160.177
100	5	-0.115562	105.68	-160.755
101	5	-0.102953	105.69	-161.27
102	5	-0.0928787	105.699	-161.734
103	5	-0.0802981	105.705	-162.136
104	5	-0.0702426	105.71	-162.487
105	5	-0.0576847	105.714	-162.776
106	5	-0.0476439	105.716	-163.014
107	5	-0.0350997	105.717	-163.189
108	5	-0.0250691	105.718	-163.315
109	5	-0.0125328	105.718	-163.377
110	5	0	105.718	-163.377
111	5	0.0125328	105.718	-163.315

112	5	0.0250691	105.719	-163.189
113	5	0.0350997	105.72	-163.014
114	5	0.0476439	105.722	-162.776
115	5	0.0576847	105.726	-162.487
116	5	0.0702426	105.731	-162.136
117	5	0.0802981	105.737	-161.734
118	5	0.0928787	105.746	-161.27
119	5	0.102953	105.756	-160.755
120	5	0.115562	105.77	-160.177
121	5	0.125661	105.785	-159.549
122	5	0.138305	105.805	-158.858
123	5	0.150969	105.827	-158.103
124	5	0.161119	105.853	-157.297
125	5	0.173829	105.883	-156.428
126	5	0.184017	105.917	-155.508
127	5	0.196779	105.956	-154.524
128	5	0.207012	105.999	-153.489
129	5	0.219834	106.047	-152.39
130	5	0.230118	106.1	-151.239
131	5	0.243007	106.159	-150.024
132	5	0.253347	106.223	-148.757
133	5	0.266311	106.294	-147.426
134	5	0.279319	106.372	-146.029
135	5	0.28976	106.456	-144.581
136	5	0.302855	106.548	-143.066
137	5	0.31337	106.646	-141.499
138	5	0.326561	106.753	-139.867
139	5	0.337155	106.867	-138.181
140	5	0.350451	106.989	-136.429
141	5	0.361133	107.12	-134.623
142	5	0.374544	107.26	-132.75
143	5	0.385321	107.409	-130.824
144	5	0.398855	107.568	-128.829
145	5	0.412463	107.738	-126.767
146	5	0.423405	107.917	-124.65
147	5	0.437153	108.108	-122.464
148	5	0.448213	108.309	-120.223
149	5	0.462114	108.523	-117.913
150	5	0.473299	108.747	-115.546
151	5	0.487364	108.984	-113.109
152	5	0.498687	109.233	-110.616
153	5	0.51293	109.496	-108.051
154	5	0.524401	109.771	-105.429
155	5	0.538836	110.061	-102.735
156	5	0.553384	110.368	-99.968
157	5	0.565108	110.687	-97.1425
158	5	0.579873	111.023	-94.2431
159	5	0.591776	111.373	-91.2842
160	5	0.606775	111.741	-88.2504
161	5	0.618872	112.124	-85.156
162	5	0.634124	112.527	-81.9854
163	5	0.646431	112.944	-78.7532
164	5	0.661955	113.383	-75.4435
165	5	0.67449	113.838	-72.071
166	5	0.690309	114.314	-68.6195
167	5	0.706302	114.813	-65.0879
168	5	0.719228	115.33	-61.4918
169	5	0.735557	115.871	-57.814
170	5	0.748762	116.432	-54.0702
171	5	0.765456	117.018	-50.2429
172	5	0.778966	117.625	-46.3481
173	5	0.796056	118.258	-42.3678

174	5	0.809896		118.914	-38.3183
175	5	0.827417		119.599	-34.1813
176	5	0.841621		120.307	-29.9731
177	5	0.859618		121.046	-25.6751
178	5	0.877897		121.817	-21.2856
179	5	0.892733		122.614	-16.8219
180	5	0.911562		123.445	-12.2641
181	5	0.926859		124.304	-7.62981
182	5	0.946291		125.199	-2.89835
183	5	0.9621	126.125	1.91215	
184	5	0.982202		127.09	6.82316
185	5	0.998575		128.087	11.816
186	5	1.01943	129.126	16.9132	
187	5	1.03643	130.2	22.0953	
188	5	1.05812	131.32	27.3859	
189	5	1.08032	132.487	32.7875	
190	5	1.09847	133.694	38.2799	
191	5	1.12168	134.952	43.8883	
192	5	1.14069	136.253	49.5917	
193	5	1.16505	137.61	55.417	
194	5	1.18504	139.015	61.3422	
195	5	1.21073	140.48	67.3958	
196	5	1.23187	141.998	73.5551	
197	5	1.25908	143.583	79.8506	
198	5	1.28155	145.226	86.2583	
199	5	1.31058	146.943	92.8112	
200	5	1.34075	148.741	99.515	
201	5	1.36581	150.606	106.344	
202	5	1.39838	152.562	113.336	
203	5	1.42554	154.594	120.464	
204	5	1.46106	156.729	127.769	
205	5	1.49085	158.951	135.223	
206	5	1.53007	161.292	142.874	
207	5	1.56322	163.736	150.69	
208	5	1.60725	166.319	158.726	
209	5	1.64485	169.025	166.95	
210	5	1.6954	171.899	175.427	
211	5	1.75069	174.964	184.181	
212	5	1.79912	178.201	193.176	
213	5	1.86629	181.684	202.508	
214	5	1.92684	185.397	212.142	
215	5	2.01409	189.453	222.212	
216	5	2.09693	193.85	232.697	
217	5	2.22621	198.806	243.828	
218	5	2.36561	204.403	255.656	
219	5	2.65209	211.436	268.916	

Data Set Standard Deviation = 1.85484
Numerator = 72316.1
Denominator = 158579
W Statistic = 0.456024 = 72316.1 / 158579

5% Critical value of 0.976 exceeds 0.456024
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.456024
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Beryllium

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-3.35241	-2.65209	7.03356	8.89087
2	-3.35241	-2.36561	12.6297	16.8214
3	-3.35241	-2.22621	17.5857	24.2845
4	-3.35241	-2.09693	21.9828	31.3143
5	-3.35241	-2.01409	26.0394	38.0664
6	-3.35241	-1.92684	29.7521	44.5259
7	-3.35241	-1.86629	33.2351	50.7825
8	-3.35241	-1.79912	36.472	56.8138
9	-3.35241	-1.75069	39.5369	62.6829
10	-3.35241	-1.6954	42.4112	68.3665
11	-3.35241	-1.64485	45.1168	73.8807
12	-3.35241	-1.60725	47.7	79.2689
13	-3.35241	-1.56322	50.1437	84.5095
14	-3.35241	-1.53007	52.4848	89.6389
15	-3.35241	-1.49085	54.7074	94.6368
16	-3.35241	-1.46106	56.8421	99.5349
17	-3.35241	-1.42554	58.8743	104.314
18	-3.35241	-1.39838	60.8297	109.002
19	-3.35241	-1.36581	62.6952	113.581
20	-3.35241	-1.34075	64.4928	118.075
21	-3.35241	-1.31058	66.2104	122.469
22	-3.35241	-1.28155	67.8528	126.765
23	-3.35241	-1.25908	69.4381	130.986
24	-3.35241	-1.23187	70.9556	135.116
25	-3.35241	-1.21073	72.4214	139.175
26	-3.35241	-1.18504	73.8258	143.147
27	-3.35241	-1.16505	75.1831	147.053
28	-3.35241	-1.14069	76.4843	150.877
29	-2.65926	-1.12168	77.7424	153.86
30	-2.65926	-1.09847	78.9491	156.781
31	-2.52573	-1.08032	80.1162	159.51
32	-2.04022	-1.05812	81.2358	161.669
33	-1.89712	-1.03643	82.31	163.635
34	-1.89712	-1.01943	83.3492	165.569
35	-1.77196	-0.998575	84.3464	167.338
36	-1.66073	-0.982202	85.3111	168.969
37	-1.23787	-0.9621	86.2367	170.16
38	1.60944	-0.946291	87.1322	168.637
39	1.60944	-0.926859	87.9912	167.146
40	1.60944	-0.911562	88.8222	165.679
41	1.60944	-0.892733	89.6192	164.242
42	1.60944	-0.877897	90.3899	162.829
43	1.60944	-0.859618	91.1288	161.445
44	1.60944	-0.841621	91.8371	160.091
45	1.60944	-0.827417	92.5218	158.759
46	1.60944	-0.809896	93.1777	157.456
47	1.60944	-0.796056	93.8114	156.174
48	1.60944	-0.778966	94.4182	154.921
49	1.60944	-0.765456	95.0041	153.689

50	1.60944	-0.748762	95.5647	152.484
51	1.60944	-0.735557	96.1058	151.3
52	1.60944	-0.719228	96.6231	150.142
53	1.60944	-0.706302	97.1219	149.006
54	1.60944	-0.690309	97.5985	147.895
55	1.60944	-0.674499	8.0534	146.809
56	1.60944	-0.661955	98.4916	145.744
57	1.60944	-0.646431	98.9095	144.703
58	1.60944	-0.634124	99.3116	143.683
59	1.60944	-0.618872	99.6946	142.687
60	1.60944	-0.606775	100.063	141.71
61	1.60944	-0.591776	100.413	140.758
62	1.60944	-0.579873	100.749	139.824
63	1.60944	-0.565108	101.069	138.915
64	1.60944	-0.553384	101.375	138.024
65	1.60944	-0.538836	101.665	137.157
66	1.60944	-0.524401	101.94	136.313
67	1.60944	-0.51293	102.203	135.487
68	1.60944	-0.498687	102.452	134.685
69	1.60944	-0.487364	102.689	133.9
70	1.60944	-0.473299	102.913	133.139
71	1.60944	-0.462114	103.127	132.395
72	1.60944	-0.448213	103.328	131.674
73	1.60944	-0.437153	103.519	130.97
74	1.60944	-0.423405	103.698	130.289
75	1.60944	-0.412463	103.868	129.625
76	1.60944	-0.398855	104.027	128.983
77	1.60944	-0.385321	104.176	128.363
78	1.60944	-0.374544	104.316	127.76
79	1.60944	-0.361133	104.447	127.179
80	1.60944	-0.350451	104.569	126.615
81	1.60944	-0.337155	104.683	126.072
82	1.60944	-0.326561	104.79	125.546
83	1.60944	-0.31337	104.888	125.042
84	1.60944	-0.302855	104.98	124.555
85	1.60944	-0.28976	105.064	124.088
86	1.60944	-0.279319	105.142	123.639
87	1.60944	-0.266311	105.213	123.21
88	1.60944	-0.253347	105.277	122.802
89	1.60944	-0.243007	105.336	122.411
90	1.60944	-0.230118	105.389	122.041
91	1.60944	-0.219834	105.437	121.687
92	1.60944	-0.207012	105.48	121.354
93	1.60944	-0.196779	105.519	121.037
94	1.60944	-0.184017	105.553	120.741
95	1.60944	-0.173829	105.583	120.461
96	1.60944	-0.161119	105.609	120.202
97	1.60944	-0.150969	105.632	119.959
98	1.60944	-0.138305	105.651	119.736
99	1.60944	-0.125661	105.666	119.534
100	1.60944	-0.115562	105.68	119.348
101	1.60944	-0.102953	105.69	119.182
102	1.60944	-0.0928787	105.699	119.033
103	1.60944	-0.0802981	105.705	118.904
104	1.60944	-0.0702426	105.71	118.791
105	1.60944	-0.0576847	105.714	118.698
106	1.60944	-0.0476439	105.716	118.621
107	1.60944	-0.0350997	105.717	118.565
108	1.60944	-0.0250691	105.718	118.524
109	1.60944	-0.0125328	105.718	118.504
110	1.60944	0	105.718	118.504
111	1.60944	0.0125328	105.718	118.524

112	1.60944	0.0250691	105.719	118.565
113	1.60944	0.0350997	105.72	118.621
114	1.60944	0.0476439	105.722	118.698
115	1.60944	0.0576847	105.726	118.791
116	1.60944	0.0702426	105.731	118.904
117	1.60944	0.0802981	105.737	119.033
118	1.60944	0.0928787	105.746	119.182
119	1.60944	0.102953	105.756	119.348
120	1.60944	0.115562	105.77	119.534
121	1.60944	0.125661	105.785	119.736
122	1.60944	0.138305	105.805	119.959
123	1.60944	0.150969	105.827	120.202
124	1.60944	0.161119	105.853	120.461
125	1.60944	0.173829	105.883	120.741
126	1.60944	0.184017	105.917	121.037
127	1.60944	0.196779	105.956	121.354
128	1.60944	0.207012	105.999	121.687
129	1.60944	0.219834	106.047	122.041
130	1.60944	0.230118	106.1	122.411
131	1.60944	0.243007	106.159	122.802
132	1.60944	0.253347	106.223	123.21
133	1.60944	0.266311	106.294	123.639
134	1.60944	0.279319	106.372	124.088
135	1.60944	0.28976	106.456	124.555
136	1.60944	0.302855	106.548	125.042
137	1.60944	0.31337	106.646	125.546
138	1.60944	0.326561	106.753	126.072
139	1.60944	0.337155	106.867	126.615
140	1.60944	0.350451	106.989	127.179
141	1.60944	0.361133	107.12	127.76
142	1.60944	0.374544	107.26	128.363
143	1.60944	0.385321	107.409	128.983
144	1.60944	0.398855	107.568	129.625
145	1.60944	0.412463	107.738	130.289
146	1.60944	0.423405	107.917	130.97
147	1.60944	0.437153	108.108	131.674
148	1.60944	0.448213	108.309	132.395
149	1.60944	0.462114	108.523	133.139
150	1.60944	0.473299	108.747	133.9
151	1.60944	0.487364	108.984	134.685
152	1.60944	0.498687	109.233	135.487
153	1.60944	0.51293	109.496	136.313
154	1.60944	0.524401	109.771	137.157
155	1.60944	0.538836	110.061	138.024
156	1.60944	0.553384	110.368	138.915
157	1.60944	0.565108	110.687	139.824
158	1.60944	0.579873	111.023	140.758
159	1.60944	0.591776	111.373	141.71
160	1.60944	0.606775	111.741	142.687
161	1.60944	0.618872	112.124	143.683
162	1.60944	0.634124	112.527	144.703
163	1.60944	0.646431	112.944	145.744
164	1.60944	0.661955	113.383	146.809
165	1.60944	0.67449	113.838	147.895
166	1.60944	0.690309	114.314	149.006
167	1.60944	0.706302	114.813	150.142
168	1.60944	0.719228	115.33	151.3
169	1.60944	0.735557	115.871	152.484
170	1.60944	0.748762	116.432	153.689
171	1.60944	0.765456	117.018	154.921
172	1.60944	0.778966	117.625	156.174
173	1.60944	0.796056	118.258	157.456

174	1.60944	0.809896		118.914	158.759
175	1.60944	0.827417		119.599	160.091
176	1.60944	0.841621		120.307	161.445
177	1.60944	0.859618		121.046	162.829
178	1.60944	0.877897		121.817	164.242
179	1.60944	0.892733		122.614	165.679
180	1.60944	0.911562		123.445	167.146
181	1.60944	0.926859		124.304	168.637
182	1.60944	0.946291		125.199	170.16
183	1.60944	0.9621	126.125	171.709	
184	1.60944	0.982202		127.09	173.29
185	1.60944	0.998575		128.087	174.897
186	1.60944	1.01943	129.126	176.537	
187	1.60944	1.03643	130.2	178.205	
188	1.60944	1.05812	131.32	179.908	
189	1.60944	1.08032	132.487	181.647	
190	1.60944	1.09847	133.694	183.415	
191	1.60944	1.12168	134.952	185.22	
192	1.60944	1.14069	136.253	187.056	
193	1.60944	1.16505	137.61	188.931	
194	1.60944	1.18504	139.015	190.839	
195	1.60944	1.21073	140.48	192.787	
196	1.60944	1.23187	141.998	194.77	
197	1.60944	1.25908	143.583	196.796	
198	1.60944	1.28155	145.226	198.859	
199	1.60944	1.31058	146.943	200.968	
200	1.60944	1.34075	148.741	203.126	
201	1.60944	1.36581	150.606	205.324	
202	1.60944	1.39838	152.562	207.575	
203	1.60944	1.42554	154.594	209.869	
204	1.60944	1.46106	156.729	212.22	
205	1.60944	1.49085	158.951	214.62	
206	1.60944	1.53007	161.292	217.082	
207	1.60944	1.56322	163.736	219.598	
208	1.60944	1.60725	166.319	222.185	
209	1.60944	1.64485	169.025	224.832	
210	1.60944	1.6954	171.899	227.561	
211	1.60944	1.75069	174.964	230.379	
212	1.60944	1.79912	178.201	233.274	
213	1.60944	1.86629	181.684	236.278	
214	1.60944	1.92684	185.397	239.379	
215	1.60944	2.01409	189.453	242.621	
216	1.60944	2.09693	193.85	245.996	
217	1.60944	2.22621	198.806	249.578	
218	1.60944	2.36561	204.403	253.386	
219	1.60944	2.65209	211.436	257.654	

Data Set Standard Deviation = 1.76137
Numerator = 66385.7
Denominator = 143000
W Statistic = 0.464235 = 66385.7 / 143000

5% Critical value of 0.976 exceeds 0.464235
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.464235
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Beryllium

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 95.8904%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 18
Maximum Background Concentration = 1.60944
Confidence Level = 69.2%
False Positive Rate = 30.8%

Location	Date	Samples	Mean	Significant
LMW-9	6/30/2010	1	-3.35241	FALSE
LMW-10	6/30/2010	1	-3.35241	FALSE
LMW-15R	6/30/2010	1	-1.77196	FALSE
LMW-14R	6/30/2010	1	-3.35241	FALSE
LMW-9D	6/30/2010	1	-3.35241	FALSE
LMW-8	6/30/2010	1	-3.35241	FALSE
LMW-6	6/30/2010	1	-2.04022	FALSE
LMW-3S	6/30/2010	1	-3.35241	FALSE
LMW-3	6/30/2010	1	-3.35241	FALSE
LMW-16	6/30/2010	1	-3.35241	FALSE
LMW-9S	6/30/2010	1	-3.35241	FALSE
LMW-7	6/11/2009	1	-1.66073	FALSE
LMW-11	11/20/2008	1	1.60944	FALSE
LMW-12	11/20/2008	1	1.60944	FALSE
LMW-13	11/20/2008	1	1.60944	FALSE
MW-5	11/20/2008	1	1.60944	FALSE

Concentrations (ppb)

Parameter: Chloroform

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 219
Total Non-Detect: 212
Percent Non-Detects: 96.8037%
Total Background Measurements: 18
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	18	17 (94.4444%)	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
			11/16/2009	ND<0.14 U	ND<0.14 U
			6/30/2010	ND<0.14 U	ND<0.14 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-14R	6	6 (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
			6/30/2010	ND<0.14 U	ND<0.14 U
LMW-10	15	15 (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
			11/16/2009	ND<0.14 U	ND<0.14 U
			6/30/2010	ND<0.14 U	ND<0.14 U

LMW-15R	13	13 (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
		11/16/2009		ND<0.14 U		ND<0.14 U
		11/16/2009		ND<0.14 U		ND<0.14 U
		11/16/2009		ND<0.14 U		ND<0.14 U
		6/30/2010		ND<0.14 U		ND<0.14 U
LMW-16	8	8 (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
		11/16/2009		ND<0.14 U		ND<0.14 U
		6/30/2010		ND<0.14 U		ND<0.14 U
LMW-3	20	17 (85%)	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	
		11/16/2009		0.5 J	0.5 J	
		6/30/2010		0.31 J	0.31 J	
LMW-3S	8	8 (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
		11/16/2009		ND<0.14 U		ND<0.14 U
		6/30/2010		ND<0.14 U		ND<0.14 U
LMW-6	18	17 (94.4444%)	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
			11/16/2009	ND<0.14 U		ND<0.14 U
			6/30/2010	ND<0.14 U		ND<0.14 U
LMW-8	18	18 (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
			11/16/2009	ND<0.14 U		ND<0.14 U
			6/30/2010	ND<0.14 U		ND<0.14 U
LMW-9	18	17 (94.4444%)	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
			11/16/2009	ND<0.14 U		ND<0.14 U
			6/30/2010	ND<0.14 U		ND<0.14 U
LMW-9D	8	8 (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
			11/16/2009	ND<0.14 U		ND<0.14 U
			6/30/2010	ND<0.14 U		ND<0.14 U
LMW-9S	7	7 (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
			6/30/2010	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-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
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

There are 0 unused locations

Loc.	Meas. ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Chloroform

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0	-2.65209	7.03356	0
2	0	-2.365	6.2297	0
3	0.07	-2.226	7.5857	-0.155834
4	0.07	-2.096	9.9828	-0.30262
5	0.07	-2.014	9.0394	-0.443606
6	0.07	-1.926	8.7521	-0.578485
7	0.07	-1.866	3.2351	-0.709125
8	0.07	-1.799	1.472	-0.835063
9	0.07	-1.750	6.5369	-0.957612
10	0.07	-1.695	4.4112	-1.07629
11	0.07	-1.644	5.1168	-1.19143
12	0.07	-1.607	2.7	-1.30394
13	0.07	-1.563	0.1437	-1.41336
14	0.07	-1.530	2.4848	-1.52047
15	0.07	-1.490	8.7074	-1.62483
16	0.07	-1.461	6.8421	-1.7271
17	0.07	-1.425	8.8743	-1.82689
18	0.07	-1.398	6.8297	-1.92477
19	0.07	-1.365	2.6952	-2.02038
20	0.07	-1.340	4.4928	-2.11423
21	0.07	-1.310	6.2104	-2.20597
22	0.07	-1.281	7.8528	-2.29568
23	0.07	-1.259	9.4381	-2.38382
24	0.07	-1.231	0.9556	-2.47005
25	0.07	-1.210	7.4214	-2.5548
26	0.07	-1.185	3.8258	-2.63775
27	0.07	-1.165	5.1831	-2.71931
28	0.07	-1.140	6.4843	-2.79916
29	0.07	-1.121	7.7424	-2.87767
30	0.07	-1.098	4.9491	-2.95457
31	0.07	-1.080	3.1162	-3.03019
32	0.07	-1.058	1.2358	-3.10426
33	0.07	-1.036	4.31	-3.17681
34	0.07	-1.019	4.3492	-3.24817
35	0.07	-0.998575	84.3464	-3.31807
36	0.07	-0.982202	85.3111	-3.38682
37	0.31	-0.962	6.2367	-3.68507
38	0.33	-0.946291	87.1322	-3.99735
39	0.5	-0.926859	87.9912	-4.46078
40	0.5	-0.911562	88.8222	-4.91656
41	0.5	-0.892733	89.6192	-5.36292
42	0.5	-0.877897	90.3899	-5.80187
43	0.5	-0.859618	91.1288	-6.23168
44	0.5	-0.841621	91.8371	-6.65249
45	0.5	-0.827417	92.5218	-7.0662
46	0.5	-0.809896	93.1777	-7.47115
47	0.5	-0.796056	93.8114	-7.86918
48	0.5	-0.778966	94.4182	-8.25866
49	0.5	-0.765456	95.0041	-8.64139

50	0.5	-0.748762	95.5647	-9.01577
51	0.5	-0.735557	96.1058	-9.38355
52	0.5	-0.719228	96.6231	-9.74316
53	0.5	-0.706302	97.1219	-10.0963
54	0.5	-0.690309	97.5985	-10.4415
55	0.5	-0.674499	8.0534	-10.7787
56	0.5	-0.661955	98.4916	-11.1097
57	0.5	-0.646431	98.9095	-11.4329
58	0.5	-0.634124	99.3116	-11.75
59	0.5	-0.618872	99.6946	-12.0594
60	0.5	-0.606775	100.063	-12.3628
61	0.5	-0.591776	100.413	-12.6587
62	0.5	-0.579873	100.749	-12.9486
63	0.5	-0.565108	101.069	-13.2312
64	0.5	-0.553384	101.375	-13.5079
65	0.5	-0.538836	101.665	-13.7773
66	0.5	-0.524401	101.94	-14.0395
67	0.5	-0.51293	102.203	-14.2959
68	0.5	-0.498687	102.452	-14.5453
69	0.5	-0.487364	102.689	-14.789
70	0.5	-0.473299	102.913	-15.0256
71	0.5	-0.462114	103.127	-15.2567
72	0.5	-0.448213	103.328	-15.4808
73	0.5	-0.437153	103.519	-15.6994
74	0.5	-0.423405	103.698	-15.9111
75	0.5	-0.412463	103.868	-16.1173
76	0.5	-0.398855	104.027	-16.3167
77	0.5	-0.385321	104.176	-16.5094
78	0.5	-0.374544	104.316	-16.6967
79	0.5	-0.361133	104.447	-16.8772
80	0.5	-0.350451	104.569	-17.0524
81	0.5	-0.337155	104.683	-17.221
82	0.5	-0.326561	104.79	-17.3843
83	0.5	-0.31337	104.888	-17.541
84	0.5	-0.302855	104.98	-17.6924
85	0.5	-0.28976	105.064	-17.8373
86	0.5	-0.279319	105.142	-17.977
87	0.5	-0.266311	105.213	-18.1101
88	0.5	-0.253347	105.277	-18.2368
89	0.5	-0.243007	105.336	-18.3583
90	0.5	-0.230118	105.389	-18.4733
91	0.5	-0.219834	105.437	-18.5833
92	0.5	-0.207012	105.48	-18.6868
93	0.5	-0.196779	105.519	-18.7852
94	0.5	-0.184017	105.553	-18.8772
95	0.5	-0.173829	105.583	-18.9641
96	0.5	-0.161119	105.609	-19.0446
97	0.5	-0.150969	105.632	-19.1201
98	0.5	-0.138305	105.651	-19.1893
99	0.5	-0.125661	105.666	-19.2521
100	0.5	-0.115562	105.68	-19.3099
101	0.5	-0.102953	105.69	-19.3614
102	0.5	-0.0928787	105.699	-19.4078
103	0.5	-0.0802981	105.705	-19.448
104	0.5	-0.0702426	105.71	-19.4831
105	0.5	-0.0576847	105.714	-19.5119
106	0.5	-0.0476439	105.716	-19.5357
107	0.5	-0.0350997	105.717	-19.5533
108	0.5	-0.0250691	105.718	-19.5658
109	0.5	-0.0125328	105.718	-19.5721
110	0.5	0	105.718	-19.5721
111	0.5	0.0125328	105.718	-19.5658

112	0.5	0.0250691	105.719	-19.5533
113	0.5	0.0350997	105.72	-19.5357
114	0.5	0.0476439	105.722	-19.5119
115	0.5	0.0576847	105.726	-19.4831
116	0.5	0.0702426	105.731	-19.448
117	0.5	0.0802981	105.737	-19.4078
118	0.5	0.0928787	105.746	-19.3614
119	0.5	0.102953	105.756	-19.3099
120	0.5	0.115562	105.77	-19.2521
121	0.5	0.125661	105.785	-19.1893
122	0.5	0.138305	105.805	-19.1201
123	0.5	0.150969	105.827	-19.0446
124	0.5	0.161119	105.853	-18.9641
125	0.5	0.173829	105.883	-18.8772
126	0.5	0.184017	105.917	-18.7852
127	0.5	0.196779	105.956	-18.6868
128	0.5	0.207012	105.999	-18.5833
129	0.5	0.219834	106.047	-18.4733
130	0.5	0.230118	106.1	-18.3583
131	0.5	0.243007	106.159	-18.2368
132	0.5	0.253347	106.223	-18.1101
133	0.5	0.266311	106.294	-17.977
134	0.5	0.279319	106.372	-17.8373
135	0.5	0.28976	106.456	-17.6924
136	0.5	0.302855	106.548	-17.541
137	0.5	0.31337	106.646	-17.3843
138	0.5	0.326561	106.753	-17.221
139	0.5	0.337155	106.867	-17.0524
140	0.5	0.350451	106.989	-16.8772
141	0.5	0.361133	107.12	-16.6967
142	0.5	0.374544	107.26	-16.5094
143	0.5	0.385321	107.409	-16.3167
144	0.5	0.398855	107.568	-16.1173
145	0.5	0.412463	107.738	-15.9111
146	0.5	0.423405	107.917	-15.6994
147	0.5	0.437153	108.108	-15.4808
148	0.5	0.448213	108.309	-15.2567
149	0.5	0.462114	108.523	-15.0256
150	0.5	0.473299	108.747	-14.789
151	0.5	0.487364	108.984	-14.5453
152	0.5	0.498687	109.233	-14.2959
153	0.5	0.51293	109.496	-14.0395
154	0.5	0.524401	109.771	-13.7773
155	0.5	0.538836	110.061	-13.5079
156	0.5	0.553384	110.368	-13.2312
157	0.5	0.565108	110.687	-12.9486
158	0.5	0.579873	111.023	-12.6587
159	0.5	0.591776	111.373	-12.3628
160	0.5	0.606775	111.741	-12.0594
161	0.5	0.618872	112.124	-11.75
162	0.5	0.634124	112.527	-11.4329
163	0.5	0.646431	112.944	-11.1097
164	0.5	0.661955	113.383	-10.7787
165	0.5	0.67449	113.838	-10.4415
166	0.5	0.690309	114.314	-10.0963
167	0.5	0.706302	114.813	-9.74316
168	0.5	0.719228	115.33	-9.38355
169	0.5	0.735557	115.871	-9.01577
170	0.5	0.748762	116.432	-8.64139
171	0.5	0.765456	117.018	-8.25866
172	0.5	0.778966	117.625	-7.86918
173	0.5	0.796056	118.258	-7.47115

174	0.5	0.809896	118.914	-7.0662
175	0.5	0.827417	119.599	-6.65249
176	0.5	0.841621	120.307	-6.23168
177	0.5	0.859618	121.046	-5.80187
178	0.5	0.877897	121.817	-5.36292
179	0.5	0.892733	122.614	-4.91656
180	0.5	0.911562	123.445	-4.46078
181	0.5	0.926859	124.304	-3.99735
182	0.5	0.946291	125.199	-3.5242
183	0.5	0.9621	126.125	-3.04315
184	0.5	0.982202	127.09	-2.55205
185	0.5	0.998575	128.087	-2.05276
186	0.5	1.01943	129.126	-1.54305
187	0.5	1.03643	130.2	-1.02483
188	0.5	1.05812	131.32	-0.495773
189	0.5	1.08032	132.487	0.0443874
190	0.5	1.09847	133.694	0.593622
191	0.5	1.12168	134.952	1.15446
192	0.5	1.14069	136.253	1.72481
193	0.5	1.16505	137.61	2.30733
194	0.5	1.18504	139.015	2.89985
195	0.5	1.21073	140.48	3.50521
196	0.5	1.23187	141.998	4.12115
197	0.5	1.25908	143.583	4.75069
198	0.5	1.28155	145.226	5.39146
199	0.5	1.31058	146.943	6.04675
200	0.5	1.34075	148.741	6.71713
201	0.5	1.36581	150.606	7.40003
202	0.5	1.39838	152.562	8.09922
203	0.5	1.42554	154.594	8.81199
204	0.5	1.46106	156.729	9.54252
205	0.5	1.49085	158.951	10.288
206	0.5	1.53007	161.292	11.053
207	0.5	1.56322	163.736	11.8346
208	0.5	1.60725	166.319	12.6382
209	0.5	1.64485	169.025	13.4606
210	0.5	1.6954	171.899	14.3083
211	0.5	1.75069	174.964	15.1837
212	0.5	1.79912	178.201	16.0832
213	0.5	1.86629	181.684	17.0164
214	0.5	1.92684	185.397	17.9798
215	0.5	2.01409	189.453	18.9869
216	3	2.09693	193.85	25.2777
217	6	2.22621	198.806	38.6349
218	8	2.36561	204.403	57.5598
219	78	2.65209	211.436	264.423

Data Set Standard Deviation = 5.28055
Numerator = 69919.3
Denominator = 1.28527e+006
W Statistic = 0.0544005 = 69919.3 / 1.28527e+006

5% Critical value of 0.976 exceeds 0.0544005
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.0544005
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Chloroform

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-2.65926	-2.65209	7.03356	7.05259
2	-2.65926	-2.36561	12.6297	13.3434
3	-2.65926	-2.22621	17.5857	19.2634
4	-2.65926	-2.09693	21.9828	24.8397
5	-2.65926	-2.01409	26.0394	30.1957
6	-2.65926	-1.92684	29.7521	35.3197
7	-2.65926	-1.86629	33.2351	40.2826
8	-2.65926	-1.79912	36.472	45.067
9	-2.65926	-1.75069	39.5369	49.7225
10	-2.65926	-1.6954	42.4112	54.231
11	-2.65926	-1.64485	45.1168	58.6051
12	-2.65926	-1.60725	47.7	62.8792
13	-2.65926	-1.56322	50.1437	67.0362
14	-2.65926	-1.53007	52.4848	71.105
15	-2.65926	-1.49085	54.7074	75.0696
16	-2.65926	-1.46106	56.8421	78.9549
17	-2.65926	-1.42554	58.8743	82.7458
18	-2.65926	-1.39838	60.8297	86.4645
19	-2.65926	-1.36581	62.6952	90.0965
20	-2.65926	-1.34075	64.4928	93.6619
21	-2.65926	-1.31058	66.2104	97.1471
22	-2.65926	-1.28155	67.8528	100.555
23	-2.65926	-1.25908	69.4381	103.903
24	-2.65926	-1.23187	70.9556	107.179
25	-2.65926	-1.21073	72.4214	110.399
26	-2.65926	-1.18504	73.8258	113.55
27	-2.65926	-1.16505	75.1831	116.648
28	-2.65926	-1.14069	76.4843	119.682
29	-2.65926	-1.12168	77.7424	122.665
30	-2.65926	-1.09847	78.9491	125.586
31	-2.65926	-1.08032	80.1162	128.458
32	-2.65926	-1.05812	81.2358	131.272
33	-2.65926	-1.03643	82.31	134.028
34	-2.65926	-1.01943	83.3492	136.739
35	-1.17118	-0.998575	84.3464	137.909
36	-1.10866	-0.982202	85.3111	138.998
37	-0.693147	-0.9621	86.2367	139.665
38	-0.693147	-0.946291	87.1322	140.321
39	-0.693147	-0.926859	87.9912	140.963
40	-0.693147	-0.911562	88.8222	141.595
41	-0.693147	-0.892733	89.6192	142.214
42	-0.693147	-0.877897	90.3899	142.822
43	-0.693147	-0.859618	91.1288	143.418
44	-0.693147	-0.841621	91.8371	144.001
45	-0.693147	-0.827417	92.5218	144.575
46	-0.693147	-0.809896	93.1777	145.136
47	-0.693147	-0.796056	93.8114	145.688
48	-0.693147	-0.778966	94.4182	146.228
49	-0.693147	-0.765456	95.0041	146.759

50	-0.693147	-0.748762	95.5647	147.278
51	-0.693147	-0.735557	96.1058	147.787
52	-0.693147	-0.719228	96.6231	148.286
53	-0.693147	-0.706302	97.1219	148.776
54	-0.693147	-0.690309	97.5985	149.254
55	-0.693147	-0.674499	8.0534	149.722
56	-0.693147	-0.661955	98.4916	150.18
57	-0.693147	-0.646431	98.9095	150.628
58	-0.693147	-0.634124	99.3116	151.068
59	-0.693147	-0.618872	99.6946	151.497
60	-0.693147	-0.606775	100.063	151.918
61	-0.693147	-0.591776	100.413	152.328
62	-0.693147	-0.579873	100.749	152.73
63	-0.693147	-0.565108	101.069	153.121
64	-0.693147	-0.553384	101.375	153.505
65	-0.693147	-0.538836	101.665	153.878
66	-0.693147	-0.524401	101.94	154.242
67	-0.693147	-0.51293	102.203	154.597
68	-0.693147	-0.498687	102.452	154.943
69	-0.693147	-0.487364	102.689	155.281
70	-0.693147	-0.473299	102.913	155.609
71	-0.693147	-0.462114	103.127	155.929
72	-0.693147	-0.448213	103.328	156.24
73	-0.693147	-0.437153	103.519	156.543
74	-0.693147	-0.423405	103.698	156.837
75	-0.693147	-0.412463	103.868	157.122
76	-0.693147	-0.398855	104.027	157.399
77	-0.693147	-0.385321	104.176	157.666
78	-0.693147	-0.374544	104.316	157.926
79	-0.693147	-0.361133	104.447	158.176
80	-0.693147	-0.350451	104.569	158.419
81	-0.693147	-0.337155	104.683	158.653
82	-0.693147	-0.326561	104.79	158.879
83	-0.693147	-0.31337	104.888	159.096
84	-0.693147	-0.302855	104.98	159.306
85	-0.693147	-0.28976	105.064	159.507
86	-0.693147	-0.279319	105.142	159.7
87	-0.693147	-0.266311	105.213	159.885
88	-0.693147	-0.253347	105.277	160.061
89	-0.693147	-0.243007	105.336	160.229
90	-0.693147	-0.230118	105.389	160.389
91	-0.693147	-0.219834	105.437	160.541
92	-0.693147	-0.207012	105.48	160.684
93	-0.693147	-0.196779	105.519	160.821
94	-0.693147	-0.184017	105.553	160.948
95	-0.693147	-0.173829	105.583	161.069
96	-0.693147	-0.161119	105.609	161.181
97	-0.693147	-0.150969	105.632	161.285
98	-0.693147	-0.138305	105.651	161.381
99	-0.693147	-0.125661	105.666	161.468
100	-0.693147	-0.115562	105.68	161.548
101	-0.693147	-0.102953	105.69	161.62
102	-0.693147	-0.0928787	105.699	161.684
103	-0.693147	-0.0802981	105.705	161.74
104	-0.693147	-0.0702426	105.71	161.788
105	-0.693147	-0.0576847	105.714	161.828
106	-0.693147	-0.0476439	105.716	161.861
107	-0.693147	-0.0350997	105.717	161.886
108	-0.693147	-0.0250691	105.718	161.903
109	-0.693147	-0.0125328	105.718	161.912
110	-0.693147	0	105.718	161.912
111	-0.693147	0.0125328	105.718	161.903

112	-0.693147	0.0250691	105.719	161.886
113	-0.693147	0.0350997	105.72	161.861
114	-0.693147	0.0476439	105.722	161.828
115	-0.693147	0.0576847	105.726	161.788
116	-0.693147	0.0702426	105.731	161.74
117	-0.693147	0.0802981	105.737	161.684
118	-0.693147	0.0928787	105.746	161.62
119	-0.693147	0.102953	105.756	161.548
120	-0.693147	0.115562	105.77	161.468
121	-0.693147	0.125661	105.785	161.381
122	-0.693147	0.138305	105.805	161.285
123	-0.693147	0.150969	105.827	161.181
124	-0.693147	0.161119	105.853	161.069
125	-0.693147	0.173829	105.883	160.948
126	-0.693147	0.184017	105.917	160.821
127	-0.693147	0.196779	105.956	160.684
128	-0.693147	0.207012	105.999	160.541
129	-0.693147	0.219834	106.047	160.389
130	-0.693147	0.230118	106.1	160.229
131	-0.693147	0.243007	106.159	160.061
132	-0.693147	0.253347	106.223	159.885
133	-0.693147	0.266311	106.294	159.7
134	-0.693147	0.279319	106.372	159.507
135	-0.693147	0.28976	106.456	159.306
136	-0.693147	0.302855	106.548	159.096
137	-0.693147	0.31337	106.646	158.879
138	-0.693147	0.326561	106.753	158.653
139	-0.693147	0.337155	106.867	158.419
140	-0.693147	0.350451	106.989	158.176
141	-0.693147	0.361133	107.12	157.926
142	-0.693147	0.374544	107.26	157.666
143	-0.693147	0.385321	107.409	157.399
144	-0.693147	0.398855	107.568	157.122
145	-0.693147	0.412463	107.738	156.837
146	-0.693147	0.423405	107.917	156.543
147	-0.693147	0.437153	108.108	156.24
148	-0.693147	0.448213	108.309	155.929
149	-0.693147	0.462114	108.523	155.609
150	-0.693147	0.473299	108.747	155.281
151	-0.693147	0.487364	108.984	154.943
152	-0.693147	0.498687	109.233	154.597
153	-0.693147	0.51293	109.496	154.242
154	-0.693147	0.524401	109.771	153.878
155	-0.693147	0.538836	110.061	153.505
156	-0.693147	0.553384	110.368	153.121
157	-0.693147	0.565108	110.687	152.73
158	-0.693147	0.579873	111.023	152.328
159	-0.693147	0.591776	111.373	151.918
160	-0.693147	0.606775	111.741	151.497
161	-0.693147	0.618872	112.124	151.068
162	-0.693147	0.634124	112.527	150.628
163	-0.693147	0.646431	112.944	150.18
164	-0.693147	0.661955	113.383	149.722
165	-0.693147	0.67449	113.838	149.254
166	-0.693147	0.690309	114.314	148.776
167	-0.693147	0.706302	114.813	148.286
168	-0.693147	0.719228	115.33	147.787
169	-0.693147	0.735557	115.871	147.278
170	-0.693147	0.748762	116.432	146.759
171	-0.693147	0.765456	117.018	146.228
172	-0.693147	0.778966	117.625	145.688
173	-0.693147	0.796056	118.258	145.136

174	-0.693147		0.809896		118.914	144.575
175	-0.693147		0.827417		119.599	144.001
176	-0.693147		0.841621		120.307	143.418
177	-0.693147		0.859618		121.046	142.822
178	-0.693147		0.877897		121.817	142.214
179	-0.693147		0.892733		122.614	141.595
180	-0.693147		0.911562		123.445	140.963
181	-0.693147		0.926859		124.304	140.321
182	-0.693147		0.946291		125.199	139.665
183	-0.693147		0.9621	126.125	138.998	
184	-0.693147		0.982202		127.09	138.317
185	-0.693147		0.998575		128.087	137.625
186	-0.693147		1.01943	129.126	136.918	
187	-0.693147		1.03643	130.2	136.2	
188	-0.693147		1.05812	131.32	135.466	
189	-0.693147		1.08032	132.487	134.718	
190	-0.693147		1.09847	133.694	133.956	
191	-0.693147		1.12168	134.952	133.179	
192	-0.693147		1.14069	136.253	132.388	
193	-0.693147		1.16505	137.61	131.58	
194	-0.693147		1.18504	139.015	130.759	
195	-0.693147		1.21073	140.48	129.92	
196	-0.693147		1.23187	141.998	129.066	
197	-0.693147		1.25908	143.583	128.193	
198	-0.693147		1.28155	145.226	127.305	
199	-0.693147		1.31058	146.943	126.397	
200	-0.693147		1.34075	148.741	125.467	
201	-0.693147		1.36581	150.606	124.52	
202	-0.693147		1.39838	152.562	123.551	
203	-0.693147		1.42554	154.594	122.563	
204	-0.693147		1.46106	156.729	121.55	
205	-0.693147		1.49085	158.951	120.517	
206	-0.693147		1.53007	161.292	119.456	
207	-0.693147		1.56322	163.736	118.373	
208	-0.693147		1.60725	166.319	117.259	
209	-0.693147		1.64485	169.025	116.119	
210	-0.693147		1.6954	171.899	114.944	
211	-0.693147		1.75069	174.964	113.73	
212	-0.693147		1.79912	178.201	112.483	
213	-0.693147		1.86629	181.684	111.189	
214	0	1.92684	185.397	111.189		
215	0	2.01409	189.453	111.189		
216	1.09861	2.09693	193.85	113.493		
217	1.79176	2.22621	198.806	117.482		
218	2.07944	2.36561	204.403	122.401		
219	4.35671	2.65209	211.436	133.955		

Data Set Standard Deviation = 0.861842
Numerator = 17944.1
Denominator = 34236.6
W Statistic = 0.524119 = 17944.1 / 34236.6

5% Critical value of 0.976 exceeds 0.524119
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.524119
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Chloroform

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 96.8037%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 18
Maximum Background Concentration = 4.35671
Confidence Level = 69.2%
False Positive Rate = 30.8%

Location	Date	Samples	Mean	Significant
LMW-14R	6/30/2010	1	-2.65926	FALSE
LMW-10	6/30/2010	1	-2.65926	FALSE
LMW-15R	6/30/2010	1	-2.65926	FALSE
LMW-16	6/30/2010	1	-2.65926	FALSE
LMW-3	6/30/2010	1	-1.17118	FALSE
LMW-3S	6/30/2010	1	-2.65926	FALSE
LMW-6	6/30/2010	1	-2.65926	FALSE
LMW-8	6/30/2010	1	-2.65926	FALSE
LMW-9	6/30/2010	1	-2.65926	FALSE
LMW-9D	6/30/2010	1	-2.65926	FALSE
LMW-9S	6/30/2010	1	-2.65926	FALSE
LMW-7	6/11/2009	1	-2.65926	FALSE
LMW-13	11/20/2008	1	-0.693147	FALSE
LMW-12	11/20/2008	1	-0.693147	FALSE
LMW-11	11/20/2008	1	-0.693147	FALSE
MW-5	11/20/2008	1	-0.693147	FALSE

Concentrations (ppb)

Parameter: Chromium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 219
Total Non-Detect: 142
Percent Non-Detects: 64.8402%
Total Background Measurements: 18
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	18	10 (55.5556%)	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
			11/16/2009	1 B	1 B
			6/30/2010	0.72 J	0.72 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-8	18	12 (66.6667%)	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
			11/16/2009	0.69 J	0.69 J
			6/30/2010	0.35 J	0.35 J
LMW-9S	7	4 (57.1429%)	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	
			6/30/2010	0.58 J	0.58 J	
LMW-9D	8	3 (37.5%)	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	
			11/16/2009	1.1	1.1	
			6/30/2010	0.5 J	0.5 J	
LMW-9	18	9 (50%)	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	
			11/16/2009	0.62 J	0.62 J	
			6/30/2010	0.44 J	0.44 J	
LMW-6	18	11 (61.1111%)	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	
			11/16/2009	ND<0.16 U	ND<0.16 U	
			6/30/2010	0.57 J	0.57 J	
LMW-3S	8	4 (50%)	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	
			11/16/2009	0.54 J	0.54 J	
			6/30/2010	0.37 J	0.37 J	
LMW-3	20	17 (85%)	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		
		11/16/2009	1.1 B	1.1 B		
		6/30/2010	0.76 J	0.76 J		
LMW-16	8	4 (50%)	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		
		11/16/2009	0.53 J B	0.53 J B		
		6/30/2010	0.56 J	0.56 J		
LMW-15R	13	8 (61.5385%)	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		
		11/16/2009	0.16 J B	0.16 J B		
		11/16/2009	0.53 J B	0.53 J B		
		11/16/2009	0.44 J B	0.44 J B		
		6/30/2010	0.51 J	0.51 J		
LMW-10	15	9 (60%)	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		
		11/16/2009	0.26 J	0.26 J		
		6/30/2010	0.36 J	0.36 J		
LMW-14R	6	4 (66.6667%)	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
			6/30/2010		0.49 J	0.49 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-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-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-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
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

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Chromium

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.08	-2.65209	7.03356	-0.212167
2	0.16	-2.36561	12.6297	-0.590665
3	0.26	-2.22621	17.5857	-1.16948
4	0.28	-2.09693	21.9828	-1.75662
5	0.32	-2.01409	26.0394	-2.40113
6	0.35	-1.92684	29.7521	-3.07552
7	0.36	-1.86629	33.2351	-3.74739
8	0.36	-1.79912	36.472	-4.39507
9	0.37	-1.75069	39.5369	-5.04282
10	0.44	-1.6954	42.4112	-5.7888
11	0.44	-1.64485	45.1168	-6.51253
12	0.48	-1.60725	47.7	-7.28401
13	0.49	-1.56322	50.1437	-8.04999
14	0.5	-1.53007	52.4848	-8.81503
15	0.51	-1.49085	54.7074	-9.57536
16	0.53	-1.46106	56.8421	-10.3497
17	0.53	-1.42554	58.8743	-11.1053
18	0.54	-1.39838	60.8297	-11.8604
19	0.56	-1.36581	62.6952	-12.6252
20	0.57	-1.34075	64.4928	-13.3895
21	0.58	-1.31058	66.2104	-14.1496
22	0.62	-1.28155	67.8528	-14.9442
23	0.69	-1.25908	69.4381	-15.8129
24	0.72	-1.23187	70.9556	-16.6999
25	0.76	-1.21073	72.4214	-17.62
26	0.83	-1.18504	73.8258	-18.6036
27	0.84	-1.16505	75.1831	-19.5823
28	1	-1.14069	76.4843	-20.7229
29	1	-1.12168	77.7424	-21.8446
30	1	-1.09847	78.9491	-22.9431
31	1.1	-1.08032	80.1162	-24.1314
32	1.1	-1.05812	81.2358	-25.2954
33	1.2	-1.03643	82.31	-26.5391
34	1.6	-1.01943	83.3492	-28.1702
35	1.7	-0.998575	84.3464	-29.8678
36	2	-0.982202	85.3111	-31.8322
37	3	-0.9621	86.2367	-34.7185
38	4	-0.946291	87.1322	-38.5036
39	5	-0.926859	87.9912	-43.1379
40	5	-0.911562	88.8222	-47.6957
41	5	-0.892733	89.6192	-52.1594
42	5.5	-0.877897	90.3899	-56.9878
43	5.8	-0.859618	91.1288	-61.9736
44	6	-0.841621	91.8371	-67.0233
45	6	-0.827417	92.5218	-71.9878
46	6	-0.809896	93.1777	-76.8472
47	7	-0.796056	93.8114	-82.4196
48	7	-0.778966	94.4182	-87.8724
49	7	-0.765456	95.0041	-93.2306

50	10	-0.748762	95.5647	-100.718
51	10	-0.735557	96.1058	-108.074
52	10	-0.719228	96.6231	-115.266
53	10	-0.706302	97.1219	-122.329
54	10	-0.690309	97.5985	-129.232
55	10	-0.674499	98.0534	-135.977
56	10	-0.661955	98.4916	-142.597
57	10	-0.646431	98.9095	-149.061
58	10	-0.634124	99.3116	-155.402
59	10	-0.618872	99.6946	-161.591
60	10	-0.606775	100.063	-167.659
61	10	-0.591776	100.413	-173.576
62	10	-0.579873	100.749	-179.375
63	10	-0.565108	101.069	-185.026
64	10	-0.553384	101.375	-190.56
65	10	-0.538836	101.665	-195.948
66	10	-0.524401	101.94	-201.192
67	10	-0.51293	102.203	-206.322
68	10	-0.498687	102.452	-211.309
69	10	-0.487364	102.689	-216.182
70	10	-0.473299	102.913	-220.915
71	10	-0.462114	103.127	-225.536
72	10	-0.448213	103.328	-230.018
73	10	-0.437153	103.519	-234.39
74	10	-0.423405	103.698	-238.624
75	10	-0.412463	103.868	-242.749
76	10	-0.398855	104.027	-246.737
77	10	-0.385321	104.176	-250.59
78	10	-0.374544	104.316	-254.336
79	10	-0.361133	104.447	-257.947
80	10	-0.350451	104.569	-261.452
81	10	-0.337155	104.683	-264.823
82	10	-0.326561	104.79	-268.089
83	10	-0.31337	104.888	-271.223
84	10	-0.302855	104.98	-274.251
85	10	-0.28976	105.064	-277.149
86	10	-0.279319	105.142	-279.942
87	10	-0.266311	105.213	-282.605
88	10	-0.253347	105.277	-285.139
89	10	-0.243007	105.336	-287.569
90	10	-0.230118	105.389	-289.87
91	10	-0.219834	105.437	-292.068
92	10	-0.207012	105.48	-294.138
93	10	-0.196779	105.519	-296.106
94	10	-0.184017	105.553	-297.946
95	10	-0.173829	105.583	-299.684
96	10	-0.161119	105.609	-301.296
97	10	-0.150969	105.632	-302.805
98	10	-0.138305	105.651	-304.188
99	10	-0.125661	105.666	-305.445
100	10	-0.115562	105.68	-306.601
101	10	-0.102953	105.69	-307.63
102	10	-0.0928787	105.699	-308.559
103	10	-0.0802981	105.705	-309.362
104	10	-0.0702426	105.71	-310.064
105	10	-0.0576847	105.714	-310.641
106	10	-0.0476439	105.716	-311.118
107	10	-0.0350997	105.717	-311.469
108	10	-0.0250691	105.718	-311.719
109	10	-0.0125328	105.718	-311.845
110	10	0	105.718	-311.845
111	10	0.0125328	105.718	-311.719

112	10	0.0250691	105.719	-311.469
113	10	0.0350997	105.72	-311.118
114	10	0.0476439	105.722	-310.641
115	10	0.0576847	105.726	-310.064
116	10	0.0702426	105.731	-309.362
117	10	0.0802981	105.737	-308.559
118	10	0.0928787	105.746	-307.63
119	10	0.102953	105.756	-306.601
120	10	0.115562	105.77	-305.445
121	10	0.125661	105.785	-304.188
122	10	0.138305	105.805	-302.805
123	10	0.150969	105.827	-301.296
124	10	0.161119	105.853	-299.684
125	10	0.173829	105.883	-297.946
126	10	0.184017	105.917	-296.106
127	10	0.196779	105.956	-294.138
128	10	0.207012	105.999	-292.068
129	10	0.219834	106.047	-289.87
130	10	0.230118	106.1	-287.569
131	10	0.243007	106.159	-285.139
132	10	0.253347	106.223	-282.605
133	10	0.266311	106.294	-279.942
134	10	0.279319	106.372	-277.149
135	10	0.28976	106.456	-274.251
136	10	0.302855	106.548	-271.223
137	10	0.31337	106.646	-268.089
138	10	0.326561	106.753	-264.823
139	10	0.337155	106.867	-261.452
140	10	0.350451	106.989	-257.947
141	10	0.361133	107.12	-254.336
142	10	0.374544	107.26	-250.59
143	10	0.385321	107.409	-246.737
144	10	0.398855	107.568	-242.749
145	10	0.412463	107.738	-238.624
146	10	0.423405	107.917	-234.39
147	10	0.437153	108.108	-230.018
148	10	0.448213	108.309	-225.536
149	10	0.462114	108.523	-220.915
150	10	0.473299	108.747	-216.182
151	10	0.487364	108.984	-211.309
152	10	0.498687	109.233	-206.322
153	10	0.51293	109.496	-201.192
154	10	0.524401	109.771	-195.948
155	10	0.538836	110.061	-190.56
156	10	0.553384	110.368	-185.026
157	10	0.565108	110.687	-179.375
158	10	0.579873	111.023	-173.576
159	10	0.591776	111.373	-167.659
160	10	0.606775	111.741	-161.591
161	10	0.618872	112.124	-155.402
162	10	0.634124	112.527	-149.061
163	10	0.646431	112.944	-142.597
164	10	0.661955	113.383	-135.977
165	10	0.67449	113.838	-129.232
166	10	0.690309	114.314	-122.329
167	10	0.706302	114.813	-115.266
168	10	0.719228	115.33	-108.074
169	10	0.735557	115.871	-100.718
170	10	0.748762	116.432	-93.2306
171	10	0.765456	117.018	-85.576
172	10	0.778966	117.625	-77.7863
173	10	0.796056	118.258	-69.8258

174	10	0.809896		118.914	-61.7268
175	10	0.827417		119.599	-53.4526
176	10	0.841621		120.307	-45.0364
177	10	0.859618		121.046	-36.4403
178	10	0.877897		121.817	-27.6613
179	10	0.892733		122.614	-18.734
180	10	0.911562		123.445	-9.61834
181	10	0.926859		124.304	-0.349752
182	10	0.946291		125.199	9.11315
183	10	0.9621	126.125	18.7342	
184	10	0.982202		127.09	28.5562
185	10	0.998575		128.087	38.5419
186	10	1.01943	129.126	48.7362	
187	10	1.03643	130.2	59.1005	
188	10	1.05812	131.32	69.6817	
189	10	1.08032	132.487	80.485	
190	10	1.09847	133.694	91.4696	
191	10	1.12168	134.952	102.686	
192	10	1.14069	136.253	114.093	
193	10	1.16505	137.61	125.744	
194	11	1.18504	139.015	138.779	
195	13	1.21073	140.48	154.519	
196	13	1.23187	141.998	170.533	
197	17	1.25908	143.583	191.937	
198	19	1.28155	145.226	216.287	
199	19	1.31058	146.943	241.188	
200	20	1.34075	148.741	268.003	
201	20	1.36581	150.606	295.319	
202	21	1.39838	152.562	324.685	
203	21	1.42554	154.594	354.621	
204	22	1.46106	156.729	386.765	
205	23	1.49085	158.951	421.054	
206	23	1.53007	161.292	456.246	
207	24	1.56322	163.736	493.763	
208	27	1.60725	166.319	537.159	
209	28	1.64485	169.025	583.215	
210	34	1.6954	171.899	640.858	
211	34	1.75069	174.964	700.382	
212	36	1.79912	178.201	765.15	
213	40	1.86629	181.684	839.802	
214	79	1.92684	185.397	992.022	
215	84	2.01409	189.453	1161.21	
216	87	2.09693	193.85	1343.64	
217	93	2.22621	198.806	1550.68	
218	120	2.36561	204.403	1834.55	
219	345	2.65209	211.436	2749.52	

Data Set Standard Deviation = 26.5539
Numerator = 7.55986e+006
Denominator = 3.25007e+007
W Statistic = 0.232606 = 7.55986e+006 / 3.25007e+007

5% Critical value of 0.976 exceeds 0.232606
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.232606
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Chromium

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)	
1	-2.52573	-2.65209	7.03356	6.69845	
2	-1.83258	-2.36561	12.6297	11.0336	
3	-1.34707	-2.22621	17.5857	14.0325	
4	-1.27297	-2.09693	21.9828	16.7018	
5	-1.13943	-2.01409	26.0394	18.9967	
6	-1.04982	-1.92684	29.7521	21.0196	
7	-1.02165	-1.86629	33.2351	22.9263	
8	-1.02165	-1.79912	36.472	24.7644	
9	-0.994252	-1.75069	39.5369	26.505	
10	-0.820981	-1.6954	42.4112	27.8969	
11	-0.820981	-1.64485	45.1168	29.2473	
12	-0.733969	-1.60725	47.7	30.4269	
13	-0.71335	-1.56322	50.1437	31.5421	
14	-0.693147	-1.53007	52.4848	32.6026	
15	-0.673345	-1.49085	54.7074	33.6065	
16	-0.634878	-1.46106	56.8421	34.5341	
17	-0.634878	-1.42554	58.8743	35.4391	
18	-0.616186	-1.39838	60.8297	36.3008	
19	-0.579818	-1.36581	62.6952	37.0927	
20	-0.562119	-1.34075	64.4928	37.8464	
21	-0.544727	-1.31058	66.2104	38.5603	
22	-0.478036	-1.28155	67.8528	39.1729	
23	-0.371064	-1.25908	69.4381	39.6401	
24	-0.328504	-1.23187	70.9556	40.0448	
25	-0.274437	-1.21073	72.4214	40.377	
26	-0.18633	-1.18504	73.8258	40.5978	
27	-0.174353	-1.16505	75.1831	40.801	
28	0	-1.14069	76.4843	40.801	
29	0	-1.12168	77.7424	40.801	
30	0	-1.09847	78.9491	40.801	
31	0.0953102	-1.08032	80.1162	40.698	
32	0.0953102	-1.05812	81.2358	40.5972	
33	0.182322	-1.03643	82.31	40.4082	
34	0.470004	-1.01943	83.3492	39.9291	
35	0.530628	-0.998575	84.3464	39.3992	
36	0.693147	-0.982202	85.3111	38.7184	
37	1.09861	-0.9621	86.2367	37.6614	
38	1.38629	-0.946291	87.1322	36.3496	
39	1.60944	-0.926859	87.9912	34.8578	
40	1.60944	-0.911562	88.8222	33.3907	
41	1.60944	-0.892733	89.6192	31.9539	
42	1.70475	-0.877897	90.3899	30.4573	
43	1.75786	-0.859618	91.1288	28.9463	
44	1.79176	-0.841621	91.8371	27.4383	
45	1.79176	-0.827417	92.5218	25.9557	
46	1.79176	-0.809896	93.1777	24.5046	
47	1.94591	-0.796056	93.8114	22.9556	
48	1.94591	-0.778966	94.4182	21.4398	
49	1.94591	-0.765456	95.0041	19.9502	

50	2.30259	-0.748762	95.5647	18.2262
51	2.30259	-0.735557	96.1058	16.5325
52	2.30259	-0.719228	96.6231	14.8764
53	2.30259	-0.706302	97.1219	13.2501
54	2.30259	-0.690309	97.5985	11.6606
55	2.30259	-0.674499	8.0534	10.1075
56	2.30259	-0.661955	98.4916	8.58329
57	2.30259	-0.646431	98.9095	7.09483
58	2.30259	-0.634124	99.3116	5.63471
59	2.30259	-0.618872	99.6946	4.2097
60	2.30259	-0.606775	100.063	2.81255
61	2.30259	-0.591776	100.413	1.44993
62	2.30259	-0.579873	100.749	0.114727
63	2.30259	-0.565108	101.069	-1.18648
64	2.30259	-0.553384	101.375	-2.4607
65	2.30259	-0.538836	101.665	-3.70141
66	2.30259	-0.524401	101.94	-4.90889
67	2.30259	-0.51293	102.203	-6.08995
68	2.30259	-0.498687	102.452	-7.23822
69	2.30259	-0.487364	102.689	-8.36042
70	2.30259	-0.473299	102.913	-9.45023
71	2.30259	-0.462114	103.127	-10.5143
72	2.30259	-0.448213	103.328	-11.5463
73	2.30259	-0.437153	103.519	-12.5529
74	2.30259	-0.423405	103.698	-13.5278
75	2.30259	-0.412463	103.868	-14.4776
76	2.30259	-0.398855	104.027	-15.396
77	2.30259	-0.385321	104.176	-16.2832
78	2.30259	-0.374544	104.316	-17.1456
79	2.30259	-0.361133	104.447	-17.9772
80	2.30259	-0.350451	104.569	-18.7841
81	2.30259	-0.337155	104.683	-19.5604
82	2.30259	-0.326561	104.79	-20.3124
83	2.30259	-0.31337	104.888	-21.0339
84	2.30259	-0.302855	104.98	-21.7313
85	2.30259	-0.28976	105.064	-22.3985
86	2.30259	-0.279319	105.142	-23.0416
87	2.30259	-0.266311	105.213	-23.6548
88	2.30259	-0.253347	105.277	-24.2382
89	2.30259	-0.243007	105.336	-24.7977
90	2.30259	-0.230118	105.389	-25.3276
91	2.30259	-0.219834	105.437	-25.8338
92	2.30259	-0.207012	105.48	-26.3105
93	2.30259	-0.196779	105.519	-26.7636
94	2.30259	-0.184017	105.553	-27.1873
95	2.30259	-0.173829	105.583	-27.5875
96	2.30259	-0.161119	105.609	-27.9585
97	2.30259	-0.150969	105.632	-28.3061
98	2.30259	-0.138305	105.651	-28.6246
99	2.30259	-0.125661	105.666	-28.9139
100	2.30259	-0.115562	105.68	-29.18
101	2.30259	-0.102953	105.69	-29.4171
102	2.30259	-0.0928787	105.699	-29.631
103	2.30259	-0.0802981	105.705	-29.8158
104	2.30259	-0.0702426	105.71	-29.9776
105	2.30259	-0.0576847	105.714	-30.1104
106	2.30259	-0.0476439	105.716	-30.2201
107	2.30259	-0.0350997	105.717	-30.3009
108	2.30259	-0.0250691	105.718	-30.3587
109	2.30259	-0.0125328	105.718	-30.3875
110	2.30259	0	105.718	-30.3875
111	2.30259	0.0125328	105.718	-30.3587

112	2.30259	0.0250691	105.719	-30.3009
113	2.30259	0.0350997	105.72	-30.2201
114	2.30259	0.0476439	105.722	-30.1104
115	2.30259	0.0576847	105.726	-29.9776
116	2.30259	0.0702426	105.731	-29.8158
117	2.30259	0.0802981	105.737	-29.631
118	2.30259	0.0928787	105.746	-29.4171
119	2.30259	0.102953	105.756	-29.18
120	2.30259	0.115562	105.77	-28.9139
121	2.30259	0.125661	105.785	-28.6246
122	2.30259	0.138305	105.805	-28.3061
123	2.30259	0.150969	105.827	-27.9585
124	2.30259	0.161119	105.853	-27.5875
125	2.30259	0.173829	105.883	-27.1873
126	2.30259	0.184017	105.917	-26.7636
127	2.30259	0.196779	105.956	-26.3105
128	2.30259	0.207012	105.999	-25.8338
129	2.30259	0.219834	106.047	-25.3276
130	2.30259	0.230118	106.1	-24.7977
131	2.30259	0.243007	106.159	-24.2382
132	2.30259	0.253347	106.223	-23.6548
133	2.30259	0.266311	106.294	-23.0416
134	2.30259	0.279319	106.372	-22.3985
135	2.30259	0.28976	106.456	-21.7313
136	2.30259	0.302855	106.548	-21.0339
137	2.30259	0.31337	106.646	-20.3124
138	2.30259	0.326561	106.753	-19.5604
139	2.30259	0.337155	106.867	-18.7841
140	2.30259	0.350451	106.989	-17.9772
141	2.30259	0.361133	107.12	-17.1456
142	2.30259	0.374544	107.26	-16.2832
143	2.30259	0.385321	107.409	-15.396
144	2.30259	0.398855	107.568	-14.4776
145	2.30259	0.412463	107.738	-13.5278
146	2.30259	0.423405	107.917	-12.5529
147	2.30259	0.437153	108.108	-11.5463
148	2.30259	0.448213	108.309	-10.5143
149	2.30259	0.462114	108.523	-9.45023
150	2.30259	0.473299	108.747	-8.36042
151	2.30259	0.487364	108.984	-7.23822
152	2.30259	0.498687	109.233	-6.08995
153	2.30259	0.51293	109.496	-4.90889
154	2.30259	0.524401	109.771	-3.70141
155	2.30259	0.538836	110.061	-2.4607
156	2.30259	0.553384	110.368	-1.18648
157	2.30259	0.565108	110.687	0.114727
158	2.30259	0.579873	111.023	1.44993
159	2.30259	0.591776	111.373	2.81255
160	2.30259	0.606775	111.741	4.2097
161	2.30259	0.618872	112.124	5.63471
162	2.30259	0.634124	112.527	7.09483
163	2.30259	0.646431	112.944	8.58329
164	2.30259	0.661955	113.383	10.1075
165	2.30259	0.67449	113.838	11.6606
166	2.30259	0.690309	114.314	13.2501
167	2.30259	0.706302	114.813	14.8764
168	2.30259	0.719228	115.33	16.5325
169	2.30259	0.735557	115.871	18.2262
170	2.30259	0.748762	116.432	19.9502
171	2.30259	0.765456	117.018	21.7128
172	2.30259	0.778966	117.625	23.5064
173	2.30259	0.796056	118.258	25.3394

174	2.30259	0.809896		118.914	27.2042
175	2.30259	0.827417		119.599	29.1094
176	2.30259	0.841621		120.307	31.0474
177	2.30259	0.859618		121.046	33.0267
178	2.30259	0.877897		121.817	35.0481
179	2.30259	0.892733		122.614	37.1037
180	2.30259	0.911562		123.445	39.2027
181	2.30259	0.926859		124.304	41.3368
182	2.30259	0.946291		125.199	43.5158
183	2.30259	0.9621	126.125	45.7311	
184	2.30259	0.982202		127.09	47.9927
185	2.30259	0.998575		128.087	50.292
186	2.30259	1.01943	129.126	52.6393	
187	2.30259	1.03643	130.2	55.0258	
188	2.30259	1.05812	131.32	57.4622	
189	2.30259	1.08032	132.487	59.9497	
190	2.30259	1.09847	133.694	62.479	
191	2.30259	1.12168	134.952	65.0618	
192	2.30259	1.14069	136.253	67.6883	
193	2.30259	1.16505	137.61	70.3709	
194	2.3979	1.18504	139.015	73.2126	
195	2.56495	1.21073	140.48	76.318	
196	2.56495	1.23187	141.998	79.4777	
197	2.83321	1.25908	143.583	83.0449	
198	2.94444	1.28155	145.226	86.8184	
199	2.94444	1.31058	146.943	90.6773	
200	2.99573	1.34075	148.741	94.6939	
201	2.99573	1.36581	150.606	98.7854	
202	3.04452	1.39838	152.562	103.043	
203	3.04452	1.42554	154.594	107.383	
204	3.09104	1.46106	156.729	111.899	
205	3.13549	1.49085	158.951	116.574	
206	3.13549	1.53007	161.292	121.371	
207	3.17805	1.56322	163.736	126.339	
208	3.29584	1.60725	166.319	131.636	
209	3.3322	1.64485	169.025	137.117	
210	3.52636	1.6954	171.899	143.096	
211	3.52636	1.75069	174.964	149.27	
212	3.58352	1.79912	178.201	155.717	
213	3.68888	1.86629	181.684	162.601	
214	4.36945	1.92684	185.397	171.02	
215	4.43082	2.01409	189.453	179.945	
216	4.46591	2.09693	193.85	189.309	
217	4.5326	2.22621	198.806	199.4	
218	4.78749	2.36561	204.403	210.725	
219	5.84354	2.65209	211.436	226.223	

Data Set Standard Deviation = 1.24243
Numerator = 51176.7
Denominator = 71150.5
W Statistic = 0.719274 = 51176.7 / 71150.5

5% Critical value of 0.976 exceeds 0.719274
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.719274
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Chromium

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	5.84354	219
	3/16/1999	ND<2.30259	71.5
	9/23/1999	ND<2.30259	71.5
	3/14/2000	4.46591	216
	9/23/2003	ND<2.30259	71.5
	3/10/2004	4.78749	218
	10/12/2004	ND<2.30259	71.5
	4/1/2005	2.30259 J	191
	10/26/2005	ND<2.30259	71.5
	6/19/2006	ND<2.30259	71.5
	11/18/2006	ND<2.30259	71.5
	6/2/2007	3.04452	202
	11/15/2007	ND<2.30259	71.5
	5/20/2008	ND<2.30259	71.5
	11/20/2008	ND<2.30259	71.5
	6/11/2009	-0.174353 J	168
	11/16/2009	0 B	169
	6/30/2010	-0.328504 J	165

Rank Sum = 2263
Rank Mean = 125.722

Background Rank Sum = 2263
Background Rank Mean = 125.722

Compliance Wells

Well ID	Date	Result	Rank
LMW-8	1/16/1998	ND<2.30259	71.5
	3/16/1999	1.79176 J	185
	9/23/1999	2.56495 J	195
	3/14/2000	3.04452	203
	9/23/2003	ND<2.30259	71.5
	3/10/2004	ND<2.30259	71.5
	10/12/2004	ND<2.30259	71.5
	4/1/2005	ND<2.30259	71.5
	10/26/2005	ND<2.30259	71.5
	6/19/2006	ND<2.30259	71.5
	11/18/2006	ND<2.30259	71.5
	6/2/2007	ND<2.30259	71.5
	11/15/2007	ND<2.30259	71.5
	5/20/2008	ND<2.30259	71.5
	11/20/2008	ND<2.30259	71.5
	6/11/2009	-1.27297 J	145
	11/16/2009	-0.371064 J	164
	6/30/2010	-1.04982 J	147

Rank Sum = 1897
Rank Mean = 105.389

LMW-9S	11/18/2006	ND<2.30259	71.5
	6/2/2007	1.60944	180
	11/15/2007	ND<2.30259	71.5
	5/20/2008	ND<2.30259	71.5
	11/20/2008	ND<2.30259	71.5
	6/11/2009	0	170
	6/30/2010	-0.544727 J	162

Rank Sum = 798
Rank Mean = 114

LMW-9D	11/18/2006	1.79176 J	186
	6/2/2007	ND<2.30259	71.5
	11/15/2007	ND<2.30259	71.5
	5/20/2008	1.09861 J	178
	11/20/2008	ND<2.30259	71.5
	6/11/2009	0	171
	11/16/2009	0.0953102	172
	6/30/2010	-0.693147 J	155

Rank Sum = 1076.5
Rank Mean = 134.563

LMW-9	1/16/1998	3.13549	205
	3/16/1999	ND<2.30259	71.5
	9/23/1999	3.09104	204
	3/14/2000	2.83321 J	197
	9/23/2003	ND<2.30259	71.5
	3/10/2004	2.94444 J	198
	10/12/2004	ND<2.30259	71.5
	4/1/2005	ND<2.30259	71.5
	10/26/2005	ND<2.30259	71.5
	6/19/2006	2.30259 J	192
	11/18/2006	ND<2.30259	71.5
	6/2/2007	1.94591	188
	11/15/2007	ND<2.30259	71.5
	5/20/2008	ND<2.30259	71.5
	11/20/2008	ND<2.30259	71.5
	6/11/2009	0.182322	174
	11/16/2009	-0.478036 J	163
	6/30/2010	-0.820981 J	151

Rank Sum = 2315.5
Rank Mean = 128.639

LMW-6	1/16/1998	2.56495 J	196
	3/16/1999	ND<2.30259	71.5
	9/23/1999	1.79176 J	187
	3/14/2000	3.52636	210
	9/23/2003	ND<2.30259	71.5
	3/10/2004	ND<2.30259	71.5
	10/12/2004	ND<2.30259	71.5
	4/1/2005	ND<2.30259	71.5
	10/26/2005	ND<2.30259	71.5
	6/19/2006	ND<2.30259	71.5
	11/18/2006	ND<2.30259	71.5
	6/2/2007	1.38629 J	179
	11/15/2007	ND<2.30259	71.5
	5/20/2008	1.94591 J	189
	11/20/2008	ND<2.30259	71.5
	6/11/2009	-0.733969 J	153
	11/16/2009	ND<-2.52573 U	71.5
	6/30/2010	-0.562119 J	161

Rank Sum = 2061.5

Rank Mean = 114.528

LMW-3S	11/18/2006	ND<2.30259	71.5
	6/2/2007	2.3979	194
	11/15/2007	ND<2.30259	71.5
	5/20/2008	ND<2.30259	71.5
	11/20/2008	ND<2.30259	71.5
	6/11/2009	0.530628	176
	11/16/2009	-0.616186 J	159
	6/30/2010	-0.994252 J	150

Rank Sum = 965
Rank Mean = 120.625

LMW-3	11/19/1996	ND<2.30259	71.5
	3/24/1997	ND<2.30259	71.5
	1/16/1998	ND<2.30259	71.5
	3/16/1999	ND<2.30259	71.5
	9/23/1999	ND<2.30259	71.5
	3/14/2000	ND<2.30259	71.5
	9/23/2003	ND<2.30259	71.5
	3/10/2004	ND<2.30259	71.5
	10/12/2004	ND<2.30259	71.5
	4/1/2005	ND<2.30259	71.5
	10/26/2005	ND<2.30259	71.5
	6/19/2006	ND<2.30259	71.5
	11/18/2006	ND<2.30259	71.5
	6/2/2007	ND<2.30259	71.5
	11/15/2007	ND<2.30259	71.5
	5/20/2008	ND<2.30259	71.5
	11/20/2008	ND<2.30259	71.5
	6/11/2009	-1.13943 J	146
	11/16/2009	0.0953102 B	173
	6/30/2010	-0.274437 J	166

Rank Sum = 1700.5
Rank Mean = 85.025

LMW-16	11/18/2006	ND<2.30259	71.5
	6/2/2007	2.99573	200
	11/15/2007	ND<2.30259	71.5
	5/20/2008	ND<2.30259	71.5
	11/20/2008	ND<2.30259	71.5
	6/11/2009	-0.18633 J	167
	11/16/2009	-0.634878 J B	157
	6/30/2010	-0.579818 J	160

Rank Sum = 970
Rank Mean = 121.25

LMW-15R	11/18/2006	ND<2.30259	71.5
	6/2/2007	ND<2.30259	71.5
	11/15/2007	ND<2.30259	71.5
	11/15/2007	ND<2.30259	71.5
	5/20/2008	ND<2.30259	71.5
	5/20/2008	ND<2.30259	71.5
	11/20/2008	ND<2.30259	71.5
	11/20/2008	ND<2.30259	71.5
	6/11/2009	1.70475	183
	11/16/2009	-1.83258 J B	143
	11/16/2009	-0.634878 J B	158
	11/16/2009	-0.820981 J B	152
	6/30/2010	-0.673345 J	156

Rank Sum = 1364
Rank Mean = 104.923

LMW-10	3/14/2000	3.3322	209
	9/23/2003	ND<2.30259	71.5
	3/10/2004	3.58352	212
	10/12/2004	ND<2.30259	71.5
	4/1/2005	ND<2.30259	71.5
	10/26/2005	ND<2.30259	71.5
	6/19/2006	ND<2.30259	71.5
	11/18/2006	ND<2.30259	71.5
	6/2/2007	0.693147	177
	11/15/2007	ND<2.30259	71.5
	5/20/2008	ND<2.30259	71.5
	11/20/2008	ND<2.30259	71.5
	6/11/2009	-1.02165 J	148
	11/16/2009	-1.34707 J	144
	6/30/2010	-1.02165 J	149

Rank Sum = 1682.5
Rank Mean = 112.167

LMW-14R	6/2/2007	ND<2.30259	71.5
	11/15/2007	ND<2.30259	71.5
	5/20/2008	ND<2.30259	71.5
	11/20/2008	ND<2.30259	71.5
	6/11/2009	0.470004	175
	6/30/2010	-0.71335 J	154

Rank Sum = 615
Rank Mean = 102.5

LMW-7	1/16/1998	2.30259 J	193
	3/16/1999	ND<2.30259	71.5
	9/23/1999	1.60944 J	181
	3/14/2000	3.52636	211
	9/23/2003	ND<2.30259	71.5
	3/10/2004	ND<2.30259	71.5
	10/12/2004	ND<2.30259	71.5
	4/1/2005	2.94444 J	199
	10/26/2005	3.13549	206
	6/19/2006	ND<2.30259	71.5
	11/18/2006	1.60944 J	182
	6/2/2007	3.17805	207
	11/15/2007	ND<2.30259	71.5
	5/20/2008	1.94591 J	190
	11/20/2008	ND<2.30259	71.5
	6/11/2009	1.75786	184

Rank Sum = 2253.5
Rank Mean = 140.844

LMW-11	3/14/2000	2.99573	201
	9/23/2003	ND<2.30259	71.5
	3/10/2004	3.68888	213
	10/12/2004	ND<2.30259	71.5
	4/1/2005	ND<2.30259	71.5
	10/26/2005	ND<2.30259	71.5
	6/19/2006	ND<2.30259	71.5
	6/2/2007	ND<2.30259	71.5
	11/15/2007	ND<2.30259	71.5
	5/20/2008	ND<2.30259	71.5
	11/20/2008	ND<2.30259	71.5

Rank Sum = 1057.5
Rank Mean = 96.1364

LMW-12	3/14/2000	4.5326	217

	9/23/2003	ND<2.30259	71.5
	3/10/2004	ND<2.30259	71.5
	10/12/2004	ND<2.30259	71.5
	4/1/2005	ND<2.30259	71.5
	10/26/2005	ND<2.30259	71.5
	6/19/2006	ND<2.30259	71.5
	6/2/2007	ND<2.30259	71.5
	11/15/2007	ND<2.30259	71.5
	5/20/2008	ND<2.30259	71.5
	11/20/2008	ND<2.30259	71.5

Rank Sum = 932
Rank Mean = 84.7273

LMW-13	3/14/2000	3.29584	208
	9/23/2003	ND<2.30259	71.5
	3/10/2004	ND<2.30259	71.5
	10/12/2004	ND<2.30259	71.5
	4/1/2005	ND<2.30259	71.5
	10/26/2005	ND<2.30259	71.5
	6/19/2006	ND<2.30259	71.5
	6/2/2007	ND<2.30259	71.5
	11/15/2007	ND<2.30259	71.5
	5/20/2008	ND<2.30259	71.5
	11/20/2008	ND<2.30259	71.5

Rank Sum = 923
Rank Mean = 83.9091

MW-5	1/16/1998	ND<2.30259	71.5
	3/16/1999	ND<2.30259	71.5
	9/23/1999	ND<2.30259	71.5
	3/14/2000	4.36945	214
	9/23/2003	ND<2.30259	71.5
	3/10/2004	4.43082	215
	10/12/2004	ND<2.30259	71.5
	4/1/2005	ND<2.30259	71.5
	10/26/2005	ND<2.30259	71.5
	6/19/2006	ND<2.30259	71.5
	11/15/2007	ND<2.30259	71.5
	5/20/2008	ND<2.30259	71.5
	11/20/2008	ND<2.30259	71.5

Rank Sum = 1215.5
Rank Mean = 93.5

Calculation Results:

Kruskal-Wallis H Statistic = 16.6663
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 22.9121
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
16.6663 < 26.2962 indicating no significant group difference at 5% significance level
22.9121 < 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: 219
Total Non-Detect: 179
Percent Non-Detects: 81.7352%
Total Background Measurements: 18
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	18	15 (83.3333%)	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
			11/16/2009	0.24	0.24
			6/30/2010	0.27	0.27

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9D8	7	(87.5%)	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<0.07 U	ND<0.07 U
			11/16/2009	ND<0.07 U	ND<0.07 U
			6/30/2010	ND<0.07 U	ND<0.07 U
LMW-10	15	12 (80%)	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
			11/16/2009	0.15 J	0.15 J

			6/30/2010	0.2	0.2	
LMW-16	8	6 (75%)	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<0.07 U		ND<0.07 U
			11/16/2009	0.08 J	0.08 J	
			6/30/2010	0.09 J	0.09 J	
LMW-9S	7	2 (28.5714%)	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	
			6/30/2010	0.16 J	0.16 J	
LMW-3	20	17 (85%)	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	
			11/16/2009	0.16 J	0.16 J	
			6/30/2010	0.17 J	0.17 J	
LMW-3S	8	5 (62.5%)	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	
			11/16/2009	0.42	0.42	
			6/30/2010	0.57	0.57	
LMW-6	18	14 (77.7778%)	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	
			11/16/2009	1.2	1.2	
			6/30/2010	1.2	1.2	
LMW-8	18	15 (83.3333%)	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	
			11/16/2009	0.71	0.71	
			6/30/2010	0.78	0.78	
LMW-9	18	14 (77.7778%)	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	
			11/16/2009	0.13 J	0.13 J	
			6/30/2010	0.13 J	0.13 J	
LMW-14R	6	4 (66.6667%)	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	
			6/30/2010	0.17 J	0.17 J	
LMW-15R	13	8 (61.5385%)	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	
			11/16/2009	0.26	0.26	
			11/16/2009	0.3	0.3	

			11/16/2009	0.25	0.25	
			6/30/2010	0.7	0.7	
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-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-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-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	
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

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Cobalt

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0	-2.65209	7.03356	0
2	0	-2.36561	12.6297	0
3	0	-2.22621	17.5857	0
4	0	-2.09693	21.9828	0
5	0	-2.01409	26.0394	0
6	0	-1.92684	29.7521	0
7	0.035	-1.86629	33.2351	-0.0653202
8	0.035	-1.79912	36.472	-0.128289
9	0.035	-1.75069	39.5369	-0.189563
10	0.035	-1.6954	42.4112	-0.248902
11	0.08	-1.64485	45.1168	-0.380491
12	0.09	-1.60725	47.7	-0.525143
13	0.13	-1.56322	50.1437	-0.728362
14	0.13	-1.53007	52.4848	-0.92727
15	0.13	-1.49085	54.7074	-1.12108
16	0.13	-1.46106	56.8421	-1.31102
17	0.15	-1.42554	58.8743	-1.52485
18	0.15	-1.39838	60.8297	-1.73461
19	0.16	-1.36581	62.6952	-1.95314
20	0.16	-1.34075	64.4928	-2.16766
21	0.16	-1.31058	66.2104	-2.37735
22	0.17	-1.28155	67.8528	-2.59521
23	0.17	-1.25908	69.4381	-2.80926
24	0.2	-1.23187	70.9556	-3.05563
25	0.24	-1.21073	72.4214	-3.3462
26	0.24	-1.18504	73.8258	-3.63062
27	0.24	-1.16505	75.1831	-3.91023
28	0.25	-1.14069	76.4843	-4.1954
29	0.26	-1.12168	77.7424	-4.48703
30	0.27	-1.09847	78.9491	-4.78362
31	0.3	-1.08032	80.1162	-5.10772
32	0.42	-1.05812	81.2358	-5.55213
33	0.42	-1.03643	82.31	-5.98743
34	0.47	-1.01943	83.3492	-6.46656
35	0.57	-0.998575	84.3464	-7.03575
36	0.63	-0.982202	85.3111	-7.65454
37	0.7	-0.9621	86.2367	-8.32801
38	0.71	-0.946291	87.1322	-8.99987
39	0.78	-0.926859	87.9912	-9.72282
40	0.83	-0.911562	88.8222	-10.4794
41	1	-0.892733	89.6192	-11.3722
42	1	-0.877897	90.3899	-12.25
43	1	-0.859618	91.1288	-13.1097
44	1	-0.841621	91.8371	-13.9513
45	1.2	-0.827417	92.5218	-14.9442
46	1.2	-0.809896	93.1777	-15.9161
47	1.4	-0.796056	93.8114	-17.0305
48	3	-0.778966	94.4182	-19.3674
49	10	-0.765456	95.0041	-27.022

50	10	-0.748762	95.5647	-34.5096
51	10	-0.735557	96.1058	-41.8652
52	10	-0.719228	96.6231	-49.0575
53	10	-0.706302	97.1219	-56.1205
54	10	-0.690309	97.5985	-63.0236
55	10	-0.674499	8.0534	-69.7685
56	10	-0.661955	98.4916	-76.388
57	10	-0.646431	98.9095	-82.8524
58	10	-0.634124	99.3116	-89.1936
59	10	-0.618872	99.6946	-95.3823
60	10	-0.606775	100.063	-101.45
61	10	-0.591776	100.413	-107.368
62	10	-0.579873	100.749	-113.167
63	10	-0.565108	101.069	-118.818
64	10	-0.553384	101.375	-124.351
65	10	-0.538836	101.665	-129.74
66	10	-0.524401	101.94	-134.984
67	10	-0.51293	102.203	-140.113
68	10	-0.498687	102.452	-145.1
69	10	-0.487364	102.689	-149.974
70	10	-0.473299	102.913	-154.707
71	10	-0.462114	103.127	-159.328
72	10	-0.448213	103.328	-163.81
73	10	-0.437153	103.519	-168.181
74	10	-0.423405	103.698	-172.416
75	10	-0.412463	103.868	-176.54
76	10	-0.398855	104.027	-180.529
77	10	-0.385321	104.176	-184.382
78	10	-0.374544	104.316	-188.127
79	10	-0.361133	104.447	-191.739
80	10	-0.350451	104.569	-195.243
81	10	-0.337155	104.683	-198.615
82	10	-0.326561	104.79	-201.88
83	10	-0.31337	104.888	-205.014
84	10	-0.302855	104.98	-208.043
85	10	-0.28976	105.064	-210.94
86	10	-0.279319	105.142	-213.733
87	10	-0.266311	105.213	-216.396
88	10	-0.253347	105.277	-218.93
89	10	-0.243007	105.336	-221.36
90	10	-0.230118	105.389	-223.661
91	10	-0.219834	105.437	-225.86
92	10	-0.207012	105.48	-227.93
93	10	-0.196779	105.519	-229.897
94	10	-0.184017	105.553	-231.738
95	10	-0.173829	105.583	-233.476
96	10	-0.161119	105.609	-235.087
97	10	-0.150969	105.632	-236.597
98	10	-0.138305	105.651	-237.98
99	10	-0.125661	105.666	-239.236
100	10	-0.115562	105.68	-240.392
101	10	-0.102953	105.69	-241.422
102	10	-0.0928787	105.699	-242.35
103	10	-0.0802981	105.705	-243.153
104	10	-0.0702426	105.71	-243.856
105	10	-0.0576847	105.714	-244.433
106	10	-0.0476439	105.716	-244.909
107	10	-0.0350997	105.717	-245.26
108	10	-0.0250691	105.718	-245.511
109	10	-0.0125328	105.718	-245.636
110	10	0	105.718	-245.636
111	10	0.0125328	105.718	-245.511

112	10	0.0250691	105.719	-245.26
113	10	0.0350997	105.72	-244.909
114	10	0.0476439	105.722	-244.433
115	10	0.0576847	105.726	-243.856
116	10	0.0702426	105.731	-243.153
117	10	0.0802981	105.737	-242.35
118	10	0.0928787	105.746	-241.422
119	10	0.102953	105.756	-240.392
120	10	0.115562	105.77	-239.236
121	10	0.125661	105.785	-237.98
122	10	0.138305	105.805	-236.597
123	10	0.150969	105.827	-235.087
124	10	0.161119	105.853	-233.476
125	10	0.173829	105.883	-231.738
126	10	0.184017	105.917	-229.897
127	10	0.196779	105.956	-227.93
128	10	0.207012	105.999	-225.86
129	10	0.219834	106.047	-223.661
130	10	0.230118	106.1	-221.36
131	10	0.243007	106.159	-218.93
132	10	0.253347	106.223	-216.396
133	10	0.266311	106.294	-213.733
134	10	0.279319	106.372	-210.94
135	10	0.28976	106.456	-208.043
136	10	0.302855	106.548	-205.014
137	10	0.31337	106.646	-201.88
138	10	0.326561	106.753	-198.615
139	10	0.337155	106.867	-195.243
140	10	0.350451	106.989	-191.739
141	10	0.361133	107.12	-188.127
142	10	0.374544	107.26	-184.382
143	10	0.385321	107.409	-180.529
144	10	0.398855	107.568	-176.54
145	10	0.412463	107.738	-172.416
146	10	0.423405	107.917	-168.181
147	10	0.437153	108.108	-163.81
148	10	0.448213	108.309	-159.328
149	10	0.462114	108.523	-154.707
150	10	0.473299	108.747	-149.974
151	10	0.487364	108.984	-145.1
152	10	0.498687	109.233	-140.113
153	10	0.51293	109.496	-134.984
154	10	0.524401	109.771	-129.74
155	10	0.538836	110.061	-124.351
156	10	0.553384	110.368	-118.818
157	10	0.565108	110.687	-113.167
158	10	0.579873	111.023	-107.368
159	10	0.591776	111.373	-101.45
160	10	0.606775	111.741	-95.3823
161	10	0.618872	112.124	-89.1936
162	10	0.634124	112.527	-82.8524
163	10	0.646431	112.944	-76.388
164	10	0.661955	113.383	-69.7685
165	10	0.67449	113.838	-63.0236
166	10	0.690309	114.314	-56.1205
167	10	0.706302	114.813	-49.0575
168	10	0.719228	115.33	-41.8652
169	10	0.735557	115.871	-34.5096
170	10	0.748762	116.432	-27.022
171	10	0.765456	117.018	-19.3674
172	10	0.778966	117.625	-11.5778
173	10	0.796056	118.258	-3.61722

174	10	0.809896		118.914	4.48174
175	10	0.827417		119.599	12.7559
176	10	0.841621		120.307	21.1721
177	10	0.859618		121.046	29.7683
178	10	0.877897		121.817	38.5473
179	10	0.892733		122.614	47.4746
180	10	0.911562		123.445	56.5902
181	10	0.926859		124.304	65.8588
182	10	0.946291		125.199	75.3217
183	10	0.9621	126.125	84.9427	
184	10	0.982202		127.09	94.7647
185	10	0.998575		128.087	104.75
186	10	1.01943	129.126	114.945	
187	10	1.03643	130.2	125.309	
188	10	1.05812	131.32	135.89	
189	10	1.08032	132.487	146.694	
190	10	1.09847	133.694	157.678	
191	10	1.12168	134.952	168.895	
192	10	1.14069	136.253	180.302	
193	10	1.16505	137.61	191.952	
194	10	1.18504	139.015	203.803	
195	10	1.21073	140.48	215.91	
196	10	1.23187	141.998	228.229	
197	10	1.25908	143.583	240.82	
198	10	1.28155	145.226	253.635	
199	10	1.31058	146.943	266.741	
200	10	1.34075	148.741	280.148	
201	10	1.36581	150.606	293.806	
202	10	1.39838	152.562	307.79	
203	10	1.42554	154.594	322.046	
204	10	1.46106	156.729	336.656	
205	10	1.49085	158.951	351.565	
206	10	1.53007	161.292	366.865	
207	10	1.56322	163.736	382.498	
208	10	1.60725	166.319	398.57	
209	10	1.64485	169.025	415.019	
210	10	1.6954	171.899	431.973	
211	10	1.75069	174.964	449.48	
212	10	1.79912	178.201	467.471	
213	10	1.86629	181.684	486.134	
214	10	1.92684	185.397	505.402	
215	10	2.01409	189.453	525.543	
216	10	2.09693	193.85	546.512	
217	10	2.22621	198.806	568.774	
218	10	2.36561	204.403	592.43	
219	11	2.65209	211.436	621.603	

Data Set Standard Deviation = 3.98205
Numerator = 386391
Denominator = 730884
W Statistic = 0.528663 = 386391 / 730884

5% Critical value of 0.976 exceeds 0.528663
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.528663
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Cobalt

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-3.35241	-2.65209	7.03356	8.89087
2	-3.35241	-2.36561	12.6297	16.8214
3	-3.35241	-2.22621	17.5857	24.2845
4	-3.35241	-2.09693	21.9828	31.3143
5	-2.52573	-2.01409	26.0394	36.4013
6	-2.40795	-1.92684	29.7521	41.0411
7	-2.04022	-1.86629	33.2351	44.8487
8	-2.04022	-1.79912	36.472	48.5193
9	-2.04022	-1.75069	39.5369	52.0911
10	-2.04022	-1.6954	42.4112	55.5501
11	-1.89712	-1.64485	45.1168	58.6706
12	-1.89712	-1.60725	47.7	61.7197
13	-1.83258	-1.56322	50.1437	64.5844
14	-1.83258	-1.53007	52.4848	67.3884
15	-1.83258	-1.49085	54.7074	70.1205
16	-1.77196	-1.46106	56.8421	72.7095
17	-1.77196	-1.42554	58.8743	75.2355
18	-1.60944	-1.39838	60.8297	77.4861
19	-1.42712	-1.36581	62.6952	79.4352
20	-1.42712	-1.34075	64.4928	81.3486
21	-1.42712	-1.31058	66.2104	83.219
22	-1.38629	-1.28155	67.8528	84.9956
23	-1.34707	-1.25908	69.4381	86.6917
24	-1.30933	-1.23187	70.9556	88.3046
25	-1.20397	-1.21073	72.4214	89.7623
26	-0.867501	-1.18504	73.8258	90.7903
27	-0.867501	-1.16505	75.1831	91.801
28	-0.755023	-1.14069	76.4843	92.6622
29	-0.562119	-1.12168	77.7424	93.2927
30	-0.462035	-1.09847	78.9491	93.8003
31	-0.356675	-1.08032	80.1162	94.1856
32	-0.34249	-1.05812	81.2358	94.548
33	-0.248461	-1.03643	82.31	94.8055
34	-0.18633	-1.01943	83.3492	94.9955
35	0	-0.998575	84.3464	94.9955
36	0	-0.982202	85.3111	94.9955
37	0	-0.9621	86.2367	94.9955
38	0	-0.946291	87.1322	94.9955
39	0	-0.926859	87.9912	94.9955
40	0	-0.911562	88.8222	94.9955
41	0	-0.892733	89.6192	94.9955
42	0	-0.877897	90.3899	94.9955
43	0	-0.859618	91.1288	94.9955
44	0	-0.841621	91.8371	94.9955
45	0.182322	-0.827417	92.5218	94.8446
46	0.182322	-0.809896	93.1777	94.6969
47	0.336472	-0.796056	93.8114	94.4291
48	1.09861	-0.778966	94.4182	93.5733
49	2.30259	-0.765456	95.0041	91.8108

50	2.30259	-0.748762	95.5647	90.0867
51	2.30259	-0.735557	96.1058	88.393
52	2.30259	-0.719228	96.6231	86.7369
53	2.30259	-0.706302	97.1219	85.1106
54	2.30259	-0.690309	97.5985	83.5211
55	2.30259	-0.674499	8.0534	81.968
56	2.30259	-0.661955	98.4916	80.4438
57	2.30259	-0.646431	98.9095	78.9554
58	2.30259	-0.634124	99.3116	77.4952
59	2.30259	-0.618872	99.6946	76.0702
60	2.30259	-0.606775	100.063	74.6731
61	2.30259	-0.591776	100.413	73.3105
62	2.30259	-0.579873	100.749	71.9753
63	2.30259	-0.565108	101.069	70.6741
64	2.30259	-0.553384	101.375	69.3998
65	2.30259	-0.538836	101.665	68.1591
66	2.30259	-0.524401	101.94	66.9516
67	2.30259	-0.51293	102.203	65.7706
68	2.30259	-0.498687	102.452	64.6223
69	2.30259	-0.487364	102.689	63.5001
70	2.30259	-0.473299	102.913	62.4103
71	2.30259	-0.462114	103.127	61.3462
72	2.30259	-0.448213	103.328	60.3142
73	2.30259	-0.437153	103.519	59.3076
74	2.30259	-0.423405	103.698	58.3327
75	2.30259	-0.412463	103.868	57.383
76	2.30259	-0.398855	104.027	56.4646
77	2.30259	-0.385321	104.176	55.5773
78	2.30259	-0.374544	104.316	54.7149
79	2.30259	-0.361133	104.447	53.8834
80	2.30259	-0.350451	104.569	53.0764
81	2.30259	-0.337155	104.683	52.3001
82	2.30259	-0.326561	104.79	51.5482
83	2.30259	-0.31337	104.888	50.8266
84	2.30259	-0.302855	104.98	50.1292
85	2.30259	-0.28976	105.064	49.4621
86	2.30259	-0.279319	105.142	48.8189
87	2.30259	-0.266311	105.213	48.2057
88	2.30259	-0.253347	105.277	47.6223
89	2.30259	-0.243007	105.336	47.0628
90	2.30259	-0.230118	105.389	46.5329
91	2.30259	-0.219834	105.437	46.0267
92	2.30259	-0.207012	105.48	45.5501
93	2.30259	-0.196779	105.519	45.097
94	2.30259	-0.184017	105.553	44.6733
95	2.30259	-0.173829	105.583	44.273
96	2.30259	-0.161119	105.609	43.902
97	2.30259	-0.150969	105.632	43.5544
98	2.30259	-0.138305	105.651	43.2359
99	2.30259	-0.125661	105.666	42.9466
100	2.30259	-0.115562	105.68	42.6805
101	2.30259	-0.102953	105.69	42.4434
102	2.30259	-0.0928787	105.699	42.2296
103	2.30259	-0.0802981	105.705	42.0447
104	2.30259	-0.0702426	105.71	41.8829
105	2.30259	-0.0576847	105.714	41.7501
106	2.30259	-0.0476439	105.716	41.6404
107	2.30259	-0.0350997	105.717	41.5596
108	2.30259	-0.0250691	105.718	41.5019
109	2.30259	-0.0125328	105.718	41.473
110	2.30259	0	105.718	41.473
111	2.30259	0.0125328	105.718	41.5019

112	2.30259	0.0250691	105.719	41.5596
113	2.30259	0.0350997	105.72	41.6404
114	2.30259	0.0476439	105.722	41.7501
115	2.30259	0.0576847	105.726	41.8829
116	2.30259	0.0702426	105.731	42.0447
117	2.30259	0.0802981	105.737	42.2296
118	2.30259	0.0928787	105.746	42.4434
119	2.30259	0.102953	105.756	42.6805
120	2.30259	0.115562	105.77	42.9466
121	2.30259	0.125661	105.785	43.2359
122	2.30259	0.138305	105.805	43.5544
123	2.30259	0.150969	105.827	43.902
124	2.30259	0.161119	105.853	44.273
125	2.30259	0.173829	105.883	44.6733
126	2.30259	0.184017	105.917	45.097
127	2.30259	0.196779	105.956	45.5501
128	2.30259	0.207012	105.999	46.0267
129	2.30259	0.219834	106.047	46.5329
130	2.30259	0.230118	106.1	47.0628
131	2.30259	0.243007	106.159	47.6223
132	2.30259	0.253347	106.223	48.2057
133	2.30259	0.266311	106.294	48.8189
134	2.30259	0.279319	106.372	49.4621
135	2.30259	0.28976	106.456	50.1292
136	2.30259	0.302855	106.548	50.8266
137	2.30259	0.31337	106.646	51.5482
138	2.30259	0.326561	106.753	52.3001
139	2.30259	0.337155	106.867	53.0764
140	2.30259	0.350451	106.989	53.8834
141	2.30259	0.361133	107.12	54.7149
142	2.30259	0.374544	107.26	55.5773
143	2.30259	0.385321	107.409	56.4646
144	2.30259	0.398855	107.568	57.383
145	2.30259	0.412463	107.738	58.3327
146	2.30259	0.423405	107.917	59.3076
147	2.30259	0.437153	108.108	60.3142
148	2.30259	0.448213	108.309	61.3462
149	2.30259	0.462114	108.523	62.4103
150	2.30259	0.473299	108.747	63.5001
151	2.30259	0.487364	108.984	64.6223
152	2.30259	0.498687	109.233	65.7706
153	2.30259	0.51293	109.496	66.9516
154	2.30259	0.524401	109.771	68.1591
155	2.30259	0.538836	110.061	69.3998
156	2.30259	0.553384	110.368	70.6741
157	2.30259	0.565108	110.687	71.9753
158	2.30259	0.579873	111.023	73.3105
159	2.30259	0.591776	111.373	74.6731
160	2.30259	0.606775	111.741	76.0702
161	2.30259	0.618872	112.124	77.4952
162	2.30259	0.634124	112.527	78.9554
163	2.30259	0.646431	112.944	80.4438
164	2.30259	0.661955	113.383	81.968
165	2.30259	0.67449	113.838	83.5211
166	2.30259	0.690309	114.314	85.1106
167	2.30259	0.706302	114.813	86.7369
168	2.30259	0.719228	115.33	88.393
169	2.30259	0.735557	115.871	90.0867
170	2.30259	0.748762	116.432	91.8108
171	2.30259	0.765456	117.018	93.5733
172	2.30259	0.778966	117.625	95.3669
173	2.30259	0.796056	118.258	97.1999

174	2.30259	0.809896		118.914	99.0648
175	2.30259	0.827417		119.599	100.97
176	2.30259	0.841621		120.307	102.908
177	2.30259	0.859618		121.046	104.887
178	2.30259	0.877897		121.817	106.909
179	2.30259	0.892733		122.614	108.964
180	2.30259	0.911562		123.445	111.063
181	2.30259	0.926859		124.304	113.197
182	2.30259	0.946291		125.199	115.376
183	2.30259	0.9621	126.125	117.592	
184	2.30259	0.982202		127.09	119.853
185	2.30259	0.998575		128.087	122.153
186	2.30259	1.01943	129.126	124.5	
187	2.30259	1.03643	130.2	126.886	
188	2.30259	1.05812	131.32	129.323	
189	2.30259	1.08032	132.487	131.81	
190	2.30259	1.09847	133.694	134.34	
191	2.30259	1.12168	134.952	136.922	
192	2.30259	1.14069	136.253	139.549	
193	2.30259	1.16505	137.61	142.231	
194	2.30259	1.18504	139.015	144.96	
195	2.30259	1.21073	140.48	147.748	
196	2.30259	1.23187	141.998	150.584	
197	2.30259	1.25908	143.583	153.484	
198	2.30259	1.28155	145.226	156.434	
199	2.30259	1.31058	146.943	159.452	
200	2.30259	1.34075	148.741	162.539	
201	2.30259	1.36581	150.606	165.684	
202	2.30259	1.39838	152.562	168.904	
203	2.30259	1.42554	154.594	172.187	
204	2.30259	1.46106	156.729	175.551	
205	2.30259	1.49085	158.951	178.984	
206	2.30259	1.53007	161.292	182.507	
207	2.30259	1.56322	163.736	186.106	
208	2.30259	1.60725	166.319	189.807	
209	2.30259	1.64485	169.025	193.594	
210	2.30259	1.6954	171.899	197.498	
211	2.30259	1.75069	174.964	201.529	
212	2.30259	1.79912	178.201	205.672	
213	2.30259	1.86629	181.684	209.969	
214	2.30259	1.92684	185.397	214.406	
215	2.30259	2.01409	189.453	219.044	
216	2.30259	2.09693	193.85	223.872	
217	2.30259	2.22621	198.806	228.998	
218	2.30259	2.36561	204.403	234.445	
219	2.3979	2.65209	211.436	240.804	

Data Set Standard Deviation = 1.50671
Numerator = 57986.8
Denominator = 104639
W Statistic = 0.554159 = 57986.8 / 104639

5% Critical value of 0.976 exceeds 0.554159
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.554159
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Cobalt

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	ND<2.30259	90
	3/16/1999	ND<2.30259	90
	9/23/1999	ND<2.30259	90
	3/14/2000	ND<2.30259	90
	9/23/2003	ND<2.30259	90
	3/10/2004	ND<2.30259	90
	10/12/2004	ND<2.30259	90
	4/1/2005	ND<2.30259	90
	10/26/2005	ND<2.30259	90
	6/19/2006	ND<2.30259	90
	11/18/2006	ND<2.30259	90
	6/2/2007	ND<2.30259	90
	11/15/2007	ND<2.30259	90
	5/20/2008	ND<2.30259	90
	11/20/2008	ND<2.30259	90
	6/11/2009	-1.42712	194
	11/16/2009	-1.42712	195
	6/30/2010	-1.30933	199

Rank Sum = 1938
Rank Mean = 107.667

Background Rank Sum = 1938
Background Rank Mean = 107.667

Compliance Wells

Well ID	Date	Result	Rank
LMW-9D	11/18/2006	ND<2.30259	90
	6/2/2007	ND<2.30259	90
	11/15/2007	1.09861 J	217
	5/20/2008	ND<2.30259	90
	11/20/2008	ND<2.30259	90
	6/11/2009	ND<-3.35241 U	90
	11/16/2009	ND<-3.35241 U	90
	6/30/2010	ND<-3.35241 U	90

Rank Sum = 847
Rank Mean = 105.875

LMW-10	3/14/2000	ND<2.30259	90
	9/23/2003	ND<2.30259	90
	3/10/2004	ND<2.30259	90
	10/12/2004	ND<2.30259	90
	4/1/2005	ND<2.30259	90
	10/26/2005	ND<2.30259	90
	6/19/2006	ND<2.30259	90
	11/18/2006	ND<2.30259	90

	6/2/2007	ND<2.30259	90
	11/15/2007	ND<2.30259	90
	5/20/2008	ND<2.30259	90
	11/20/2008	ND<2.30259	90
	6/11/2009	-2.04022 J	182
	11/16/2009	-1.89712 J	186
	6/30/2010	-1.60944	193

Rank Sum = 1641
Rank Mean = 109.4

LMW-16	11/18/2006	ND<2.30259	90
	6/2/2007	ND<2.30259	90
	11/15/2007	ND<2.30259	90
	5/20/2008	ND<2.30259	90
	11/20/2008	ND<2.30259	90
	6/11/2009	ND<-3.35241 U	90
	11/16/2009	-2.52573 J	180
	6/30/2010	-2.40795 J	181

Rank Sum = 901
Rank Mean = 112.625

LMW-9S	11/18/2006	0 J	210
	6/2/2007	0 J	211
	11/15/2007	ND<2.30259	90
	5/20/2008	0 J	212
	11/20/2008	ND<2.30259	90
	6/11/2009	-2.04022 J	183
	6/30/2010	-1.83258 J	188

Rank Sum = 1184
Rank Mean = 169.143

LMW-3	11/19/1996	ND<2.30259	90
	3/24/1997	ND<2.30259	90
	1/16/1998	ND<2.30259	90
	3/16/1999	ND<2.30259	90
	9/23/1999	ND<2.30259	90
	3/14/2000	ND<2.30259	90
	9/23/2003	ND<2.30259	90
	3/10/2004	ND<2.30259	90
	10/12/2004	ND<2.30259	90
	4/1/2005	ND<2.30259	90
	10/26/2005	ND<2.30259	90
	6/19/2006	ND<2.30259	90
	11/18/2006	ND<2.30259	90
	6/2/2007	ND<2.30259	90
	11/15/2007	ND<2.30259	90
	5/20/2008	ND<2.30259	90
	11/20/2008	ND<2.30259	90
	6/11/2009	-1.83258 J	189
	11/16/2009	-1.83258 J	190
	6/30/2010	-1.77196 J	191

Rank Sum = 2100
Rank Mean = 105

LMW-3S	11/18/2006	ND<2.30259	90
	6/2/2007	ND<2.30259	90
	11/15/2007	ND<2.30259	90
	5/20/2008	ND<0 J	90
	11/20/2008	ND<2.30259	90
	6/11/2009	-0.867501	201
	11/16/2009	-0.867501	202
	6/30/2010	-0.562119	204

Rank Sum = 1057
Rank Mean = 132.125

LMW-6	1/16/1998	ND<2.30259	90
	3/16/1999	ND<2.30259	90
	9/23/1999	2.3979 J	219
	3/14/2000	ND<2.30259	90
	9/23/2003	ND<2.30259	90
	3/10/2004	ND<2.30259	90
	10/12/2004	ND<2.30259	90
	4/1/2005	ND<2.30259	90
	10/26/2005	ND<2.30259	90
	6/19/2006	ND<2.30259	90
	11/18/2006	ND<0 J	90
	6/2/2007	ND<2.30259	90
	11/15/2007	ND<2.30259	90
	5/20/2008	ND<0 J	90
	11/20/2008	ND<2.30259	90
	6/11/2009	0.336472	216
	11/16/2009	0.182322	214
	6/30/2010	0.182322	215

Rank Sum = 2124
Rank Mean = 118

LMW-8	1/16/1998	ND<2.30259	90
	3/16/1999	ND<2.30259	90
	9/23/1999	ND<2.30259	90
	3/14/2000	ND<2.30259	90
	9/23/2003	ND<2.30259	90
	3/10/2004	ND<2.30259	90
	10/12/2004	ND<2.30259	90
	4/1/2005	ND<2.30259	90
	10/26/2005	ND<2.30259	90
	6/19/2006	ND<2.30259	90
	11/18/2006	ND<2.30259	90
	6/2/2007	ND<2.30259	90
	11/15/2007	ND<2.30259	90
	5/20/2008	ND<0 J	90
	11/20/2008	ND<2.30259	90
	6/11/2009	-0.755023	203
	11/16/2009	-0.34249	207
	6/30/2010	-0.248461	208

Rank Sum = 1968
Rank Mean = 109.333

LMW-9	1/16/1998	ND<2.30259	90
	3/16/1999	ND<2.30259	90
	9/23/1999	ND<2.30259	90
	3/14/2000	ND<2.30259	90
	9/23/2003	ND<2.30259	90
	3/10/2004	ND<2.30259	90
	10/12/2004	ND<2.30259	90
	4/1/2005	ND<2.30259	90
	10/26/2005	ND<2.30259	90
	6/19/2006	2.30259 J	218
	11/18/2006	ND<2.30259	90
	6/2/2007	ND<2.30259	90
	11/15/2007	ND<2.30259	90
	5/20/2008	ND<2.30259	90
	11/20/2008	ND<2.30259	90
	6/11/2009	-1.89712 J	187
	11/16/2009	-2.04022 J	184

	6/30/2010	-2.04022 J	185

Rank Sum = 2034
Rank Mean = 113

LMW-14R	6/2/2007	ND<2.30259	90
	11/15/2007	ND<2.30259	90
	5/20/2008	ND<0 J	90
	11/20/2008	ND<2.30259	90
	6/11/2009	-1.42712	196
	6/30/2010	-1.77196 J	192

Rank Sum = 748
Rank Mean = 124.667

LMW-15R	11/18/2006	ND<2.30259	90
	6/2/2007	ND<2.30259	90
	11/15/2007	ND<2.30259	90
	11/15/2007	ND<2.30259	90
	5/20/2008	ND<2.30259	90
	5/20/2008	ND<0 J	90
	11/20/2008	ND<2.30259	90
	11/20/2008	ND<2.30259	90
	6/11/2009	-0.18633	209
	11/16/2009	-1.34707	198
	11/16/2009	-1.20397	200
	11/16/2009	-1.38629	197
	6/30/2010	-0.356675	206

Rank Sum = 1730
Rank Mean = 133.077

LMW-7	1/16/1998	ND<2.30259	90
	3/16/1999	ND<2.30259	90
	9/23/1999	ND<2.30259	90
	3/14/2000	ND<2.30259	90
	9/23/2003	ND<2.30259	90
	3/10/2004	ND<2.30259	90
	10/12/2004	ND<2.30259	90
	4/1/2005	ND<2.30259	90
	10/26/2005	ND<2.30259	90
	6/19/2006	ND<2.30259	90
	11/18/2006	0 J	213
	6/2/2007	ND<2.30259	90
	11/15/2007	ND<2.30259	90
	5/20/2008	ND<2.30259	90
	11/20/2008	ND<2.30259	90
	6/11/2009	-0.462035	205

Rank Sum = 1678
Rank Mean = 104.875

LMW-12	3/14/2000	ND<2.30259	90
	9/23/2003	ND<2.30259	90
	3/10/2004	ND<2.30259	90
	10/12/2004	ND<2.30259	90
	4/1/2005	ND<2.30259	90
	10/26/2005	ND<2.30259	90
	6/19/2006	ND<2.30259	90
	6/2/2007	ND<2.30259	90
	11/15/2007	ND<2.30259	90
	5/20/2008	ND<2.30259	90
	11/20/2008	ND<2.30259	90

Rank Sum = 990
Rank Mean = 90

LMW-13	3/14/2000	ND<2.30259	90
	9/23/2003	ND<2.30259	90
	3/10/2004	ND<2.30259	90
	10/12/2004	ND<2.30259	90
	4/1/2005	ND<2.30259	90
	10/26/2005	ND<2.30259	90
	6/19/2006	ND<2.30259	90
	6/2/2007	ND<2.30259	90
	11/15/2007	ND<2.30259	90
	5/20/2008	ND<2.30259	90
	11/20/2008	ND<2.30259	90

Rank Sum = 990
Rank Mean = 90

LMW-11	3/14/2000	ND<2.30259	90
	9/23/2003	ND<2.30259	90
	3/10/2004	ND<2.30259	90
	10/12/2004	ND<2.30259	90
	4/1/2005	ND<2.30259	90
	10/26/2005	ND<2.30259	90
	6/19/2006	ND<2.30259	90
	6/2/2007	ND<2.30259	90
	11/15/2007	ND<2.30259	90
	5/20/2008	ND<2.30259	90
	11/20/2008	ND<2.30259	90

Rank Sum = 990
Rank Mean = 90

MW-5	1/16/1998	ND<2.30259	90
	3/16/1999	ND<2.30259	90
	9/23/1999	ND<2.30259	90
	3/14/2000	ND<2.30259	90
	9/23/2003	ND<2.30259	90
	3/10/2004	ND<2.30259	90
	10/12/2004	ND<2.30259	90
	4/1/2005	ND<2.30259	90
	10/26/2005	ND<2.30259	90
	6/19/2006	ND<2.30259	90
	11/15/2007	ND<2.30259	90
	5/20/2008	ND<2.30259	90
	11/20/2008	ND<2.30259	90

Rank Sum = 1170
Rank Mean = 90

Calculation Results:

Kruskal-Wallis H Statistic = 14.3342
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 31.5758
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
14.3342 < 26.2962 indicating no significant group difference at 5% significance level
31.5758 > 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 107.667

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9D	105.875	-1.79167	62.6357
LMW-10	109.4	1.73333	51.5337
LMW-16	112.625	4.95833	62.6357
LMW-9S	169.143	61.4762	65.66

LMW-3	105	-2.6666	47.8913	
LMW-3S	132.125	24.4583	62.6357	
LMW-6	118	10.3333	49.1355	
LMW-8	109.333	1.66667	49.1355	
LMW-9	113	5.33333	49.1355	
LMW-14R		124.667	17	69.488
LMW-15R		133.077	25.4103	53.6524
LMW-7	104.875	-2.7916	50.6477	
LMW-12	90	-17.666	56.4135	
LMW-13	90	-17.666	56.4135	
LMW-11	90	-17.666	56.4135	
MW-5	90	-17.666	53.6524	

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 107.667

Well	Mean Rank	Dif from Bkg	Critical Value	
LMW-9D	105.875	-1.7916	73.9823	
LMW-10	109.4	1.73333	60.8692	
LMW-16	112.625	4.95833	73.9823	
LMW-9S	169.143	61.4762	77.5545	
LMW-3	105	-2.6666	56.567	
LMW-3S	132.125	24.4583	73.9823	
LMW-6	118	10.3333	58.0365	
LMW-8	109.333	1.66667	58.0365	
LMW-9	113	5.33333	58.0365	
LMW-14R		124.667	17	82.076
LMW-15R		133.077	25.4103	63.3717
LMW-7	104.875	-2.7916	59.8226	
LMW-12	90	-17.666	66.6329	
LMW-13	90	-17.666	66.6329	
LMW-11	90	-17.666	66.6329	
MW-5	90	-17.666	63.3717	

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Cobalt

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 81.7352%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 18
Maximum Background Concentration = 2.30259
Confidence Level = 69.2%
False Positive Rate = 30.8%

Location	Date	Samples	Mean	Significant
LMW-9D	6/30/2010	1	-3.35241	FALSE
LMW-10	6/30/2010	1	-1.60944	FALSE
LMW-16	6/30/2010	1	-2.40795	FALSE
LMW-9S	6/30/2010	1	-1.83258	FALSE
LMW-3	6/30/2010	1	-1.77196	FALSE
LMW-3S	6/30/2010	1	-0.562119	FALSE
LMW-6	6/30/2010	1	0.182322	FALSE
LMW-8	6/30/2010	1	-0.248461	FALSE
LMW-9	6/30/2010	1	-2.04022	FALSE
LMW-14R	6/30/2010	1	-1.77196	FALSE
LMW-15R	6/30/2010	1	-0.356675	FALSE
LMW-7	6/11/2009	1	-0.462035	FALSE
LMW-12	11/20/2008	1	2.30259	FALSE
LMW-13	11/20/2008	1	2.30259	FALSE
LMW-11	11/20/2008	1	2.30259	FALSE
MW-5	11/20/2008	1	2.30259	FALSE

Concentrations (ppb)

Parameter: Copper

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 214
Total Non-Detect: 143
Percent Non-Detects: 66.8224%
Total Background Measurements: 18
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	18	11 (61.1111%)	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
			11/16/2009	0.78 J	0.78 J
			6/30/2010	1.3	1.3

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9S	7	4 (57.1429%)	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
			6/30/2010	1.7	1.7
LMW-9D	8	2 (25%)	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
			11/16/2009	0.75 J	0.75 J
			6/30/2010	0.9 J	0.9 J
LMW-9	18	11 (61.1111%)	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	
			11/16/2009	0.59 J	0.59 J	
			6/30/2010	2.4	2.4	
LMW-6	18	12 (66.6667%)	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	
			11/16/2009	1.2	1.2	
			6/30/2010	3	3	
LMW-10	15	12 (80%)	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	
			11/16/2009	ND<0.21 U		ND<0.21 U
			6/30/2010	1.9	1.9	
LMW-8	18	12 (66.6667%)	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	
			11/16/2009	0.65 J	0.65 J	
			6/30/2010	1.3	1.3	
LMW-15R	12	4 (33.3333%)	11/18/2006	3 J	3 J	
			6/2/2007	5 J	5 J	
			11/15/2007	5 J	5 J	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	5 J	5 J	
			11/20/2008	ND<20	ND<20	
			6/11/2009	3.7	3.7	
			11/16/2009	0.92 J	0.92 J	
			11/16/2009	0.57 J	0.57 J	
			11/16/2009	1.7	1.7	
LMW-16	7	2 (28.5714%)	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	
			11/16/2009	0.59 J	0.59 J	
LMW-3	19	15 (78.9474%)	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	
			11/16/2009	1.1	1.1	
LMW-3S	7	3 (42.8571%)	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	
			11/16/2009	0.82 J	0.82 J	
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-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	
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-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

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Copper

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 214

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.105	-2.65209	7.03356	-0.278469
2	0.36	-2.36561	12.6297	-1.13009
3	0.51	-2.22621	17.5857	-2.26546
4	0.57	-2.09693	21.9828	-3.46071
5	0.59	-1.99539	25.9644	-4.63799
6	0.59	-1.92684	29.6771	-5.77482
7	0.65	-1.85218	33.1077	-6.97874
8	0.69	-1.78661	36.2996	-8.2115
9	0.7	-1.7392	39.3245	-9.42894
10	0.74	-1.68494	42.1635	-10.6758
11	0.75	-1.63524	44.8375	-11.9022
12	0.75	-1.59819	47.3917	-13.1009
13	0.78	-1.55477	49.809	-14.3136
14	0.81	-1.5141	52.1015	-15.54
15	0.82	-1.48328	54.3016	-16.7563
16	0.83	-1.44663	56.3944	-17.957
17	0.88	-1.41183	58.3877	-19.1994
18	0.9	-1.38517	60.3064	-20.4461
19	0.92	-1.35317	62.1374	-21.691
20	1.1	-1.32251	63.8865	-23.1457
21	1.2	-1.29884	65.5734	-24.7044
22	1.3	-1.27024	67.1869	-26.3557
23	1.3	-1.24809	68.7447	-27.9782
24	1.4	-1.22123	70.2361	-29.6879
25	1.7	-1.19522	71.6646	-31.7198
26	1.7	-1.17499	73.0452	-33.7172
27	1.7	-1.15035	74.3685	-35.6728
28	1.9	-1.12639	75.6373	-37.813
29	2	-1.10768	76.8642	-40.0283
30	2	-1.08482	78.0411	-42.198
31	2	-1.06252	79.17	-44.323
32	2	-1.04505	80.2621	-46.4131
33	2.4	-1.02365	81.31	-48.8699
34	3	-1.00271	82.3154	-51.878
35	3	-0.986272	83.2882	-54.8368
36	3	-0.966088	84.2215	-57.7351
37	3.7	-0.946291	85.117	-61.2364
38	4	-0.930718	85.9832	-64.9593
39	4	-0.911562	86.8141	-68.6055
40	5	-0.892733	87.6111	-73.0692
41	5	-0.877897	88.3818	-77.4586
42	5	-0.859618	89.1208	-81.7567
43	5	-0.841621	89.8291	-85.9648
44	5	-0.827417	90.5137	-90.1019
45	5	-0.809896	91.1696	-94.1514
46	5	-0.796056	91.8033	-98.1317
47	5	-0.778966	92.4101	-102.027
48	5	-0.7621	92.9909	-105.837
49	5	-0.748762	93.5516	-109.581

50	6	-0.732275	94.0878	-113.974
51	6	-0.715986	94.6004	-118.27
52	6	-0.703089	95.0948	-122.489
53	6	-0.687131	95.5669	-126.612
54	6	-0.671346	96.0176	-130.64
55	7	-0.658838	96.4517	-135.252
56	7	-0.643345	96.8656	-139.755
57	7	-0.628006	97.26	-144.151
58	7	-0.615839	97.6392	-148.462
59	7	-0.6007698.0001	-152.667	
60	8	-0.585815	98.3433	-157.354
61	8	-0.573953	98.6727	-161.945
62	8	-0.559237	98.9855	-166.419
63	9	-0.544642	99.2821	-171.321
64	9	-0.533048	99.5663	-176.119
65	9	-0.518658	99.8353	-180.786
66	10	-0.507221	100.093	-185.859
67	10	-0.493018	100.336	-190.789
68	10	-0.478914	100.565	-195.578
69	10	-0.467699	100.784	-200.255
70	10	-0.453763	100.99	-204.793
71	10	-0.439913	101.183	-209.192
72	10	-0.428895	101.367	-213.481
73	10	-0.415193	101.539	-217.633
74	10	-0.401571	101.701	-221.648
75	10	-0.390726	101.853	-225.556
76	10	-0.377233	101.996	-229.328
77	10	-0.363809	102.128	-232.966
78	10	-0.353118	102.253	-236.497
79	10	-0.33981102.368	-239.895	
80	10	-0.326561	102.475	-243.161
81	10	-0.316004	102.575	-246.321
82	10	-0.302855	102.666	-249.349
83	10	-0.28976102.75	-252.247	
84	10	-0.279319	102.828	-255.04
85	10	-0.266311	102.899	-257.703
86	10	-0.253347	102.964	-260.237
87	10	-0.243007	103.023	-262.667
88	10	-0.230118	103.076	-264.968
89	10	-0.219834	103.124	-267.166
90	10	-0.207012	103.167	-269.237
91	10	-0.194225	103.204	-271.179
92	10	-0.184017	103.238	-273.019
93	10	-0.171285	103.268	-274.732
94	10	-0.158579	103.293	-276.318
95	10	-0.148434	103.315	-277.802
96	10	-0.135774	103.333	-279.16
97	10	-0.123135	103.348	-280.391
98	10	-0.113039	103.361	-281.521
99	10	-0.100433	103.371	-282.526
100	10	-0.0878447	103.379	-283.404
101	10	-0.0777834	103.385	-284.182
102	10	-0.0652187	103.389	-284.834
103	10	-0.0526632	103.392	-285.361
104	10	-0.0426257	103.394	-285.787
105	10	-0.0300838	103.395	-286.088
106	10	-0.0175476	103.395	-286.263
107	10	-0.00751925	103.395	-286.339
108	10	0.00751925	103.395	-286.263
109	10	0.0175476	103.396	-286.088
110	10	0.0300838	103.396	-285.787
111	10	0.0426257	103.398	-285.361

112	10	0.0526632	103.401	-284.834
113	10	0.0652187	103.405	-284.182
114	10	0.0777834	103.411	-283.404
115	10	0.0878447	103.419	-282.526
116	10	0.100433	103.429	-281.521
117	10	0.113039	103.442	-280.391
118	10	0.123135	103.457	-279.16
119	10	0.135774	103.475	-277.802
120	10	0.148434	103.498	-276.318
121	10	0.158579	103.523	-274.732
122	10	0.171285	103.552	-273.019
123	10	0.184017	103.586	-271.179
124	10	0.194225	103.624	-269.237
125	10	0.207012	103.666	-267.166
126	10	0.219834	103.715	-264.968
127	10	0.230118	103.768	-262.667
128	10	0.243007	103.827	-260.237
129	10	0.253347	103.891	-257.703
130	10	0.266311	103.962	-255.04
131	10	0.279319	104.04	-252.247
132	10	0.28976	104.124	-249.349
133	10	0.302855	104.216	-246.321
134	10	0.316004	104.315	-243.161
135	10	0.326561	104.422	-239.895
136	10	0.33981	104.538	-236.497
137	10	0.353118	104.662	-232.966
138	10	0.363809	104.795	-229.328
139	10	0.377233	104.937	-225.556
140	10	0.390726	105.09	-221.648
141	10	0.401571	105.251	-217.633
142	10	0.415193	105.423	-213.481
143	10	0.428895	105.607	-209.192
144	10	0.439913	105.801	-204.793
145	10	0.453763	106.007	-200.255
146	10	0.467699	106.225	-195.578
147	10	0.478914	106.455	-190.789
148	10	0.493018	106.698	-185.859
149	10	0.507221	106.955	-180.786
150	10	0.518658	107.224	-175.6
151	10	0.533048	107.508	-170.269
152	10	0.544642	107.805	-164.823
153	10	0.559237	108.118	-159.231
154	10	0.573953	108.447	-153.491
155	10	0.585815	108.79	-147.633
156	10	0.60076	109.151	-141.625
157	10	0.615839	109.53	-135.467
158	10	0.628006	109.925	-129.187
159	10	0.643345	110.339	-122.753
160	10	0.658838	110.773	-116.165
161	10	0.671346	111.223	-109.452
162	10	0.687131	111.696	-102.58
163	10	0.703089	112.19	-95.5494
164	10	0.715986	112.703	-88.3895
165	10	0.732275	113.239	-81.0668
166	10	0.748762	113.799	-73.5792
167	10	0.7621	114.38	-65.9582
168	10	0.778966	114.987	-58.1685
169	10	0.796056	115.621	-50.208
170	10	0.809896	116.277	-42.109
171	10	0.827417	116.961	-33.8348
172	10	0.841621	117.67	-25.4186
173	10	0.859618	118.409	-16.8224

174	10	0.877897		119.179	-8.04347
175	10	0.892733		119.976	0.883859
176	10	0.911562		120.807	9.99947
177	10	0.930718		121.673	19.3067
178	10	0.946291		122.569	28.7696
179	10	0.966088		123.502	38.4304
180	10	0.986272		124.475	48.2932
181	10	1.00271	125.48	58.3203	
182	10	1.02365	126.528	68.5568	
183	10	1.04505	127.62	79.0073	
184	10	1.06252	128.749	89.6325	
185	10	1.08482	129.926	100.481	
186	10	1.10768	131.153	111.558	
187	10	1.12639	132.422	122.821	
188	10	1.15035	133.745	134.325	
189	10	1.17499	135.126	146.075	
190	10	1.19522	136.554	158.027	
191	10	1.22123	138.046	170.239	
192	10	1.24809	139.603	182.72	
193	10	1.27024	141.217	195.423	
194	10	1.29884	142.904	208.411	
195	10	1.32251	144.653	221.636	
196	10	1.35317	146.484	235.168	
197	10	1.38517	148.403	249.019	
198	10	1.41183	150.396	263.138	
199	10	1.44663	152.489	277.604	
200	10	1.48328	154.689	292.437	
201	10	1.5141	156.981	307.578	
202	10	1.55477	159.399	323.126	
203	10	1.59819	161.953	339.108	
204	10	1.63524	164.627	355.46	
205	10	1.68494	167.466	372.309	
206	10	1.7392	170.491	389.701	
207	10	1.78661	173.683	407.567	
208	10	1.85218	177.113	426.089	
209	10	1.92684	180.826	445.358	
210	11	1.99539	184.808	467.307	
211	12	2.09693	189.205	492.47	
212	18	2.22621	194.161	532.542	
213	20	2.36561	199.757	579.854	
214	73	2.65209	206.79	773.456	

Data Set Standard Deviation = 5.67372
Numerator = 598235
Denominator = 1.4179e+006
W Statistic = 0.421916 = 598235 / 1.4179e+006

5% Critical value of 0.976 exceeds 0.421916
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.421916
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Copper

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 214

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-2.25379	-2.65209	7.03356	5.97726
2	-1.02165	-2.36561	12.6297	8.39409
3	-0.673345	-2.22621	17.5857	9.8931
4	-0.562119	-2.09693	21.9828	11.0718
5	-0.527633	-1.99539	25.9644	12.1247
6	-0.527633	-1.92684	29.6771	13.1413
7	-0.430783	-1.85218	33.1077	13.9392
8	-0.371064	-1.78661	36.2996	14.6022
9	-0.356675	-1.7392	39.3245	15.2225
10	-0.301105	-1.68494	42.1635	15.7298
11	-0.287682	-1.63524	44.8375	16.2003
12	-0.287682	-1.59819	47.3917	16.66
13	-0.248461	-1.55477	49.809	17.0463
14	-0.210721	-1.5141	52.1015	17.3654
15	-0.198451	-1.48328	54.3016	17.6597
16	-0.18633	-1.44663	56.3944	17.9293
17	-0.127833	-1.41183	58.3877	18.1098
18	-0.105361	-1.38517	60.3064	18.2557
19	-0.0833816	-1.35317	62.1374	18.3685
20	0.0953102	-1.32251	63.8865	18.2425
21	0.182322	-1.29884	65.5734	18.0057
22	0.262364	-1.27024	67.1869	17.6724
23	0.262364	-1.24809	68.7447	17.345
24	0.336472	-1.22123	70.2361	16.9341
25	0.530628	-1.19522	71.6646	16.2998
26	0.530628	-1.17499	73.0452	15.6764
27	0.530628	-1.15035	74.3685	15.0659
28	0.641854	-1.12639	75.6373	14.343
29	0.693147	-1.10768	76.8642	13.5752
30	0.693147	-1.08482	78.0411	12.8232
31	0.693147	-1.06252	79.17	12.0868
32	0.693147	-1.04505	80.2621	11.3624
33	0.875469	-1.02365	81.31	10.4662
34	1.09861	-1.00271	82.3154	9.36462
35	1.09861	-0.986272	83.2882	8.28109
36	1.09861	-0.966088	84.2215	7.21973
37	1.30833	-0.946291	85.117	5.98167
38	1.38629	-0.930718	85.9832	4.69142
39	1.38629	-0.911562	86.8141	3.42773
40	1.60944	-0.892733	87.6111	1.99093
41	1.60944	-0.877897	88.3818	0.578011
42	1.60944	-0.859618	89.1208	-0.805491
43	1.60944	-0.841621	89.8291	-2.16003
44	1.60944	-0.827417	90.5137	-3.4917
45	1.60944	-0.809896	91.1696	-4.79518
46	1.60944	-0.796056	91.8033	-6.07638
47	1.60944	-0.778966	92.4101	-7.33008
48	1.60944	-0.7621	92.9909	-8.55663
49	1.60944	-0.748762	93.5516	-9.76172

50	1.79176	-0.732275	94.0878	-11.0738
51	1.79176	-0.715986	94.6004	-12.3567
52	1.79176	-0.703089	95.0948	-13.6164
53	1.79176	-0.687131	95.5669	-14.8476
54	1.79176	-0.671346	96.0176	-16.0505
55	1.94591	-0.658838	96.4517	-17.3325
56	1.94591	-0.643345	96.8656	-18.5844
57	1.94591	-0.628006	97.26	-19.8065
58	1.94591	-0.615839	97.6392	-21.0048
59	1.94591	-0.6007698.0001	-22.1739	
60	2.07944	-0.585815	98.3433	-23.392
61	2.07944	-0.573953	98.6727	-24.5855
62	2.07944	-0.559237	98.9855	-25.7484
63	2.19722	-0.544642	99.2821	-26.9451
64	2.19722	-0.533048	99.5663	-28.1163
65	2.19722	-0.518658	99.8353	-29.256
66	2.30259	-0.507221	100.093	-30.4239
67	2.30259	-0.493018	100.336	-31.5591
68	2.30259	-0.478914	100.565	-32.6618
69	2.30259	-0.467699	100.784	-33.7387
70	2.30259	-0.453763	100.99	-34.7836
71	2.30259	-0.439913	101.183	-35.7965
72	2.30259	-0.428895	101.367	-36.7841
73	2.30259	-0.415193	101.539	-37.7401
74	2.30259	-0.401571	101.701	-38.6647
75	2.30259	-0.390726	101.853	-39.5644
76	2.30259	-0.377233	101.996	-40.433
77	2.30259	-0.363809	102.128	-41.2707
78	2.30259	-0.353118	102.253	-42.0838
79	2.30259	-0.33981102.368	-42.8663	
80	2.30259	-0.326561	102.475	-43.6182
81	2.30259	-0.316004	102.575	-44.3458
82	2.30259	-0.302855	102.666	-45.0432
83	2.30259	-0.28976102.75	-45.7104	
84	2.30259	-0.279319	102.828	-46.3535
85	2.30259	-0.266311	102.899	-46.9667
86	2.30259	-0.253347	102.964	-47.5501
87	2.30259	-0.243007	103.023	-48.1096
88	2.30259	-0.230118	103.076	-48.6395
89	2.30259	-0.219834	103.124	-49.1457
90	2.30259	-0.207012	103.167	-49.6223
91	2.30259	-0.194225	103.204	-50.0696
92	2.30259	-0.184017	103.238	-50.4933
93	2.30259	-0.171285	103.268	-50.8877
94	2.30259	-0.158579	103.293	-51.2528
95	2.30259	-0.148434	103.315	-51.5946
96	2.30259	-0.135774	103.333	-51.9072
97	2.30259	-0.123135	103.348	-52.1908
98	2.30259	-0.113039	103.361	-52.451
99	2.30259	-0.100433	103.371	-52.6823
100	2.30259	-0.0878447	103.379	-52.8846
101	2.30259	-0.0777834	103.385	-53.0637
102	2.30259	-0.0652187	103.389	-53.2138
103	2.30259	-0.0526632	103.392	-53.3351
104	2.30259	-0.0426257	103.394	-53.4333
105	2.30259	-0.0300838	103.395	-53.5025
106	2.30259	-0.0175476	103.395	-53.5429
107	2.30259	-0.00751925	103.395	-53.5602
108	2.30259	0.00751925	103.395	-53.5429
109	2.30259	0.0175476	103.396	-53.5025
110	2.30259	0.0300838	103.396	-53.4333
111	2.30259	0.0426257	103.398	-53.3351

112	2.30259	0.0526632	103.401	-53.2138
113	2.30259	0.0652187	103.405	-53.0637
114	2.30259	0.0777834	103.411	-52.8846
115	2.30259	0.0878447	103.419	-52.6823
116	2.30259	0.100433	103.429	-52.451
117	2.30259	0.113039	103.442	-52.1908
118	2.30259	0.123135	103.457	-51.9072
119	2.30259	0.135774	103.475	-51.5946
120	2.30259	0.148434	103.498	-51.2528
121	2.30259	0.158579	103.523	-50.8877
122	2.30259	0.171285	103.552	-50.4933
123	2.30259	0.184017	103.586	-50.0696
124	2.30259	0.194225	103.624	-49.6223
125	2.30259	0.207012	103.666	-49.1457
126	2.30259	0.219834	103.715	-48.6395
127	2.30259	0.230118	103.768	-48.1096
128	2.30259	0.243007	103.827	-47.5501
129	2.30259	0.253347	103.891	-46.9667
130	2.30259	0.266311	103.962	-46.3535
131	2.30259	0.279319	104.04	-45.7104
132	2.30259	0.28976	104.124	-45.0432
133	2.30259	0.302855	104.216	-44.3458
134	2.30259	0.316004	104.315	-43.6182
135	2.30259	0.326561	104.422	-42.8663
136	2.30259	0.33981	104.538	-42.0838
137	2.30259	0.353118	104.662	-41.2707
138	2.30259	0.363809	104.795	-40.433
139	2.30259	0.377233	104.937	-39.5644
140	2.30259	0.390726	105.09	-38.6647
141	2.30259	0.401571	105.251	-37.7401
142	2.30259	0.415193	105.423	-36.7841
143	2.30259	0.428895	105.607	-35.7965
144	2.30259	0.439913	105.801	-34.7836
145	2.30259	0.453763	106.007	-33.7387
146	2.30259	0.467699	106.225	-32.6618
147	2.30259	0.478914	106.455	-31.5591
148	2.30259	0.493018	106.698	-30.4239
149	2.30259	0.507221	106.955	-29.256
150	2.30259	0.518658	107.224	-28.0617
151	2.30259	0.533048	107.508	-26.8343
152	2.30259	0.544642	107.805	-25.5802
153	2.30259	0.559237	108.118	-24.2925
154	2.30259	0.573953	108.447	-22.971
155	2.30259	0.585815	108.79	-21.6221
156	2.30259	0.60076	109.151	-20.2388
157	2.30259	0.615839	109.53	-18.8208
158	2.30259	0.628006	109.925	-17.3747
159	2.30259	0.643345	110.339	-15.8934
160	2.30259	0.658838	110.773	-14.3763
161	2.30259	0.671346	111.223	-12.8305
162	2.30259	0.687131	111.696	-11.2483
163	2.30259	0.703089	112.19	-9.6294
164	2.30259	0.715986	112.703	-7.98078
165	2.30259	0.732275	113.239	-6.29465
166	2.30259	0.748762	113.799	-4.57057
167	2.30259	0.7621	114.38	-2.81577
168	2.30259	0.778966	114.987	-1.02213
169	2.30259	0.796056	115.621	0.810857
170	2.30259	0.809896	116.277	2.67571
171	2.30259	0.827417	116.961	4.58091
172	2.30259	0.841621	117.67	6.51881
173	2.30259	0.859618	118.409	8.49816

174	2.30259	0.877897		119.179	10.5196
175	2.30259	0.892733		119.976	12.5752
176	2.30259	0.911562		120.807	14.6741
177	2.30259	0.930718		121.673	16.8172
178	2.30259	0.946291		122.569	18.9961
179	2.30259	0.966088		123.502	21.2206
180	2.30259	0.986272		124.475	23.4916
181	2.30259	1.00271	125.48	25.8004	
182	2.30259	1.02365	126.528	28.1575	
183	2.30259	1.04505	127.62	30.5638	
184	2.30259	1.06252	128.749	33.0103	
185	2.30259	1.08482	129.926	35.5082	
186	2.30259	1.10768	131.153	38.0587	
187	2.30259	1.12639	132.422	40.6523	
188	2.30259	1.15035	133.745	43.3011	
189	2.30259	1.17499	135.126	46.0066	
190	2.30259	1.19522	136.554	48.7587	
191	2.30259	1.22123	138.046	51.5707	
192	2.30259	1.24809	139.603	54.4445	
193	2.30259	1.27024	141.217	57.3694	
194	2.30259	1.29884	142.904	60.36	
195	2.30259	1.32251	144.653	63.4052	
196	2.30259	1.35317	146.484	66.521	
197	2.30259	1.38517	148.403	69.7105	
198	2.30259	1.41183	150.396	72.9614	
199	2.30259	1.44663	152.489	76.2924	
200	2.30259	1.48328	154.689	79.7077	
201	2.30259	1.5141	156.981	83.1941	
202	2.30259	1.55477	159.399	86.7741	
203	2.30259	1.59819	161.953	90.4541	
204	2.30259	1.63524	164.627	94.2193	
205	2.30259	1.68494	167.466	98.099	
206	2.30259	1.7392	170.491	102.104	
207	2.30259	1.78661	173.683	106.218	
208	2.30259	1.85218	177.113	110.482	
209	2.30259	1.92684	180.826	114.919	
210	2.3979	1.99539	184.808	119.704	
211	2.48491	2.09693	189.205	124.914	
212	2.89037	2.22621	194.161	131.349	
213	2.99573	2.36561	199.757	138.436	
214	4.29046	2.65209	206.79	149.814	

Data Set Standard Deviation = 0.903951
Numerator = 22444.4
Denominator = 35991.5
W Statistic = 0.623602 = 22444.4 / 35991.5

5% Critical value of 0.976 exceeds 0.623602
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.623602
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Copper

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	4.29046	214
	3/16/1999	ND<2.30259	72
	9/23/1999	ND<2.30259	72
	3/14/2000	ND<2.30259	72
	9/23/2003	ND<2.30259	72
	3/10/2004	ND<2.30259	72
	10/12/2004	ND<2.30259	72
	4/1/2005	ND<2.30259	72
	10/26/2005	ND<2.30259	72
	6/19/2006	ND<2.30259	72
	11/18/2006	ND<2.30259	72
	6/2/2007	2.07944 J	202
	11/15/2007	1.60944 J	182
	5/20/2008	2.07944 J	203
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.301105 J	152
	11/16/2009	-0.248461 J	155
	6/30/2010	0.262364	164

Rank Sum = 2064
Rank Mean = 114.667

Background Rank Sum = 2064
Background Rank Mean = 114.667

Compliance Wells

Well ID	Date	Result	Rank
LMW-9S	11/18/2006	ND<2.30259	72
	6/2/2007	ND<2.30259	72
	11/15/2007	1.94591 J	197
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.18633 J	158
	6/30/2010	0.530628	167

Rank Sum = 810
Rank Mean = 115.714

LMW-9D	11/18/2006	1.79176 J	192
	6/2/2007	ND<2.30259	72
	11/15/2007	2.19722 J	205
	5/20/2008	0.693147 J	171
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.371064 J	150
	11/16/2009	-0.287682 J	153
	6/30/2010	-0.105361 J	160

Rank Sum = 1175

Rank Mean = 146.875

LMW-9	1/16/1998	2.19722 J	206
	3/16/1999	ND<2.30259	72
	9/23/1999	2.48491 J	211
	3/14/2000	ND<2.30259	72
	9/23/2003	ND<2.30259	72
	3/10/2004	ND<2.30259	72
	10/12/2004	ND<2.30259	72
	4/1/2005	ND<2.30259	72
	10/26/2005	ND<2.30259	72
	6/19/2006	ND<2.30259	72
	11/18/2006	ND<2.30259	72
	6/2/2007	1.60944 J	183
	11/15/2007	1.94591 J	198
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.127833 J	159
	11/16/2009	-0.527633 J	147
	6/30/2010	0.875469	175

Rank Sum = 2071
Rank Mean = 115.056

LMW-6	1/16/1998	2.89037 J	212
	3/16/1999	ND<2.30259	72
	9/23/1999	ND<2.30259	72
	3/14/2000	ND<2.30259	72
	9/23/2003	ND<2.30259	72
	3/10/2004	ND<2.30259	72
	10/12/2004	ND<2.30259	72
	4/1/2005	ND<2.30259	72
	10/26/2005	ND<2.30259	72
	6/19/2006	ND<2.30259	72
	11/18/2006	ND<2.30259	72
	6/2/2007	1.94591 J	199
	11/15/2007	1.94591 J	200
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	0.530628	168
	11/16/2009	0.182322	163
	6/30/2010	1.09861	176

Rank Sum = 1982
Rank Mean = 110.111

LMW-10	3/14/2000	ND<2.30259	72
	9/23/2003	ND<2.30259	72
	3/10/2004	ND<2.30259	72
	10/12/2004	ND<2.30259	72
	4/1/2005	ND<2.30259	72
	10/26/2005	ND<2.30259	72
	6/19/2006	ND<2.30259	72
	11/18/2006	ND<2.30259	72
	6/2/2007	ND<2.30259	72
	11/15/2007	ND<2.30259	72
	5/20/2008	0.693147 J	172
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.673345 J	145
	11/16/2009	ND<-2.25379 U	72
	6/30/2010	0.641854	170

Rank Sum = 1351
Rank Mean = 90.0667

LMW-8	1/16/1998	0.693147 J	173
	3/16/1999	1.60944 J	184
	9/23/1999	ND<2.30259	72
	3/14/2000	ND<2.30259	72
	9/23/2003	ND<2.30259	72
	3/10/2004	ND<2.30259	72
	10/12/2004	ND<2.30259	72
	4/1/2005	ND<2.30259	72
	10/26/2005	ND<2.30259	72
	6/19/2006	ND<2.30259	72
	11/18/2006	ND<2.30259	72
	6/2/2007	ND<2.30259	72
	11/15/2007	1.79176 J	193
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.287682 J	154
	11/16/2009	-0.430783 J	149
	6/30/2010	0.262364	165

Rank Sum = 1882
Rank Mean = 104.556

LMW-15R	11/18/2006	1.09861 J	177
	6/2/2007	1.60944 J	185
	11/15/2007	1.60944 J	186
	11/15/2007	ND<2.30259	72
	5/20/2008	ND<2.30259	72
	5/20/2008	ND<2.30259	72
	11/20/2008	1.60944 J	187
	11/20/2008	ND<2.30259	72
	6/11/2009	1.30833	179
	11/16/2009	-0.0833816 J	161
	11/16/2009	-0.562119 J	146
	11/16/2009	0.530628	169

Rank Sum = 1678
Rank Mean = 139.833

LMW-16	11/18/2006	ND<2.30259	72
	6/2/2007	1.94591 J	201
	11/15/2007	1.79176 J	194
	5/20/2008	ND<2.30259	72
	11/20/2008	1.60944 J	188
	6/11/2009	-1.02165 J	144
	11/16/2009	-0.527633 J	148

Rank Sum = 1019
Rank Mean = 145.571

LMW-3	11/19/1996	ND<2.30259	72
	3/24/1997	ND<2.30259	72
	1/16/1998	1.38629 J	180
	3/16/1999	ND<2.30259	72
	9/23/1999	ND<2.30259	72
	3/14/2000	ND<2.30259	72
	9/23/2003	ND<2.30259	72
	3/10/2004	ND<2.30259	72
	10/12/2004	ND<2.30259	72
	4/1/2005	ND<2.30259	72
	10/26/2005	ND<2.30259	72
	6/19/2006	ND<2.30259	72
	11/18/2006	ND<2.30259	72
	6/2/2007	ND<2.30259	72
	11/15/2007	2.19722 J	207
	5/20/2008	ND<2.30259	72

	11/20/2008	ND<2.30259	72
	6/11/2009	-0.356675 J	151
	11/16/2009	0.0953102	162

Rank Sum = 1780
Rank Mean = 93.6842

LMW-3S	11/18/2006	0.693147 J	174
	6/2/2007	ND<2.30259	72
	11/15/2007	1.79176 J	195
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	0.336472	166
	11/16/2009	-0.198451 J	157

Rank Sum = 908
Rank Mean = 129.714

LMW-14R	6/2/2007	ND<2.30259	72
	11/15/2007	ND<2.30259	72
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.210721 J	156

Rank Sum = 444
Rank Mean = 88.8

LMW-7	1/16/1998	2.99573	213
	3/16/1999	1.60944 J	189
	9/23/1999	1.60944 J	190
	3/14/2000	ND<2.30259	72
	9/23/2003	ND<2.30259	72
	3/10/2004	ND<2.30259	72
	10/12/2004	ND<2.30259	72
	4/1/2005	2.30259 J	208
	10/26/2005	2.3979 J	210
	6/19/2006	2.30259 J	209
	11/18/2006	ND<2.30259	72
	6/2/2007	1.79176 J	196
	11/15/2007	2.07944 J	204
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	1.38629	181

Rank Sum = 2304
Rank Mean = 144

MW-5	1/16/1998	1.09861 J	178
	3/16/1999	ND<2.30259	72
	9/23/1999	ND<2.30259	72
	3/14/2000	ND<2.30259	72
	9/23/2003	ND<2.30259	72
	3/10/2004	ND<2.30259	72
	10/12/2004	ND<2.30259	72
	4/1/2005	ND<2.30259	72
	10/26/2005	ND<2.30259	72
	6/19/2006	ND<2.30259	72
	11/15/2007	1.60944 J	191
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72

Rank Sum = 1161
Rank Mean = 89.3077

LMW-13	3/14/2000	ND<2.30259	72
	9/23/2003	ND<2.30259	72
	3/10/2004	ND<2.30259	72

	10/12/2004	ND<2.30259	72
	4/1/2005	ND<2.30259	72
	10/26/2005	ND<2.30259	72
	6/19/2006	ND<2.30259	72
	6/2/2007	ND<2.30259	72
	11/15/2007	ND<2.30259	72
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72

Rank Sum = 792
Rank Mean = 72

LMW-12	3/14/2000	ND<2.30259	72
	9/23/2003	ND<2.30259	72
	3/10/2004	ND<2.30259	72
	10/12/2004	ND<2.30259	72
	4/1/2005	ND<2.30259	72
	10/26/2005	ND<2.30259	72
	6/19/2006	ND<2.30259	72
	6/2/2007	ND<2.30259	72
	11/15/2007	ND<2.30259	72
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72

Rank Sum = 792
Rank Mean = 72

LMW-11	3/14/2000	ND<2.30259	72
	9/23/2003	ND<2.30259	72
	3/10/2004	ND<2.30259	72
	10/12/2004	ND<2.30259	72
	4/1/2005	ND<2.30259	72
	10/26/2005	ND<2.30259	72
	6/19/2006	ND<2.30259	72
	6/2/2007	ND<2.30259	72
	11/15/2007	ND<2.30259	72
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72

Rank Sum = 792
Rank Mean = 72

Calculation Results:

Kruskal-Wallis H Statistic = 30.8783
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 44.0094
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
30.8783 > 26.2962 indicating a significant group difference at 5% significance level
44.0094 > 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 114.667

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9S	115.714	1.04762	64.1643
LMW-9D	146.875	32.2083	61.2089
LMW-9	115.056	0.388889	48.0162
LMW-6	110.111	-4.5555	48.0162
LMW-10	90.0667	-24.6	50.3598
LMW-8	104.556	-10.1111	48.0162
LMW-15R	139.833	25.1667	53.6837
LMW-16	145.571	30.9048	64.1643
LMW-3	93.6842	-20.9825	47.3802

LMW-3S	129.714	15.0476	64.1643	
LMW-14R		88.8	-25.866	72.8202
LMW-7	144	29.3333	49.494	
MW-5	89.3077	-25.359	52.4303	
LMW-13	72	-42.666	55.1284	
LMW-12	72	-42.666	55.1284	
LMW-11	72	-42.666	55.1284	

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 114.667

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9S	115.714	1.04762	75.7879
LMW-9D	146.875	32.2083	72.297
LMW-9	115.056	0.388889	56.7145
LMW-6	110.111	-4.5555	56.7145
LMW-10	90.0667	-24.6	59.4826
LMW-8	104.556	-10.111	56.7145
LMW-15R		139.833	25.1667	63.4087
LMW-16	145.571	30.9048	75.7879
LMW-3	93.6842	-20.982	55.9633
LMW-3S	129.714	15.0476	75.7879
LMW-14R		88.8	-25.866	86.0118
LMW-7	144	29.3333	58.4599
MW-5	89.3077	-25.359	61.9281
LMW-13	72	-42.666	65.1151
LMW-12	72	-42.666	65.1151
LMW-11	72	-42.666	65.1151

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Copper

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 66.8224%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 18
Maximum Background Concentration = 4.29046
Confidence Level = 69.2%
False Positive Rate = 30.8%

Location	Date	Samples	Mean	Significant
LMW-9S	6/30/2010	1	0.530628	FALSE
LMW-9D	6/30/2010	1	-0.105361	FALSE
LMW-9	6/30/2010	1	0.875469	FALSE
LMW-6	6/30/2010	1	1.09861	FALSE
LMW-10	6/30/2010	1	0.641854	FALSE
LMW-8	6/30/2010	1	0.262364	FALSE
LMW-15R	11/16/2009	3	-0.0382908	FALSE
LMW-16	11/16/2009	1	-0.527633	FALSE
LMW-3	11/16/2009	1	0.0953102	FALSE
LMW-3S	11/16/2009	1	-0.198451	FALSE
LMW-14R	6/11/2009	1	-0.210721	FALSE
LMW-7	6/11/2009	1	1.38629	FALSE
MW-5	11/20/2008	1	2.30259	FALSE
LMW-13	11/20/2008	1	2.30259	FALSE
LMW-12	11/20/2008	1	2.30259	FALSE
LMW-11	11/20/2008	1	2.30259	FALSE

Concentrations (ppb)

Parameter: Dichlorodifluoromethane

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 206
Total Non-Detect: 190
Percent Non-Detects: 92.233%
Total Background Measurements: 17
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	17	15 (88.2353%)	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<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<0 J	ND<0 J
			11/20/2008	1	1
			11/16/2009	1.1	1.1
			6/30/2010	ND<0.25 U	ND<0.25 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-16	7	7 (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
			11/16/2009	ND<0.25 U	ND<0.25 U
			6/30/2010	ND<0.25 U	ND<0.25 U
LMW-3S	7	2 (28.5714%)	11/18/2006	12	12
			6/2/2007	ND<1	ND<1
			11/15/2007	2	2
			5/20/2008	ND<0 J	ND<0 J
			11/20/2008	2	2
			11/16/2009	2.2	2.2
			6/30/2010	4	4
LMW-6	17	16 (94.1176%)	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<0 J	ND<0 J	
			11/18/2006	2	2	
			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	
			11/16/2009	ND<0.25 U		ND<0.25 U
			6/30/2010	ND<0.25 U		ND<0.25 U
LMW-8	17	17 (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	
			11/16/2009	ND<0.25 U		ND<0.25 U
			6/30/2010	ND<0.25 U		ND<0.25 U
LMW-9	17	17 (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	
			11/16/2009	ND<0.25 U		ND<0.25 U
			6/30/2010	ND<0.25 U		ND<0.25 U
LMW-9D	7	7 (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	
			11/16/2009	ND<0.25 U		ND<0.25 U
			6/30/2010	ND<0.25 U		ND<0.25 U
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	
			6/30/2010	ND<0.25 U		ND<0.25 U
LMW-10	14	8 (57.1429%)	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	2	2	
			11/18/2006	9	9	
			6/2/2007	2	2	
			11/15/2007	ND<1	ND<1	
			5/20/2008	4	4	
			11/20/2008	2	2	
			11/16/2009	4.9	4.9	
			6/30/2010	ND<0.25 U	ND<0.25 U	
LMW-3	19	18 (94.7368%)	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	
			11/16/2009	0.41 J	0.41 J	
			6/30/2010	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	
			6/30/2010	ND<0.25 U	ND<0.25 U	
LMW-15R	12	12 (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	
			11/16/2009	ND<0.25 U	ND<0.25 U	
			11/16/2009	ND<0.25 U	ND<0.25 U	
			11/16/2009	ND<0.25 U	ND<0.25 U	
			6/30/2010	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-7	15	15 (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	
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	
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	3	3	
			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	

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Dichlorodifluoromethane

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 206

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0	-2.65209	7.03356	0
2	0	-2.36561	12.6297	0
3	0	-2.19728	17.4578	0
4	0	-2.07485	21.7627	0
5	0	-1.97737	25.6727	0
6	0	-1.91103	29.3248	0
7	0	-1.83843	32.7046	0
8	0	-1.77438	35.853	0
9	0	-1.71688	38.8007	0
10	0.125	-1.66456	41.5715	-0.20807
11	0.125	-1.61644	44.1843	-0.410125
12	0.125	-1.58047	46.6822	-0.607683
13	0.125	-1.5382	49.0483	-0.799958
14	0.125	-1.49852	51.2938	-0.987272
15	0.125	-1.46106	53.4285	-1.1699
16	0.125	-1.42554	55.4607	-1.3481
17	0.125	-1.39175	57.3976	-1.52207
18	0.125	-1.36581	59.2631	-1.69279
19	0.125	-1.33462	61.0443	-1.85962
20	0.125	-1.30469	62.7465	-2.02271
21	0.125	-1.27588	64.3743	-2.18219
22	0.125	-1.24809	65.9321	-2.3382
23	0.125	-1.22123	67.4235	-2.49085
24	0.125	-1.20036	68.8643	-2.6409
25	0.125	-1.17499	70.2449	-2.78777
26	0.125	-1.15035	71.5682	-2.93157
27	0.125	-1.12639	72.837	-3.07237
28	0.125	-1.10306	74.0537	-3.21025
29	0.41	-1.08032	75.2208	-3.65318
30	0.5	-1.06252	76.3498	-4.18444
31	0.5	-1.04073	77.4329	-4.70481
32	0.5	-1.01943	78.4721	-5.21452
33	0.5	-0.998575	79.4693	-5.71381
34	0.5	-0.97815	80.4261	-6.20288
35	0.5	-0.958125	81.3441	-6.68194
36	0.5	-0.942375	82.2321	-7.15313
37	0.5	-0.923014	83.0841	-7.61464
38	0.5	-0.903992	83.9013	-8.06664
39	0.5	-0.885291	84.685	-8.50928
40	0.5	-0.866894	85.4365	-8.94273
41	0.5	-0.848786	86.157	-9.36712
42	0.5	-0.834498	86.8534	-9.78437
43	0.5	-0.816874	87.5206	-10.1928
44	0.5	-0.7995	88.1598	-10.5926
45	0.5	-0.782366	88.7719	-10.9837
46	0.5	-0.765456	89.3579	-11.3665
47	0.5	-0.748762	89.9185	-11.7408
48	0.5	-0.735557	90.4595	-12.1086
49	0.5	-0.719228	90.9768	-12.4682

50	0.5	-0.703089	91.4712	-12.8198
51	0.5	-0.687131	91.9433	-13.1634
52	0.5	-0.671346	92.394	-13.499
53	0.5	-0.655726	92.824	-13.8269
54	0.5	-0.643345	93.2379	-14.1486
55	0.5	-0.628006	93.6323	-14.4626
56	0.5	-0.612813	94.0078	-14.769
57	0.5	-0.597761	94.3651	-15.0679
58	0.5	-0.582841	94.7048	-15.3593
59	0.5	-0.568052	95.0275	-15.6433
60	0.5	-0.556308	95.337	-15.9215
61	0.5	-0.541736	95.6305	-16.1923
62	0.5	-0.5272895.9085	-16.456	
63	0.5	-0.5129396.1716	-16.7124	
64	0.5	-0.498687	96.4203	-16.9618
65	0.5	-0.484544	96.6551	-17.204
66	0.5	-0.473299	96.8791	-17.4407
67	0.5	-0.459327	97.0901	-17.6704
68	0.5	-0.445443	97.2885	-17.8931
69	0.5	-0.431644	97.4748	-18.1089
70	0.5	-0.417928	97.6495	-18.3179
71	0.5	-0.4070197.8151	-18.5214	
72	0.5	-0.393433	97.9699	-18.7181
73	0.5	-0.379927	98.1143	-18.908
74	0.5	-0.3664998.2486	-19.0913	
75	0.5	-0.353118	98.3733	-19.2678
76	0.5	-0.3398198.4887	-19.4378	
77	0.5	-0.329206	98.5971	-19.6024
78	0.5	-0.316004	98.697	-19.7604
79	0.5	-0.302855	98.7887	-19.9118
80	0.5	-0.2897698.8727	-20.0567	
81	0.5	-0.276714	98.9492	-20.195
82	0.5	-0.263715	99.0188	-20.3269
83	0.5	-0.253347	99.083	-20.4536
84	0.5	-0.240426	99.1408	-20.5738
85	0.5	-0.227545	99.1925	-20.6875
86	0.5	-0.214702	99.2386	-20.7949
87	0.5	-0.201894	99.2794	-20.8958
88	0.5	-0.189118	99.3152	-20.9904
89	0.5	-0.1789299.3472	-21.0799	
90	0.5	-0.166199	99.3748	-21.163
91	0.5	-0.153505	99.3984	-21.2397
92	0.5	-0.140835	99.4182	-21.3101
93	0.5	-0.128189	99.4346	-21.3742
94	0.5	-0.115562	99.448	-21.432
95	0.5	-0.105474	99.4591	-21.4847
96	0.5	-0.0928787	99.4677	-21.5312
97	0.5	-0.0802981	99.4742	-21.5713
98	0.5	-0.0677301	99.4788	-21.6052
99	0.5	-0.0551734	99.4818	-21.6328
100	0.5	-0.0426257	99.4836	-21.6541
101	0.5	-0.0325917	99.4847	-21.6704
102	0.5	-0.0200544	99.4851	-21.6804
103	0.5	-0.00751925	99.4852	-21.6842
104	0.5	0.00751925	99.4852	-21.6804
105	0.5	0.0200544	99.4856	-21.6704
106	0.5	0.0325917	99.4867	-21.6541
107	0.5	0.0426257	99.4885	-21.6328
108	0.5	0.0551734	99.4915	-21.6052
109	0.5	0.0677301	99.4961	-21.5713
110	0.5	0.0802981	99.5026	-21.5312
111	0.5	0.0928787	99.5112	-21.4847

112	0.5	0.105474	99.5223	-21.432
113	0.5	0.115562	99.5357	-21.3742
114	0.5	0.128189	99.5521	-21.3101
115	0.5	0.140835	99.5719	-21.2397
116	0.5	0.153505	99.5955	-21.163
117	0.5	0.166199	99.6231	-21.0799
118	0.5	0.17892	99.6551	-20.9904
119	0.5	0.189118	99.6909	-20.8958
120	0.5	0.201894	99.7317	-20.7949
121	0.5	0.214702	99.7778	-20.6875
122	0.5	0.227545	99.8295	-20.5738
123	0.5	0.240426	99.8873	-20.4536
124	0.5	0.253347	99.9515	-20.3269
125	0.5	0.263715	100.021	-20.195
126	0.5	0.276714	100.098	-20.0567
127	0.5	0.28976	100.182	-19.9118
128	0.5	0.302855	100.273	-19.7604
129	0.5	0.316004	100.373	-19.6024
130	0.5	0.329206	100.482	-19.4378
131	0.5	0.33981	100.597	-19.2678
132	0.5	0.353118	100.722	-19.0913
133	0.5	0.36649	100.856	-18.908
134	0.5	0.379927	101	-18.7181
135	0.5	0.393433	101.155	-18.5214
136	0.5	0.40701	101.321	-18.3179
137	0.5	0.417928	101.495	-18.1089
138	0.5	0.431644	101.682	-17.8931
139	0.5	0.445443	101.88	-17.6704
140	0.5	0.459327	102.091	-17.4407
141	0.5	0.473299	102.315	-17.204
142	0.5	0.484544	102.55	-16.9618
143	0.5	0.498687	102.799	-16.7124
144	0.5	0.51293	103.062	-16.456
145	0.5	0.52728	103.34	-16.1923
146	0.5	0.541736	103.633	-15.9215
147	0.5	0.556308	103.943	-15.6433
148	0.5	0.568052	104.265	-15.3593
149	0.5	0.582841	104.605	-15.0679
150	0.5	0.597761	104.962	-14.769
151	0.5	0.612813	105.338	-14.4626
152	0.5	0.628006	105.732	-14.1486
153	0.5	0.643345	106.146	-13.8269
154	0.5	0.655726	106.576	-13.499
155	0.5	0.671346	107.027	-13.1634
156	0.5	0.687131	107.499	-12.8198
157	0.5	0.703089	107.993	-12.4682
158	0.5	0.719228	108.511	-12.1086
159	0.5	0.735557	109.052	-11.7408
160	0.5	0.748762	109.612	-11.3665
161	0.5	0.765456	110.198	-10.9837
162	0.5	0.782366	110.81	-10.5926
163	0.5	0.7995	111.45	-10.1928
164	0.5	0.816874	112.117	-9.78437
165	0.5	0.834498	112.813	-9.36712
166	0.5	0.848786	113.534	-8.94273
167	0.5	0.866894	114.285	-8.50928
168	0.5	0.885291	115.069	-8.06664
169	0.5	0.903992	115.886	-7.61464
170	0.5	0.923014	116.738	-7.15313
171	0.5	0.942375	117.626	-6.68194
172	0.5	0.958125	118.544	-6.20288
173	0.5	0.97815	119.501	-5.71381

174	0.5	0.998575	120.498	-5.21452
175	0.5	1.01943	121.537	-4.70481
176	0.5	1.04073	122.621	-4.18444
177	0.5	1.06252	123.749	-3.65318
178	0.5	1.08032	124.917	-3.11302
179	0.5	1.10306	126.133	-2.56149
180	0.5	1.12639	127.402	-1.99829
181	0.5	1.15035	128.725	-1.42312
182	0.5	1.17499	130.106	-0.835624
183	0.5	1.20036	131.547	-0.235444
184	0.5	1.22123	133.038	0.37517
185	0.5	1.24809	134.596	0.999213
186	0.5	1.27588	136.224	1.63715
187	0.5	1.30469	137.926	2.28949
188	0.5	1.33462	139.707	2.95681
189	0.5	1.36581	141.573	3.63971
190	0.5	1.39175	143.51	4.33558
191	0.5	1.42554	145.542	5.04835
192	1	1.46106	147.676	6.50941
193	1.1	1.49852	149.922	8.15778
194	2	1.5382	152.288	11.2342
195	2	1.58047	154.786	14.3951
196	2	1.61644	157.399	17.628
197	2	1.66456	160.17	20.9571
198	2	1.71688	163.117	24.3909
199	2	1.77438	166.266	27.9396
200	2.2	1.83843	169.646	31.9842
201	3	1.91103	173.298	37.7173
202	4	1.97737	177.208	45.6267
203	4	2.07485	181.513	53.9261
204	4.9	2.19728	186.341	64.6928
205	9	2.36561	191.937	85.9833
206	12	2.65209	198.97	117.808

Data Set Standard Deviation = 1.14962
Numerator = 13878.8
Denominator = 53907.7
W Statistic = 0.257455 = 13878.8 / 53907.7

5% Critical value of 0.976 exceeds 0.257455
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.257455
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Dichlorodifluoromethane

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 206

i	x(i)	m(i)	sum(m^2)	sum(mx)	
1	-2.07944	-2.65209	7.03356	5.51486	
2	-2.07944	-2.36561	12.6297	10.434	
3	-2.07944	-2.19728	17.4578	15.0031	
4	-2.07944	-2.07485	21.7627	19.3177	
5	-2.07944	-1.97737	25.6727	23.4295	
6	-2.07944	-1.91103	29.3248	27.4034	
7	-2.07944	-1.83843	32.7046	31.2263	
8	-2.07944	-1.77438	35.853	34.916	
9	-2.07944	-1.71688	38.8007	38.4861	
10	-2.07944	-1.66456	41.5715	41.9475	
11	-2.07944	-1.61644	44.1843	45.3088	
12	-2.07944	-1.58047	46.6822	48.5953	
13	-2.07944	-1.5382	49.0483	51.7939	
14	-2.07944	-1.49852	51.2938	54.9099	
15	-2.07944	-1.46106	53.4285	57.9481	
16	-2.07944	-1.42554	55.4607	60.9125	
17	-2.07944	-1.39175	57.3976	63.8065	
18	-2.07944	-1.36581	59.2631	66.6466	
19	-2.07944	-1.33462	61.0443	69.4219	
20	-0.891598	-1.30469	62.7465	70.5852	
21	-0.693147	-1.27588	64.3743	71.4695	
22	-0.693147	-1.24809	65.9321	72.3346	
23	-0.693147	-1.22123	67.4235	73.1811	
24	-0.693147	-1.20036	68.8643	74.0132	
25	-0.693147	-1.17499	70.2449	74.8276	
26	-0.693147	-1.15035	71.5682	75.625	
27	-0.693147	-1.12639	72.837	76.4057	
28	-0.693147	-1.10306	74.0537	77.1703	
29	-0.693147	-1.08032	75.2208	77.9191	
30	-0.693147	-1.06252	76.3498	78.6556	
31	-0.693147	-1.04073	77.4329	79.377	
32	-0.693147	-1.01943	78.4721	80.0836	
33	-0.693147	-0.998575		79.4693	80.7758
34	-0.693147	-0.97815	80.4261	81.4538	
35	-0.693147	-0.958125		81.3441	82.1179
36	-0.693147	-0.942375		82.2321	82.7711
37	-0.693147	-0.923014		83.0841	83.4109
38	-0.693147	-0.903992		83.9013	84.0375
39	-0.693147	-0.885291		84.685	84.6511
40	-0.693147	-0.866894		85.4365	85.252
41	-0.693147	-0.848786		86.157	85.8403
42	-0.693147	-0.834498		86.8534	86.4187
43	-0.693147	-0.816874		87.5206	86.985
44	-0.693147	-0.7995	88.1598	87.5391	
45	-0.693147	-0.782366		88.7719	88.0814
46	-0.693147	-0.765456		89.3579	88.612
47	-0.693147	-0.748762		89.9185	89.131
48	-0.693147	-0.735557		90.4595	89.6409
49	-0.693147	-0.719228		90.9768	90.1394

50	-0.693147	-0.703089	91.4712	90.6267
51	-0.693147	-0.687131	91.9433	91.103
52	-0.693147	-0.671346	92.394	91.5684
53	-0.693147	-0.655726	92.824	92.0229
54	-0.693147	-0.643345	93.2379	92.4688
55	-0.693147	-0.628006	93.6323	92.9041
56	-0.693147	-0.612813	94.0078	93.3289
57	-0.693147	-0.597761	94.3651	93.7432
58	-0.693147	-0.582841	94.7048	94.1472
59	-0.693147	-0.568052	95.0275	94.5409
60	-0.693147	-0.556308	95.337	94.9266
61	-0.693147	-0.541736	95.6305	95.3021
62	-0.693147	-0.5272895.9085	95.6675	
63	-0.693147	-0.5129396.1716	96.0231	
64	-0.693147	-0.498687	96.4203	96.3687
65	-0.693147	-0.484544	96.6551	96.7046
66	-0.693147	-0.473299	96.8791	97.0327
67	-0.693147	-0.459327	97.0901	97.351
68	-0.693147	-0.445443	97.2885	97.6598
69	-0.693147	-0.431644	97.4748	97.959
70	-0.693147	-0.417928	97.6495	98.2487
71	-0.693147	-0.4070197.8151	98.5308	
72	-0.693147	-0.393433	97.9699	98.8035
73	-0.693147	-0.379927	98.1143	99.0668
74	-0.693147	-0.3664998.2486	99.3209	
75	-0.693147	-0.353118	98.3733	99.5656
76	-0.693147	-0.3398198.4887	99.8012	
77	-0.693147	-0.329206	98.5971	100.029
78	-0.693147	-0.316004	98.697	100.248
79	-0.693147	-0.302855	98.7887	100.458
80	-0.693147	-0.2897698.8727	100.659	
81	-0.693147	-0.276714	98.9492	100.851
82	-0.693147	-0.263715	99.0188	101.034
83	-0.693147	-0.253347	99.083	101.209
84	-0.693147	-0.240426	99.1408	101.376
85	-0.693147	-0.227545	99.1925	101.534
86	-0.693147	-0.214702	99.2386	101.683
87	-0.693147	-0.201894	99.2794	101.823
88	-0.693147	-0.189118	99.3152	101.954
89	-0.693147	-0.1789299.3472	102.078	
90	-0.693147	-0.166199	99.3748	102.193
91	-0.693147	-0.153505	99.3984	102.299
92	-0.693147	-0.140835	99.4182	102.397
93	-0.693147	-0.128189	99.4346	102.486
94	-0.693147	-0.115562	99.448	102.566
95	-0.693147	-0.105474	99.4591	102.639
96	-0.693147	-0.0928787	99.4677	102.703
97	-0.693147	-0.0802981	99.4742	102.759
98	-0.693147	-0.0677301	99.4788	102.806
99	-0.693147	-0.0551734	99.4818	102.844
100	-0.693147	-0.0426257	99.4836	102.874
101	-0.693147	-0.0325917	99.4847	102.896
102	-0.693147	-0.0200544	99.4851	102.91
103	-0.693147	-0.00751925	99.4852	102.915
104	-0.693147	0.00751925	99.4852	102.91
105	-0.693147	0.0200544	99.4856	102.896
106	-0.693147	0.0325917	99.4867	102.874
107	-0.693147	0.0426257	99.4885	102.844
108	-0.693147	0.0551734	99.4915	102.806
109	-0.693147	0.0677301	99.4961	102.759
110	-0.693147	0.0802981	99.5026	102.703
111	-0.693147	0.0928787	99.5112	102.639

112	-0.693147	0.105474	99.5223	102.566
113	-0.693147	0.115562	99.5357	102.486
114	-0.693147	0.128189	99.5521	102.397
115	-0.693147	0.140835	99.5719	102.299
116	-0.693147	0.153505	99.5955	102.193
117	-0.693147	0.166199	99.6231	102.078
118	-0.693147	0.17892	99.6551	101.954
119	-0.693147	0.189118	99.6909	101.823
120	-0.693147	0.201894	99.7317	101.683
121	-0.693147	0.214702	99.7778	101.534
122	-0.693147	0.227545	99.8295	101.376
123	-0.693147	0.240426	99.8873	101.209
124	-0.693147	0.253347	99.9515	101.034
125	-0.693147	0.263715	100.021	100.851
126	-0.693147	0.276714	100.098	100.659
127	-0.693147	0.28976	100.182	100.458
128	-0.693147	0.302855	100.273	100.248
129	-0.693147	0.316004	100.373	100.029
130	-0.693147	0.329206	100.482	99.8012
131	-0.693147	0.33981	100.597	99.5656
132	-0.693147	0.353118	100.722	99.3209
133	-0.693147	0.36649	100.856	99.0668
134	-0.693147	0.379927	101	98.8035
135	-0.693147	0.393433	101.155	98.5308
136	-0.693147	0.40701	101.321	98.2487
137	-0.693147	0.417928	101.495	97.959
138	-0.693147	0.431644	101.682	97.6598
139	-0.693147	0.445443	101.88	97.351
140	-0.693147	0.459327	102.091	97.0327
141	-0.693147	0.473299	102.315	96.7046
142	-0.693147	0.484544	102.55	96.3687
143	-0.693147	0.498687	102.799	96.0231
144	-0.693147	0.51293	103.062	95.6675
145	-0.693147	0.52728	103.34	95.3021
146	-0.693147	0.541736	103.633	94.9266
147	-0.693147	0.556308	103.943	94.5409
148	-0.693147	0.568052	104.265	94.1472
149	-0.693147	0.582841	104.605	93.7432
150	-0.693147	0.597761	104.962	93.3289
151	-0.693147	0.612813	105.338	92.9041
152	-0.693147	0.628006	105.732	92.4688
153	-0.693147	0.643345	106.146	92.0229
154	-0.693147	0.655726	106.576	91.5684
155	-0.693147	0.671346	107.027	91.103
156	-0.693147	0.687131	107.499	90.6267
157	-0.693147	0.703089	107.993	90.1394
158	-0.693147	0.719228	108.511	89.6409
159	-0.693147	0.735557	109.052	89.131
160	-0.693147	0.748762	109.612	88.612
161	-0.693147	0.765456	110.198	88.0814
162	-0.693147	0.782366	110.81	87.5391
163	-0.693147	0.7995	111.45	86.985
164	-0.693147	0.816874	112.117	86.4187
165	-0.693147	0.834498	112.813	85.8403
166	-0.693147	0.848786	113.534	85.252
167	-0.693147	0.866894	114.285	84.6511
168	-0.693147	0.885291	115.069	84.0375
169	-0.693147	0.903992	115.886	83.4109
170	-0.693147	0.923014	116.738	82.7711
171	-0.693147	0.942375	117.626	82.1179
172	-0.693147	0.958125	118.544	81.4538
173	-0.693147	0.97815	119.501	80.7758

174	-0.693147		0.998575	120.498	80.0836
175	-0.693147		1.01943	121.537	79.377
176	-0.693147		1.04073	122.621	78.6556
177	-0.693147		1.06252	123.749	77.9191
178	-0.693147		1.08032	124.917	77.1703
179	-0.693147		1.10306	126.133	76.4057
180	-0.693147		1.12639	127.402	75.625
181	-0.693147		1.15035	128.725	74.8276
182	-0.693147		1.17499	130.106	74.0132
183	0	1.20036	131.547	74.0132	
184	0	1.22123	133.038	74.0132	
185	0	1.24809	134.596	74.0132	
186	0	1.27588	136.224	74.0132	
187	0	1.30469	137.926	74.0132	
188	0	1.33462	139.707	74.0132	
189	0	1.36581	141.573	74.0132	
190	0	1.39175	143.51	74.0132	
191	0	1.42554	145.542	74.0132	
192	0	1.46106	147.676	74.0132	
193	0.0953102		1.49852	149.922	74.156
194	0.693147		1.5382	152.288	75.2222
195	0.693147		1.58047	154.786	76.3177
196	0.693147		1.61644	157.399	77.4381
197	0.693147		1.66456	160.17	78.5919
198	0.693147		1.71688	163.117	79.7819
199	0.693147		1.77438	166.266	81.0118
200	0.788457		1.83843	169.646	82.4614
201	1.09861	1.91103	173.298	84.5608	
202	1.38629	1.97737	177.208	87.3021	
203	1.38629	2.07485	181.513	90.1784	
204	1.58924	2.19728	186.341	93.6704	
205	2.19722	2.36561	191.937	98.8682	
206	2.48491	2.65209	198.97	105.458	

Data Set Standard Deviation = 0.666599
Numerator = 11121.5
Denominator = 18124.7
W Statistic = 0.613607 = 11121.5 / 18124.7

5% Critical value of 0.976 exceeds 0.613607
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.613607
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Dichlorodifluoromethane

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 92.233%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 17
Maximum Background Concentration = 0.0953102
Confidence Level = 68%
False Positive Rate = 32%

Location	Date	Samples	Mean	Significant
LMW-16	6/30/2010	1	-2.07944	FALSE
LMW-3S	6/30/2010	1	1.38629	TRUE
LMW-6	6/30/2010	1	-2.07944	FALSE
LMW-8	6/30/2010	1	-2.07944	FALSE
LMW-9	6/30/2010	1	-2.07944	FALSE
LMW-9D	6/30/2010	1	-2.07944	FALSE
LMW-9S	6/30/2010	1	-2.07944	FALSE
LMW-10	6/30/2010	1	-2.07944	FALSE
LMW-3	6/30/2010	1	-2.07944	FALSE
LMW-14R	6/30/2010	1	-2.07944	FALSE
LMW-15R	6/30/2010	1	-2.07944	FALSE
LMW-13	11/20/2008	1	-0.693147	FALSE
LMW-7	11/20/2008	1	-0.693147	FALSE
LMW-11	11/20/2008	1	-0.693147	FALSE
MW-5	11/20/2008	1	-0.693147	FALSE
LMW-12	11/20/2008	1	-0.693147	FALSE

Mann-Kendall Trend Analysis

Parameter: Dichlorodifluoromethane

Location: LMW-3S

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives	
ND<-0.693147	2.48491	-3.178050	1		
0.693147	2.48491	-1.791760	2		
ND<0 J 2.48491		-2.484910	3		
0.693147	2.48491	-1.791760	4		
0.788457	2.48491	-1.696450	5		
1.38629	2.48491	-1.098610	6		
0.693147	ND<-0.693147	1.38629 1	6		
ND<0 J ND<-0.693147		0.693147	2	6	
0.693147	ND<-0.693147	1.38629 3	6		
0.788457	ND<-0.693147	1.4816 4	6		
1.38629	ND<-0.693147	2.07944 5	6		
ND<0 J 0.693147		-0.693147	5	7	
0.693147	0.693147	0 5	7		
0.788457	0.693147	0.0953102	6	7	
1.38629	0.693147	0.693147	7	7	
0.693147	ND<0 J 0.693147	8	7		
0.788457	ND<0 J 0.788457	9	7		
1.38629	ND<0 J 1.38629 10	7			
0.788457	0.693147	0.0953102	11	7	
1.38629	0.693147	0.693147	12	7	
1.38629	0.788457	0.597837	13	7	

S Statistic = 13 - 7 = 6
Comparing at 1.0 - (0.05 / 2) = 97.5% confidence level (two-tailed)
Failed to calculate probability for S = 6
Table out of range

Concentrations (ppb)

Parameter: Iron

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 12
Total Non-Detect: 0
Percent Non-Detects: 0%
Total Background Measurements: 1
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	1	0 (0%)	6/30/2010	130	130

There are 11 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-14R	1	0 (0%)	6/30/2010	43 J	43 J
LMW-10	1	0 (0%)	6/30/2010	41 J	41 J
LMW-15R	1	0 (0%)	6/30/2010	110	110
LMW-16	1	0 (0%)	6/30/2010	150	150
LMW-3	1	0 (0%)	6/30/2010	53	53
LMW-6	1	0 (0%)	6/30/2010	52	52
LMW-9S	1	0 (0%)	6/30/2010	360	360
LMW-9D	1	0 (0%)	6/30/2010	150	150
LMW-9	1	0 (0%)	6/30/2010	200	200
LMW-8	1	0 (0%)	6/30/2010	9400	9400
LMW-3S	1	0 (0%)	6/30/2010	41 J	41 J

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Wilks Test of Normality

Parameter: Iron

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
K = 6 for 12 measurements

i	x(i)	x(n-i+1)		x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	41	9400	9359	0.5475	5124.05	
2	41	360	319	0.3325	106.068	
3	43	200	157	0.2347	36.8479	
4	52	150	98	0.1586	15.5428	
5	53	150	97	0.0922	8.9434	
6	110	130	20	0.0303	0.606	
7	130	110	-20			
8	150	53	-97			
9	150	52	-98			
10	200	43	-157			
11	360	41	-319			
12	9400	41	-9359			

Sum of b values = 5292.06
Sample Standard Deviation = 2680.23
W Statistic = 0.354416

5% Critical value of 0.859 exceeds 0.354416
Evidence of non-normality at 95% level of significance

1% Critical value of 0.805 exceeds 0.354416
Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Iron

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
K = 6 for 12 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	3.71357	9.14846	5.43489	0.5475	2.9756
2	3.71357	5.8861	2.17253	0.3325	0.722367
3	3.7612	5.29832	1.53712	0.2347	0.360761
4	3.95124	5.01064	1.05939	0.1586	0.16802
5	3.97029	5.01064	1.04034	0.0922	0.0959197
6	4.70048	4.86753	0.167054	0.0303	0.00506174
7	4.86753	4.70048	-0.167054		
8	5.01064	3.97029	-1.04034		
9	5.01064	3.95124	-1.05939		
10	5.29832	3.7612	-1.53712		
11	5.8861	3.71357	-2.17253		
12	9.14846	3.71357	-5.43489		

Sum of b values = 4.32773
Sample Standard Deviation = 1.51111
W Statistic = 0.745653

5% Critical value of 0.859 exceeds 0.745653
Evidence of non-normality at 95% level of significance

1% Critical value of 0.805 exceeds 0.745653
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Iron

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	6/30/2010	4.86753	7

Rank Sum = 7
Rank Mean = 7

Background Rank Sum = 7
Background Rank Mean = 7

Compliance Wells

Well ID	Date	Result	Rank
LMW-14R	6/30/2010	3.7612 J	3

Rank Sum = 3
Rank Mean = 3

LMW-10	6/30/2010	3.71357 J	1

Rank Sum = 1
Rank Mean = 1

LMW-15R	6/30/2010	4.70048	6

Rank Sum = 6
Rank Mean = 6

LMW-16	6/30/2010	5.01064	8

Rank Sum = 8
Rank Mean = 8

LMW-3	6/30/2010	3.97029	5

Rank Sum = 5
Rank Mean = 5

LMW-6	6/30/2010	3.95124	4

Rank Sum = 4
Rank Mean = 4

LMW-9S	6/30/2010	5.8861	11

Rank Sum = 11
Rank Mean = 11

LMW-9D	6/30/2010	5.01064	9

Rank Sum = 9
Rank Mean = 9

LMW-9	6/30/2010	5.29832	10

Rank Sum = 10
Rank Mean = 10

LMW-8	6/30/2010	9.14846	12

Rank Sum = 12
Rank Mean = 12

LMW-3S	6/30/2010	3.71357 J	2

Rank Sum = 2
Rank Mean = 2

Calculation Results:

Kruskal-Wallis H Statistic = 11
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 11
95% Confidence comparison value is 19.6752 at 11 degrees of freedom
11 < 19.6752 indicating no significant group difference at 5% significance level
11 < 19.6752 indicating no significant group difference at 5% significance level when adjusted for ties

Concentrations (ppb)

Parameter: Lead

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 219
Total Non-Detect: 151
Percent Non-Detects: 68.9498%
Total Background Measurements: 18
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	18	11 (61.1111%)	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
			11/16/2009	0.3 J	0.3 J
			6/30/2010	0.19 J	0.19 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-8	18	17 (94.4444%)	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
			11/16/2009	ND<0.08 U	ND<0.08 U
			6/30/2010	ND<0.08 U	ND<0.08 U
LMW-9S	7	4 (57.1429%)	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
			6/30/2010	0.11 J	0.11 J	
LMW-9	18	12 (66.6667%)	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	
			11/16/2009	ND<0.08 U		ND<0.08 U
			6/30/2010	0.16 J	0.16 J	
LMW-6	18	15 (83.3333%)	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	0.08 J	0.08 J	
			11/16/2009	ND<0.08 U		ND<0.08 U
			6/30/2010	0.14 J	0.14 J	
LMW-3S	8	4 (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	
			11/16/2009	ND<0.08 U		ND<0.08 U
			6/30/2010	0.09 J	0.09 J	
LMW-3	20	15 (75%)	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
		11/16/2009	0.37	0.37	
		6/30/2010	0.17 J	0.17 J	
LMW-16	8	4 (50%) 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
		11/16/2009	0.09 J	0.09 J	
		6/30/2010	0.26 J	0.26 J	
LMW-15R	13	8 (61.5385%)	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	
		11/16/2009	0.21 J	0.21 J	
		11/16/2009	0.14 J	0.14 J	
		11/16/2009	ND<0.08 U		ND<0.08 U
		6/30/2010	0.08 J	0.08 J	
LMW-10	15	11 (73.3333%)	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
		11/16/2009	ND<0.08 U		ND<0.08 U
		6/30/2010	0.11 J	0.11 J	
LMW-9D	8	2 (25%) 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	
		11/16/2009	0.31	0.31	
		6/30/2010	0.23 J	0.23 J	
LMW-14R	6	3 (50%) 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	
			6/30/2010	0.1 J	0.1 J	
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-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	
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

There are 0 unused locations

Loc.	Meas. ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Lead

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0	-2.65209	7.03356	0
2	0	-2.36561	12.6297	0
3	0	-2.22621	17.5857	0
4	0	-2.09693	21.9828	0
5	0	-2.01409	26.0394	0
6	0	-1.92684	29.7521	0
7	0	-1.86629	33.2351	0
8	0	-1.79912	36.472	0
9	0	-1.75069	39.5369	0
10	0	-1.6954	42.4112	0
11	0	-1.64485	45.1168	0
12	0.04	-1.60725	47.7	-0.06429
13	0.04	-1.56322	50.1437	-0.126819
14	0.04	-1.53007	52.4848	-0.188021
15	0.04	-1.49085	54.7074	-0.247656
16	0.04	-1.46106	56.8421	-0.306098
17	0.04	-1.42554	58.8743	-0.36312
18	0.04	-1.39838	60.8297	-0.419055
19	0.04	-1.36581	62.6952	-0.473687
20	0.04	-1.34075	64.4928	-0.527317
21	0.04	-1.31058	66.2104	-0.57974
22	0.04	-1.28155	67.8528	-0.631002
23	0.04	-1.25908	69.4381	-0.681366
24	0.08	-1.23187	70.9556	-0.779915
25	0.08	-1.21073	72.4214	-0.876773
26	0.09	-1.18504	73.8258	-0.983427
27	0.09	-1.16505	75.1831	-1.08828
28	0.1	-1.14069	76.4843	-1.20235
29	0.11	-1.12168	77.7424	-1.32573
30	0.11	-1.09847	78.9491	-1.44657
31	0.13	-1.08032	80.1162	-1.58701
32	0.14	-1.05812	81.2358	-1.73515
33	0.14	-1.03643	82.31	-1.88025
34	0.16	-1.01943	83.3492	-2.04335
35	0.17	-0.998575	84.3464	-2.21311
36	0.17	-0.982202	85.3111	-2.38009
37	0.19	-0.9621	86.2367	-2.56289
38	0.21	-0.946291	87.1322	-2.76161
39	0.22	-0.926859	87.9912	-2.96552
40	0.23	-0.911562	88.8222	-3.17517
41	0.26	-0.892733	89.6192	-3.40728
42	0.3	-0.877897	90.3899	-3.67065
43	0.31	-0.859618	91.1288	-3.93714
44	0.37	-0.841621	91.8371	-4.24854
45	0.5	-0.827417	92.5218	-4.66224
46	0.5	-0.809896	93.1777	-5.06719
47	0.5	-0.796056	93.8114	-5.46522
48	0.5	-0.778966	94.4182	-5.8547
49	0.5	-0.765456	95.0041	-6.23743

50	0.5	-0.748762	95.5647	-6.61181
51	0.5	-0.735557	96.1058	-6.97959
52	0.5	-0.719228	96.6231	-7.3392
53	0.5	-0.706302	97.1219	-7.69236
54	0.5	-0.690309	97.5985	-8.03751
55	0.5	-0.674499	8.0534	-8.37476
56	0.5	-0.661955	98.4916	-8.70573
57	0.5	-0.646431	98.9095	-9.02895
58	0.5	-0.634124	99.3116	-9.34601
59	0.5	-0.618872	99.6946	-9.65545
60	0.5	-0.606775	100.063	-9.95883
61	0.5	-0.591776	100.413	-10.2547
62	0.5	-0.579873	100.749	-10.5447
63	0.5	-0.565108	101.069	-10.8272
64	0.5	-0.553384	101.375	-11.1039
65	0.5	-0.538836	101.665	-11.3733
66	0.5	-0.524401	101.94	-11.6355
67	0.5	-0.51293	102.203	-11.892
68	0.5	-0.498687	102.452	-12.1413
69	0.5	-0.487364	102.689	-12.385
70	0.5	-0.473299	102.913	-12.6217
71	0.5	-0.462114	103.127	-12.8527
72	0.5	-0.448213	103.328	-13.0768
73	0.5	-0.437153	103.519	-13.2954
74	0.5	-0.423405	103.698	-13.5071
75	0.5	-0.412463	103.868	-13.7133
76	0.5	-0.398855	104.027	-13.9128
77	0.5	-0.385321	104.176	-14.1054
78	0.5	-0.374544	104.316	-14.2927
79	0.5	-0.361133	104.447	-14.4733
80	0.5	-0.350451	104.569	-14.6485
81	0.5	-0.337155	104.683	-14.8171
82	0.5	-0.326561	104.79	-14.9803
83	0.5	-0.31337	104.888	-15.137
84	0.5	-0.302855	104.98	-15.2885
85	0.5	-0.28976	105.064	-15.4333
86	0.5	-0.279319	105.142	-15.573
87	0.5	-0.266311	105.213	-15.7062
88	0.5	-0.253347	105.277	-15.8328
89	0.5	-0.243007	105.336	-15.9543
90	0.5	-0.230118	105.389	-16.0694
91	0.5	-0.219834	105.437	-16.1793
92	0.5	-0.207012	105.48	-16.2828
93	0.5	-0.196779	105.519	-16.3812
94	0.5	-0.184017	105.553	-16.4732
95	0.5	-0.173829	105.583	-16.5601
96	0.5	-0.161119	105.609	-16.6407
97	0.5	-0.150969	105.632	-16.7162
98	0.5	-0.138305	105.651	-16.7853
99	0.5	-0.125661	105.666	-16.8482
100	0.5	-0.115562	105.68	-16.9059
101	0.5	-0.102953	105.69	-16.9574
102	0.5	-0.0928787	105.699	-17.0039
103	0.5	-0.0802981	105.705	-17.044
104	0.5	-0.0702426	105.71	-17.0791
105	0.5	-0.0576847	105.714	-17.108
106	0.5	-0.0476439	105.716	-17.1318
107	0.5	-0.0350997	105.717	-17.1493
108	0.5	-0.0250691	105.718	-17.1619
109	0.5	-0.0125328	105.718	-17.1681
110	0.5	0	105.718	-17.1681
111	0.5	0.0125328	105.718	-17.1619

112	0.5	0.0250691	105.719	-17.1493
113	0.5	0.0350997	105.72	-17.1318
114	0.5	0.0476439	105.722	-17.108
115	0.5	0.0576847	105.726	-17.0791
116	0.5	0.0702426	105.731	-17.044
117	0.5	0.0802981	105.737	-17.0039
118	0.5	0.0928787	105.746	-16.9574
119	0.5	0.102953	105.756	-16.9059
120	0.5	0.115562	105.77	-16.8482
121	0.5	0.125661	105.785	-16.7853
122	0.5	0.138305	105.805	-16.7162
123	0.5	0.150969	105.827	-16.6407
124	0.5	0.161119	105.853	-16.5601
125	0.5	0.173829	105.883	-16.4732
126	0.5	0.184017	105.917	-16.3812
127	0.5	0.196779	105.956	-16.2828
128	0.5	0.207012	105.999	-16.1793
129	0.5	0.219834	106.047	-16.0694
130	0.5	0.230118	106.1	-15.9543
131	0.5	0.243007	106.159	-15.8328
132	0.5	0.253347	106.223	-15.7062
133	0.5	0.266311	106.294	-15.573
134	0.5	0.279319	106.372	-15.4333
135	0.5	0.28976	106.456	-15.2885
136	0.5	0.302855	106.548	-15.137
137	0.5	0.31337	106.646	-14.9803
138	0.5	0.326561	106.753	-14.8171
139	0.5	0.337155	106.867	-14.6485
140	0.5	0.350451	106.989	-14.4733
141	0.5	0.361133	107.12	-14.2927
142	0.5	0.374544	107.26	-14.1054
143	0.5	0.385321	107.409	-13.9128
144	0.5	0.398855	107.568	-13.7133
145	0.5	0.412463	107.738	-13.5071
146	0.5	0.423405	107.917	-13.2954
147	0.5	0.437153	108.108	-13.0768
148	0.5	0.448213	108.309	-12.8527
149	0.5	0.462114	108.523	-12.6217
150	0.5	0.473299	108.747	-12.385
151	0.5	0.487364	108.984	-12.1413
152	0.5	0.498687	109.233	-11.892
153	0.5	0.51293	109.496	-11.6355
154	0.5	0.524401	109.771	-11.3733
155	0.5	0.538836	110.061	-11.1039
156	0.5	0.553384	110.368	-10.8272
157	0.5	0.565108	110.687	-10.5447
158	0.5	0.579873	111.023	-10.2547
159	0.5	0.591776	111.373	-9.95883
160	0.5	0.606775	111.741	-9.65545
161	0.5	0.618872	112.124	-9.34601
162	0.5	0.634124	112.527	-9.02895
163	0.5	0.646431	112.944	-8.70573
164	0.5	0.661955	113.383	-8.37476
165	0.5	0.67449	113.838	-8.03751
166	0.5	0.690309	114.314	-7.69236
167	0.5	0.706302	114.813	-7.3392
168	0.5	0.719228	115.33	-6.97959
169	0.5	0.735557	115.871	-6.61181
170	0.5	0.748762	116.432	-6.23743
171	0.5	0.765456	117.018	-5.8547
172	0.5	0.778966	117.625	-5.46522
173	0.58	0.796056	118.258	-5.00351

174	0.71	0.809896		118.914	-4.42848
175	0.88	0.827417		119.599	-3.70035
176	0.89	0.841621		120.307	-2.95131
177	1	0.859618		121.046	-2.09169
178	1	0.877897		121.817	-1.2138
179	1	0.892733		122.614	-0.321064
180	1	0.911562		123.445	0.590498
181	1	0.926859		124.304	1.51736
182	1	0.946291		125.199	2.46365
183	1	0.9621	126.125	3.42575	
184	2	0.982202		127.09	5.39015
185	2	0.998575		128.087	7.3873
186	3	1.01943	129.126	10.4456	
187	3	1.03643	130.2	13.5549	
188	3	1.05812	131.32	16.7292	
189	3	1.08032	132.487	19.9702	
190	3	1.09847	133.694	23.2656	
191	3	1.12168	134.952	26.6307	
192	3	1.14069	136.253	30.0527	
193	3	1.16505	137.61	33.5479	
194	3	1.18504	139.015	37.103	
195	4	1.21073	140.48	41.9459	
196	4	1.23187	141.998	46.8734	
197	5	1.25908	143.583	53.1688	
198	8	1.28155	145.226	63.4212	
199	9	1.31058	146.943	75.2164	
200	11	1.34075	148.741	89.9647	
201	13	1.36581	150.606	107.72	
202	14	1.39838	152.562	127.297	
203	16	1.42554	154.594	150.106	
204	16	1.46106	156.729	173.483	
205	17	1.49085	158.951	198.828	
206	18	1.53007	161.292	226.369	
207	18	1.56322	163.736	254.507	
208	19	1.60725	166.319	285.044	
209	21	1.64485	169.025	319.586	
210	22	1.6954	171.899	356.885	
211	25	1.75069	174.964	400.652	
212	27	1.79912	178.201	449.228	
213	35	1.86629	181.684	514.549	
214	44	1.92684	185.397	599.33	
215	46	2.01409	189.453	691.978	
216	49	2.09693	193.85	794.727	
217	50	2.22621	198.806	906.038	
218	52	2.36561	204.403	1029.05	
219	130	2.65209	211.436	1373.82	

Data Set Standard Deviation = 12.096
Numerator = 1.88738e+006
Denominator = 6.74405e+006
W Statistic = 0.279859 = 1.88738e+006 / 6.74405e+006

5% Critical value of 0.976 exceeds 0.279859
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.279859
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Lead

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-3.21888	-2.65209	7.03356	8.53674
2	-3.21888	-2.36561	12.6297	16.1514
3	-3.21888	-2.22621	17.5857	23.3172
4	-3.21888	-2.09693	21.9828	30.067
5	-3.21888	-2.01409	26.0394	36.5501
6	-3.21888	-1.92684	29.7521	42.7524
7	-3.21888	-1.86629	33.2351	48.7597
8	-3.21888	-1.79912	36.472	54.5509
9	-3.21888	-1.75069	39.5369	60.1861
10	-3.21888	-1.6954	42.4112	65.6434
11	-3.21888	-1.64485	45.1168	70.938
12	-3.21888	-1.60725	47.7	76.1115
13	-2.52573	-1.56322	50.1437	80.0598
14	-2.52573	-1.53007	52.4848	83.9243
15	-2.40795	-1.49085	54.7074	87.5142
16	-2.40795	-1.46106	56.8421	91.0323
17	-2.30259	-1.42554	58.8743	94.3148
18	-2.20727	-1.39838	60.8297	97.4014
19	-2.20727	-1.36581	62.6952	100.416
20	-2.04022	-1.34075	64.4928	103.152
21	-1.96611	-1.31058	66.2104	105.728
22	-1.96611	-1.28155	67.8528	108.248
23	-1.83258	-1.25908	69.4381	110.555
24	-1.77196	-1.23187	70.9556	112.738
25	-1.77196	-1.21073	72.4214	114.883
26	-1.66073	-1.18504	73.8258	116.852
27	-1.56065	-1.16505	75.1831	118.67
28	-1.51413	-1.14069	76.4843	120.397
29	-1.46968	-1.12168	77.7424	122.045
30	-1.34707	-1.09847	78.9491	123.525
31	-1.20397	-1.08032	80.1162	124.826
32	-1.17118	-1.05812	81.2358	126.065
33	-0.994252	-1.03643	82.31	127.096
34	-0.693147	-1.01943	83.3492	127.802
35	-0.693147	-0.998575	84.3464	128.494
36	-0.693147	-0.982202	85.3111	129.175
37	-0.693147	-0.9621	86.2367	129.842
38	-0.693147	-0.946291	87.1322	130.498
39	-0.693147	-0.926859	87.9912	131.14
40	-0.693147	-0.911562	88.8222	131.772
41	-0.693147	-0.892733	89.6192	132.391
42	-0.693147	-0.877897	90.3899	133
43	-0.693147	-0.859618	91.1288	133.595
44	-0.693147	-0.841621	91.8371	134.179
45	-0.693147	-0.827417	92.5218	134.752
46	-0.693147	-0.809896	93.1777	135.314
47	-0.693147	-0.796056	93.8114	135.865
48	-0.693147	-0.778966	94.4182	136.405
49	-0.693147	-0.765456	95.0041	136.936

50	-0.693147	-0.748762	95.5647	137.455
51	-0.693147	-0.735557	96.1058	137.965
52	-0.693147	-0.719228	96.6231	138.463
53	-0.693147	-0.706302	97.1219	138.953
54	-0.693147	-0.690309	97.5985	139.431
55	-0.693147	-0.674499	8.0534	139.899
56	-0.693147	-0.661955	98.4916	140.358
57	-0.693147	-0.646431	98.9095	140.806
58	-0.693147	-0.634124	99.3116	141.245
59	-0.693147	-0.618872	99.6946	141.674
60	-0.693147	-0.606775	100.063	142.095
61	-0.693147	-0.591776	100.413	142.505
62	-0.693147	-0.579873	100.749	142.907
63	-0.693147	-0.565108	101.069	143.299
64	-0.693147	-0.553384	101.375	143.682
65	-0.693147	-0.538836	101.665	144.056
66	-0.693147	-0.524401	101.94	144.419
67	-0.693147	-0.51293	102.203	144.775
68	-0.693147	-0.498687	102.452	145.12
69	-0.693147	-0.487364	102.689	145.458
70	-0.693147	-0.473299	102.913	145.786
71	-0.693147	-0.462114	103.127	146.107
72	-0.693147	-0.448213	103.328	146.417
73	-0.693147	-0.437153	103.519	146.72
74	-0.693147	-0.423405	103.698	147.014
75	-0.693147	-0.412463	103.868	147.3
76	-0.693147	-0.398855	104.027	147.576
77	-0.693147	-0.385321	104.176	147.843
78	-0.693147	-0.374544	104.316	148.103
79	-0.693147	-0.361133	104.447	148.353
80	-0.693147	-0.350451	104.569	148.596
81	-0.693147	-0.337155	104.683	148.83
82	-0.693147	-0.326561	104.79	149.056
83	-0.693147	-0.31337	104.888	149.273
84	-0.693147	-0.302855	104.98	149.483
85	-0.693147	-0.28976	105.064	149.684
86	-0.693147	-0.279319	105.142	149.878
87	-0.693147	-0.266311	105.213	150.062
88	-0.693147	-0.253347	105.277	150.238
89	-0.693147	-0.243007	105.336	150.406
90	-0.693147	-0.230118	105.389	150.566
91	-0.693147	-0.219834	105.437	150.718
92	-0.693147	-0.207012	105.48	150.862
93	-0.693147	-0.196779	105.519	150.998
94	-0.693147	-0.184017	105.553	151.126
95	-0.693147	-0.173829	105.583	151.246
96	-0.693147	-0.161119	105.609	151.358
97	-0.693147	-0.150969	105.632	151.463
98	-0.693147	-0.138305	105.651	151.558
99	-0.693147	-0.125661	105.666	151.646
100	-0.693147	-0.115562	105.68	151.726
101	-0.693147	-0.102953	105.69	151.797
102	-0.693147	-0.0928787	105.699	151.861
103	-0.693147	-0.0802981	105.705	151.917
104	-0.693147	-0.0702426	105.71	151.966
105	-0.693147	-0.0576847	105.714	152.006
106	-0.693147	-0.0476439	105.716	152.039
107	-0.693147	-0.0350997	105.717	152.063
108	-0.693147	-0.0250691	105.718	152.08
109	-0.693147	-0.0125328	105.718	152.089
110	-0.693147	0	105.718	152.089
111	-0.693147	0.0125328	105.718	152.08

112	-0.693147	0.0250691	105.719	152.063
113	-0.693147	0.0350997	105.72	152.039
114	-0.693147	0.0476439	105.722	152.006
115	-0.693147	0.0576847	105.726	151.966
116	-0.693147	0.0702426	105.731	151.917
117	-0.693147	0.0802981	105.737	151.861
118	-0.693147	0.0928787	105.746	151.797
119	-0.693147	0.102953	105.756	151.726
120	-0.693147	0.115562	105.77	151.646
121	-0.693147	0.125661	105.785	151.558
122	-0.693147	0.138305	105.805	151.463
123	-0.693147	0.150969	105.827	151.358
124	-0.693147	0.161119	105.853	151.246
125	-0.693147	0.173829	105.883	151.126
126	-0.693147	0.184017	105.917	150.998
127	-0.693147	0.196779	105.956	150.862
128	-0.693147	0.207012	105.999	150.718
129	-0.693147	0.219834	106.047	150.566
130	-0.693147	0.230118	106.1	150.406
131	-0.693147	0.243007	106.159	150.238
132	-0.693147	0.253347	106.223	150.062
133	-0.693147	0.266311	106.294	149.878
134	-0.693147	0.279319	106.372	149.684
135	-0.693147	0.28976	106.456	149.483
136	-0.693147	0.302855	106.548	149.273
137	-0.693147	0.31337	106.646	149.056
138	-0.693147	0.326561	106.753	148.83
139	-0.693147	0.337155	106.867	148.596
140	-0.693147	0.350451	106.989	148.353
141	-0.693147	0.361133	107.12	148.103
142	-0.693147	0.374544	107.26	147.843
143	-0.693147	0.385321	107.409	147.576
144	-0.693147	0.398855	107.568	147.3
145	-0.693147	0.412463	107.738	147.014
146	-0.693147	0.423405	107.917	146.72
147	-0.693147	0.437153	108.108	146.417
148	-0.693147	0.448213	108.309	146.107
149	-0.693147	0.462114	108.523	145.786
150	-0.693147	0.473299	108.747	145.458
151	-0.693147	0.487364	108.984	145.12
152	-0.693147	0.498687	109.233	144.775
153	-0.693147	0.51293	109.496	144.419
154	-0.693147	0.524401	109.771	144.056
155	-0.693147	0.538836	110.061	143.682
156	-0.693147	0.553384	110.368	143.299
157	-0.693147	0.565108	110.687	142.907
158	-0.693147	0.579873	111.023	142.505
159	-0.693147	0.591776	111.373	142.095
160	-0.693147	0.606775	111.741	141.674
161	-0.693147	0.618872	112.124	141.245
162	-0.544727	0.634124	112.527	140.9
163	-0.342490	0.646431	112.944	140.679
164	-0.127833	0.661955	113.383	140.594
165	-0.116534	0.67449	113.838	140.515
166	0	0.690309	114.314	140.515
167	0	0.706302	114.813	140.515
168	0	0.719228	115.33	140.515
169	0	0.735557	115.871	140.515
170	0	0.748762	116.432	140.515
171	0	0.765456	117.018	140.515
172	0	0.778966	117.625	140.515
173	0	0.796056	118.258	140.515

174	0	0.809896		118.914	140.515	
175	0	0.827417		119.599	140.515	
176	0	0.841621		120.307	140.515	
177	0	0.859618		121.046	140.515	
178	0	0.877897		121.817	140.515	
179	0	0.892733		122.614	140.515	
180	0	0.911562		123.445	140.515	
181	0	0.926859		124.304	140.515	
182	0	0.946291		125.199	140.515	
183	0	0.9621	126.125	140.515		
184	0.693147		0.982202		127.09	141.196
185	0.693147		0.998575		128.087	141.888
186	1.09861	1.01943	129.126	143.008		
187	1.09861	1.03643	130.2	144.147		
188	1.09861	1.05812	131.32	145.309		
189	1.09861	1.08032	132.487	146.496		
190	1.09861	1.09847	133.694	147.703		
191	1.09861	1.12168	134.952	148.935		
192	1.09861	1.14069	136.253	150.188		
193	1.09861	1.16505	137.61	151.468		
194	1.09861	1.18504	139.015	152.77		
195	1.38629	1.21073	140.48	154.449		
196	1.38629	1.23187	141.998	156.156		
197	1.60944	1.25908	143.583	158.183		
198	2.07944	1.28155	145.226	160.848		
199	2.19722	1.31058	146.943	163.727		
200	2.3979	1.34075	148.741	166.942		
201	2.56495	1.36581	150.606	170.446		
202	2.63906	1.39838	152.562	174.136		
203	2.77259	1.42554	154.594	178.088		
204	2.77259	1.46106	156.729	182.139		
205	2.83321	1.49085	158.951	186.363		
206	2.89037	1.53007	161.292	190.786		
207	2.89037	1.56322	163.736	195.304		
208	2.94444	1.60725	166.319	200.036		
209	3.04452	1.64485	169.025	205.044		
210	3.09104	1.6954	171.899	210.285		
211	3.21888	1.75069	174.964	215.92		
212	3.29584	1.79912	178.201	221.85		
213	3.55535	1.86629	181.684	228.485		
214	3.78419	1.92684	185.397	235.776		
215	3.82864	2.01409	189.453	243.488		
216	3.89182	2.09693	193.85	251.649		
217	3.91202	2.22621	198.806	260.358		
218	3.95124	2.36561	204.403	269.705		
219	4.86753	2.65209	211.436	282.614		

Data Set Standard Deviation = 1.48152
Numerator = 79870.6
Denominator = 101170
W Statistic = 0.789472 = 79870.6 / 101170

5% Critical value of 0.976 exceeds 0.789472
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.789472
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Lead

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	2.83321	205
	3/16/1999	ND<-0.693147	76
	9/23/1999	2.19722	199
	3/14/2000	ND<-0.693147	76
	9/23/2003	ND<-0.693147	76
	3/10/2004	3.21888	211
	10/12/2004	ND<-0.693147	76
	4/1/2005	ND<-0.693147	76
	10/26/2005	ND<-0.693147	76
	6/19/2006	ND<-0.693147	76
	11/18/2006	ND<0 J	76
	6/2/2007	1.09861	186
	11/15/2007	ND<-0.693147	76
	5/20/2008	ND<-0.693147	76
	11/20/2008	ND<-0.693147	76
	6/11/2009	-2.04022 J	159
	11/16/2009	-1.20397 J	170
	6/30/2010	-1.66073 J	165

Rank Sum = 2131
Rank Mean = 118.389

Background Rank Sum = 2131
Background Rank Mean = 118.389

Compliance Wells

Well ID	Date	Result	Rank
LMW-8	1/16/1998	ND<-0.693147	76
	3/16/1999	ND<-0.693147	76
	9/23/1999	3.04452	209
	3/14/2000	ND<-0.693147	76
	9/23/2003	ND<-0.693147	76
	3/10/2004	ND<-0.693147	76
	10/12/2004	ND<-0.693147	76
	4/1/2005	ND<-0.693147	76
	10/26/2005	ND<-0.693147	76
	6/19/2006	ND<-0.693147	76
	11/18/2006	ND<-0.693147	76
	6/2/2007	ND<-0.693147	76
	11/15/2007	ND<-0.693147	76
	5/20/2008	ND<-0.693147	76
	11/20/2008	ND<-0.693147	76
	6/11/2009	ND<-3.21888 U	76
	11/16/2009	ND<-3.21888 U	76
	6/30/2010	ND<-3.21888 U	76

Rank Sum = 1501
Rank Mean = 83.3889

LMW-9S	11/18/2006	ND<-0.693147	76
	6/2/2007	0.693147	184
	11/15/2007	0	177
	5/20/2008	ND<-0.693147	76
	11/20/2008	ND<0 J	76
	6/11/2009	ND<-3.21888 U	76
	6/30/2010	-2.20727 J	157

Rank Sum = 822
Rank Mean = 117.429

LMW-9	1/16/1998	ND<-0.693147	76
	3/16/1999	ND<-0.693147	76
	9/23/1999	3.29584	212
	3/14/2000	ND<-0.693147	76
	9/23/2003	ND<-0.693147	76
	3/10/2004	2.56495	201
	10/12/2004	ND<-0.693147	76
	4/1/2005	ND<0 J	76
	10/26/2005	ND<-0.693147	76
	6/19/2006	ND<0 J	76
	11/18/2006	ND<0 J	76
	6/2/2007	0	178
	11/15/2007	ND<-0.693147	76
	5/20/2008	0	179
	11/20/2008	ND<-0.693147	76
	6/11/2009	-1.77196 J	163
	11/16/2009	ND<-3.21888 U	76
	6/30/2010	-1.83258 J	162

Rank Sum = 2007
Rank Mean = 111.5

LMW-6	1/16/1998	ND<-0.693147	76
	3/16/1999	ND<-0.693147	76
	9/23/1999	2.77259	203
	3/14/2000	ND<-0.693147	76
	9/23/2003	ND<-0.693147	76
	3/10/2004	ND<-0.693147	76
	10/12/2004	ND<-0.693147	76
	4/1/2005	ND<-0.693147	76
	10/26/2005	ND<-0.693147	76
	6/19/2006	ND<-0.693147	76
	11/18/2006	ND<-0.693147	76
	6/2/2007	ND<0 J	76
	11/15/2007	ND<-0.693147	76
	5/20/2008	ND<-0.693147	76
	11/20/2008	ND<-0.693147	76
	6/11/2009	-2.52573 J	152
	11/16/2009	ND<-3.21888 U	76
	6/30/2010	-1.96611 J	160

Rank Sum = 1655
Rank Mean = 91.9444

LMW-3S	11/18/2006	ND<-0.693147	76
	6/2/2007	1.09861	187
	11/15/2007	0	180
	5/20/2008	ND<-0.693147	76
	11/20/2008	ND<-0.693147	76
	6/11/2009	-0.544727	173
	11/16/2009	ND<-3.21888 U	76
	6/30/2010	-2.40795 J	154

Rank Sum = 998

Rank Mean = 124.75

LMW-3	11/19/1996	ND<-0.693147	76
	3/24/1997	2.3979	200
	1/16/1998	ND<-0.693147	76
	3/16/1999	ND<-0.693147	76
	9/23/1999	2.07944	198
	3/14/2000	ND<-0.693147	76
	9/23/2003	ND<-0.693147	76
	3/10/2004	ND<-0.693147	76
	10/12/2004	ND<-0.693147	76
	4/1/2005	ND<-0.693147	76
	10/26/2005	ND<-0.693147	76
	6/19/2006	ND<-0.693147	76
	11/18/2006	ND<-0.693147	76
	6/2/2007	ND<-0.693147	76
	11/15/2007	0	181
	5/20/2008	ND<-0.693147	76
	11/20/2008	ND<-0.693147	76
	6/11/2009	ND<-3.21888 U	76
	11/16/2009	-0.994252	172
	6/30/2010	-1.77196 J	164

Rank Sum = 2055
Rank Mean = 102.75

LMW-16	11/18/2006	ND<0 J	76
	6/2/2007	1.60944	197
	11/15/2007	0.693147	185
	5/20/2008	ND<-0.693147	76
	11/20/2008	ND<-0.693147	76
	6/11/2009	ND<-3.21888 U	76
	11/16/2009	-2.40795 J	155
	6/30/2010	-1.34707 J	169

Rank Sum = 1010
Rank Mean = 126.25

LMW-15R	11/18/2006	ND<0 J	76
	6/2/2007	ND<-0.693147	76
	11/15/2007	ND<-0.693147	76
	11/15/2007	ND<-0.693147	76
	5/20/2008	ND<-0.693147	76
	5/20/2008	ND<-0.693147	76
	11/20/2008	ND<-0.693147	76
	11/20/2008	0	182
	6/11/2009	-0.116534	176
	11/16/2009	-1.56065 J	166
	11/16/2009	-1.96611 J	161
	11/16/2009	ND<-3.21888 U	76
	6/30/2010	-2.52573 J	153

Rank Sum = 1446
Rank Mean = 111.231

LMW-10	3/14/2000	3.91202	217
	9/23/2003	ND<-0.693147	76
	3/10/2004	4.86753	219
	10/12/2004	ND<-0.693147	76
	4/1/2005	ND<-0.693147	76
	10/26/2005	ND<-0.693147	76
	6/19/2006	ND<0 J	76
	11/18/2006	ND<-0.693147	76
	6/2/2007	1.38629	195
	11/15/2007	ND<-0.693147	76

	5/20/2008	ND<-0.693147	76
	11/20/2008	ND<0 J	76
	6/11/2009	ND<-3.21888 U	76
	11/16/2009	ND<-3.21888 U	76
	6/30/2010	-2.20727 J	158

Rank Sum = 1625
Rank Mean = 108.333

LMW-9D	11/18/2006	1.09861	188
	6/2/2007	1.09861	189
	11/15/2007	ND<0 J	76
	5/20/2008	1.09861	190
	11/20/2008	ND<-0.693147	76
	6/11/2009	-0.34249	174
	11/16/2009	-1.17118	171
	6/30/2010	-1.46968 J	168

Rank Sum = 1232
Rank Mean = 154

LMW-14R	6/2/2007	1.38629	196
	11/15/2007	ND<-0.693147	76
	5/20/2008	ND<-0.693147	76
	11/20/2008	ND<-0.693147	76
	6/11/2009	-1.51413 J	167
	6/30/2010	-2.30259 J	156

Rank Sum = 747
Rank Mean = 124.5

LMW-7	1/16/1998	ND<-0.693147	76
	3/16/1999	ND<-0.693147	76
	9/23/1999	2.89037	206
	3/14/2000	2.77259	204
	9/23/2003	ND<-0.693147	76
	3/10/2004	ND<-0.693147	76
	10/12/2004	ND<-0.693147	76
	4/1/2005	1.09861	191
	10/26/2005	1.09861	192
	6/19/2006	1.09861	193
	11/18/2006	0	183
	6/2/2007	1.09861	194
	11/15/2007	ND<-0.693147	76
	5/20/2008	ND<-0.693147	76
	11/20/2008	ND<-0.693147	76
	6/11/2009	-0.127833	175

Rank Sum = 2146
Rank Mean = 134.125

LMW-13	3/14/2000	3.78419	214
	9/23/2003	ND<-0.693147	76
	3/10/2004	3.55535	213
	10/12/2004	ND<-0.693147	76
	4/1/2005	ND<-0.693147	76
	10/26/2005	ND<-0.693147	76
	6/19/2006	ND<-0.693147	76
	6/2/2007	ND<-0.693147	76
	11/15/2007	ND<-0.693147	76
	5/20/2008	ND<-0.693147	76
	11/20/2008	ND<-0.693147	76

Rank Sum = 1111
Rank Mean = 101

LMW-12	3/14/2000	3.89182	216

	9/23/2003	ND<-0.693147	76
	3/10/2004	2.89037	207
	10/12/2004	ND<-0.693147	76
	4/1/2005	ND<-0.693147	76
	10/26/2005	ND<-0.693147	76
	6/19/2006	ND<-0.693147	76
	6/2/2007	ND<-0.693147	76
	11/15/2007	ND<-0.693147	76
	5/20/2008	ND<-0.693147	76
	11/20/2008	ND<-0.693147	76

Rank Sum = 1107
Rank Mean = 100.636

LMW-11	3/14/2000	2.94444	208
	9/23/2003	ND<-0.693147	76
	3/10/2004	3.82864	215
	10/12/2004	ND<-0.693147	76
	4/1/2005	ND<-0.693147	76
	10/26/2005	ND<-0.693147	76
	6/19/2006	ND<-0.693147	76
	6/2/2007	ND<-0.693147	76
	11/15/2007	ND<-0.693147	76
	5/20/2008	ND<-0.693147	76
	11/20/2008	ND<-0.693147	76

Rank Sum = 1107
Rank Mean = 100.636

MW-5	1/16/1998	ND<-0.693147	76
	3/16/1999	ND<-0.693147	76
	9/23/1999	2.63906	202
	3/14/2000	3.09104	210
	9/23/2003	ND<-0.693147	76
	3/10/2004	3.95124	218
	10/12/2004	ND<-0.693147	76
	4/1/2005	ND<-0.693147	76
	10/26/2005	ND<-0.693147	76
	6/19/2006	ND<-0.693147	76
	11/15/2007	ND<-0.693147	76
	5/20/2008	ND<-0.693147	76
	11/20/2008	ND<-0.693147	76

Rank Sum = 1390
Rank Mean = 106.923

Calculation Results:

Kruskal-Wallis H Statistic = 13.519
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 20.1111
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
13.519 < 26.2962 indicating no significant group difference at 5% significance level
20.1111 < 26.2962 indicating no significant group difference at 5% significance level when adjusted for ties

Concentrations (ppb)

Parameter: Manganese

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 12
Total Non-Detect: 1
Percent Non-Detects: 8.33333%
Total Background Measurements: 1
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	1	1 (100%)	6/30/2010	ND<0.84 U	ND<0.84 U

There are 11 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9S	1	0 (0%)	6/30/2010	13	13
LMW-9D	1	0 (0%)	6/30/2010	1.5 J	1.5 J
LMW-3S	1	0 (0%)	6/30/2010	23	23
LMW-8	1	0 (0%)	6/30/2010	150	150
LMW-9	1	0 (0%)	6/30/2010	1.4 J	1.4 J
LMW-15R	1	0 (0%)	6/30/2010	1.6 J	1.6 J
LMW-6	1	0 (0%)	6/30/2010	5.6	5.6
LMW-16	1	0 (0%)	6/30/2010	1.1 J	1.1 J
LMW-3	1	0 (0%)	6/30/2010	1.1 J	1.1 J
LMW-14R	1	0 (0%)	6/30/2010	1.3 J	1.3 J
LMW-10	1	0 (0%)	6/30/2010	1.1 J	1.1 J

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Wilks Test of Normality

Parameter: Manganese

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
K = 6 for 12 measurements

i	x(i)	x(n-i+1)		x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.42	150	149.58	0.5475	81.8951	
2	1.1	23	21.9	0.3325	7.28175	
3	1.1	13	11.9	0.2347	2.79293	
4	1.1	5.6	4.5	0.1586	0.7137	
5	1.3	1.6	0.3	0.0922	0.02766	
6	1.4	1.5	0.1	0.0303	0.00303	
7	1.5	1.4	-0.1			
8	1.6	1.3	-0.3			
9	5.6	1.1	-4.5			
10	13	1.1	-11.9			
11	23	1.1	-21.9			
12	150	0.42	-149.58			

Sum of b values = 92.7141
Sample Standard Deviation = 42.5023
W Statistic = 0.432589

5% Critical value of 0.859 exceeds 0.432589
Evidence of non-normality at 95% level of significance

1% Critical value of 0.805 exceeds 0.432589
Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Manganese

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
K = 6 for 12 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.867501	5.01064	5.87814	0.5475	3.21828
2	0.0953102	3.13549	3.04018	0.3325	1.01086
3	0.0953102	2.56495	2.46964	0.2347	0.579624
4	0.0953102	1.72277	1.62746	0.1586	0.258115
5	0.262364	0.470004	0.207639	0.0922	0.0191443
6	0.336472	0.405465	0.0689929	0.0303	0.00209048
7	0.405465	0.336472	-0.0689929		
8	0.470004	0.262364	-0.207639		
9	1.72277	0.0953102	-1.62746		
10	2.56495	0.0953102	-2.46964		
11	3.13549	0.0953102	-3.04018		
12	5.01064	-0.867501	-5.87814		

Sum of b values = 5.08811
Sample Standard Deviation = 1.67961
W Statistic = 0.834264

5% Critical value of 0.859 exceeds 0.834264
Evidence of non-normality at 95% level of significance

1% Critical value of 0.805 is less than 0.834264
Data is normally distributed at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Manganese

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	6/30/2010	ND<-0.867501 U	1

Rank Sum = 1
Rank Mean = 1

Background Rank Sum = 1
Background Rank Mean = 1

Compliance Wells

Well ID	Date	Result	Rank
LMW-9S	6/30/2010	2.56495	10

Rank Sum = 10
Rank Mean = 10

LMW-9D	6/30/2010	0.405465 J	7

Rank Sum = 7
Rank Mean = 7

LMW-3S	6/30/2010	3.13549	11

Rank Sum = 11
Rank Mean = 11

LMW-8	6/30/2010	5.01064	12

Rank Sum = 12
Rank Mean = 12

LMW-9	6/30/2010	0.336472 J	6

Rank Sum = 6
Rank Mean = 6

LMW-15R	6/30/2010	0.470004 J	8

Rank Sum = 8
Rank Mean = 8

LMW-6	6/30/2010	1.72277	9

Rank Sum = 9
Rank Mean = 9

LMW-16	6/30/2010	0.0953102 J	2

Rank Sum = 2
Rank Mean = 2

LMW-3	6/30/2010	0.0953102 J	3

Rank Sum = 3
Rank Mean = 3

LMW-14R 6/30/2010 0.262364 J 5
Rank Sum = 5
Rank Mean = 5

LMW-10 6/30/2010 0.0953102 J 4
Rank Sum = 4
Rank Mean = 4

Calculation Results:

Kruskal-Wallis H Statistic = 11
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 11
95% Confidence comparison value is 19.6752 at 11 degrees of freedom
11 < 19.6752 indicating no significant group difference at 5% significance level
11 < 19.6752 indicating no significant group difference at 5% significance level when adjusted for ties

Concentrations (ppb)

Parameter: Mercury

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 194
Total Non-Detect: 191
Percent Non-Detects: 98.4536%
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<0	ND<0
			11/15/2007	ND<0 J	ND<0 J
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/30/2010	ND<0.09 U	ND<0.09 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-15R	9	9 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<0 J	ND<0 J
			11/15/2007	ND<0 J	ND<0 J
			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
			6/30/2010	ND<0.09 U	ND<0.09 U
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<0 J	ND<0 J
			11/20/2008	ND<1	ND<1
			6/30/2010	ND<0.09 U	ND<0.09 U
LMW-9S	6	5 (83.3333%)	11/18/2006	ND<1	ND<1

			6/2/2007	ND<0	ND<0
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<0 J	ND<0 J
			11/20/2008	ND<1	ND<1
			6/30/2010	0.22	0.22
LMW-9D	6	6 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<0	ND<0
			11/15/2007	ND<0 J	ND<0 J
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/30/2010	ND<0.09 U	ND<0.09 U
LMW-16	6	6 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<0	ND<0
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<0 J	ND<0 J
			11/20/2008	ND<1	ND<1
			6/30/2010	ND<0.09 U	ND<0.09 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<0	ND<0
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/30/2010	ND<0.09 U	ND<0.09 U
LMW-3S	6	6 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<0	ND<0
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/30/2010	ND<0.09 U	ND<0.09 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
			6/30/2010	ND<0.09 U	ND<0.09 U

LMW-8	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	1	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	ND<0	
			11/15/2007	ND<0 J	ND<0 J	
			5/20/2008	ND<0 J	ND<0 J	
			11/20/2008	ND<1	ND<1	
			6/30/2010	0.18 J	0.18 J	
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<0 J	ND<0 J	
			11/15/2007	ND<0 J	ND<0 J	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/30/2010	ND<0.09 U		ND<0.09 U
LMW-14R	5	5 (100%)	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	
			6/30/2010	ND<0.09 U		ND<0.09 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-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-7	15	15 (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<0	ND<0	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
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-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	

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Mercury

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 194

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0	-2.575836.63492	0	
2	0	-2.3263412.0468	0	
3	0	-2.1700916.7561	0	
4	0	-2.0537520.974	0	
5	0	-1.9599624.8154	0	
6	0	-1.8807928.3528	0	
7	0	-1.8119131.6358	0	
8	0	-1.7392 34.6606	0	
9	0	-1.6849437.4996	0	
10	0	-1.6352440.1736	0	
11	0	-1.5892742.6994	0	
12	0	-1.5464345.0909	0	
13	0	-1.5062647.3597	0	
14	0	-1.4683849.5158	0	
15	0	-1.4325 51.5679	0	
16	0	-1.3917553.5049	0	
17	0	-1.3594655.353	0	
18	0	-1.3285457.118	0	
19	0	-1.2988458.805	0	
20	0	-1.2702460.4185	0	
21	0.045	-1.2426461.9627	-0.0559189	
22	0.045	-1.2159663.4412	-0.110637	
23	0.045	-1.1901264.8576	-0.164192	
24	0.045	-1.1601266.2035	-0.216398	
25	0.045	-1.1359 67.4937	-0.267513	
26	0.045	-1.1123268.731	-0.317568	
27	0.045	-1.0893569.9177	-0.366588	
28	0.045	-1.0669471.056	-0.414601	
29	0.045	-1.0450572.1482	-0.461628	
30	0.045	-1.0236573.196	-0.507692	
31	0.18	-1.0027174.2015	-0.68818	
32	0.22	-0.9781575.1582	-0.903373	
33	0.5	-0.958125	76.0762	-1.38244
34	0.5	-0.938476	76.957	-1.85167
35	0.5	-0.919183	77.8019	-2.31127
36	0.5	-0.900227	78.6123	-2.76138
37	0.5	-0.881587	79.3895	-3.20217
38	0.5	-0.863249	80.1347	-3.6338
39	0.5	-0.841621	80.843	-4.05461
40	0.5	-0.823893	81.5218	-4.46655
41	0.5	-0.806422	82.1721	-4.86976
42	0.5	-0.789191	82.7949	-5.26436
43	0.5	-0.772193	83.3912	-5.65046
44	0.5	-0.755415	83.9619	-6.02816
45	0.5	-0.738846	84.5078	-6.39759
46	0.5	-0.722479	85.0297	-6.75883
47	0.5	-0.703089	85.5241	-7.11037
48	0.5	-0.687131	85.9962	-7.45394
49	0.5	-0.671346	86.4469	-7.78961

50	0.5	-0.655726	86.8769	-8.11747
51	0.5	-0.640266	87.2868	-8.43761
52	0.5	-0.624956	87.6774	-8.75008
53	0.5	-0.609791	88.0493	-9.05498
54	0.5	-0.594766	88.403	-9.35236
55	0.5	-0.576911	88.7358	-9.64082
56	0.5	-0.5621789.0519	-9.9219	
57	0.5	-0.547551	89.3517	-10.1957
58	0.5	-0.533048	89.6358	-10.4622
59	0.5	-0.518658	89.9048	-10.7215
60	0.5	-0.504372	90.1592	-10.9737
61	0.5	-0.490189	90.3995	-11.2188
62	0.5	-0.476105	90.6262	-11.4569
63	0.5	-0.459327	90.8372	-11.6865
64	0.5	-0.445443	91.0356	-11.9092
65	0.5	-0.431644	91.2219	-12.1251
66	0.5	-0.417928	91.3966	-12.334
67	0.5	-0.4042991.56	-12.5362	
68	0.5	-0.390726	91.7127	-12.7315
69	0.5	-0.377233	91.855	-12.9202
70	0.5	-0.363809	91.9873	-13.1021
71	0.5	-0.347787	92.1083	-13.276
72	0.5	-0.334503	92.2202	-13.4432
73	0.5	-0.321278	92.3234	-13.6038
74	0.5	-0.308108	92.4183	-13.7579
75	0.5	-0.294992	92.5054	-13.9054
76	0.5	-0.281926	92.5848	-14.0464
77	0.5	-0.268908	92.6572	-14.1808
78	0.5	-0.253347	92.7213	-14.3075
79	0.5	-0.240426	92.7791	-14.4277
80	0.5	-0.227545	92.8309	-14.5415
81	0.5	-0.214702	92.877	-14.6488
82	0.5	-0.201894	92.9178	-14.7498
83	0.5	-0.189118	92.9535	-14.8443
84	0.5	-0.176374	92.9847	-14.9325
85	0.5	-0.163659	93.0114	-15.0143
86	0.5	-0.148434	93.0335	-15.0886
87	0.5	-0.135774	93.0519	-15.1565
88	0.5	-0.123135	93.0671	-15.218
89	0.5	-0.110516	93.0793	-15.2733
90	0.5	-0.0979139	93.0889	-15.3222
91	0.5	-0.0853288	93.0961	-15.3649
92	0.5	-0.0727562	93.1014	-15.4013
93	0.5	-0.0601949	93.1051	-15.4314
94	0.5	-0.0451348	93.1071	-15.4539
95	0.5	-0.0325917	93.1082	-15.4702
96	0.5	-0.0200544	93.1086	-15.4803
97	0.5	-0.00751925	93.1086	-15.484
98	0.5	0.00751925	93.1087	-15.4803
99	0.5	0.0200544	93.1091	-15.4702
100	0.5	0.0325917	93.1101	-15.4539
101	0.5	0.0451348	93.1122	-15.4314
102	0.5	0.0601949	93.1158	-15.4013
103	0.5	0.0727562	93.1211	-15.3649
104	0.5	0.0853288	93.1284	-15.3222
105	0.5	0.0979139	93.138	-15.2733
106	0.5	0.110516	93.1502	-15.218
107	0.5	0.123135	93.1653	-15.1565
108	0.5	0.135774	93.1838	-15.0886
109	0.5	0.148434	93.2058	-15.0143
110	0.5	0.163659	93.2326	-14.9325
111	0.5	0.176374	93.2637	-14.8443

112	0.5	0.189118	93.2995	-14.7498
113	0.5	0.201894	93.3402	-14.6488
114	0.5	0.214702	93.3863	-14.5415
115	0.5	0.227545	93.4381	-14.4277
116	0.5	0.240426	93.4959	-14.3075
117	0.5	0.253347	93.5601	-14.1808
118	0.5	0.268908	93.6324	-14.0464
119	0.5	0.281926	93.7119	-13.9054
120	0.5	0.294992	93.7989	-13.7579
121	0.5	0.308108	93.8938	-13.6038
122	0.5	0.321278	93.9971	-13.4432
123	0.5	0.334503	94.1089	-13.276
124	0.5	0.347787	94.2299	-13.1021
125	0.5	0.363809	94.3623	-12.9202
126	0.5	0.377233	94.5046	-12.7315
127	0.5	0.390726	94.6572	-12.5362
128	0.5	0.40429	94.8207	-12.334
129	0.5	0.417928	94.9953	-12.1251
130	0.5	0.431644	95.1817	-11.9092
131	0.5	0.445443	95.3801	-11.6865
132	0.5	0.459327	95.5911	-11.4569
133	0.5	0.476105	95.8177	-11.2188
134	0.5	0.490189	96.058	-10.9737
135	0.5	0.504372	96.3124	-10.7215
136	0.5	0.518658	96.5814	-10.4622
137	0.5	0.533048	96.8656	-10.1957
138	0.5	0.547551	97.1654	-9.9219
139	0.5	0.56217	97.4814	-9.64082
140	0.5	0.576911	97.8142	-9.35236
141	0.5	0.594766	98.168	-9.05498
142	0.5	0.609791	98.5398	-8.75008
143	0.5	0.624956	98.9304	-8.43761
144	0.5	0.640266	99.3403	-8.11747
145	0.5	0.655726	99.7703	-7.78961
146	0.5	0.671346	100.221	-7.45394
147	0.5	0.687131	100.693	-7.11037
148	0.5	0.703089	101.188	-6.75883
149	0.5	0.722479	101.709	-6.39759
150	0.5	0.738846	102.255	-6.02816
151	0.5	0.755415	102.826	-5.65046
152	0.5	0.772193	103.422	-5.26436
153	0.5	0.789191	104.045	-4.86976
154	0.5	0.806422	104.695	-4.46655
155	0.5	0.823893	105.374	-4.05461
156	0.5	0.841621	106.083	-3.6338
157	0.5	0.863249	106.828	-3.20217
158	0.5	0.881587	107.605	-2.76138
159	0.5	0.900227	108.415	-2.31127
160	0.5	0.919183	109.26	-1.85167
161	0.5	0.938476	110.141	-1.38244
162	0.5	0.958125	111.059	-0.903373
163	0.5	0.97815	112.016	-0.414298
164	0.5	1.00271	113.021	0.0870575
165	0.5	1.02365	114.069	0.598884
166	0.5	1.04505	115.161	1.12141
167	0.5	1.06694	116.3	1.65488
168	0.5	1.08935	117.486	2.19955
169	0.5	1.11232	118.724	2.75571
170	0.5	1.1359	120.014	3.32366
171	0.5	1.16012	121.36	3.90372
172	0.5	1.19012	122.776	4.49878
173	0.5	1.21596	124.255	5.10676

174	0.5	1.24264	125.799	5.72808
175	0.5	1.27024	127.412	6.3632
176	0.5	1.29884	129.099	7.01262
177	0.5	1.32854	130.864	7.67689
178	0.5	1.35946	132.712	8.35662
179	0.5	1.39175	134.649	9.05249
180	0.5	1.4325	136.701	9.76874
181	0.5	1.46838	138.858	10.5029
182	0.5	1.50626	141.126	11.2561
183	0.5	1.54643	143.518	12.0293
184	0.5	1.58927	146.044	12.8239
185	0.5	1.63524	148.718	13.6415
186	0.5	1.68494	151.557	14.484
187	0.5	1.7392	154.581	15.3536
188	0.5	1.81191	157.864	16.2596
189	0.5	1.88079	161.402	17.2
190	0.5	1.95996	165.243	18.1799
191	0.5	2.05375	169.461	19.2068
192	0.5	2.17009	174.17	20.2919
193	0.5	2.32634	179.582	21.455
194	1	2.57583	186.217	24.0309

Data Set Standard Deviation = 0.182026
Numerator = 577.482
Denominator = 1190.81
W Statistic = 0.484948 = 577.482 / 1190.81

5% Critical value of 0.976 exceeds 0.484948
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.484948
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Mercury

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 194

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-3.10109	-2.57583	6.63492	7.9879
2	-3.10109	-2.32634	12.0468	15.2021
3	-3.10109	-2.17009	16.7561	21.9318
4	-3.10109	-2.05375	20.974	28.3006
5	-3.10109	-1.95996	24.8154	34.3786
6	-3.10109	-1.88079	28.3528	40.2111
7	-3.10109	-1.81191	31.6358	45.8301
8	-3.10109	-1.7392	34.6606	51.2235
9	-3.10109	-1.68494	37.4996	56.4486
10	-3.10109	-1.63524	40.1736	61.5196
11	-1.7148	-1.58927	42.6994	64.2449
12	-1.51413	-1.54643	45.0909	66.5864
13	-0.693147	-1.50626	47.3597	67.6305
14	-0.693147	-1.46838	49.5158	68.6483
15	-0.693147	-1.4325	51.5679	69.6412
16	-0.693147	-1.39175	53.5049	70.6059
17	-0.693147	-1.35946	55.353	71.5482
18	-0.693147	-1.32854	57.118	72.4691
19	-0.693147	-1.29884	58.805	73.3694
20	-0.693147	-1.27024	60.4185	74.2498
21	-0.693147	-1.24264	61.9627	75.1112
22	-0.693147	-1.21596	63.4412	75.954
23	-0.693147	-1.19012	64.8576	76.7789
24	-0.693147	-1.16012	66.2035	77.5831
25	-0.693147	-1.1359	67.4937	78.3704
26	-0.693147	-1.11232	68.731	79.1414
27	-0.693147	-1.08935	69.9177	79.8965
28	-0.693147	-1.06694	71.056	80.636
29	-0.693147	-1.04505	72.1482	81.3604
30	-0.693147	-1.02365	73.196	82.0699
31	-0.693147	-1.00271	74.2015	82.765
32	-0.693147	-0.97815	75.1582	83.443
33	-0.693147	-0.958125	76.0762	84.1071
34	-0.693147	-0.938476	76.957	84.7576
35	-0.693147	-0.919183	77.8019	85.3947
36	-0.693147	-0.900227	78.6123	86.0187
37	-0.693147	-0.881587	79.3895	86.6298
38	-0.693147	-0.863249	80.1347	87.2281
39	-0.693147	-0.841621	80.843	87.8115
40	-0.693147	-0.823893	81.5218	88.3826
41	-0.693147	-0.806422	82.1721	88.9416
42	-0.693147	-0.789191	82.7949	89.4886
43	-0.693147	-0.772193	83.3912	90.0238
44	-0.693147	-0.755415	83.9619	90.5474
45	-0.693147	-0.738846	84.5078	91.0596
46	-0.693147	-0.722479	85.0297	91.5604
47	-0.693147	-0.703089	85.5241	92.0477
48	-0.693147	-0.687131	85.9962	92.524
49	-0.693147	-0.671346	86.4469	92.9893

50	-0.693147	-0.655726	86.8769	93.4438
51	-0.693147	-0.640266	87.2868	93.8876
52	-0.693147	-0.624956	87.6774	94.3208
53	-0.693147	-0.609791	88.0493	94.7435
54	-0.693147	-0.594766	88.403	95.1558
55	-0.693147	-0.576911	88.7358	95.5556
56	-0.693147	-0.5621789.0519	95.9453	
57	-0.693147	-0.547551	89.3517	96.3248
58	-0.693147	-0.533048	89.6358	96.6943
59	-0.693147	-0.518658	89.9048	97.0538
60	-0.693147	-0.504372	90.1592	97.4034
61	-0.693147	-0.490189	90.3995	97.7432
62	-0.693147	-0.476105	90.6262	98.0732
63	-0.693147	-0.459327	90.8372	98.3916
64	-0.693147	-0.445443	91.0356	98.7004
65	-0.693147	-0.431644	91.2219	98.9996
66	-0.693147	-0.417928	91.3966	99.2892
67	-0.693147	-0.4042991.56	99.5695	
68	-0.693147	-0.390726	91.7127	99.8403
69	-0.693147	-0.377233	91.855	100.102
70	-0.693147	-0.363809	91.9873	100.354
71	-0.693147	-0.347787	92.1083	100.595
72	-0.693147	-0.334503	92.2202	100.827
73	-0.693147	-0.321278	92.3234	101.05
74	-0.693147	-0.308108	92.4183	101.263
75	-0.693147	-0.294992	92.5054	101.468
76	-0.693147	-0.281926	92.5848	101.663
77	-0.693147	-0.268908	92.6572	101.849
78	-0.693147	-0.253347	92.7213	102.025
79	-0.693147	-0.240426	92.7791	102.192
80	-0.693147	-0.227545	92.8309	102.349
81	-0.693147	-0.214702	92.877	102.498
82	-0.693147	-0.201894	92.9178	102.638
83	-0.693147	-0.189118	92.9535	102.769
84	-0.693147	-0.176374	92.9847	102.892
85	-0.693147	-0.163659	93.0114	103.005
86	-0.693147	-0.148434	93.0335	103.108
87	-0.693147	-0.135774	93.0519	103.202
88	-0.693147	-0.123135	93.0671	103.287
89	-0.693147	-0.110516	93.0793	103.364
90	-0.693147	-0.0979139	93.0889	103.432
91	-0.693147	-0.0853288	93.0961	103.491
92	-0.693147	-0.0727562	93.1014	103.541
93	-0.693147	-0.0601949	93.1051	103.583
94	-0.693147	-0.0451348	93.1071	103.614
95	-0.693147	-0.0325917	93.1082	103.637
96	-0.693147	-0.0200544	93.1086	103.651
97	-0.693147	-0.00751925	93.1086	103.656
98	-0.693147	0.00751925	93.1087	103.651
99	-0.693147	0.0200544	93.1091	103.637
100	-0.693147	0.0325917	93.1101	103.614
101	-0.693147	0.0451348	93.1122	103.583
102	-0.693147	0.0601949	93.1158	103.541
103	-0.693147	0.0727562	93.1211	103.491
104	-0.693147	0.0853288	93.1284	103.432
105	-0.693147	0.0979139	93.138	103.364
106	-0.693147	0.110516	93.1502	103.287
107	-0.693147	0.123135	93.1653	103.202
108	-0.693147	0.135774	93.1838	103.108
109	-0.693147	0.148434	93.2058	103.005
110	-0.693147	0.163659	93.2326	102.892
111	-0.693147	0.176374	93.2637	102.769

112	-0.693147	0.189118		93.2995	102.638
113	-0.693147	0.201894		93.3402	102.498
114	-0.693147	0.214702		93.3863	102.349
115	-0.693147	0.227545		93.4381	102.192
116	-0.693147	0.240426		93.4959	102.025
117	-0.693147	0.253347		93.5601	101.849
118	-0.693147	0.268908		93.6324	101.663
119	-0.693147	0.281926		93.7119	101.468
120	-0.693147	0.294992		93.7989	101.263
121	-0.693147	0.308108		93.8938	101.05
122	-0.693147	0.321278		93.9971	100.827
123	-0.693147	0.334503		94.1089	100.595
124	-0.693147	0.347787		94.2299	100.354
125	-0.693147	0.363809		94.3623	100.102
126	-0.693147	0.377233		94.5046	99.8403
127	-0.693147	0.390726		94.6572	99.5695
128	-0.693147	0.40429	94.8207	99.2892	
129	-0.693147	0.417928		94.9953	98.9996
130	-0.693147	0.431644		95.1817	98.7004
131	-0.693147	0.445443		95.3801	98.3916
132	-0.693147	0.459327		95.5911	98.0732
133	-0.693147	0.476105		95.8177	97.7432
134	-0.693147	0.490189		96.058	97.4034
135	-0.693147	0.504372		96.3124	97.0538
136	-0.693147	0.518658		96.5814	96.6943
137	-0.693147	0.533048		96.8656	96.3248
138	-0.693147	0.547551		97.1654	95.9453
139	-0.693147	0.56217	97.4814	95.5556	
140	-0.693147	0.576911		97.8142	95.1558
141	-0.693147	0.594766		98.168	94.7435
142	-0.693147	0.609791		98.5398	94.3208
143	-0.693147	0.624956		98.9304	93.8876
144	-0.693147	0.640266		99.3403	93.4438
145	-0.693147	0.655726		99.7703	92.9893
146	-0.693147	0.671346		100.221	92.524
147	-0.693147	0.687131		100.693	92.0477
148	-0.693147	0.703089		101.188	91.5604
149	-0.693147	0.722479		101.709	91.0596
150	-0.693147	0.738846		102.255	90.5474
151	-0.693147	0.755415		102.826	90.0238
152	-0.693147	0.772193		103.422	89.4886
153	-0.693147	0.789191		104.045	88.9416
154	-0.693147	0.806422		104.695	88.3826
155	-0.693147	0.823893		105.374	87.8115
156	-0.693147	0.841621		106.083	87.2281
157	-0.693147	0.863249		106.828	86.6298
158	-0.693147	0.881587		107.605	86.0187
159	-0.693147	0.900227		108.415	85.3947
160	-0.693147	0.919183		109.26	84.7576
161	-0.693147	0.938476		110.141	84.1071
162	-0.693147	0.958125		111.059	83.443
163	-0.693147	0.97815	112.016	82.765	
164	-0.693147	1.00271	113.021	82.0699	
165	-0.693147	1.02365	114.069	81.3604	
166	-0.693147	1.04505	115.161	80.636	
167	-0.693147	1.06694	116.3	79.8965	
168	-0.693147	1.08935	117.486	79.1414	
169	-0.693147	1.11232	118.724	78.3704	
170	-0.693147	1.1359	120.014	77.5831	
171	-0.693147	1.16012	121.36	76.7789	
172	-0.693147	1.19012	122.776	75.954	
173	-0.693147	1.21596	124.255	75.1112	

174	0	1.24264	125.799	75.1112
175	0	1.27024	127.412	75.1112
176	0	1.29884	129.099	75.1112
177	0	1.32854	130.864	75.1112
178	0	1.35946	132.712	75.1112
179	0	1.39175	134.649	75.1112
180	0	1.4325	136.701	75.1112
181	0	1.46838	138.858	75.1112
182	0	1.50626	141.126	75.1112
183	0	1.54643	143.518	75.1112
184	0	1.58927	146.044	75.1112
185	0	1.63524	148.718	75.1112
186	0	1.68494	151.557	75.1112
187	0	1.7392	154.581	75.1112
188	0	1.81191	157.864	75.1112
189	0	1.88079	161.402	75.1112
190	0	1.95996	165.243	75.1112
191	0	2.05375	169.461	75.1112
192	0	2.17009	174.17	75.1112
193	0	2.32634	179.582	75.1112
194	0	2.57583	186.217	75.1112

Data Set Standard Deviation = 0.598458
Numerator = 5641.69
Denominator = 12872
W Statistic = 0.438292 = 5641.69 / 12872

5% Critical value of 0.976 exceeds 0.438292
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.438292
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Mercury

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 98.4536%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 16
Maximum Background Concentration = 0
Confidence Level = 66.7%
False Positive Rate = 33.3%

Location	Date	Samples	Mean	Significant
LMW-15R	6/30/2010	1	-3.10109	FALSE
LMW-10	6/30/2010	1	-3.10109	FALSE
LMW-9S	6/30/2010	1	-1.51413	FALSE
LMW-9D	6/30/2010	1	-3.10109	FALSE
LMW-16	6/30/2010	1	-3.10109	FALSE
LMW-3	6/30/2010	1	-3.10109	FALSE
LMW-3S	6/30/2010	1	-3.10109	FALSE
LMW-6	6/30/2010	1	-3.10109	FALSE
LMW-8	6/30/2010	1	-1.7148	FALSE
LMW-9	6/30/2010	1	-3.10109	FALSE
LMW-14R	6/30/2010	1	-3.10109	FALSE
LMW-13	11/20/2008	1	-0.693147	FALSE
LMW-11	11/20/2008	1	-0.693147	FALSE
LMW-7	11/20/2008	1	-0.693147	FALSE
MW-5	11/20/2008	1	-0.693147	FALSE
LMW-12	11/20/2008	1	-0.693147	FALSE

Concentrations (ppb)

Parameter: Nickel

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 219
Total Non-Detect: 147
Percent Non-Detects: 67.1233%
Total Background Measurements: 18
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	18	11 (61.1111%)	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
			11/16/2009	1.2	1.2
			6/30/2010	0.76 J	0.76 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9D	8	3 (37.5%)	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
			11/16/2009	0.69	0.69
			6/30/2010	0.53 J	0.53 J
LMW-9	18	12 (66.6667%)	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	
			11/16/2009	0.46 J	0.46 J	
			6/30/2010	ND<0.4 U		ND<0.4 U
LMW-10	15	12 (80%)	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	
			11/16/2009	0.5 J	0.5 J	
			6/30/2010	ND<0.4 U		ND<0.4 U
LMW-15R	10	6 (60%)	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	
			6/30/2010	1	1	
LMW-9S	10	4 (40%)	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	
			11/16/2009	1.6 J B	1.6 J B	
			11/16/2009	0.8 J B	0.8 J B	
			11/16/2009	0.97 J B	0.97 J B	
			6/30/2010	ND<0.4 U		ND<0.4 U
LMW-8	18	12 (66.6667%)	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	
			11/16/2009	0.64	0.64	
			6/30/2010	0.69 J	0.69 J	

LMW-16	8	4 (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	ND<30	ND<30	
			11/20/2008	ND<30	ND<30	
			6/11/2009	0.72	0.72	
			11/16/2009	0.66	0.66	
			6/30/2010	0.97 J	0.97 J	
LMW-3	20	16 (80%)	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	
			11/16/2009	1.1	1.1	
			6/30/2010	1.3	1.3	
LMW-3S	8	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	
			11/16/2009	2.8	2.8	
			6/30/2010	4.1	4.1	
LMW-6	18	12 (66.6667%)	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	
			11/16/2009	1.8 J	1.8 J	
			6/30/2010	1.9	1.9	
LMW-14R		6	2 (33.3333%)	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	
			6/30/2010	0.84 J	0.84 J	
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-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-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	
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

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Nickel

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.2	-2.65209	7.03356	-0.530417
2	0.2	-2.36561	12.6297	-1.00354
3	0.2	-2.22621	17.5857	-1.44878
4	0.33	-2.09693	21.9828	-2.14077
5	0.38	-2.01409	26.0394	-2.90612
6	0.46	-1.92684	29.7521	-3.79247
7	0.5	-1.86629	33.2351	-4.72562
8	0.53	-1.79912	36.472	-5.67915
9	0.54	-1.75069	39.5369	-6.62452
10	0.55	-1.6954	42.4112	-7.55699
11	0.61	-1.64485	45.1168	-8.56035
12	0.64	-1.60725	47.7	-9.58899
13	0.66	-1.56322	50.1437	-10.6207
14	0.69	-1.53007	52.4848	-11.6765
15	0.69	-1.49085	54.7074	-12.7051
16	0.72	-1.46106	56.8421	-13.7571
17	0.76	-1.42554	58.8743	-14.8405
18	0.79	-1.39838	60.8297	-15.9452
19	0.8	-1.36581	62.6952	-17.0379
20	0.84	-1.34075	64.4928	-18.1641
21	0.97	-1.31058	66.2104	-19.4354
22	0.97	-1.28155	67.8528	-20.6785
23	1	-1.25908	69.4381	-21.9376
24	1	-1.23187	70.9556	-23.1694
25	1	-1.21073	72.4214	-24.3802
26	1	-1.18504	73.8258	-25.5652
27	1	-1.16505	75.1831	-26.7303
28	1	-1.14069	76.4843	-27.8709
29	1	-1.12168	77.7424	-28.9926
30	1	-1.09847	78.9491	-30.0911
31	1	-1.08032	80.1162	-31.1714
32	1	-1.05812	81.2358	-32.2295
33	1	-1.03643	82.31	-33.266
34	1	-1.01943	83.3492	-34.2854
35	1	-0.998575	84.3464	-35.284
36	1	-0.982202	85.3111	-36.2662
37	1.1	-0.9621	86.2367	-37.3245
38	1.2	-0.946291	87.1322	-38.46
39	1.2	-0.926859	87.9912	-39.5723
40	1.3	-0.911562	88.8222	-40.7573
41	1.6	-0.892733	89.6192	-42.1857
42	1.8	-0.877897	90.3899	-43.7659
43	1.9	-0.859618	91.1288	-45.3991
44	2	-0.841621	91.8371	-47.0824
45	2	-0.827417	92.5218	-48.7372
46	2	-0.809896	93.1777	-50.357
47	2	-0.796056	93.8114	-51.9491
48	2	-0.778966	94.4182	-53.5071
49	2.2	-0.765456	95.0041	-55.1911

50	2.2	-0.748762	95.5647	-56.8383
51	2.6	-0.735557	96.1058	-58.7508
52	2.8	-0.719228	96.6231	-60.7646
53	3	-0.706302	97.1219	-62.8835
54	3	-0.690309	97.5985	-64.9545
55	3	-0.674499	8.0534	-66.9779
56	3	-0.661955	98.4916	-68.9638
57	3	-0.646431	98.9095	-70.9031
58	3	-0.634124	99.3116	-72.8055
59	3	-0.618872	99.6946	-74.6621
60	3	-0.606775	100.063	-76.4824
61	4	-0.591776	100.413	-78.8495
62	4	-0.579873	100.749	-81.169
63	4.1	-0.565108	101.069	-83.4859
64	5	-0.553384	101.375	-86.2529
65	5	-0.538836	101.665	-88.947
66	5	-0.524401	101.94	-91.5691
67	5	-0.51293	102.203	-94.1337
68	5.5	-0.498687	102.452	-96.8765
69	6	-0.487364	102.689	-99.8007
70	6	-0.473299	102.913	-102.64
71	6	-0.462114	103.127	-105.413
72	6	-0.448213	103.328	-108.102
73	7	-0.437153	103.519	-111.162
74	9	-0.423405	103.698	-114.973
75	15	-0.412463	103.868	-121.16
76	15	-0.398855	104.027	-127.143
77	15	-0.385321	104.176	-132.923
78	15	-0.374544	104.316	-138.541
79	15	-0.361133	104.447	-143.958
80	15	-0.350451	104.569	-149.215
81	15	-0.337155	104.683	-154.272
82	15	-0.326561	104.79	-159.17
83	15	-0.31337	104.888	-163.871
84	15	-0.302855	104.98	-168.414
85	15	-0.28976	105.064	-172.76
86	15	-0.279319	105.142	-176.95
87	15	-0.266311	105.213	-180.945
88	15	-0.253347	105.277	-184.745
89	15	-0.243007	105.336	-188.39
90	15	-0.230118	105.389	-191.842
91	15	-0.219834	105.437	-195.139
92	15	-0.207012	105.48	-198.244
93	15	-0.196779	105.519	-201.196
94	15	-0.184017	105.553	-203.956
95	15	-0.173829	105.583	-206.564
96	15	-0.161119	105.609	-208.981
97	15	-0.150969	105.632	-211.245
98	15	-0.138305	105.651	-213.32
99	15	-0.125661	105.666	-215.205
100	15	-0.115562	105.68	-216.938
101	15	-0.102953	105.69	-218.482
102	15	-0.0928787	105.699	-219.875
103	15	-0.0802981	105.705	-221.08
104	15	-0.0702426	105.71	-222.134
105	15	-0.0576847	105.714	-222.999
106	15	-0.0476439	105.716	-223.714
107	15	-0.0350997	105.717	-224.24
108	15	-0.0250691	105.718	-224.616
109	15	-0.0125328	105.718	-224.804
110	15	0	105.718	-224.804
111	15	0.0125328	105.718	-224.616

112	15	0.0250691	105.719	-224.24
113	15	0.0350997	105.72	-223.714
114	15	0.0476439	105.722	-222.999
115	15	0.0576847	105.726	-222.134
116	15	0.0702426	105.731	-221.08
117	15	0.0802981	105.737	-219.875
118	15	0.0928787	105.746	-218.482
119	15	0.102953	105.756	-216.938
120	15	0.115562	105.77	-215.205
121	15	0.125661	105.785	-213.32
122	15	0.138305	105.805	-211.245
123	15	0.150969	105.827	-208.981
124	15	0.161119	105.853	-206.564
125	15	0.173829	105.883	-203.956
126	15	0.184017	105.917	-201.196
127	15	0.196779	105.956	-198.244
128	15	0.207012	105.999	-195.139
129	15	0.219834	106.047	-191.842
130	15	0.230118	106.1	-188.39
131	15	0.243007	106.159	-184.745
132	15	0.253347	106.223	-180.945
133	15	0.266311	106.294	-176.95
134	15	0.279319	106.372	-172.76
135	15	0.28976	106.456	-168.414
136	15	0.302855	106.548	-163.871
137	15	0.31337	106.646	-159.17
138	15	0.326561	106.753	-154.272
139	15	0.337155	106.867	-149.215
140	15	0.350451	106.989	-143.958
141	15	0.361133	107.12	-138.541
142	15	0.374544	107.26	-132.923
143	15	0.385321	107.409	-127.143
144	15	0.398855	107.568	-121.16
145	15	0.412463	107.738	-114.973
146	15	0.423405	107.917	-108.622
147	15	0.437153	108.108	-102.065
148	15	0.448213	108.309	-95.3416
149	15	0.462114	108.523	-88.4099
150	15	0.473299	108.747	-81.3104
151	15	0.487364	108.984	-73.9999
152	15	0.498687	109.233	-66.5196
153	15	0.51293	109.496	-58.8257
154	15	0.524401	109.771	-50.9596
155	15	0.538836	110.061	-42.8771
156	15	0.553384	110.368	-34.5763
157	15	0.565108	110.687	-26.0997
158	15	0.579873	111.023	-17.4016
159	15	0.591776	111.373	-8.52498
160	15	0.606775	111.741	0.576645
161	15	0.618872	112.124	9.85973
162	15	0.634124	112.527	19.3716
163	15	0.646431	112.944	29.0681
164	15	0.661955	113.383	38.9974
165	15	0.67449	113.838	49.1147
166	15	0.690309	114.314	59.4694
167	15	0.706302	114.813	70.0639
168	15	0.719228	115.33	80.8523
169	15	0.735557	115.871	91.8857
170	15	0.748762	116.432	103.117
171	15	0.765456	117.018	114.599
172	15	0.778966	117.625	126.283
173	15	0.796056	118.258	138.224

174	15	0.809896		118.914	150.373
175	15	0.827417		119.599	162.784
176	15	0.841621		120.307	175.408
177	15	0.859618		121.046	188.303
178	15	0.877897		121.817	201.471
179	15	0.892733		122.614	214.862
180	15	0.911562		123.445	228.535
181	15	0.926859		124.304	242.438
182	15	0.946291		125.199	256.633
183	15	0.9621	126.125	271.064	
184	15	0.982202		127.09	285.797
185	15	0.998575		128.087	300.776
186	15	1.01943	129.126	316.067	
187	15	1.03643	130.2	331.614	
188	15	1.05812	131.32	347.486	
189	15	1.08032	132.487	363.69	
190	15	1.09847	133.694	380.167	
191	15	1.12168	134.952	396.993	
192	15	1.14069	136.253	414.103	
193	15	1.16505	137.61	431.579	
194	15	1.18504	139.015	449.354	
195	15	1.21073	140.48	467.515	
196	15	1.23187	141.998	485.993	
197	15	1.25908	143.583	504.879	
198	15	1.28155	145.226	524.103	
199	15	1.31058	146.943	543.761	
200	15	1.34075	148.741	563.873	
201	15	1.36581	150.606	584.36	
202	15	1.39838	152.562	605.335	
203	15	1.42554	154.594	626.719	
204	15	1.46106	156.729	648.634	
205	15	1.49085	158.951	670.997	
206	15	1.53007	161.292	693.948	
207	15	1.56322	163.736	717.397	
208	15	1.60725	166.319	741.505	
209	15	1.64485	169.025	766.178	
210	15	1.6954	171.899	791.609	
211	15	1.75069	174.964	817.869	
212	15	1.79912	178.201	844.856	
213	15	1.86629	181.684	872.851	
214	15	1.92684	185.397	901.753	
215	15	2.01409	189.453	931.964	
216	15	2.09693	193.85	963.418	
217	15	2.22621	198.806	996.812	
218	15	2.36561	204.403	1032.3	
219	18	2.65209	211.436	1080.03	

Data Set Standard Deviation = 6.20843
Numerator = 1.16647e+006
Denominator = 1.77664e+006
W Statistic = 0.656562 = 1.16647e+006 / 1.77664e+006

5% Critical value of 0.976 exceeds 0.656562
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.656562
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Nickel

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-1.60944	-2.65209	7.03356	4.26837
2	-1.60944	-2.36561	12.6297	8.07568
3	-1.60944	-2.22621	17.5857	11.6586
4	-1.10866	-2.09693	21.9828	13.9834
5	-0.967584	-2.01409	26.0394	15.9322
6	-0.776529	-1.92684	29.7521	17.4285
7	-0.693147	-1.86629	33.2351	18.7221
8	-0.634878	-1.79912	36.472	19.8643
9	-0.616186	-1.75069	39.5369	20.943
10	-0.597837	-1.6954	42.4112	21.9566
11	-0.494296	-1.64485	45.1168	22.7697
12	-0.446287	-1.60725	47.7	23.487
13	-0.415515	-1.56322	50.1437	24.1365
14	-0.371064	-1.53007	52.4848	24.7042
15	-0.371064	-1.49085	54.7074	25.2574
16	-0.328504	-1.46106	56.8421	25.7374
17	-0.274437	-1.42554	58.8743	26.1286
18	-0.235722	-1.39838	60.8297	26.4583
19	-0.223144	-1.36581	62.6952	26.763
20	-0.174353	-1.34075	64.4928	26.9968
21	-0.0304592	-1.31058	66.2104	27.0367
22	-0.0304592	-1.28155	67.8528	27.0758
23	0	-1.25908	69.4381	27.0758
24	0	-1.23187	70.9556	27.0758
25	0	-1.21073	72.4214	27.0758
26	0	-1.18504	73.8258	27.0758
27	0	-1.16505	75.1831	27.0758
28	0	-1.14069	76.4843	27.0758
29	0	-1.12168	77.7424	27.0758
30	0	-1.09847	78.9491	27.0758
31	0	-1.08032	80.1162	27.0758
32	0	-1.05812	81.2358	27.0758
33	0	-1.03643	82.31	27.0758
34	0	-1.01943	83.3492	27.0758
35	0	-0.998575	84.3464	27.0758
36	0	-0.982202	85.3111	27.0758
37	0.0953102	-0.9621	86.2367	26.9841
38	0.182322	-0.946291	87.1322	26.8115
39	0.182322	-0.926859	87.9912	26.6425
40	0.262364	-0.911562	88.8222	26.4034
41	0.470004	-0.892733	89.6192	25.9838
42	0.587787	-0.877897	90.3899	25.4678
43	0.641854	-0.859618	91.1288	24.916
44	0.693147	-0.841621	91.8371	24.3327
45	0.693147	-0.827417	92.5218	23.7591
46	0.693147	-0.809896	93.1777	23.1978
47	0.693147	-0.796056	93.8114	22.646
48	0.693147	-0.778966	94.4182	22.106
49	0.788457	-0.765456	95.0041	21.5025

50	0.788457	-0.748762	95.5647	20.9121
51	0.955511	-0.735557	96.1058	20.2093
52	1.02962	-0.719228	96.6231	19.4688
53	1.09861	-0.706302	97.1219	18.6928
54	1.09861	-0.690309	97.5985	17.9344
55	1.09861	-0.674498	98.0534	17.1934
56	1.09861	-0.661955	98.4916	16.4662
57	1.09861	-0.646431	98.9095	15.756
58	1.09861	-0.634124	99.3116	15.0594
59	1.09861	-0.618872	99.6946	14.3795
60	1.09861	-0.606775	100.063	13.7129
61	1.38629	-0.591776	100.413	12.8925
62	1.38629	-0.579873	100.749	12.0886
63	1.41099	-0.565108	101.069	11.2913
64	1.60944	-0.553384	101.375	10.4006
65	1.60944	-0.538836	101.665	9.53339
66	1.60944	-0.524401	101.94	8.6894
67	1.60944	-0.51293	102.203	7.86387
68	1.70475	-0.498687	102.452	7.01373
69	1.79176	-0.487364	102.689	6.14049
70	1.79176	-0.473299	102.913	5.29246
71	1.79176	-0.462114	103.127	4.46446
72	1.79176	-0.448213	103.328	3.66137
73	1.94591	-0.437153	103.519	2.81071
74	2.19722	-0.423405	103.698	1.88039
75	2.70805	-0.412463	103.868	0.763424
76	2.70805	-0.398855	104.027	-0.316697
77	2.70805	-0.385321	104.176	-1.36017
78	2.70805	-0.374544	104.316	-2.37445
79	2.70805	-0.361133	104.447	-3.35242
80	2.70805	-0.350451	104.569	-4.30145
81	2.70805	-0.337155	104.683	-5.21449
82	2.70805	-0.326561	104.79	-6.09883
83	2.70805	-0.31337	104.888	-6.94745
84	2.70805	-0.302855	104.98	-7.7676
85	2.70805	-0.28976	105.064	-8.55228
86	2.70805	-0.279319	105.142	-9.3087
87	2.70805	-0.266311	105.213	-10.0299
88	2.70805	-0.253347	105.277	-10.716
89	2.70805	-0.243007	105.336	-11.374
90	2.70805	-0.230118	105.389	-11.9972
91	2.70805	-0.219834	105.437	-12.5925
92	2.70805	-0.207012	105.48	-13.1531
93	2.70805	-0.196779	105.519	-13.686
94	2.70805	-0.184017	105.553	-14.1843
95	2.70805	-0.173829	105.583	-14.6551
96	2.70805	-0.161119	105.609	-15.0914
97	2.70805	-0.150969	105.632	-15.5002
98	2.70805	-0.138305	105.651	-15.8748
99	2.70805	-0.125661	105.666	-16.2151
100	2.70805	-0.115562	105.68	-16.528
101	2.70805	-0.102953	105.69	-16.8068
102	2.70805	-0.0928787	105.699	-17.0583
103	2.70805	-0.0802981	105.705	-17.2758
104	2.70805	-0.0702426	105.71	-17.466
105	2.70805	-0.0576847	105.714	-17.6222
106	2.70805	-0.0476439	105.716	-17.7512
107	2.70805	-0.0350997	105.717	-17.8463
108	2.70805	-0.0250691	105.718	-17.9142
109	2.70805	-0.0125328	105.718	-17.9481
110	2.70805	0	105.718	-17.9481
111	2.70805	0.0125328	105.718	-17.9142

112	2.70805	0.0250691	105.719	-17.8463
113	2.70805	0.0350997	105.72	-17.7512
114	2.70805	0.0476439	105.722	-17.6222
115	2.70805	0.0576847	105.726	-17.466
116	2.70805	0.0702426	105.731	-17.2758
117	2.70805	0.0802981	105.737	-17.0583
118	2.70805	0.0928787	105.746	-16.8068
119	2.70805	0.102953	105.756	-16.528
120	2.70805	0.115562	105.77	-16.2151
121	2.70805	0.125661	105.785	-15.8748
122	2.70805	0.138305	105.805	-15.5002
123	2.70805	0.150969	105.827	-15.0914
124	2.70805	0.161119	105.853	-14.6551
125	2.70805	0.173829	105.883	-14.1843
126	2.70805	0.184017	105.917	-13.686
127	2.70805	0.196779	105.956	-13.1531
128	2.70805	0.207012	105.999	-12.5925
129	2.70805	0.219834	106.047	-11.9972
130	2.70805	0.230118	106.1	-11.374
131	2.70805	0.243007	106.159	-10.716
132	2.70805	0.253347	106.223	-10.0299
133	2.70805	0.266311	106.294	-9.3087
134	2.70805	0.279319	106.372	-8.55228
135	2.70805	0.28976	106.456	-7.7676
136	2.70805	0.302855	106.548	-6.94745
137	2.70805	0.31337	106.646	-6.09883
138	2.70805	0.326561	106.753	-5.21449
139	2.70805	0.337155	106.867	-4.30145
140	2.70805	0.350451	106.989	-3.35242
141	2.70805	0.361133	107.12	-2.37445
142	2.70805	0.374544	107.26	-1.36017
143	2.70805	0.385321	107.409	-0.316697
144	2.70805	0.398855	107.568	0.763424
145	2.70805	0.412463	107.738	1.88039
146	2.70805	0.423405	107.917	3.027
147	2.70805	0.437153	108.108	4.21083
148	2.70805	0.448213	108.309	5.42461
149	2.70805	0.462114	108.523	6.67604
150	2.70805	0.473299	108.747	7.95776
151	2.70805	0.487364	108.984	9.27756
152	2.70805	0.498687	109.233	10.628
153	2.70805	0.51293	109.496	12.0171
154	2.70805	0.524401	109.771	13.4372
155	2.70805	0.538836	110.061	14.8964
156	2.70805	0.553384	110.368	16.395
157	2.70805	0.565108	110.687	17.9253
158	2.70805	0.579873	111.023	19.4956
159	2.70805	0.591776	111.373	21.0982
160	2.70805	0.606775	111.741	22.7414
161	2.70805	0.618872	112.124	24.4173
162	2.70805	0.634124	112.527	26.1345
163	2.70805	0.646431	112.944	27.8851
164	2.70805	0.661955	113.383	29.6777
165	2.70805	0.67449	113.838	31.5043
166	2.70805	0.690309	114.314	33.3737
167	2.70805	0.706302	114.813	35.2864
168	2.70805	0.719228	115.33	37.2341
169	2.70805	0.735557	115.871	39.226
170	2.70805	0.748762	116.432	41.2537
171	2.70805	0.765456	117.018	43.3266
172	2.70805	0.778966	117.625	45.4361
173	2.70805	0.796056	118.258	47.5918

174	2.70805	0.809896		118.914	49.7851
175	2.70805	0.827417		119.599	52.0257
176	2.70805	0.841621		120.307	54.3049
177	2.70805	0.859618		121.046	56.6328
178	2.70805	0.877897		121.817	59.0102
179	2.70805	0.892733		122.614	61.4277
180	2.70805	0.911562		123.445	63.8963
181	2.70805	0.926859		124.304	66.4063
182	2.70805	0.946291		125.199	68.9689
183	2.70805	0.9621	126.125	71.5743	
184	2.70805	0.982202		127.09	74.2341
185	2.70805	0.998575		128.087	76.9383
186	2.70805	1.01943	129.126	79.699	
187	2.70805	1.03643	130.2	82.5057	
188	2.70805	1.05812	131.32	85.3712	
189	2.70805	1.08032	132.487	88.2967	
190	2.70805	1.09847	133.694	91.2714	
191	2.70805	1.12168	134.952	94.309	
192	2.70805	1.14069	136.253	97.398	
193	2.70805	1.16505	137.61	100.553	
194	2.70805	1.18504	139.015	103.762	
195	2.70805	1.21073	140.48	107.041	
196	2.70805	1.23187	141.998	110.377	
197	2.70805	1.25908	143.583	113.787	
198	2.70805	1.28155	145.226	117.257	
199	2.70805	1.31058	146.943	120.806	
200	2.70805	1.34075	148.741	124.437	
201	2.70805	1.36581	150.606	128.136	
202	2.70805	1.39838	152.562	131.923	
203	2.70805	1.42554	154.594	135.783	
204	2.70805	1.46106	156.729	139.74	
205	2.70805	1.49085	158.951	143.777	
206	2.70805	1.53007	161.292	147.92	
207	2.70805	1.56322	163.736	152.154	
208	2.70805	1.60725	166.319	156.506	
209	2.70805	1.64485	169.025	160.961	
210	2.70805	1.6954	171.899	165.552	
211	2.70805	1.75069	174.964	170.293	
212	2.70805	1.79912	178.201	175.165	
213	2.70805	1.86629	181.684	180.219	
214	2.70805	1.92684	185.397	185.437	
215	2.70805	2.01409	189.453	190.891	
216	2.70805	2.09693	193.85	196.57	
217	2.70805	2.22621	198.806	202.598	
218	2.70805	2.36561	204.403	209.005	
219	2.89037	2.65209	211.436	216.67	

Data Set Standard Deviation = 1.22096
Numerator = 46945.9
Denominator = 68713.1
W Statistic = 0.683216 = 46945.9 / 68713.1

5% Critical value of 0.976 exceeds 0.683216
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.683216
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Nickel

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	ND<2.70805	74
	3/16/1999	ND<2.70805	74
	9/23/1999	ND<2.70805	74
	3/14/2000	ND<2.70805	74
	9/23/2003	ND<2.70805	74
	3/10/2004	ND<2.70805	74
	10/12/2004	ND<2.70805	74
	4/1/2005	ND<2.70805	74
	10/26/2005	ND<2.70805	74
	6/19/2006	ND<2.70805	74
	11/18/2006	0 J	167
	6/2/2007	1.79176	213
	11/15/2007	1.09861 J	197
	5/20/2008	1.60944 J	208
	11/20/2008	ND<2.70805	74
	6/11/2009	-0.235722	162
	11/16/2009	0.182322	182
	6/30/2010	-0.274437 J	161

Rank Sum = 2104
Rank Mean = 116.889

Background Rank Sum = 2104
Background Rank Mean = 116.889

Compliance Wells

Well ID	Date	Result	Rank
LMW-9D	11/18/2006	0.693147 J	188
	6/2/2007	ND<2.70805	74
	11/15/2007	ND<2.70805	74
	5/20/2008	0 J	168
	11/20/2008	ND<2.70805	74
	6/11/2009	-0.597837 J	154
	11/16/2009	-0.371064	158
	6/30/2010	-0.634878 J	152

Rank Sum = 1042
Rank Mean = 130.25

LMW-9	1/16/1998	ND<2.70805	74
	3/16/1999	1.79176 J	214
	9/23/1999	ND<2.70805	74
	3/14/2000	ND<2.70805	74
	9/23/2003	ND<2.70805	74
	3/10/2004	ND<2.70805	74
	10/12/2004	ND<2.70805	74
	4/1/2005	ND<2.70805	74

	10/26/2005	ND<2.70805	74
	6/19/2006	ND<2.70805	74
	11/18/2006	ND<2.70805	74
	6/2/2007	1.09861 J	198
	11/15/2007	ND<2.70805	74
	5/20/2008	0 J	169
	11/20/2008	2.19722 J	218
	6/11/2009	-1.10866 J	148
	11/16/2009	-0.776529 J	150
	6/30/2010	ND<-1.60944 U	74

Rank Sum = 1985
Rank Mean = 110.278

LMW-10	3/14/2000	ND<2.70805	74
	9/23/2003	ND<2.70805	74
	3/10/2004	ND<2.70805	74
	10/12/2004	ND<2.70805	74
	4/1/2005	ND<2.70805	74
	10/26/2005	ND<2.70805	74
	6/19/2006	ND<2.70805	74
	11/18/2006	ND<2.70805	74
	6/2/2007	ND<2.70805	74
	11/15/2007	ND<2.70805	74
	5/20/2008	0 J	170
	11/20/2008	ND<2.70805	74
	6/11/2009	-0.967584 J	149
	11/16/2009	-0.693147 J	151
	6/30/2010	ND<-1.60944 U	74

Rank Sum = 1358
Rank Mean = 90.5333

LMW-15R	11/18/2006	0 J	171
	6/2/2007	ND<2.70805	74
	11/15/2007	ND<2.70805	74
	11/15/2007	ND<2.70805	74
	5/20/2008	ND<2.70805	74
	5/20/2008	0 J	172
	11/20/2008	ND<2.70805	74
	11/20/2008	ND<2.70805	74
	6/11/2009	1.09861	199
	6/30/2010	0	173

Rank Sum = 1159
Rank Mean = 115.9

LMW-9S	11/18/2006	0 J	174
	6/2/2007	ND<2.70805	74
	11/15/2007	ND<2.70805	74
	5/20/2008	0 J	175
	11/20/2008	ND<2.70805	74
	6/11/2009	0.182322	183
	11/16/2009	0.470004 J B	185
	11/16/2009	-0.223144 J B	163
	11/16/2009	-0.0304592 J B	165
	6/30/2010	ND<-1.60944 U	74

Rank Sum = 1341
Rank Mean = 134.1

LMW-8	1/16/1998	ND<2.70805	74
	3/16/1999	1.79176 J	215
	9/23/1999	ND<2.70805	74
	3/14/2000	ND<2.70805	74
	9/23/2003	ND<2.70805	74

	3/10/2004	ND<2.70805	74
	10/12/2004	ND<2.70805	74
	4/1/2005	ND<2.70805	74
	10/26/2005	ND<2.70805	74
	6/19/2006	ND<2.70805	74
	11/18/2006	0 J	176
	6/2/2007	ND<2.70805	74
	11/15/2007	ND<2.70805	74
	5/20/2008	0 J	177
	11/20/2008	ND<2.70805	74
	6/11/2009	-0.494296	155
	11/16/2009	-0.446287	156
	6/30/2010	-0.371064 J	159

Rank Sum = 1926
Rank Mean = 107

LMW-16	11/18/2006	0 J	178
	6/2/2007	ND<2.70805	74
	11/15/2007	ND<2.70805	74
	5/20/2008	ND<2.70805	74
	11/20/2008	ND<2.70805	74
	6/11/2009	-0.328504	160
	11/16/2009	-0.415515	157
	6/30/2010	-0.0304592 J	166

Rank Sum = 957
Rank Mean = 119.625

LMW-3	11/19/1996	ND<2.70805	74
	3/24/1997	ND<2.70805	74
	1/16/1998	ND<2.70805	74
	3/16/1999	ND<2.70805	74
	9/23/1999	ND<2.70805	74
	3/14/2000	ND<2.70805	74
	9/23/2003	ND<2.70805	74
	3/10/2004	ND<2.70805	74
	10/12/2004	ND<2.70805	74
	4/1/2005	ND<2.70805	74
	10/26/2005	ND<2.70805	74
	6/19/2006	ND<2.70805	74
	11/18/2006	ND<2.70805	74
	6/2/2007	ND<2.70805	74
	11/15/2007	ND<2.70805	74
	5/20/2008	0 J	179
	11/20/2008	ND<2.70805	74
	6/11/2009	-0.616186 J	153
	11/16/2009	0.0953102	181
	6/30/2010	0.262364	184

Rank Sum = 1881
Rank Mean = 94.05

LMW-3S	11/18/2006	0.693147 J	189
	6/2/2007	1.38629 J	205
	11/15/2007	1.60944 J	209
	5/20/2008	1.09861 J	200
	11/20/2008	1.09861 J	201
	6/11/2009	0.955511	195
	11/16/2009	1.02962	196
	6/30/2010	1.41099	207

Rank Sum = 1602
Rank Mean = 200.25

LMW-6	1/16/1998	ND<2.70805	74

	3/16/1999	ND<2.70805	74
	9/23/1999	ND<2.70805	74
	3/14/2000	ND<2.70805	74
	9/23/2003	ND<2.70805	74
	3/10/2004	ND<2.70805	74
	10/12/2004	ND<2.70805	74
	4/1/2005	ND<2.70805	74
	10/26/2005	ND<2.70805	74
	6/19/2006	ND<2.70805	74
	11/18/2006	0 J	180
	6/2/2007	1.60944	210
	11/15/2007	ND<2.70805	74
	5/20/2008	0.693147 J	190
	11/20/2008	ND<2.70805	74
	6/11/2009	0.788457	193
	11/16/2009	0.587787 J	186
	6/30/2010	0.641854	187

Rank Sum = 2034
Rank Mean = 113

LMW-14R	6/2/2007	ND<2.70805	74
	11/15/2007	ND<2.70805	74
	5/20/2008	0.693147 J	191
	11/20/2008	1.09861 J	202
	6/11/2009	0.788457	194
	6/30/2010	-0.174353 J	164

Rank Sum = 899
Rank Mean = 149.833

LMW-7	1/16/1998	ND<2.70805	74
	3/16/1999	ND<2.70805	74
	9/23/1999	ND<2.70805	74
	3/14/2000	ND<2.70805	74
	9/23/2003	ND<2.70805	74
	3/10/2004	ND<2.70805	74
	10/12/2004	ND<2.70805	74
	4/1/2005	2.89037 J	219
	10/26/2005	ND<2.70805	74
	6/19/2006	ND<2.70805	74
	11/18/2006	1.38629 J	206
	6/2/2007	1.94591	217
	11/15/2007	1.60944 J	211
	5/20/2008	0.693147 J	192
	11/20/2008	1.09861 J	203
	6/11/2009	1.70475	212

Rank Sum = 2126
Rank Mean = 132.875

LMW-11	3/14/2000	ND<2.70805	74
	9/23/2003	ND<2.70805	74
	3/10/2004	ND<2.70805	74
	10/12/2004	ND<2.70805	74
	4/1/2005	ND<2.70805	74
	10/26/2005	ND<2.70805	74
	6/19/2006	ND<2.70805	74
	6/2/2007	ND<2.70805	74
	11/15/2007	ND<2.70805	74
	5/20/2008	ND<2.70805	74
	11/20/2008	ND<2.70805	74

Rank Sum = 814
Rank Mean = 74

LMW-13	3/14/2000	ND<2.70805	74
	9/23/2003	ND<2.70805	74
	3/10/2004	ND<2.70805	74
	10/12/2004	ND<2.70805	74
	4/1/2005	ND<2.70805	74
	10/26/2005	ND<2.70805	74
	6/19/2006	ND<2.70805	74
	6/2/2007	ND<2.70805	74
	11/15/2007	ND<2.70805	74
	5/20/2008	ND<2.70805	74
	11/20/2008	ND<2.70805	74

Rank Sum = 814
Rank Mean = 74

LMW-12	3/14/2000	ND<2.70805	74
	9/23/2003	ND<2.70805	74
	3/10/2004	ND<2.70805	74
	10/12/2004	ND<2.70805	74
	4/1/2005	ND<2.70805	74
	10/26/2005	ND<2.70805	74
	6/19/2006	ND<2.70805	74
	6/2/2007	ND<2.70805	74
	11/15/2007	ND<2.70805	74
	5/20/2008	ND<2.70805	74
	11/20/2008	ND<2.70805	74

Rank Sum = 814
Rank Mean = 74

MW-5	1/16/1998	ND<2.70805	74
	3/16/1999	1.79176 J	216
	9/23/1999	ND<2.70805	74
	3/14/2000	ND<2.70805	74
	9/23/2003	ND<2.70805	74
	3/10/2004	ND<2.70805	74
	10/12/2004	ND<2.70805	74
	4/1/2005	ND<2.70805	74
	10/26/2005	ND<2.70805	74
	6/19/2006	ND<2.70805	74
	11/15/2007	1.09861 J	204
	5/20/2008	ND<2.70805	74
	11/20/2008	ND<2.70805	74

Rank Sum = 1234
Rank Mean = 94.9231

Calculation Results:

Kruskal-Wallis H Statistic = 37.5855
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 53.8797
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
37.5855 > 26.2962 indicating a significant group difference at 5% significance level
53.8797 > 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 116.889

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9D	130.25	13.3611	62.6357
LMW-9	110.278	-6.61111	49.1355
LMW-10	90.5333	-26.3556	51.5337
LMW-15R	115.9	-0.988889	58.1379

LMW-9S	134.1	17.2111	58.1379	
LMW-8	107	-9.8888	49.1355	
LMW-16	119.625	2.73611	62.6357	
LMW-3	94.05	-22.838	47.8913	
LMW-3S	200.25	83.3611	62.6357	
LMW-6	113	-3.8888	49.1355	
LMW-14R		149.833	32.9444	69.488
LMW-7	132.875	15.9861	50.6477	
LMW-11	74	-42.888	56.4135	
LMW-13	74	-42.888	56.4135	
LMW-12	74	-42.888	56.4135	
MW-5	94.9231	-21.965	53.6524	

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 116.889

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9D	130.25	13.3611	73.9823
LMW-9	110.278	-6.6111	58.0365
LMW-10	90.5333	-26.355	60.8692
LMW-15R		115.9	-0.988889	68.6697
LMW-9S	134.1	17.2111	68.6697
LMW-8	107	-9.8888	58.0365
LMW-16	119.625	2.73611	73.9823
LMW-3	94.05	-22.838	56.567
LMW-3S	200.25	83.3611	73.9823
LMW-6	113	-3.8888	58.0365
LMW-14R		149.833	32.9444	82.076
LMW-7	132.875	15.9861	59.8226
LMW-11	74	-42.888	66.6329
LMW-13	74	-42.888	66.6329
LMW-12	74	-42.888	66.6329
MW-5	94.9231	-21.965	63.3717

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Nickel

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 67.1233%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 18
Maximum Background Concentration = 2.70805
Confidence Level = 69.2%
False Positive Rate = 30.8%

Location	Date	Samples	Mean	Significant
LMW-9D	6/30/2010	1	-0.634878	FALSE
LMW-9	6/30/2010	1	-1.60944	FALSE
LMW-10	6/30/2010	1	-1.60944	FALSE
LMW-15R	6/30/2010	1	0	FALSE
LMW-9S	6/30/2010	1	-1.60944	FALSE
LMW-8	6/30/2010	1	-0.371064	FALSE
LMW-16	6/30/2010	1	-0.0304592	FALSE
LMW-3	6/30/2010	1	0.262364	FALSE
LMW-3S	6/30/2010	1	1.41099	FALSE
LMW-6	6/30/2010	1	0.641854	FALSE
LMW-14R	6/30/2010	1	-0.174353	FALSE
LMW-7	6/11/2009	1	1.70475	FALSE
LMW-11	11/20/2008	1	2.70805	FALSE
LMW-13	11/20/2008	1	2.70805	FALSE
LMW-12	11/20/2008	1	2.70805	FALSE
MW-5	11/20/2008	1	2.70805	FALSE

Mann-Kendall Trend Analysis

Parameter: Nickel

Location: LMW-3S

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
1.38629 J		0.693147 J	0.693147	1	0
1.60944 J		0.693147 J	0.916291	2	0
1.09861 J		0.693147 J	0.405465	3	0
1.09861 J		0.693147 J	0.405465	4	0
0.955511		0.693147 J	0.262364	5	0
1.02962		0.693147 J	0.336472	6	0
1.41099		0.693147 J	0.71784 7	0	
1.60944 J		1.38629 J	0.223144	8	0
1.09861 J		1.38629 J	-0.287682	8	1
1.09861 J		1.38629 J	-0.287682	8	2
0.955511		1.38629 J	-0.430783	8	3
1.02962		1.38629 J	-0.356675	8	4
1.41099		1.38629 J	0.0246926	9	4
1.09861 J		1.60944 J	-0.510826	9	5
1.09861 J		1.60944 J	-0.510826	9	6
0.955511		1.60944 J	-0.653926	9	7
1.02962		1.60944 J	-0.579818	9	8
1.41099		1.60944 J	-0.198451	9	9
1.09861 J		1.09861 J	0 9	9	
0.955511		1.09861 J	-0.143101	9	10
1.02962		1.09861 J	-0.0689929	9	11
1.41099		1.09861 J	0.312375	10	11
0.955511		1.09861 J	-0.143101	10	12
1.02962		1.09861 J	-0.0689929	10	13
1.41099		1.09861 J	0.312375	11	13
1.02962		0.955511	0.074108	12	13
1.41099		0.955511	0.455476	13	13
1.41099		1.02962	0.381368	14	13

S Statistic = 14 - 13 = 1
Comparing at 1.0 - (0.05 / 2) = 97.5% confidence level (two-tailed)
Failed to calculate probability for S = 1
Table out of range

Concentrations (ppb)

Parameter: Nitrate

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 106
Total Non-Detect: 54
Percent Non-Detects: 50.9434%
Total Background Measurements: 7
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	7	3 (42.8571%)	11/18/2006	50	50
			6/2/2007	643000	643000
			11/15/2007	ND<10	ND<10
			5/20/2008	369	369
			11/20/2008	ND<10	ND<10
			11/16/2009	ND<360 U	ND<360 U
			6/30/2010	84 J	84 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-10	7	2 (28.5714%)	11/18/2006	551	551
			6/2/2007	1020	1020
			11/15/2007	ND<10	ND<10
			5/20/2008	406	406
			11/20/2008	ND<10	ND<10
			11/16/2009	2400	2400
			6/30/2010	370	370
LMW-15R	9	6 (66.6667%)	11/18/2006	4780	4780
			6/2/2007	1400	1400
			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
			6/30/2010	2100	2100
LMW-16	7	4 (57.1429%)	11/18/2006	52	52
			6/2/2007	166	166
			11/15/2007	ND<10	ND<10
			5/20/2008	377	377
			11/20/2008	ND<10	ND<10
			11/16/2009	ND<360 U	ND<360 U
			6/30/2010	ND<36 U	ND<36 U
LMW-3S	7	3 (42.8571%)	11/18/2006	321	321
			6/2/2007	196	196
			11/15/2007	ND<10	ND<10
			5/20/2008	546	546
			11/20/2008	ND<10	ND<10
			11/16/2009	710 J M	710 J M
			6/30/2010	ND<36 U	ND<36 U

LMW-14R	5	3 (60%)	6/2/2007	326	326	
			11/15/2007	ND<10	ND<10	
			5/20/2008	371	371	
			11/20/2008	ND<10	ND<10	
			6/30/2010	ND<36 U		ND<36 U
LMW-6	7	3 (42.8571%)	11/18/2006	1150	1150	
			6/2/2007	ND<10	ND<10	
			11/15/2007	ND<10	ND<10	
			5/20/2008	1410	1410	
			11/20/2008	ND<10	ND<10	
			11/16/2009	5000	5000	
			6/30/2010	880	880	
LMW-8	7	2 (28.5714%)	11/18/2006	216	216	
			6/2/2007	398	398	
			11/15/2007	ND<10	ND<10	
			5/20/2008	570	570	
			11/20/2008	ND<10	ND<10	
			11/16/2009	740 J	740 J	
			6/30/2010	45 J	45 J	
LMW-9D	7	3 (42.8571%)	11/18/2006	107	107	
			6/2/2007	461	461	
			11/15/2007	ND<10	ND<10	
			5/20/2008	ND<10	ND<10	
			11/20/2008	ND<10	ND<10	
			11/16/2009	430 J M H		430 J M H
			6/30/2010	58 J	58 J	
LMW-9	7	2 (28.5714%)	11/18/2006	99	99	
			6/2/2007	17200	17200	
			11/15/2007	ND<10	ND<10	
			5/20/2008	455	455	
			11/20/2008	ND<10	ND<10	
			11/16/2009	450 J M H		450 J M H
			6/30/2010	45 J	45 J	
LMW-9S	9	4 (44.4444%)	11/18/2006	109	109	
			6/2/2007	1000	1000	
			11/15/2007	ND<10	ND<10	
			5/20/2008	ND<10	ND<10	
			11/20/2008	ND<10	ND<10	
			11/16/2009	ND<360 U		ND<360 U
			11/16/2009	7300 H	7300 H	
			11/16/2009	770 J M H		770 J M H
			6/30/2010	60 J	60 J	
LMW-3	7	2 (28.5714%)	11/18/2006	333	333	
			6/2/2007	209	209	
			11/15/2007	ND<10	ND<10	
			5/20/2008	515	515	
			11/20/2008	ND<10	ND<10	
			11/16/2009	870 J H	870 J H	
			6/30/2010	78 J M	78 J M	
LMW-12	4	4 (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	

LMW-11	4	4 (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	
LMW-13	4	4 (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	
MW-5	3	3 (100%)	11/15/2007	ND<10	ND<10	
			5/20/2008	ND<10	ND<10	
			11/20/2008	ND<10	ND<10	
LMW-7	5	2 (40%)	11/18/2006	119	119	
			6/2/2007	295	295	
			11/15/2007	ND<10	ND<10	
			5/20/2008	128	128	
			11/20/2008	ND<10	ND<10	

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Nitrate

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 106

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	5	-2.36561	5.59613	-11.8281
2	5	-2.09693	9.99325	-22.3127
3	5	-1.91103	13.6453	-31.8679
4	5	-1.78661	16.8373	-40.8009
5	5	-1.68494	19.6763	-49.2256
6	5	-1.58927	22.2021	-57.172
7	5	-1.5141	24.4946	-64.7425
8	5	-1.44663	26.5873	-71.9757
9	5	-1.37866	28.488	-78.8689
10	5	-1.32251	30.237	-85.4815
11	5	-1.27024	31.8505	-91.8327
12	5	-1.21596	33.3291	-97.9125
13	5	-1.17	34.698	-103.762
14	5	-1.12639	35.9668	-109.394
15	5	-1.08032	37.1339	-114.796
16	5	-1.04073	38.217	-120
17	5	-1.00271	39.2224	-125.013
18	5	-0.9621	40.148	-129.824
19	5	-0.926859	41.0071	-134.458
20	5	-0.892733	41.8041	-138.922
21	5	-0.855996	42.5368	-143.202
22	5	-0.823893	43.2156	-147.321
23	5	-0.792618	43.8439	-151.284
24	5	-0.758753	44.4196	-155.078
25	5	-0.729003	44.951	-158.723
26	5	-0.699883	45.4408	-162.222
27	5	-0.668209	45.8873	-165.563
28	5	-0.640266	46.2973	-168.765
29	5	-0.609791	46.6691	-171.814
30	5	-0.582841	47.0088	-174.728
31	5	-0.556308	47.3183	-177.51
32	5	-0.52728	47.5963	-180.146
33	5	-0.501527	47.8479	-182.654
34	5	-0.476105	48.0745	-185.034
35	5	-0.448213	48.2754	-187.275
36	5	-0.423405	48.4547	-189.392
37	5	-0.398855	48.6138	-191.386
38	5	-0.371856	48.7521	-193.246
39	5	-0.347787	48.873	-194.985
40	5	-0.323919	48.9779	-196.604
41	5	-0.297612	49.0665	-198.092
42	5	-0.27411	49.1417	-199.463
43	5	-0.250759	49.2045	-200.717
44	5	-0.224974	49.2552	-201.842
45	5	-0.201894	49.2959	-202.851
46	5	-0.17892	49.3279	-203.746
47	5	-0.153505	49.3515	-204.513
48	5	-0.130716	49.3686	-205.167
49	18	-0.107995	49.3802	-207.111

50	18	-0.0828129		49.3871	-208.601
51	18	-0.0601949		49.3907	-209.685
52	45	-0.0376076		49.3921	-211.377
53	45	-0.0125328		49.3923	-211.941
54	50	0.0125328		49.3924	-211.314
55	52	0.0376076		49.3939	-209.359
56	58	0.0601949		49.3975	-205.868
57	60	0.0828129		49.4043	-200.899
58	78	0.107995		49.416	-192.475
59	84	0.130716		49.4331	-181.495
60	99	0.153505		49.4567	-166.298
61	107	0.17892	49.4887	-147.154	
62	109	0.201894		49.5294	-125.147
63	119	0.224974		49.58	-98.3753
64	128	0.250759		49.6429	-66.2781
65	166	0.27411	49.7181	-20.7758	
66	180	0.297612		49.8066	32.7943
67	180	0.323919		49.9116	91.0997
68	180	0.347787		50.0325	153.701
69	196	0.371856		50.1708	226.585
70	209	0.398855		50.3299	309.946
71	216	0.423405		50.5091	401.401
72	295	0.448213		50.71	533.624
73	321	0.476105		50.9367	686.454
74	326	0.501527		51.1882	849.952
75	333	0.52728	51.4663	1025.54	
76	369	0.556308		51.7757	1230.81
77	370	0.582841		52.1155	1446.46
78	371	0.609791		52.4873	1672.7
79	377	0.640266		52.8972	1914.08
80	398	0.668209		53.3437	2180.02
81	406	0.699883		53.8336	2464.18
82	430	0.729003		54.365	2777.65
83	450	0.758753		54.9407	3119.09
84	455	0.792618		55.569	3479.73
85	461	0.823893		56.2478	3859.54
86	515	0.855996		56.9805	4300.38
87	546	0.892733		57.7775	4787.81
88	551	0.926859		58.6365	5298.51
89	570	0.9621	59.5622	5846.91	
90	710	1.00271	60.5676	6558.83	
91	740	1.04073	61.6507	7328.98	
92	770	1.08032	62.8178	8160.82	
93	870	1.12639	64.0866	9140.78	
94	880	1.17	65.4555	10170.4	
95	1000	1.21596	66.934	11386.3	
96	1020	1.27024	68.5475	12682	
97	1150	1.32251	70.2966	14202.9	
98	1400	1.37866	72.1973	16133	
99	1410	1.44663	74.29	18172.7	
100	2100	1.5141	76.5825	21352.4	
101	2400	1.58927	79.1083	25166.6	
102	4780	1.68494	81.9473	33220.6	
103	5000	1.78661	85.1393	42153.7	
104	7300	1.91103	88.7913	56104.2	
105	17200	2.09693	93.1885	92171.4	
106	643000	2.36561	98.7846	1.61326e+006	

Data Set Standard Deviation = 62428.8
Numerator = 2.60261e+012
Denominator = 4.04248e+013

W Statistic = 0.0643815 = 2.60261e+012 / 4.04248e+013

5% Critical value of 0.976 exceeds 0.0643815
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.0643815
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Nitrate

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 106

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	1.60944	-2.36561	5.59613	-3.80731
2	1.60944	-2.09693	9.99325	-7.18219
3	1.60944	-1.91103	13.6453	-10.2579
4	1.60944	-1.78661	16.8373	-13.1333
5	1.60944	-1.68494	19.6763	-15.8451
6	1.60944	-1.58927	22.2021	-18.4029
7	1.60944	-1.5141	24.4946	-20.8398
8	1.60944	-1.44663	26.5873	-23.1681
9	1.60944	-1.37866	28.488	-25.3869
10	1.60944	-1.32251	30.237	-27.5154
11	1.60944	-1.27024	31.8505	-29.5598
12	1.60944	-1.21596	33.3291	-31.5168
13	1.60944	-1.17	34.698	-33.3998
14	1.60944	-1.12639	35.9668	-35.2127
15	1.60944	-1.08032	37.1339	-36.9514
16	1.60944	-1.04073	38.217	-38.6264
17	1.60944	-1.00271	39.2224	-40.2402
18	1.60944	-0.9621	40.148	-41.7887
19	1.60944	-0.926859	41.0071	-43.2804
20	1.60944	-0.892733	41.8041	-44.7172
21	1.60944	-0.855996	42.5368	-46.0948
22	1.60944	-0.823893	43.2156	-47.4208
23	1.60944	-0.792618	43.8439	-48.6965
24	1.60944	-0.758753	44.4196	-49.9177
25	1.60944	-0.729003	44.951	-51.091
26	1.60944	-0.699883	45.4408	-52.2174
27	1.60944	-0.668209	45.8873	-53.2928
28	1.60944	-0.640266	46.2973	-54.3233
29	1.60944	-0.609791	46.6691	-55.3047
30	1.60944	-0.582841	47.0088	-56.2428
31	1.60944	-0.556308	47.3183	-57.1381
32	1.60944	-0.527284	47.5963	-57.9867
33	1.60944	-0.501527	47.8479	-58.7939
34	1.60944	-0.476105	48.0745	-59.5602
35	1.60944	-0.448213	48.2754	-60.2815
36	1.60944	-0.423405	48.4547	-60.963
37	1.60944	-0.398855	48.6138	-61.6049
38	1.60944	-0.371856	48.7521	-62.2034
39	1.60944	-0.347787	48.873	-62.7631
40	1.60944	-0.323919	48.9779	-63.2845
41	1.60944	-0.297612	49.0665	-63.7635
42	1.60944	-0.274114	49.1417	-64.2046
43	1.60944	-0.250759	49.2045	-64.6082
44	1.60944	-0.224974	49.2552	-64.9703
45	1.60944	-0.201894	49.2959	-65.2952
46	1.60944	-0.178924	49.3279	-65.5832
47	1.60944	-0.153505	49.3515	-65.8302
48	1.60944	-0.130716	49.3686	-66.0406
49	2.89037	-0.107995	49.3802	-66.3528

50	2.89037	-0.0828129		49.3871	-66.5921
51	2.89037	-0.0601949		49.3907	-66.7661
52	3.80666	-0.0376076		49.3921	-66.9093
53	3.80666	-0.0125328		49.3923	-66.957
54	3.91202	0.0125328		49.3924	-66.9079
55	3.95124	0.0376076		49.3939	-66.7593
56	4.06044	0.0601949		49.3975	-66.5149
57	4.09434	0.0828129		49.4043	-66.1759
58	4.35671	0.107995		49.416	-65.7054
59	4.43082	0.130716		49.4331	-65.1262
60	4.59512	0.153505		49.4567	-64.4208
61	4.67283	0.17892	49.4887	-63.5847	
62	4.69135	0.201894		49.5294	-62.6376
63	4.77912	0.224974		49.58	-61.5624
64	4.85203	0.250759		49.6429	-60.3457
65	5.11199	0.27411	49.7181	-58.9445	
66	5.19296	0.297612		49.8066	-57.399
67	5.19296	0.323919		49.9116	-55.7169
68	5.19296	0.347787		50.0325	-53.9108
69	5.27811	0.371856		50.1708	-51.9481
70	5.34233	0.398855		50.3299	-49.8173
71	5.37528	0.423405		50.5091	-47.5414
72	5.68698	0.448213		50.71	-44.9924
73	5.77144	0.476105		50.9367	-42.2446
74	5.7869	0.501527		51.1882	-39.3423
75	5.80814	0.52728	51.4663	-36.2798	
76	5.9108	0.556308		51.7757	-32.9916
77	5.9135	0.582841		52.1155	-29.545
78	5.9162	0.609791		52.4873	-25.9373
79	5.93225	0.640266		52.8972	-22.1391
80	5.98645	0.668209		53.3437	-18.1389
81	6.00635	0.699883		53.8336	-13.9352
82	6.06379	0.729003		54.365	-9.51464
83	6.10925	0.758753		54.9407	-4.87923
84	6.1203	0.792618		55.569	-0.028172
85	6.1334	0.823893		56.2478	5.02509
86	6.24417	0.855996		56.9805	10.3701
87	6.30262	0.892733		57.7775	15.9966
88	6.31173	0.926859		58.6365	21.8467
89	6.34564	0.9621	59.5622	27.9519	
90	6.56526	1.00271	60.5676	34.5349	
91	6.60665	1.04073	61.6507	41.4107	
92	6.64639	1.08032	62.8178	48.5909	
93	6.76849	1.12639	64.0866	56.2149	
94	6.77992	1.17	65.4555	64.1474	
95	6.90776	1.21596	66.934	72.5469	
96	6.92756	1.27024	68.5475	81.3466	
97	7.04752	1.32251	70.2966	90.667	
98	7.24423	1.37866	72.1973	100.654	
99	7.25134	1.44663	74.29	111.144	
100	7.64969	1.5141	76.5825	122.727	
101	7.78322	1.58927	79.1083	135.096	
102	8.4722	1.68494	81.9473	149.372	
103	8.51719	1.78661	85.1393	164.588	
104	8.89563	1.91103	88.7913	181.588	
105	9.75266	2.09693	93.1885	202.039	
106	13.3739	2.36561	98.7846	233.676	

Data Set Standard Deviation = 2.51083
Numerator = 54604.7
Denominator = 65390.5

W Statistic = 0.835055 = 54604.7 / 65390.5

5% Critical value of 0.976 exceeds 0.835055
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.835055
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Nitrate

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	11/18/2006	3.91202	57
	6/2/2007	13.3739	106
	11/15/2007	ND<1.60944	27.5
	5/20/2008	5.9108	76
	11/20/2008	ND<1.60944	27.5
	11/16/2009	ND<5.19296 U	27.5
	6/30/2010	4.43082 J	62

Rank Sum = 383.5
Rank Mean = 54.7857

Background Rank Sum = 383.5
Background Rank Mean = 54.7857

Compliance Wells

Well ID	Date	Result	Rank
LMW-10	11/18/2006	6.31173	88
	6/2/2007	6.92756	96
	11/15/2007	ND<1.60944	27.5
	5/20/2008	6.00635	81
	11/20/2008	ND<1.60944	27.5
	11/16/2009	7.78322	101
	6/30/2010	5.9135	77

Rank Sum = 498
Rank Mean = 71.1429

LMW-15R	11/18/2006	8.4722	102
	6/2/2007	7.24423	98
	11/15/2007	ND<1.60944	27.5
	11/15/2007	ND<1.60944	27.5
	5/20/2008	ND<1.60944	27.5
	5/20/2008	ND<1.60944	27.5
	11/20/2008	ND<1.60944	27.5
	11/20/2008	ND<1.60944	27.5
	6/30/2010	7.64969	100

Rank Sum = 465
Rank Mean = 51.6667

LMW-16	11/18/2006	3.95124	58
	6/2/2007	5.11199	68
	11/15/2007	ND<1.60944	27.5
	5/20/2008	5.93225	79
	11/20/2008	ND<1.60944	27.5
	11/16/2009	ND<5.19296 U	27.5
	6/30/2010	ND<2.89037 U	27.5

Rank Sum = 315

Rank Mean = 45

LMW-3S	11/18/2006	5.77144	73
	6/2/2007	5.27811	69
	11/15/2007	ND<1.60944	27.5
	5/20/2008	6.30262	87
	11/20/2008	ND<1.60944	27.5
	11/16/2009	6.56526 J M	90
	6/30/2010	ND<2.89037 U	27.5

Rank Sum = 401.5
Rank Mean = 57.3571

LMW-14R	6/2/2007	5.7869	74
	11/15/2007	ND<1.60944	27.5
	5/20/2008	5.9162	78
	11/20/2008	ND<1.60944	27.5
	6/30/2010	ND<2.89037 U	27.5

Rank Sum = 234.5
Rank Mean = 46.9

LMW-6	11/18/2006	7.04752	97
	6/2/2007	ND<1.60944	27.5
	11/15/2007	ND<1.60944	27.5
	5/20/2008	7.25134	99
	11/20/2008	ND<1.60944	27.5
	11/16/2009	8.51719	103
	6/30/2010	6.77992	94

Rank Sum = 475.5
Rank Mean = 67.9286

LMW-8	11/18/2006	5.37528	71
	6/2/2007	5.98645	80
	11/15/2007	ND<1.60944	27.5
	5/20/2008	6.34564	89
	11/20/2008	ND<1.60944	27.5
	11/16/2009	6.60665 J	91
	6/30/2010	3.80666 J	55

Rank Sum = 441
Rank Mean = 63

LMW-9D	11/18/2006	4.67283	64
	6/2/2007	6.1334	85
	11/15/2007	ND<1.60944	27.5
	5/20/2008	ND<1.60944	27.5
	11/20/2008	ND<1.60944	27.5
	11/16/2009	6.06379 J M H	82
	6/30/2010	4.06044 J	59

Rank Sum = 372.5
Rank Mean = 53.2143

LMW-9	11/18/2006	4.59512	63
	6/2/2007	9.75266	105
	11/15/2007	ND<1.60944	27.5
	5/20/2008	6.1203	84
	11/20/2008	ND<1.60944	27.5
	11/16/2009	6.10925 J M H	83
	6/30/2010	3.80666 J	56

Rank Sum = 446
Rank Mean = 63.7143

LMW-9S	11/18/2006	4.69135	65

	6/2/2007	6.90776	95
	11/15/2007	ND<1.60944	27.5
	5/20/2008	ND<1.60944	27.5
	11/20/2008	ND<1.60944	27.5
	11/16/2009	ND<5.19296 U	27.5
	11/16/2009	8.89563 H	104
	11/16/2009	6.64639 J M H	92
	6/30/2010	4.09434 J	60

Rank Sum = 526
Rank Mean = 58.4444

LMW-3	11/18/2006	5.80814	75
	6/2/2007	5.34233	70
	11/15/2007	ND<1.60944	27.5
	5/20/2008	6.24417	86
	11/20/2008	ND<1.60944	27.5
	11/16/2009	6.76849 J H	93
	6/30/2010	4.35671 J M	61

Rank Sum = 440
Rank Mean = 62.8571

LMW-12	6/2/2007	ND<1.60944	27.5
	11/15/2007	ND<1.60944	27.5
	5/20/2008	ND<1.60944	27.5
	11/20/2008	ND<1.60944	27.5

Rank Sum = 110
Rank Mean = 27.5

LMW-11	6/2/2007	ND<1.60944	27.5
	11/15/2007	ND<1.60944	27.5
	5/20/2008	ND<1.60944	27.5
	11/20/2008	ND<1.60944	27.5

Rank Sum = 110
Rank Mean = 27.5

LMW-13	6/2/2007	ND<1.60944	27.5
	11/15/2007	ND<1.60944	27.5
	5/20/2008	ND<1.60944	27.5
	11/20/2008	ND<1.60944	27.5

Rank Sum = 110
Rank Mean = 27.5

MW-5	11/15/2007	ND<1.60944	27.5
	5/20/2008	ND<1.60944	27.5
	11/20/2008	ND<1.60944	27.5

Rank Sum = 82.5
Rank Mean = 27.5

LMW-7	11/18/2006	4.77912	66
	6/2/2007	5.68698	72
	11/15/2007	ND<1.60944	27.5
	5/20/2008	4.85203	67
	11/20/2008	ND<1.60944	27.5

Rank Sum = 260
Rank Mean = 52

Calculation Results:

Kruskal-Wallis H Statistic = 17.8302
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 20.5459
95% Confidence comparison value is 26.2962 at 16 degrees of freedom

17.8302 < 26.2962 indicating no significant group difference at 5% significance level
20.5459 < 26.2962 indicating no significant group difference at 5% significance level when adjusted for ties

Concentrations (ppb)

Parameter: Selenium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 219
Total Non-Detect: 194
Percent Non-Detects: 88.5845%
Total Background Measurements: 18
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	18	18 (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
			11/16/2009	ND<0.21 U	ND<0.21 U
			6/30/2010	ND<0.21 U	ND<0.21 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-10	15	15 (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
			11/16/2009	ND<0.21 U	ND<0.21 U
			6/30/2010	ND<0.21 U	ND<0.21 U
LMW-14R	6	6 (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
			6/30/2010	ND<0.21 U	ND<0.21 U

LMW-6	18	8 (44.4444%)	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	
			11/16/2009	2.6	2.6	
			6/30/2010	3.2	3.2	
LMW-8	18	9 (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	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	
			11/16/2009	0.59	0.59	
			6/30/2010	0.33 J	0.33 J	
LMW-15R		10	9 (90%)	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	
			6/30/2010	ND<0.21 U		ND<0.21 U
LMW-3S	8	8 (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
			11/16/2009	ND<0.21 U		ND<0.21 U
			6/30/2010	ND<0.21 U		ND<0.21 U
LMW-3	20	20 (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
			11/16/2009	ND<0.21 U		ND<0.21 U
			6/30/2010	ND<0.21 U		ND<0.21 U
LMW-16	8	7 (87.5%)	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
			11/16/2009	ND<0.21 U		ND<0.21 U
			6/30/2010	ND<0.21 U		ND<0.21 U
LMW-9D	8	7 (87.5%)	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
			11/16/2009	ND<0.21 U		ND<0.21 U
			6/30/2010	ND<0.21 U		ND<0.21 U
LMW-9S	10	8 (80%)	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
			11/16/2009	ND<0.21 U		ND<0.21 U
			11/16/2009	ND<0.21 U		ND<0.21 U
			11/16/2009	ND<0.21 U		ND<0.21 U
			6/30/2010	ND<0.21 U		ND<0.21 U
LMW-9	18	17 (94.4444%)	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	

			11/16/2009	ND<0.21 U	ND<0.21 U
			6/30/2010	ND<0.21 U	ND<0.21 U
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-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-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
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-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

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Selenium

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.105	-2.65209	7.03356	-0.278469
2	0.105	-2.36561	12.6297	-0.526859
3	0.105	-2.22621	17.5857	-0.76061
4	0.105	-2.09693	21.9828	-0.980788
5	0.105	-2.01409	26.0394	-1.19227
6	0.105	-1.92684	29.7521	-1.39459
7	0.105	-1.86629	33.2351	-1.59055
8	0.105	-1.79912	36.472	-1.77945
9	0.105	-1.75069	39.5369	-1.96328
10	0.105	-1.6954	42.4112	-2.14129
11	0.105	-1.64485	45.1168	-2.314
12	0.105	-1.6072	47.7	-2.48276
13	0.105	-1.56322	50.1437	-2.6469
14	0.105	-1.53007	52.4848	-2.80756
15	0.105	-1.49085	54.7074	-2.9641
16	0.105	-1.46106	56.8421	-3.11751
17	0.105	-1.42554	58.8743	-3.26719
18	0.105	-1.39838	60.8297	-3.41402
19	0.105	-1.36581	62.6952	-3.55743
20	0.105	-1.34075	64.4928	-3.69821
21	0.105	-1.31058	66.2104	-3.83582
22	0.105	-1.28155	67.8528	-3.97038
23	0.105	-1.25908	69.4381	-4.10259
24	0.105	-1.23187	70.9556	-4.23193
25	0.105	-1.21073	72.4214	-4.35906
26	0.105	-1.18504	73.8258	-4.48349
27	0.105	-1.16505	75.1831	-4.60582
28	0.105	-1.14069	76.4843	-4.72559
29	0.105	-1.12168	77.7424	-4.84337
30	0.24	-1.09847	78.9491	-5.107
31	0.28	-1.08032	80.1162	-5.40949
32	0.33	-1.05812	81.2358	-5.75867
33	0.59	-1.03643	82.31	-6.37017
34	0.64	-1.01943	83.3492	-7.0226
35	1	-0.998575	84.3464	-8.02117
36	1	-0.982202	85.3111	-9.00338
37	1	-0.9621	86.2367	-9.96548
38	1	-0.946291	87.1322	-10.9118
39	1	-0.926859	87.9912	-11.8386
40	1	-0.911562	88.8222	-12.7502
41	1	-0.892733	89.6192	-13.6429
42	1	-0.877897	90.3899	-14.5208
43	1	-0.859618	91.1288	-15.3804
44	1	-0.841621	91.8371	-16.2221
45	1	-0.827417	92.5218	-17.0495
46	1	-0.809896	93.1777	-17.8594
47	1	-0.796056	93.8114	-18.6554
48	1	-0.778966	94.4182	-19.4344
49	1	-0.765456	95.0041	-20.1998

50	1	-0.748762	95.5647	-20.9486
51	1	-0.735557	96.1058	-21.6842
52	1	-0.719228	96.6231	-22.4034
53	1	-0.706302	97.1219	-23.1097
54	1	-0.690309	97.5985	-23.8
55	1	-0.674499	8.0534	-24.4745
56	1	-0.661955	98.4916	-25.1365
57	1	-0.646431	98.9095	-25.7829
58	1	-0.634124	99.3116	-26.417
59	1	-0.618872	99.6946	-27.0359
60	1	-0.606775	100.063	-27.6427
61	1	-0.591776	100.413	-28.2344
62	1	-0.579873	100.749	-28.8143
63	1	-0.565108	101.069	-29.3794
64	1	-0.553384	101.375	-29.9328
65	1	-0.538836	101.665	-30.4716
66	1	-0.524401	101.94	-30.996
67	1	-0.51293	102.203	-31.509
68	1	-0.498687	102.452	-32.0076
69	1	-0.487364	102.689	-32.495
70	1	-0.473299	102.913	-32.9683
71	1	-0.462114	103.127	-33.4304
72	1	-0.448213	103.328	-33.8786
73	1	-0.437153	103.519	-34.3158
74	1	-0.423405	103.698	-34.7392
75	1	-0.412463	103.868	-35.1517
76	1	-0.398855	104.027	-35.5505
77	1	-0.385321	104.176	-35.9358
78	1	-0.374544	104.316	-36.3104
79	1	-0.361133	104.447	-36.6715
80	1	-0.350451	104.569	-37.022
81	1	-0.337155	104.683	-37.3591
82	1	-0.326561	104.79	-37.6857
83	1	-0.31337	104.888	-37.9991
84	1	-0.302855	104.98	-38.3019
85	1	-0.28976	105.064	-38.5917
86	1	-0.279319	105.142	-38.871
87	1	-0.266311	105.213	-39.1373
88	1	-0.253347	105.277	-39.3906
89	1	-0.243007	105.336	-39.6337
90	1	-0.230118	105.389	-39.8638
91	1	-0.219834	105.437	-40.0836
92	1	-0.207012	105.48	-40.2906
93	1	-0.196779	105.519	-40.4874
94	1	-0.184017	105.553	-40.6714
95	1	-0.173829	105.583	-40.8452
96	1	-0.161119	105.609	-41.0064
97	1	-0.150969	105.632	-41.1573
98	1	-0.138305	105.651	-41.2956
99	1	-0.125661	105.666	-41.4213
100	1	-0.115562	105.68	-41.5369
101	1	-0.102953	105.69	-41.6398
102	1	-0.0928787	105.699	-41.7327
103	1	-0.0802981	105.705	-41.813
104	1	-0.0702426	105.71	-41.8832
105	1	-0.0576847	105.714	-41.9409
106	1	-0.0476439	105.716	-41.9886
107	1	-0.0350997	105.717	-42.0237
108	1	-0.0250691	105.718	-42.0487
109	1	-0.0125328	105.718	-42.0613
110	1	0	105.718	-42.0613
111	1	0.0125328	105.718	-42.0487

112	1	0.0250691	105.719	-42.0237
113	1	0.0350997	105.72	-41.9886
114	1	0.0476439	105.722	-41.9409
115	1	0.0576847	105.726	-41.8832
116	1	0.0702426	105.731	-41.813
117	1	0.0802981	105.737	-41.7327
118	1	0.0928787	105.746	-41.6398
119	1	0.102953	105.756	-41.5369
120	1	0.115562	105.77	-41.4213
121	1	0.125661	105.785	-41.2956
122	1	0.138305	105.805	-41.1573
123	1	0.150969	105.827	-41.0064
124	1	0.161119	105.853	-40.8452
125	1	0.173829	105.883	-40.6714
126	1	0.184017	105.917	-40.4874
127	1	0.196779	105.956	-40.2906
128	1	0.207012	105.999	-40.0836
129	1	0.219834	106.047	-39.8638
130	1	0.230118	106.1	-39.6337
131	1	0.243007	106.159	-39.3906
132	1	0.253347	106.223	-39.1373
133	1	0.266311	106.294	-38.871
134	1	0.279319	106.372	-38.5917
135	1	0.28976	106.456	-38.3019
136	1	0.302855	106.548	-37.9991
137	1	0.31337	106.646	-37.6857
138	1	0.326561	106.753	-37.3591
139	1	0.337155	106.867	-37.022
140	1	0.350451	106.989	-36.6715
141	1	0.361133	107.12	-36.3104
142	1	0.374544	107.26	-35.9358
143	1	0.385321	107.409	-35.5505
144	1	0.398855	107.568	-35.1517
145	1	0.412463	107.738	-34.7392
146	1	0.423405	107.917	-34.3158
147	1	0.437153	108.108	-33.8786
148	1	0.448213	108.309	-33.4304
149	1	0.462114	108.523	-32.9683
150	1	0.473299	108.747	-32.495
151	1	0.487364	108.984	-32.0076
152	1	0.498687	109.233	-31.509
153	1	0.51293	109.496	-30.996
154	1	0.524401	109.771	-30.4716
155	1	0.538836	110.061	-29.9328
156	1	0.553384	110.368	-29.3794
157	1	0.565108	110.687	-28.8143
158	1	0.579873	111.023	-28.2344
159	1	0.591776	111.373	-27.6427
160	1	0.606775	111.741	-27.0359
161	1	0.618872	112.124	-26.417
162	1	0.634124	112.527	-25.7829
163	1	0.646431	112.944	-25.1365
164	1	0.661955	113.383	-24.4745
165	1	0.67449	113.838	-23.8
166	1	0.690309	114.314	-23.1097
167	1	0.706302	114.813	-22.4034
168	1	0.719228	115.33	-21.6842
169	1	0.735557	115.871	-20.9486
170	1	0.748762	116.432	-20.1998
171	1	0.765456	117.018	-19.4344
172	1	0.778966	117.625	-18.6554
173	1	0.796056	118.258	-17.8594

174	1	0.809896		118.914	-17.0495
175	1	0.827417		119.599	-16.2221
176	1	0.841621		120.307	-15.3804
177	1	0.859618		121.046	-14.5208
178	1	0.877897		121.817	-13.6429
179	1	0.892733		122.614	-12.7502
180	1	0.911562		123.445	-11.8386
181	1	0.926859		124.304	-10.9118
182	1	0.946291		125.199	-9.96548
183	1	0.9621	126.125	-9.00338	
184	1	0.982202		127.09	-8.02117
185	1	0.998575		128.087	-7.0226
186	1	1.01943	129.126	-6.00317	
187	1	1.03643	130.2	-4.96674	
188	1	1.05812	131.32	-3.90862	
189	1	1.08032	132.487	-2.8283	
190	1	1.09847	133.694	-1.72983	
191	1	1.12168	134.952	-0.608149	
192	1	1.14069	136.253	0.532539	
193	1	1.16505	137.61	1.69759	
194	1	1.18504	139.015	2.88263	
195	1	1.21073	140.48	4.09336	
196	1	1.23187	141.998	5.32522	
197	1	1.25908	143.583	6.58431	
198	1	1.28155	145.226	7.86586	
199	1	1.31058	146.943	9.17644	
200	1	1.34075	148.741	10.5172	
201	1	1.36581	150.606	11.883	
202	1	1.39838	152.562	13.2814	
203	1	1.42554	154.594	14.7069	
204	1	1.46106	156.729	16.168	
205	2	1.49085	158.951	19.1497	
206	2	1.53007	161.292	22.2098	
207	2	1.56322	163.736	25.3363	
208	2	1.60725	166.319	28.5508	
209	2	1.64485	169.025	31.8405	
210	2	1.6954	171.899	35.2313	
211	2.6	1.75069	174.964	39.783	
212	3	1.79912	178.201	45.1804	
213	3	1.86629	181.684	50.7793	
214	3.2	1.92684	185.397	56.9451	
215	3.2	2.01409	189.453	63.3903	
216	4	2.09693	193.85	71.778	
217	4	2.22621	198.806	80.6828	
218	4	2.36561	204.403	90.1453	
219	4	2.65209	211.436	100.754	

Data Set Standard Deviation = 0.63285
Numerator = 10151.3
Denominator = 18460.2
W Statistic = 0.5499 = 10151.3 / 18460.2

5% Critical value of 0.976 exceeds 0.5499
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.5499
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Selenium

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-2.25379	-2.65209	7.03356	5.97726
2	-2.25379	-2.36561	12.6297	11.3089
3	-2.25379	-2.22621	17.5857	16.3263
4	-2.25379	-2.09693	21.9828	21.0523
5	-2.25379	-2.01409	26.0394	25.5917
6	-2.25379	-1.92684	29.7521	29.9344
7	-2.25379	-1.86629	33.2351	34.1406
8	-2.25379	-1.79912	36.472	38.1955
9	-2.25379	-1.75069	39.5369	42.1412
10	-2.25379	-1.6954	42.4112	45.9622
11	-2.25379	-1.64485	45.1168	49.6694
12	-2.25379	-1.60725	47.7	53.2918
13	-2.25379	-1.56322	50.1437	56.815
14	-2.25379	-1.53007	52.4848	60.2634
15	-2.25379	-1.49085	54.7074	63.6235
16	-2.25379	-1.46106	56.8421	66.9164
17	-2.25379	-1.42554	58.8743	70.1293
18	-2.25379	-1.39838	60.8297	73.281
19	-2.25379	-1.36581	62.6952	76.3592
20	-2.25379	-1.34075	64.4928	79.381
21	-2.25379	-1.31058	66.2104	82.3348
22	-2.25379	-1.28155	67.8528	85.2231
23	-2.25379	-1.25908	69.4381	88.0609
24	-2.25379	-1.23187	70.9556	90.8372
25	-2.25379	-1.21073	72.4214	93.566
26	-2.25379	-1.18504	73.8258	96.2368
27	-2.25379	-1.16505	75.1831	98.8626
28	-2.25379	-1.14069	76.4843	101.433
29	-2.25379	-1.12168	77.7424	103.961
30	-1.42712	-1.09847	78.9491	105.529
31	-1.27297	-1.08032	80.1162	106.904
32	-1.10866	-1.05812	81.2358	108.077
33	-0.527633	-1.03643	82.31	108.624
34	-0.446287	-1.01943	83.3492	109.079
35	0	-0.998575	84.3464	109.079
36	0	-0.982202	85.3111	109.079
37	0	-0.9621	86.2367	109.079
38	0	-0.946291	87.1322	109.079
39	0	-0.926859	87.9912	109.079
40	0	-0.911562	88.8222	109.079
41	0	-0.892733	89.6192	109.079
42	0	-0.877897	90.3899	109.079
43	0	-0.859618	91.1288	109.079
44	0	-0.841621	91.8371	109.079
45	0	-0.827417	92.5218	109.079
46	0	-0.809896	93.1777	109.079
47	0	-0.796056	93.8114	109.079
48	0	-0.778966	94.4182	109.079
49	0	-0.765456	95.0041	109.079

50	0	-0.748762	95.5647	109.079
51	0	-0.735557	96.1058	109.079
52	0	-0.719228	96.6231	109.079
53	0	-0.706302	97.1219	109.079
54	0	-0.690309	97.5985	109.079
55	0	-0.674499	8.0534	109.079
56	0	-0.661955	98.4916	109.079
57	0	-0.646431	98.9095	109.079
58	0	-0.634124	99.3116	109.079
59	0	-0.618872	99.6946	109.079
60	0	-0.606775	100.063	109.079
61	0	-0.591776	100.413	109.079
62	0	-0.579873	100.749	109.079
63	0	-0.565108	101.069	109.079
64	0	-0.553384	101.375	109.079
65	0	-0.538836	101.665	109.079
66	0	-0.524401	101.94	109.079
67	0	-0.51293	102.203	109.079
68	0	-0.498687	102.452	109.079
69	0	-0.487364	102.689	109.079
70	0	-0.473299	102.913	109.079
71	0	-0.462114	103.127	109.079
72	0	-0.448213	103.328	109.079
73	0	-0.437153	103.519	109.079
74	0	-0.423405	103.698	109.079
75	0	-0.412463	103.868	109.079
76	0	-0.398855	104.027	109.079
77	0	-0.385321	104.176	109.079
78	0	-0.374544	104.316	109.079
79	0	-0.361133	104.447	109.079
80	0	-0.350451	104.569	109.079
81	0	-0.337155	104.683	109.079
82	0	-0.326561	104.79	109.079
83	0	-0.31337	104.888	109.079
84	0	-0.302855	104.98	109.079
85	0	-0.28976	105.064	109.079
86	0	-0.279319	105.142	109.079
87	0	-0.266311	105.213	109.079
88	0	-0.253347	105.277	109.079
89	0	-0.243007	105.336	109.079
90	0	-0.230118	105.389	109.079
91	0	-0.219834	105.437	109.079
92	0	-0.207012	105.48	109.079
93	0	-0.196779	105.519	109.079
94	0	-0.184017	105.553	109.079
95	0	-0.173829	105.583	109.079
96	0	-0.161119	105.609	109.079
97	0	-0.150969	105.632	109.079
98	0	-0.138305	105.651	109.079
99	0	-0.125661	105.666	109.079
100	0	-0.115562	105.68	109.079
101	0	-0.102953	105.69	109.079
102	0	-0.0928787	105.699	109.079
103	0	-0.0802981	105.705	109.079
104	0	-0.0702426	105.71	109.079
105	0	-0.0576847	105.714	109.079
106	0	-0.0476439	105.716	109.079
107	0	-0.0350997	105.717	109.079
108	0	-0.0250691	105.718	109.079
109	0	-0.0125328	105.718	109.079
110	0	0	105.718	109.079
111	0	0.0125328	105.718	109.079

112	0	0.0250691	105.719	109.079
113	0	0.0350997	105.72	109.079
114	0	0.0476439	105.722	109.079
115	0	0.0576847	105.726	109.079
116	0	0.0702426	105.731	109.079
117	0	0.0802981	105.737	109.079
118	0	0.0928787	105.746	109.079
119	0	0.102953	105.756	109.079
120	0	0.115562	105.77	109.079
121	0	0.125661	105.785	109.079
122	0	0.138305	105.805	109.079
123	0	0.150969	105.827	109.079
124	0	0.161119	105.853	109.079
125	0	0.173829	105.883	109.079
126	0	0.184017	105.917	109.079
127	0	0.196779	105.956	109.079
128	0	0.207012	105.999	109.079
129	0	0.219834	106.047	109.079
130	0	0.230118	106.1	109.079
131	0	0.243007	106.159	109.079
132	0	0.253347	106.223	109.079
133	0	0.266311	106.294	109.079
134	0	0.279319	106.372	109.079
135	0	0.28976	106.456	109.079
136	0	0.302855	106.548	109.079
137	0	0.31337	106.646	109.079
138	0	0.326561	106.753	109.079
139	0	0.337155	106.867	109.079
140	0	0.350451	106.989	109.079
141	0	0.361133	107.12	109.079
142	0	0.374544	107.26	109.079
143	0	0.385321	107.409	109.079
144	0	0.398855	107.568	109.079
145	0	0.412463	107.738	109.079
146	0	0.423405	107.917	109.079
147	0	0.437153	108.108	109.079
148	0	0.448213	108.309	109.079
149	0	0.462114	108.523	109.079
150	0	0.473299	108.747	109.079
151	0	0.487364	108.984	109.079
152	0	0.498687	109.233	109.079
153	0	0.51293	109.496	109.079
154	0	0.524401	109.771	109.079
155	0	0.538836	110.061	109.079
156	0	0.553384	110.368	109.079
157	0	0.565108	110.687	109.079
158	0	0.579873	111.023	109.079
159	0	0.591776	111.373	109.079
160	0	0.606775	111.741	109.079
161	0	0.618872	112.124	109.079
162	0	0.634124	112.527	109.079
163	0	0.646431	112.944	109.079
164	0	0.661955	113.383	109.079
165	0	0.67449	113.838	109.079
166	0	0.690309	114.314	109.079
167	0	0.706302	114.813	109.079
168	0	0.719228	115.33	109.079
169	0	0.735557	115.871	109.079
170	0	0.748762	116.432	109.079
171	0	0.765456	117.018	109.079
172	0	0.778966	117.625	109.079
173	0	0.796056	118.258	109.079

174	0	0.809896		118.914	109.079
175	0	0.827417		119.599	109.079
176	0	0.841621		120.307	109.079
177	0	0.859618		121.046	109.079
178	0	0.877897		121.817	109.079
179	0	0.892733		122.614	109.079
180	0	0.911562		123.445	109.079
181	0	0.926859		124.304	109.079
182	0	0.946291		125.199	109.079
183	0	0.9621	126.125	109.079	
184	0	0.982202		127.09	109.079
185	0	0.998575		128.087	109.079
186	0	1.01943	129.126	109.079	
187	0	1.03643	130.2	109.079	
188	0	1.05812	131.32	109.079	
189	0	1.08032	132.487	109.079	
190	0	1.09847	133.694	109.079	
191	0	1.12168	134.952	109.079	
192	0	1.14069	136.253	109.079	
193	0	1.16505	137.61	109.079	
194	0	1.18504	139.015	109.079	
195	0	1.21073	140.48	109.079	
196	0	1.23187	141.998	109.079	
197	0	1.25908	143.583	109.079	
198	0	1.28155	145.226	109.079	
199	0	1.31058	146.943	109.079	
200	0	1.34075	148.741	109.079	
201	0	1.36581	150.606	109.079	
202	0	1.39838	152.562	109.079	
203	0	1.42554	154.594	109.079	
204	0	1.46106	156.729	109.079	
205	0.693147		1.49085	158.951	110.113
206	0.693147		1.53007	161.292	111.173
207	0.693147		1.56322	163.736	112.257
208	0.693147		1.60725	166.319	113.371
209	0.693147		1.64485	169.025	114.511
210	0.693147		1.6954	171.899	115.686
211	0.955511		1.75069	174.964	117.359
212	1.09861	1.79912	178.201	119.335	
213	1.09861	1.86629	181.684	121.386	
214	1.16315	1.92684	185.397	123.627	
215	1.16315	2.01409	189.453	125.97	
216	1.38629	2.09693	193.85	128.877	
217	1.38629	2.22621	198.806	131.963	
218	1.38629	2.36561	204.403	135.242	
219	1.38629	2.65209	211.436	138.919	

Data Set Standard Deviation = 0.844524
Numerator = 19298.4
Denominator = 32874.5
W Statistic = 0.587033 = 19298.4 / 32874.5

5% Critical value of 0.976 exceeds 0.587033
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.587033
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Selenium

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result		Rank
LMW-4	1/16/1998	ND<0	97.5	
	3/16/1999	ND<0	97.5	
	9/23/1999	ND<0	97.5	
	3/14/2000	ND<0	97.5	
	9/23/2003	ND<0	97.5	
	3/10/2004	ND<0	97.5	
	10/12/2004	ND<0	97.5	
	4/1/2005	ND<0	97.5	
	10/26/2005	ND<0	97.5	
	6/19/2006	ND<0	97.5	
	11/18/2006	ND<0	97.5	
	6/2/2007	ND<0	97.5	
	11/15/2007	ND<0	97.5	
	5/20/2008	ND<0	97.5	
	11/20/2008	ND<0	97.5	
	6/11/2009	ND<-2.25379	U	97.5
	11/16/2009	ND<-2.25379	U	97.5
	6/30/2010	ND<-2.25379	U	97.5

Rank Sum = 1755
Rank Mean = 97.5

Background Rank Sum = 1755
Background Rank Mean = 97.5

Compliance Wells

Well ID	Date	Result		Rank
LMW-10	3/14/2000	ND<0	97.5	
	9/23/2003	ND<0	97.5	
	3/10/2004	ND<0	97.5	
	10/12/2004	ND<0	97.5	
	4/1/2005	ND<0	97.5	
	10/26/2005	ND<0	97.5	
	6/19/2006	ND<0	97.5	
	11/18/2006	ND<0	97.5	
	6/2/2007	ND<0	97.5	
	11/15/2007	ND<0	97.5	
	5/20/2008	ND<0	97.5	
	11/20/2008	ND<0	97.5	
	6/11/2009	ND<-2.25379	U	97.5
	11/16/2009	ND<-2.25379	U	97.5
	6/30/2010	ND<-2.25379	U	97.5

Rank Sum = 1462.5
Rank Mean = 97.5

LMW-14R	6/2/2007	ND<0	97.5

	11/15/2007	ND<0	97.5	
	5/20/2008	ND<0	97.5	
	11/20/2008	ND<0	97.5	
	6/11/2009	ND<-2.25379 U		97.5
	6/30/2010	ND<-2.25379 U		97.5

Rank Sum = 585
Rank Mean = 97.5

LMW-6	1/16/1998	ND<0	97.5	
	3/16/1999	ND<0	97.5	
	9/23/1999	ND<0	97.5	
	3/14/2000	ND<0	97.5	
	9/23/2003	ND<0	97.5	
	3/10/2004	ND<0	97.5	
	10/12/2004	ND<0	97.5	
	4/1/2005	ND<0	97.5	
	10/26/2005	0 J	200	
	6/19/2006	0.693147		205
	11/18/2006	0.693147		206
	6/2/2007	0.693147	207	
	11/15/2007	1.38629		216
	5/20/2008	0.693147		208
	11/20/2008	0.693147		209
	6/11/2009	1.16315		214
	11/16/2009	0.955511		211
	6/30/2010	1.16315		215

Rank Sum = 2871
Rank Mean = 159.5

LMW-8	1/16/1998	ND<0	97.5	
	3/16/1999	ND<0	97.5	
	9/23/1999	ND<0	97.5	
	3/14/2000	ND<0	97.5	
	9/23/2003	ND<0	97.5	
	3/10/2004	ND<0	97.5	
	10/12/2004	ND<0	97.5	
	4/1/2005	1.09861	212	
	10/26/2005	0 J	201	
	6/19/2006	0 J	202	
	11/18/2006	0 J	203	
	6/2/2007	0 J	204	
	11/15/2007	1.09861		213
	5/20/2008	ND<0	97.5	
	11/20/2008	ND<0	97.5	
	6/11/2009	-0.446287		199
	11/16/2009	-0.527633		198
	6/30/2010	-1.10866 J		197

Rank Sum = 2706.5
Rank Mean = 150.361

LMW-15R	11/18/2006	ND<0	97.5	
	6/2/2007	ND<0	97.5	
	11/15/2007	ND<0	97.5	
	11/15/2007	ND<0	97.5	
	5/20/2008	ND<0	97.5	
	5/20/2008	ND<0	97.5	
	11/20/2008	ND<0	97.5	
	11/20/2008	ND<0	97.5	
	6/11/2009	-1.42712 J		195
	6/30/2010	ND<-2.25379 U		97.5

Rank Sum = 1072.5
Rank Mean = 107.25

LMW-3S	11/18/2006	ND<0	97.5	
	6/2/2007	ND<0	97.5	
	11/15/2007	ND<0	97.5	
	5/20/2008	ND<0	97.5	
	11/20/2008	ND<0	97.5	
	6/11/2009	ND<-2.25379	U	97.5
	11/16/2009	ND<-2.25379	U	97.5
	6/30/2010	ND<-2.25379	U	97.5

Rank Sum = 780
Rank Mean = 97.5

LMW-3	11/19/1996	ND<0	97.5	
	3/24/1997	ND<0	97.5	
	1/16/1998	ND<0	97.5	
	3/16/1999	ND<0	97.5	
	9/23/1999	ND<0	97.5	
	3/14/2000	ND<0	97.5	
	9/23/2003	ND<0	97.5	
	3/10/2004	ND<0	97.5	
	10/12/2004	ND<0	97.5	
	4/1/2005	ND<0	97.5	
	10/26/2005	ND<0	97.5	
	6/19/2006	ND<0	97.5	
	11/18/2006	ND<0	97.5	
	6/2/2007	ND<0	97.5	
	11/15/2007	ND<0	97.5	
	5/20/2008	ND<0	97.5	
	11/20/2008	ND<0	97.5	
	6/11/2009	ND<-2.25379	U	97.5
	11/16/2009	ND<-2.25379	U	97.5
	6/30/2010	ND<-2.25379	U	97.5

Rank Sum = 1950
Rank Mean = 97.5

LMW-16	11/18/2006	ND<0	97.5	
	6/2/2007	ND<0	97.5	
	11/15/2007	0.693147		210
	5/20/2008	ND<0	97.5	
	11/20/2008	ND<0	97.5	
	6/11/2009	ND<-2.25379	U	97.5
	11/16/2009	ND<-2.25379	U	97.5
	6/30/2010	ND<-2.25379	U	97.5

Rank Sum = 892.5
Rank Mean = 111.563

LMW-9D	11/18/2006	ND<0	97.5	
	6/2/2007	ND<0	97.5	
	11/15/2007	1.38629		217
	5/20/2008	ND<0	97.5	
	11/20/2008	ND<0	97.5	
	6/11/2009	ND<-2.25379	U	97.5
	11/16/2009	ND<-2.25379	U	97.5
	6/30/2010	ND<-2.25379	U	97.5

Rank Sum = 899.5
Rank Mean = 112.438

LMW-9S	11/18/2006	1.38629		218
	6/2/2007	1.38629	219	
	11/15/2007	ND<0	97.5	
	5/20/2008	ND<0	97.5	
	11/20/2008	ND<0	97.5	

	6/11/2009	ND<-2.25379	U	97.5
	11/16/2009	ND<-2.25379	U	97.5
	11/16/2009	ND<-2.25379	U	97.5
	11/16/2009	ND<-2.25379	U	97.5
	6/30/2010	ND<-2.25379	U	97.5

Rank Sum = 1217
Rank Mean = 121.7

LMW-9	1/16/1998	ND<0	97.5	
	3/16/1999	ND<0	97.5	
	9/23/1999	ND<0	97.5	
	3/14/2000	ND<0	97.5	
	9/23/2003	ND<0	97.5	
	3/10/2004	ND<0	97.5	
	10/12/2004	ND<0	97.5	
	4/1/2005	ND<0	97.5	
	10/26/2005	ND<0	97.5	
	6/19/2006	ND<0	97.5	
	11/18/2006	ND<0	97.5	
	6/2/2007	ND<0	97.5	
	11/15/2007	ND<0	97.5	
	5/20/2008	ND<0	97.5	
	11/20/2008	ND<0	97.5	
	6/11/2009	-1.27297	J	196
	11/16/2009	ND<-2.25379	U	97.5
	6/30/2010	ND<-2.25379	U	97.5

Rank Sum = 1853.5
Rank Mean = 102.972

LMW-7	1/16/1998	ND<0	97.5	
	3/16/1999	ND<0	97.5	
	9/23/1999	ND<0	97.5	
	3/14/2000	ND<0	97.5	
	9/23/2003	ND<0	97.5	
	3/10/2004	ND<0	97.5	
	10/12/2004	ND<0	97.5	
	4/1/2005	ND<0	97.5	
	10/26/2005	ND<0	97.5	
	6/19/2006	ND<0	97.5	
	11/18/2006	ND<0	97.5	
	6/2/2007	ND<0	97.5	
	11/15/2007	ND<0	97.5	
	5/20/2008	ND<0	97.5	
	11/20/2008	ND<0	97.5	
	6/11/2009	ND<-2.25379	U	97.5

Rank Sum = 1560
Rank Mean = 97.5

LMW-11	3/14/2000	ND<0	97.5	
	9/23/2003	ND<0	97.5	
	3/10/2004	ND<0	97.5	
	10/12/2004	ND<0	97.5	
	4/1/2005	ND<0	97.5	
	10/26/2005	ND<0	97.5	
	6/19/2006	ND<0	97.5	
	6/2/2007	ND<0	97.5	
	11/15/2007	ND<0	97.5	
	5/20/2008	ND<0	97.5	
	11/20/2008	ND<0	97.5	

Rank Sum = 1072.5
Rank Mean = 97.5

LMW-12	3/14/2000	ND<0	97.5
	9/23/2003	ND<0	97.5
	3/10/2004	ND<0	97.5
	10/12/2004	ND<0	97.5
	4/1/2005	ND<0	97.5
	10/26/2005	ND<0	97.5
	6/19/2006	ND<0	97.5
	6/2/2007	ND<0	97.5
	11/15/2007	ND<0	97.5
	5/20/2008	ND<0	97.5
	11/20/2008	ND<0	97.5

Rank Sum = 1072.5
Rank Mean = 97.5

MW-5	1/16/1998	ND<0	97.5
	3/16/1999	ND<0	97.5
	9/23/1999	ND<0	97.5
	3/14/2000	ND<0	97.5
	9/23/2003	ND<0	97.5
	3/10/2004	ND<0	97.5
	10/12/2004	ND<0	97.5
	4/1/2005	ND<0	97.5
	10/26/2005	ND<0	97.5
	6/19/2006	ND<0	97.5
	11/15/2007	ND<0	97.5
	5/20/2008	ND<0	97.5
	11/20/2008	ND<0	97.5

Rank Sum = 1267.5
Rank Mean = 97.5

LMW-13	3/14/2000	ND<0	97.5
	9/23/2003	ND<0	97.5
	3/10/2004	ND<0	97.5
	10/12/2004	ND<0	97.5
	4/1/2005	ND<0	97.5
	10/26/2005	ND<0	97.5
	6/19/2006	ND<0	97.5
	6/2/2007	ND<0	97.5
	11/15/2007	ND<0	97.5
	5/20/2008	ND<0	97.5
	11/20/2008	ND<0	97.5

Rank Sum = 1072.5
Rank Mean = 97.5

Calculation Results:

Kruskal-Wallis H Statistic = 23.9063
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 78.4164
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
23.9063 < 26.2962 indicating no significant group difference at 5% significance level
78.4164 > 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 97.5

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-10	97.5	0	51.5337
LMW-14R	97.5	0	69.488
LMW-6	159.5	62	49.1355
LMW-8	150.361	52.8611	49.1355

LMW-15R	107.25	9.75	58.1379	
LMW-3S	97.5	0	62.6357	
LMW-3	97.5	0	47.8913	
LMW-16	111.563	14.0625	62.6357	
LMW-9D	112.438	14.9375	62.6357	
LMW-9S	121.7	24.2	58.1379	
LMW-9	102.972	5.47222	49.1355	
LMW-7	97.5	0	50.6477	
LMW-11	97.5	0	56.4135	
LMW-12	97.5	0	56.4135	
MW-5	97.5	0	53.6524	
LMW-13	97.5	0	56.4135	

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 97.5

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-10	97.5	0	60.8692
LMW-14R	97.5	0	82.076
LMW-6	159.5	62	58.0365
LMW-8	150.361	52.8611	58.0365
LMW-15R	107.25	9.75	68.6697
LMW-3S	97.5	0	73.9823
LMW-3	97.5	0	56.567
LMW-16	111.563	14.0625	73.9823
LMW-9D	112.438	14.9375	73.9823
LMW-9S	121.7	24.2	68.6697
LMW-9	102.972	5.47222	58.0365
LMW-7	97.5	0	59.8226
LMW-11	97.5	0	66.6329
LMW-12	97.5	0	66.6329
MW-5	97.5	0	63.3717
LMW-13	97.5	0	66.6329

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Selenium

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 88.5845%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 18
Maximum Background Concentration = 0
Confidence Level = 69.2%
False Positive Rate = 30.8%

Location	Date	Samples	Mean	Significant
LMW-10	6/30/2010	1	-2.25379	FALSE
LMW-14R	6/30/2010	1	-2.25379	FALSE
LMW-6	6/30/2010	1	1.16315	TRUE
LMW-8	6/30/2010	1	-1.10866	FALSE
LMW-15R	6/30/2010	1	-2.25379	FALSE
LMW-3S	6/30/2010	1	-2.25379	FALSE
LMW-3	6/30/2010	1	-2.25379	FALSE
LMW-16	6/30/2010	1	-2.25379	FALSE
LMW-9D	6/30/2010	1	-2.25379	FALSE
LMW-9S	6/30/2010	1	-2.25379	FALSE
LMW-9	6/30/2010	1	-2.25379	FALSE
LMW-7	6/11/2009	1	-2.25379	FALSE
LMW-11	11/20/2008	1	0	FALSE
LMW-12	11/20/2008	1	0	FALSE
MW-5	11/20/2008	1	0	FALSE
LMW-13	11/20/2008	1	0	FALSE

Mann-Kendall Trend Analysis

Parameter: Selenium

Location: LMW-6

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

95% Confidence Level

Xj	Xk	Xj - Xk		Positives	Negatives
ND<0	ND<0	0	0	0	
ND<0	ND<0	0	0	0	
ND<0	ND<0	0	0	0	
ND<0	ND<0	0	0	0	
ND<0	ND<0	0	0	0	
ND<0	ND<0	0	0	0	
ND<0	ND<0	0	0	0	
0 J	ND<0	0	0	0	
0.693147		ND<0	0.693147	1	0
0.693147		ND<0	0.693147	2	0
0.693147		ND<0	0.693147	3	0
1.38629		ND<0	1.38629	4	0
0.693147		ND<0	0.693147	5	0
0.693147		ND<0	0.693147	6	0
1.16315		ND<0	1.16315	7	0
0.955511		ND<0	0.955511	8	0
1.16315		ND<0	1.16315	9	0
ND<0	ND<0	0	9	0	
ND<0	ND<0	0	9	0	
ND<0	ND<0	0	9	0	
ND<0	ND<0	0	9	0	
ND<0	ND<0	0	9	0	
ND<0	ND<0	0	9	0	
0 J	ND<0	0	9	0	
0.693147		ND<0	0.693147	10	0
0.693147		ND<0	0.693147	11	0
0.693147		ND<0	0.693147	12	0
1.38629		ND<0	1.38629	13	0
0.693147		ND<0	0.693147	14	0
0.693147		ND<0	0.693147	15	0
1.16315		ND<0	1.16315	16	0
0.955511		ND<0	0.955511	17	0
1.16315		ND<0	1.16315	18	0
ND<0	ND<0	0	18	0	
ND<0	ND<0	0	18	0	
ND<0	ND<0	0	18	0	
ND<0	ND<0	0	18	0	
ND<0	ND<0	0	18	0	
0 J	ND<0	0	18	0	
0.693147		ND<0	0.693147	19	0
0.693147		ND<0	0.693147	20	0
0.693147		ND<0	0.693147	21	0
1.38629		ND<0	1.38629	22	0
0.693147		ND<0	0.693147	23	0
0.693147		ND<0	0.693147	24	0
1.16315		ND<0	1.16315	25	0

0.955511		ND<0	0.955511	26	0
1.16315		ND<0	1.16315	27	0
ND<0	ND<0	0	27	0	
ND<0	ND<0	0	27	0	
ND<0	ND<0	0	27	0	
ND<0	ND<0	0	27	0	
0 J	ND<0	0	27	0	
0.693147		ND<0	0.693147	28	0
0.693147		ND<0	0.693147	29	0
0.693147		ND<0	0.693147	30	0
1.38629		ND<0	1.38629	31	0
0.693147		ND<0	0.693147	32	0
0.693147		ND<0	0.693147	33	0
1.16315		ND<0	1.16315	34	0
0.955511		ND<0	0.955511	35	0
1.16315		ND<0	1.16315	36	0
ND<0	ND<0	0	36	0	
ND<0	ND<0	0	36	0	
ND<0	ND<0	0	36	0	
0 J	ND<0	0	36	0	
0.693147		ND<0	0.693147	37	0
0.693147		ND<0	0.693147	38	0
0.693147		ND<0	0.693147	39	0
1.38629		ND<0	1.38629	40	0
0.693147		ND<0	0.693147	41	0
0.693147		ND<0	0.693147	42	0
1.16315		ND<0	1.16315	43	0
0.955511		ND<0	0.955511	44	0
1.16315		ND<0	1.16315	45	0
ND<0	ND<0	0	45	0	
ND<0	ND<0	0	45	0	
0 J	ND<0	0	45	0	
0.693147		ND<0	0.693147	46	0
0.693147		ND<0	0.693147	47	0
0.693147		ND<0	0.693147	48	0
1.38629		ND<0	1.38629	49	0
0.693147		ND<0	0.693147	50	0
0.693147		ND<0	0.693147	51	0
1.16315		ND<0	1.16315	52	0
0.955511		ND<0	0.955511	53	0
1.16315		ND<0	1.16315	54	0
ND<0	ND<0	0	54	0	
0 J	ND<0	0	54	0	
0.693147		ND<0	0.693147	55	0
0.693147		ND<0	0.693147	56	0
0.693147		ND<0	0.693147	57	0
1.38629		ND<0	1.38629	58	0
0.693147		ND<0	0.693147	59	0
0.693147		ND<0	0.693147	60	0
1.16315		ND<0	1.16315	61	0
0.955511		ND<0	0.955511	62	0
1.16315		ND<0	1.16315	63	0
0 J	ND<0	0	63	0	
0.693147		ND<0	0.693147	64	0
0.693147		ND<0	0.693147	65	0
0.693147		ND<0	0.693147	66	0
1.38629		ND<0	1.38629	67	0

0.693147	ND<0	0.693147	68	0	
0.693147	ND<0	0.693147	69	0	
1.16315	ND<0	1.16315	70	0	
0.955511	ND<0	0.955511	71	0	
1.16315	ND<0	1.16315	72	0	
0.693147	0 J	0.693147	73	0	
0.693147	0 J	0.693147	74	0	
0.693147	0 J	0.693147	75	0	
1.38629	0 J	1.38629	76	0	
0.693147	0 J	0.693147	77	0	
0.693147	0 J	0.693147	78	0	
1.16315	0 J	1.16315	79	0	
0.955511	0 J	0.955511	80	0	
1.16315	0 J	1.16315	81	0	
0.693147	0.693147	0	81	0	
0.693147	0.693147	0	81	0	
1.38629	0.693147	0.693147	82	0	
0.693147	0.693147	0	82	0	
0.693147	0.693147	0	82	0	
1.16315	0.693147	0.470004	83	0	
0.955511	0.693147	0.262364	84	0	
1.16315	0.693147	0.470004	85	0	
0.693147	0.693147	0	85	0	
1.38629	0.693147	0.693147	86	0	
0.693147	0.693147	0	86	0	
0.693147	0.693147	0	86	0	
1.16315	0.693147	0.470004	87	0	
0.955511	0.693147	0.262364	88	0	
1.16315	0.693147	0.470004	89	0	
1.38629	0.693147	0.693147	90	0	
0.693147	0.693147	0	90	0	
0.693147	0.693147	0	90	0	
1.16315	0.693147	0.470004	91	0	
0.955511	0.693147	0.262364	92	0	
1.16315	0.693147	0.470004	93	0	
0.693147	1.38629	-0.693147	93	1	
0.693147	1.38629	-0.693147	93	2	
1.16315	1.38629	-0.223144	93	3	
0.955511	1.38629	-0.430783	93	4	
1.16315	1.38629	-0.223144	93	5	
0.693147	0.693147	0	93	5	
1.16315	0.693147	0.470004	94	5	
0.955511	0.693147	0.262364	95	5	
1.16315	0.693147	0.470004	96	5	
1.16315	0.693147	0.470004	97	5	
0.955511	0.693147	0.262364	98	5	
1.16315	0.693147	0.470004	99	5	
0.955511	1.16315	-0.207639	99	6	
1.16315	1.16315	0	99	6	
1.16315	0.955511	0.207639	100	6	

S Statistic = 100 - 6 = 94

Tied Group	Value	Members
1	0	9
2	0.693147	5
3	1.16315	2

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
11/16/2009	1
6/30/2010	1

There are 0 time periods with multiple data

A = 1974
B = 0
C = 564
D = 0
E = 94
F = 0
a = 12546
b = 44064
c = 612
Group Variance = 587.333
Z-Score = 3.83743
Comparison Level at 1.0 - (0.05 / 2) = 97.5% confidence level = 1.97737 (two-tailed)
|3.83743| > 1.97737 indicating a trend

Mann-Kendall Trend Analysis

Parameter: Selenium

Location: LMW-8

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

95% Confidence Level

Xj	Xk	Xj - Xk		Positives	Negatives
ND<0	ND<0	0	0	0	
ND<0	ND<0	0	0	0	
ND<0	ND<0	0	0	0	
ND<0	ND<0	0	0	0	
ND<0	ND<0	0	0	0	
ND<0	ND<0	0	0	0	
1.09861		ND<0	1.09861	1	0
0 J	ND<0	0	1	0	
0 J	ND<0	0	1	0	
0 J	ND<0	0	1	0	
0 J	ND<0	0	1	0	
1.09861		ND<0	1.09861	2	0
ND<0	ND<0	0	2	0	
ND<0	ND<0	0	2	0	
-0.446287		ND<0	-0.446287	2	1
-0.527633		ND<0	-0.527633	2	2
-1.10866 J		ND<0	-1.108662	3	
ND<0	ND<0	0	2	3	
ND<0	ND<0	0	2	3	
ND<0	ND<0	0	2	3	
ND<0	ND<0	0	2	3	
ND<0	ND<0	0	2	3	
1.09861		ND<0	1.09861	3	3
0 J	ND<0	0	3	3	
0 J	ND<0	0	3	3	
0 J	ND<0	0	3	3	
0 J	ND<0	0	3	3	
1.09861		ND<0	1.09861	4	3
ND<0	ND<0	0	4	3	
ND<0	ND<0	0	4	3	
-0.446287		ND<0	-0.446287	4	4
-0.527633		ND<0	-0.527633	4	5
-1.10866 J		ND<0	-1.108664	6	
ND<0	ND<0	0	4	6	
ND<0	ND<0	0	4	6	
ND<0	ND<0	0	4	6	
ND<0	ND<0	0	4	6	
1.09861		ND<0	1.09861	5	6
0 J	ND<0	0	5	6	
0 J	ND<0	0	5	6	
0 J	ND<0	0	5	6	
0 J	ND<0	0	5	6	
1.09861		ND<0	1.09861	6	6
ND<0	ND<0	0	6	6	
ND<0	ND<0	0	6	6	
-0.446287		ND<0	-0.446287	6	7

-0.527633		ND<0	-0.527633		6	8
-1.10866 J		ND<0	-1.108666		9	
ND<0	ND<0	0	6	9		
ND<0	ND<0	0	6	9		
ND<0	ND<0	0	6	9		
1.09861		ND<0	1.09861	7	9	
0 J	ND<0	0	7	9		
0 J	ND<0	0	7	9		
0 J	ND<0	0	7	9		
0 J	ND<0	0	7	9		
1.09861		ND<0	1.09861	8	9	
ND<0	ND<0	0	8	9		
ND<0	ND<0	0	8	9		
-0.446287		ND<0	-0.446287		8	10
-0.527633		ND<0	-0.527633		8	11
-1.10866 J		ND<0	-1.108668		12	
ND<0	ND<0	0	8	12		
ND<0	ND<0	0	8	12		
1.09861		ND<0	1.09861	9	12	
0 J	ND<0	0	9	12		
0 J	ND<0	0	9	12		
0 J	ND<0	0	9	12		
0 J	ND<0	0	9	12		
1.09861		ND<0	1.09861	10	12	
ND<0	ND<0	0	10	12		
ND<0	ND<0	0	10	12		
-0.446287		ND<0	-0.446287		10	13
-0.527633		ND<0	-0.527633		10	14
-1.10866 J		ND<0	-1.108610		15	
ND<0	ND<0	0	10	15		
1.09861		ND<0	1.09861	11	15	
0 J	ND<0	0	11	15		
0 J	ND<0	0	11	15		
0 J	ND<0	0	11	15		
0 J	ND<0	0	11	15		
1.09861		ND<0	1.09861	12	15	
ND<0	ND<0	0	12	15		
ND<0	ND<0	0	12	15		
-0.446287		ND<0	-0.446287		12	16
-0.527633		ND<0	-0.527633		12	17
-1.10866 J		ND<0	-1.108612		18	
1.09861		ND<0	1.09861	13	18	
0 J	ND<0	0	13	18		
0 J	ND<0	0	13	18		
0 J	ND<0	0	13	18		
0 J	ND<0	0	13	18		
1.09861		ND<0	1.09861	14	18	
ND<0	ND<0	0	14	18		
ND<0	ND<0	0	14	18		
-0.446287		ND<0	-0.446287		14	19
-0.527633		ND<0	-0.527633		14	20
-1.10866 J		ND<0	-1.108614		21	
0 J	1.09861		-1.098614		22	
0 J	1.09861		-1.098614		23	
0 J	1.09861		-1.098614		24	
0 J	1.09861		-1.098614		25	
1.09861		1.09861		0	14	25

ND<0	1.09861		-1.0986	114	26	
ND<0	1.09861		-1.0986	114	27	
-0.446287		1.09861		-1.5449	14	28
-0.527633		1.09861		-1.6262	14	29
-1.10866 J		1.09861		-2.2072	14	30

0 J	0 J	0	14	30	
0 J	0 J	0	14	30	
0 J	0 J	0	14	30	
1.09861		0 J	1.09861	15	30
ND<0	0 J	0	15	30	
ND<0	0 J	0	15	30	
-0.446287		0 J	-0.446287	15	31
-0.527633		0 J	-0.527633	15	32
-1.10866 J		0 J	-1.1086	15	33

0 J	0 J	0	15	33	
0 J	0 J	0	15	33	
1.09861		0 J	1.09861	16	33
ND<0	0 J	0	16	33	
ND<0	0 J	0	16	33	
-0.446287		0 J	-0.446287	16	34
-0.527633		0 J	-0.527633	16	35
-1.10866 J		0 J	-1.1086	16	36

0 J	0 J	0	16	36	
1.09861		0 J	1.09861	17	36
ND<0	0 J	0	17	36	
ND<0	0 J	0	17	36	
-0.446287		0 J	-0.446287	17	37
-0.527633		0 J	-0.527633	17	38
-1.10866 J		0 J	-1.1086	17	39

1.09861		0 J	1.09861	18	39
ND<0	0 J	0	18	39	
ND<0	0 J	0	18	39	
-0.446287		0 J	-0.446287	18	40
-0.527633		0 J	-0.527633	18	41
-1.10866 J		0 J	-1.1086	18	42

ND<0	1.09861		-1.0986	118	43	
ND<0	1.09861		-1.0986	118	44	
-0.446287		1.09861		-1.5449	18	45
-0.527633		1.09861		-1.6262	18	46
-1.10866 J		1.09861		-2.2072	18	47

ND<0	ND<0	0	18	47	
-0.446287		ND<0	-0.446287	18	48
-0.527633		ND<0	-0.527633	18	49
-1.10866 J		ND<0	-1.1086	18	50

-0.446287	ND<0	-0.446287	18	51
-0.527633	ND<0	-0.527633	18	52
-1.10866 J	ND<0	-1.1086	18	53

-0.527633	-0.446287	-0.08134	56 18	54
-1.10866 J	-0.446287	-0.662376	18	55

-1.10866 J	-0.527633	-0.58103	18 56

S Statistic = 18 - 56 = -38

Tied Group	Value	Members
1	0	13
2	1.09861	2

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
11/16/2009		1
6/30/2010		1

There are 0 time periods with multiple data

A = 4854
B = 0
C = 1716
D = 0
E = 158
F = 0
a = 12546
b = 44064
c = 612
Group Variance = 427.333
Z-Score = -1.78986
Comparison Level at 1.0 - (0.05 / 2) = 97.5% confidence level = 1.97737 (two-tailed)
|-1.78986| <= 1.97737 indicating no evidence of a trend

Concentrations (ppb)

Parameter: Tetrachloroethylene

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 219
Total Non-Detect: 215
Percent Non-Detects: 98.1735%
Total Background Measurements: 18
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	18	18 (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
			11/16/2009	ND<0.15 U	ND<0.15 U
			6/30/2010	ND<0.15 U	ND<0.15 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-6	18	18 (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
			11/16/2009	ND<0.15 U	ND<0.15 U
			6/30/2010	ND<0.15 U	ND<0.15 U
LMW-10	15	14 (93.3333%)	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
			11/16/2009	0.24 J	0.24 J	
			6/30/2010	ND<0.15 U		ND<0.15 U
LMW-14R	6	6 (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
			6/30/2010	ND<0.15 U		ND<0.15 U
LMW-15R	10	10 (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
			6/30/2010	ND<0.15 U		ND<0.15 U
LMW-16	8	8 (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
			11/16/2009	ND<0.15 U		ND<0.15 U
			6/30/2010	ND<0.15 U		ND<0.15 U
LMW-3	20	20 (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
			11/16/2009	ND<0.15 U		ND<0.15 U
			6/30/2010	ND<0.15 U		ND<0.15 U
LMW-9S	10	10 (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
			11/16/2009	ND<0.15 U	ND<0.15 U
			11/16/2009	ND<0.15 U	ND<0.15 U
			11/16/2009	ND<0.15 U	ND<0.15 U
			6/30/2010	ND<0.15 U	ND<0.15 U
LMW-9D	8	8 (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
			11/16/2009	ND<0.15 U	ND<0.15 U
			6/30/2010	ND<0.15 U	ND<0.15 U
LMW-8	18	15 (83.3333%)	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
			11/16/2009	0.26 J	0.26 J
			6/30/2010	0.25 J	0.25 J
LMW-9	18	18 (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
			11/16/2009	ND<0.15 U	ND<0.15 U
			6/30/2010	ND<0.15 U	ND<0.15 U
LMW-3S	8	8 (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

			11/16/2009	ND<0.15 U	ND<0.15 U
			6/30/2010	ND<0.15 U	ND<0.15 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<0.15 U	ND<0.15 U
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-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

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Tetrachloroethylene

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0	-2.65209	7.03356	0
2	0	-2.36561	12.6297	0
3	0	-2.22621	17.5857	0
4	0	-2.09693	21.9828	0
5	0.075	-2.01409	26.0394	-0.151057
6	0.075	-1.92684	29.7521	-0.29557
7	0.075	-1.86629	33.2351	-0.435542
8	0.075	-1.79912	36.472	-0.570476
9	0.075	-1.75069	39.5369	-0.701777
10	0.075	-1.6954	42.4112	-0.828932
11	0.075	-1.64485	45.1168	-0.952296
12	0.075	-1.60725	47.7	-1.07284
13	0.075	-1.56322	50.1437	-1.19008
14	0.075	-1.53007	52.4848	-1.30484
15	0.075	-1.49085	54.7074	-1.41665
16	0.075	-1.46106	56.8421	-1.52623
17	0.075	-1.42554	58.8743	-1.63315
18	0.075	-1.39838	60.8297	-1.73802
19	0.075	-1.36581	62.6952	-1.84046
20	0.075	-1.34075	64.4928	-1.94102
21	0.075	-1.31058	66.2104	-2.03931
22	0.075	-1.28155	67.8528	-2.13543
23	0.075	-1.25908	69.4381	-2.22986
24	0.075	-1.23187	70.9556	-2.32225
25	0.075	-1.21073	72.4214	-2.41305
26	0.075	-1.18504	73.8258	-2.50193
27	0.075	-1.16505	75.1831	-2.58931
28	0.075	-1.14069	76.4843	-2.67486
29	0.075	-1.12168	77.7424	-2.75899
30	0.075	-1.09847	78.9491	-2.84137
31	0.075	-1.08032	80.1162	-2.92239
32	0.075	-1.05812	81.2358	-3.00175
33	0.075	-1.03643	82.31	-3.07949
34	0.075	-1.01943	83.3492	-3.15594
35	0.075	-0.998575	84.3464	-3.23084
36	0.075	-0.982202	85.3111	-3.3045
37	0.075	-0.9621	86.2367	-3.37666
38	0.24	-0.946291	87.1322	-3.60377
39	0.25	-0.926859	87.9912	-3.83548
40	0.26	-0.911562	88.8222	-4.07249
41	0.31	-0.892733	89.6192	-4.34924
42	0.5	-0.877897	90.3899	-4.78819
43	0.5	-0.859618	91.1288	-5.21799
44	0.5	-0.841621	91.8371	-5.6388
45	0.5	-0.827417	92.5218	-6.05251
46	0.5	-0.809896	93.1777	-6.45746
47	0.5	-0.796056	93.8114	-6.85549
48	0.5	-0.778966	94.4182	-7.24497
49	0.5	-0.765456	95.0041	-7.6277

50	0.5	-0.748762	95.5647	-8.00208
51	0.5	-0.735557	96.1058	-8.36986
52	0.5	-0.719228	96.6231	-8.72947
53	0.5	-0.706302	97.1219	-9.08263
54	0.5	-0.690309	97.5985	-9.42778
55	0.5	-0.674499	8.0534	-9.76502
56	0.5	-0.661955	98.4916	-10.096
57	0.5	-0.646431	98.9095	-10.4192
58	0.5	-0.634124	99.3116	-10.7363
59	0.5	-0.618872	99.6946	-11.0457
60	0.5	-0.606775	100.063	-11.3491
61	0.5	-0.591776	100.413	-11.645
62	0.5	-0.579873	100.749	-11.9349
63	0.5	-0.565108	101.069	-12.2175
64	0.5	-0.553384	101.375	-12.4942
65	0.5	-0.538836	101.665	-12.7636
66	0.5	-0.524401	101.94	-13.0258
67	0.5	-0.51293	102.203	-13.2823
68	0.5	-0.498687	102.452	-13.5316
69	0.5	-0.487364	102.689	-13.7753
70	0.5	-0.473299	102.913	-14.0119
71	0.5	-0.462114	103.127	-14.243
72	0.5	-0.448213	103.328	-14.4671
73	0.5	-0.437153	103.519	-14.6857
74	0.5	-0.423405	103.698	-14.8974
75	0.5	-0.412463	103.868	-15.1036
76	0.5	-0.398855	104.027	-15.303
77	0.5	-0.385321	104.176	-15.4957
78	0.5	-0.374544	104.316	-15.683
79	0.5	-0.361133	104.447	-15.8635
80	0.5	-0.350451	104.569	-16.0388
81	0.5	-0.337155	104.683	-16.2073
82	0.5	-0.326561	104.79	-16.3706
83	0.5	-0.31337	104.888	-16.5273
84	0.5	-0.302855	104.98	-16.6787
85	0.5	-0.28976	105.064	-16.8236
86	0.5	-0.279319	105.142	-16.9633
87	0.5	-0.266311	105.213	-17.0964
88	0.5	-0.253347	105.277	-17.2231
89	0.5	-0.243007	105.336	-17.3446
90	0.5	-0.230118	105.389	-17.4597
91	0.5	-0.219834	105.437	-17.5696
92	0.5	-0.207012	105.48	-17.6731
93	0.5	-0.196779	105.519	-17.7715
94	0.5	-0.184017	105.553	-17.8635
95	0.5	-0.173829	105.583	-17.9504
96	0.5	-0.161119	105.609	-18.031
97	0.5	-0.150969	105.632	-18.1064
98	0.5	-0.138305	105.651	-18.1756
99	0.5	-0.125661	105.666	-18.2384
100	0.5	-0.115562	105.68	-18.2962
101	0.5	-0.102953	105.69	-18.3477
102	0.5	-0.0928787	105.699	-18.3941
103	0.5	-0.0802981	105.705	-18.4343
104	0.5	-0.0702426	105.71	-18.4694
105	0.5	-0.0576847	105.714	-18.4982
106	0.5	-0.0476439	105.716	-18.5221
107	0.5	-0.0350997	105.717	-18.5396
108	0.5	-0.0250691	105.718	-18.5521
109	0.5	-0.0125328	105.718	-18.5584
110	0.5	0	105.718	-18.5584
111	0.5	0.0125328	105.718	-18.5521

112	0.5	0.0250691	105.719	-18.5396
113	0.5	0.0350997	105.72	-18.5221
114	0.5	0.0476439	105.722	-18.4982
115	0.5	0.0576847	105.726	-18.4694
116	0.5	0.0702426	105.731	-18.4343
117	0.5	0.0802981	105.737	-18.3941
118	0.5	0.0928787	105.746	-18.3477
119	0.5	0.102953	105.756	-18.2962
120	0.5	0.115562	105.77	-18.2384
121	0.5	0.125661	105.785	-18.1756
122	0.5	0.138305	105.805	-18.1064
123	0.5	0.150969	105.827	-18.031
124	0.5	0.161119	105.853	-17.9504
125	0.5	0.173829	105.883	-17.8635
126	0.5	0.184017	105.917	-17.7715
127	0.5	0.196779	105.956	-17.6731
128	0.5	0.207012	105.999	-17.5696
129	0.5	0.219834	106.047	-17.4597
130	0.5	0.230118	106.1	-17.3446
131	0.5	0.243007	106.159	-17.2231
132	0.5	0.253347	106.223	-17.0964
133	0.5	0.266311	106.294	-16.9633
134	0.5	0.279319	106.372	-16.8236
135	0.5	0.28976	106.456	-16.6787
136	0.5	0.302855	106.548	-16.5273
137	0.5	0.31337	106.646	-16.3706
138	0.5	0.326561	106.753	-16.2073
139	0.5	0.337155	106.867	-16.0388
140	0.5	0.350451	106.989	-15.8635
141	0.5	0.361133	107.12	-15.683
142	0.5	0.374544	107.26	-15.4957
143	0.5	0.385321	107.409	-15.303
144	0.5	0.398855	107.568	-15.1036
145	0.5	0.412463	107.738	-14.8974
146	0.5	0.423405	107.917	-14.6857
147	0.5	0.437153	108.108	-14.4671
148	0.5	0.448213	108.309	-14.243
149	0.5	0.462114	108.523	-14.0119
150	0.5	0.473299	108.747	-13.7753
151	0.5	0.487364	108.984	-13.5316
152	0.5	0.498687	109.233	-13.2823
153	0.5	0.51293	109.496	-13.0258
154	0.5	0.524401	109.771	-12.7636
155	0.5	0.538836	110.061	-12.4942
156	0.5	0.553384	110.368	-12.2175
157	0.5	0.565108	110.687	-11.9349
158	0.5	0.579873	111.023	-11.645
159	0.5	0.591776	111.373	-11.3491
160	0.5	0.606775	111.741	-11.0457
161	0.5	0.618872	112.124	-10.7363
162	0.5	0.634124	112.527	-10.4192
163	0.5	0.646431	112.944	-10.096
164	0.5	0.661955	113.383	-9.76502
165	0.5	0.67449	113.838	-9.42778
166	0.5	0.690309	114.314	-9.08263
167	0.5	0.706302	114.813	-8.72947
168	0.5	0.719228	115.33	-8.36986
169	0.5	0.735557	115.871	-8.00208
170	0.5	0.748762	116.432	-7.6277
171	0.5	0.765456	117.018	-7.24497
172	0.5	0.778966	117.625	-6.85549
173	0.5	0.796056	118.258	-6.45746

174	0.5	0.809896	118.914	-6.05251
175	0.5	0.827417	119.599	-5.6388
176	0.5	0.841621	120.307	-5.21799
177	0.5	0.859618	121.046	-4.78819
178	0.5	0.877897	121.817	-4.34924
179	0.5	0.892733	122.614	-3.90287
180	0.5	0.911562	123.445	-3.44709
181	0.5	0.926859	124.304	-2.98366
182	0.5	0.946291	125.199	-2.51051
183	0.5	0.9621	126.125	-2.02946
184	0.5	0.982202	127.09	-1.53836
185	0.5	0.998575	128.087	-1.03908
186	0.5	1.01943	129.126	-0.529362
187	0.5	1.03643	130.2	-0.0111459
188	0.5	1.05812	131.32	0.517915
189	0.5	1.08032	132.487	1.05808
190	0.5	1.09847	133.694	1.60731
191	0.5	1.12168	134.952	2.16815
192	0.5	1.14069	136.253	2.73849
193	0.5	1.16505	137.61	3.32102
194	0.5	1.18504	139.015	3.91354
195	0.5	1.21073	140.48	4.5189
196	0.5	1.23187	141.998	5.13484
197	0.5	1.25908	143.583	5.76438
198	0.5	1.28155	145.226	6.40515
199	0.5	1.31058	146.943	7.06044
200	0.5	1.34075	148.741	7.73082
201	0.5	1.36581	150.606	8.41372
202	0.5	1.39838	152.562	9.11291
203	0.5	1.42554	154.594	9.82568
204	0.5	1.46106	156.729	10.5562
205	0.5	1.49085	158.951	11.3016
206	0.5	1.53007	161.292	12.0667
207	0.5	1.56322	163.736	12.8483
208	0.5	1.60725	166.319	13.6519
209	0.5	1.64485	169.025	14.4743
210	0.5	1.6954	171.899	15.322
211	0.5	1.75069	174.964	16.1974
212	0.5	1.79912	178.201	17.0969
213	0.5	1.86629	181.684	18.0301
214	0.5	1.92684	185.397	18.9935
215	0.5	2.01409	189.453	20.0005
216	0.5	2.09693	193.85	21.049
217	0.5	2.22621	198.806	22.1621
218	0.5	2.36561	204.403	23.3449
219	0.5	2.65209	211.436	24.671

Data Set Standard Deviation = 0.164096
Numerator = 608.656
Denominator = 1241.18
W Statistic = 0.490387 = 608.656 / 1241.18

5% Critical value of 0.976 exceeds 0.490387
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.490387
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Tetrachloroethylene

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-2.59027	-2.65209	7.03356	6.86961
2	-2.59027	-2.36561	12.6297	12.9972
3	-2.59027	-2.22621	17.5857	18.7637
4	-2.59027	-2.09693	21.9828	24.1953
5	-2.59027	-2.01409	26.0394	29.4123
6	-2.59027	-1.92684	29.7521	34.4033
7	-2.59027	-1.86629	33.2351	39.2375
8	-2.59027	-1.79912	36.472	43.8977
9	-2.59027	-1.75069	39.5369	48.4325
10	-2.59027	-1.6954	42.4112	52.824
11	-2.59027	-1.64485	45.1168	57.0846
12	-2.59027	-1.60725	47.7	61.2478
13	-2.59027	-1.56322	50.1437	65.297
14	-2.59027	-1.53007	52.4848	69.2603
15	-2.59027	-1.49085	54.7074	73.122
16	-2.59027	-1.46106	56.8421	76.9065
17	-2.59027	-1.42554	58.8743	80.599
18	-2.59027	-1.39838	60.8297	84.2212
19	-2.59027	-1.36581	62.6952	87.759
20	-2.59027	-1.34075	64.4928	91.2319
21	-2.59027	-1.31058	66.2104	94.6267
22	-2.59027	-1.28155	67.8528	97.9462
23	-2.59027	-1.25908	69.4381	101.208
24	-2.59027	-1.23187	70.9556	104.398
25	-2.59027	-1.21073	72.4214	107.535
26	-2.59027	-1.18504	73.8258	110.604
27	-2.59027	-1.16505	75.1831	113.622
28	-2.59027	-1.14069	76.4843	116.577
29	-2.59027	-1.12168	77.7424	119.482
30	-2.59027	-1.09847	78.9491	122.327
31	-2.59027	-1.08032	80.1162	125.126
32	-2.59027	-1.05812	81.2358	127.867
33	-2.59027	-1.03643	82.31	130.551
34	-1.42712	-1.01943	83.3492	132.006
35	-1.38629	-0.998575	84.3464	133.39
36	-1.34707	-0.982202	85.3111	134.713
37	-1.17118	-0.9621	86.2367	135.84
38	-0.693147	-0.946291	87.1322	136.496
39	-0.693147	-0.926859	87.9912	137.139
40	-0.693147	-0.911562	88.8222	137.77
41	-0.693147	-0.892733	89.6192	138.389
42	-0.693147	-0.877897	90.3899	138.998
43	-0.693147	-0.859618	91.1288	139.594
44	-0.693147	-0.841621	91.8371	140.177
45	-0.693147	-0.827417	92.5218	140.75
46	-0.693147	-0.809896	93.1777	141.312
47	-0.693147	-0.796056	93.8114	141.864
48	-0.693147	-0.778966	94.4182	142.404
49	-0.693147	-0.765456	95.0041	142.934

50	-0.693147	-0.748762	95.5647	143.453
51	-0.693147	-0.735557	96.1058	143.963
52	-0.693147	-0.719228	96.6231	144.462
53	-0.693147	-0.706302	97.1219	144.951
54	-0.693147	-0.690309	97.5985	145.43
55	-0.693147	-0.674499	8.0534	145.897
56	-0.693147	-0.661955	98.4916	146.356
57	-0.693147	-0.646431	98.9095	146.804
58	-0.693147	-0.634124	99.3116	147.244
59	-0.693147	-0.618872	99.6946	147.673
60	-0.693147	-0.606775	100.063	148.093
61	-0.693147	-0.591776	100.413	148.503
62	-0.693147	-0.579873	100.749	148.905
63	-0.693147	-0.565108	101.069	149.297
64	-0.693147	-0.553384	101.375	149.681
65	-0.693147	-0.538836	101.665	150.054
66	-0.693147	-0.524401	101.94	150.417
67	-0.693147	-0.51293	102.203	150.773
68	-0.693147	-0.498687	102.452	151.119
69	-0.693147	-0.487364	102.689	151.456
70	-0.693147	-0.473299	102.913	151.785
71	-0.693147	-0.462114	103.127	152.105
72	-0.693147	-0.448213	103.328	152.416
73	-0.693147	-0.437153	103.519	152.719
74	-0.693147	-0.423405	103.698	153.012
75	-0.693147	-0.412463	103.868	153.298
76	-0.693147	-0.398855	104.027	153.574
77	-0.693147	-0.385321	104.176	153.841
78	-0.693147	-0.374544	104.316	154.101
79	-0.693147	-0.361133	104.447	154.351
80	-0.693147	-0.350451	104.569	154.594
81	-0.693147	-0.337155	104.683	154.828
82	-0.693147	-0.326561	104.79	155.054
83	-0.693147	-0.31337	104.888	155.272
84	-0.693147	-0.302855	104.98	155.482
85	-0.693147	-0.28976	105.064	155.682
86	-0.693147	-0.279319	105.142	155.876
87	-0.693147	-0.266311	105.213	156.061
88	-0.693147	-0.253347	105.277	156.236
89	-0.693147	-0.243007	105.336	156.405
90	-0.693147	-0.230118	105.389	156.564
91	-0.693147	-0.219834	105.437	156.717
92	-0.693147	-0.207012	105.48	156.86
93	-0.693147	-0.196779	105.519	156.996
94	-0.693147	-0.184017	105.553	157.124
95	-0.693147	-0.173829	105.583	157.244
96	-0.693147	-0.161119	105.609	157.356
97	-0.693147	-0.150969	105.632	157.461
98	-0.693147	-0.138305	105.651	157.557
99	-0.693147	-0.125661	105.666	157.644
100	-0.693147	-0.115562	105.68	157.724
101	-0.693147	-0.102953	105.69	157.795
102	-0.693147	-0.0928787	105.699	157.86
103	-0.693147	-0.0802981	105.705	157.915
104	-0.693147	-0.0702426	105.71	157.964
105	-0.693147	-0.0576847	105.714	158.004
106	-0.693147	-0.0476439	105.716	158.037
107	-0.693147	-0.0350997	105.717	158.061
108	-0.693147	-0.0250691	105.718	158.079
109	-0.693147	-0.0125328	105.718	158.087
110	-0.693147	0	105.718	158.087
111	-0.693147	0.0125328	105.718	158.079

112	-0.693147	0.0250691	105.719	158.061
113	-0.693147	0.0350997	105.72	158.037
114	-0.693147	0.0476439	105.722	158.004
115	-0.693147	0.0576847	105.726	157.964
116	-0.693147	0.0702426	105.731	157.915
117	-0.693147	0.0802981	105.737	157.86
118	-0.693147	0.0928787	105.746	157.795
119	-0.693147	0.102953	105.756	157.724
120	-0.693147	0.115562	105.77	157.644
121	-0.693147	0.125661	105.785	157.557
122	-0.693147	0.138305	105.805	157.461
123	-0.693147	0.150969	105.827	157.356
124	-0.693147	0.161119	105.853	157.244
125	-0.693147	0.173829	105.883	157.124
126	-0.693147	0.184017	105.917	156.996
127	-0.693147	0.196779	105.956	156.86
128	-0.693147	0.207012	105.999	156.717
129	-0.693147	0.219834	106.047	156.564
130	-0.693147	0.230118	106.1	156.405
131	-0.693147	0.243007	106.159	156.236
132	-0.693147	0.253347	106.223	156.061
133	-0.693147	0.266311	106.294	155.876
134	-0.693147	0.279319	106.372	155.682
135	-0.693147	0.28976	106.456	155.482
136	-0.693147	0.302855	106.548	155.272
137	-0.693147	0.31337	106.646	155.054
138	-0.693147	0.326561	106.753	154.828
139	-0.693147	0.337155	106.867	154.594
140	-0.693147	0.350451	106.989	154.351
141	-0.693147	0.361133	107.12	154.101
142	-0.693147	0.374544	107.26	153.841
143	-0.693147	0.385321	107.409	153.574
144	-0.693147	0.398855	107.568	153.298
145	-0.693147	0.412463	107.738	153.012
146	-0.693147	0.423405	107.917	152.719
147	-0.693147	0.437153	108.108	152.416
148	-0.693147	0.448213	108.309	152.105
149	-0.693147	0.462114	108.523	151.785
150	-0.693147	0.473299	108.747	151.456
151	-0.693147	0.487364	108.984	151.119
152	-0.693147	0.498687	109.233	150.773
153	-0.693147	0.51293	109.496	150.417
154	-0.693147	0.524401	109.771	150.054
155	-0.693147	0.538836	110.061	149.681
156	-0.693147	0.553384	110.368	149.297
157	-0.693147	0.565108	110.687	148.905
158	-0.693147	0.579873	111.023	148.503
159	-0.693147	0.591776	111.373	148.093
160	-0.693147	0.606775	111.741	147.673
161	-0.693147	0.618872	112.124	147.244
162	-0.693147	0.634124	112.527	146.804
163	-0.693147	0.646431	112.944	146.356
164	-0.693147	0.661955	113.383	145.897
165	-0.693147	0.67449	113.838	145.43
166	-0.693147	0.690309	114.314	144.951
167	-0.693147	0.706302	114.813	144.462
168	-0.693147	0.719228	115.33	143.963
169	-0.693147	0.735557	115.871	143.453
170	-0.693147	0.748762	116.432	142.934
171	-0.693147	0.765456	117.018	142.404
172	-0.693147	0.778966	117.625	141.864
173	-0.693147	0.796056	118.258	141.312

174	-0.693147		0.809896	118.914	140.75
175	-0.693147		0.827417	119.599	140.177
176	-0.693147		0.841621	120.307	139.594
177	-0.693147		0.859618	121.046	138.998
178	-0.693147		0.877897	121.817	138.389
179	-0.693147		0.892733	122.614	137.77
180	-0.693147		0.911562	123.445	137.139
181	-0.693147		0.926859	124.304	136.496
182	-0.693147		0.946291	125.199	135.84
183	-0.693147		0.9621	126.125	135.173
184	-0.693147		0.982202	127.09	134.493
185	-0.693147		0.998575	128.087	133.8
186	-0.693147		1.01943	129.126	133.094
187	-0.693147		1.03643	130.2	132.375
188	-0.693147		1.05812	131.32	131.642
189	-0.693147		1.08032	132.487	130.893
190	-0.693147		1.09847	133.694	130.132
191	-0.693147		1.12168	134.952	129.354
192	-0.693147		1.14069	136.253	128.564
193	-0.693147		1.16505	137.61	127.756
194	-0.693147		1.18504	139.015	126.935
195	-0.693147		1.21073	140.48	126.095
196	-0.693147		1.23187	141.998	125.242
197	-0.693147		1.25908	143.583	124.369
198	-0.693147		1.28155	145.226	123.48
199	-0.693147		1.31058	146.943	122.572
200	-0.693147		1.34075	148.741	121.643
201	-0.693147		1.36581	150.606	120.696
202	-0.693147		1.39838	152.562	119.727
203	-0.693147		1.42554	154.594	118.739
204	-0.693147		1.46106	156.729	117.726
205	-0.693147		1.49085	158.951	116.693
206	-0.693147		1.53007	161.292	115.632
207	-0.693147		1.56322	163.736	114.548
208	-0.693147		1.60725	166.319	113.434
209	-0.693147		1.64485	169.025	112.294
210	-0.693147		1.6954	171.899	111.119
211	-0.693147		1.75069	174.964	109.906
212	-0.693147		1.79912	178.201	108.659
213	-0.693147		1.86629	181.684	107.365
214	-0.693147		1.92684	185.397	106.029
215	-0.693147		2.01409	189.453	104.633
216	0	2.09693	193.85	104.633	
217	0	2.22621	198.806	104.633	
218	0	2.36561	204.403	104.633	
219	0	2.65209	211.436	104.633	

Data Set Standard Deviation = 0.692659
Numerator = 10948.1
Denominator = 22114.4
W Statistic = 0.495068 = 10948.1 / 22114.4

5% Critical value of 0.976 exceeds 0.495068
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.495068
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Tetrachloroethylene

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 98.1735%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 18
Maximum Background Concentration = 0
Confidence Level = 69.2%
False Positive Rate = 30.8%

Location	Date	Samples	Mean	Significant
LMW-6	6/30/2010	1	-2.59027	FALSE
LMW-10	6/30/2010	1	-2.59027	FALSE
LMW-14R	6/30/2010	1	-2.59027	FALSE
LMW-15R	6/30/2010	1	-2.59027	FALSE
LMW-16	6/30/2010	1	-2.59027	FALSE
LMW-3	6/30/2010	1	-2.59027	FALSE
LMW-9S	6/30/2010	1	-2.59027	FALSE
LMW-9D	6/30/2010	1	-2.59027	FALSE
LMW-8	6/30/2010	1	-1.38629	FALSE
LMW-9	6/30/2010	1	-2.59027	FALSE
LMW-3S	6/30/2010	1	-2.59027	FALSE
LMW-7	6/11/2009	1	-2.59027	FALSE
MW-5	11/20/2008	1	-0.693147	FALSE
LMW-13	11/20/2008	1	-0.693147	FALSE
LMW-12	11/20/2008	1	-0.693147	FALSE
LMW-11	11/20/2008	1	-0.693147	FALSE

Concentrations (ppb)

Parameter: Trichloroethylene

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 219
Total Non-Detect: 213
Percent Non-Detects: 97.2603%
Total Background Measurements: 18
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	18	18 (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
			11/16/2009	ND<0.13 U	ND<0.13 U
			6/30/2010	ND<0.13 U	ND<0.13 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-6	18	18 (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
			11/16/2009	ND<0.13 U	ND<0.13 U
			6/30/2010	ND<0.13 U	ND<0.13 U
LMW-14R	6	6 (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	
		6/30/2010	ND<0.13 U	ND<0.13 U	
LMW-15R	10	10 (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	
		6/30/2010	ND<0.13 U	ND<0.13 U	
LMW-16	8	8 (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	
		11/16/2009	ND<0.13 U	ND<0.13 U	
		6/30/2010	ND<0.13 U	ND<0.13 U	
LMW-3	20	20 (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	
		11/16/2009	ND<0.13 U	ND<0.13 U	
		6/30/2010	ND<0.13 U	ND<0.13 U	
LMW-8	18	15 (83.3333%)	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	
		11/16/2009	0.19 J	0.19 J	
		6/30/2010	0.29 J	0.29 J	

LMW-9	18	18 (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
			11/16/2009	ND<0.13 U		ND<0.13 U
			6/30/2010	ND<0.13 U		ND<0.13 U
LMW-9D	8	8 (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
			11/16/2009	ND<0.13 U		ND<0.13 U
			6/30/2010	ND<0.13 U		ND<0.13 U
LMW-9S	10	10 (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
			11/16/2009	ND<0.13 U		ND<0.13 U
			11/16/2009	ND<0.13 U		ND<0.13 U
			11/16/2009	ND<0.13 U		ND<0.13 U
			6/30/2010	ND<0.13 U		ND<0.13 U
LMW-10	15	12 (80%)	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	
			11/16/2009	1.7	1.7	
			6/30/2010	1.1	1.1	
LMW-3S	8	8 (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

			11/16/2009	ND<0.13 U	ND<0.13 U
			6/30/2010	ND<0.13 U	ND<0.13 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<0.13 U	ND<0.13 U
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-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-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
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

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Trichloroethylene

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0	-2.65209	7.03356	0
2	0	-2.36561	12.6297	0
3	0	-2.22621	17.5857	0
4	0	-2.09693	21.9828	0
5	0	-2.01409	26.0394	0
6	0	-1.92684	29.7521	0
7	0	-1.86629	33.2351	0
8	0	-1.79912	36.472	0
9	0.065	-1.75069	39.5369	-0.113795
10	0.065	-1.6954	42.4112	-0.223995
11	0.065	-1.64485	45.1168	-0.330911
12	0.065	-1.60725	47.7	-0.435382
13	0.065	-1.56322	50.1437	-0.536992
14	0.065	-1.53007	52.4848	-0.636446
15	0.065	-1.49085	54.7074	-0.733351
16	0.065	-1.46106	56.8421	-0.82832
17	0.065	-1.42554	58.8743	-0.92098
18	0.065	-1.39838	60.8297	-1.01187
19	0.065	-1.36581	62.6952	-1.10065
20	0.065	-1.34075	64.4928	-1.1878
21	0.065	-1.31058	66.2104	-1.27299
22	0.065	-1.28155	67.8528	-1.35629
23	0.065	-1.25908	69.4381	-1.43813
24	0.065	-1.23187	70.9556	-1.5182
25	0.065	-1.21073	72.4214	-1.5969
26	0.065	-1.18504	73.8258	-1.67393
27	0.065	-1.16505	75.1831	-1.74965
28	0.065	-1.14069	76.4843	-1.8238
29	0.065	-1.12168	77.7424	-1.89671
30	0.065	-1.09847	78.9491	-1.96811
31	0.065	-1.08032	80.1162	-2.03833
32	0.065	-1.05812	81.2358	-2.10711
33	0.065	-1.03643	82.31	-2.17448
34	0.065	-1.01943	83.3492	-2.24074
35	0.065	-0.998575	84.3464	-2.30565
36	0.065	-0.982202	85.3111	-2.36949
37	0.065	-0.9621	86.2367	-2.43203
38	0.065	-0.946291	87.1322	-2.49353
39	0.065	-0.926859	87.9912	-2.55378
40	0.19	-0.911562	88.8222	-2.72698
41	0.29	-0.892733	89.6192	-2.98587
42	0.41	-0.877897	90.3899	-3.34581
43	0.5	-0.859618	91.1288	-3.77562
44	0.5	-0.841621	91.8371	-4.19643
45	0.5	-0.827417	92.5218	-4.61014
46	0.5	-0.809896	93.1777	-5.01508
47	0.5	-0.796056	93.8114	-5.41311
48	0.5	-0.778966	94.4182	-5.80259
49	0.5	-0.765456	95.0041	-6.18532

50	0.5	-0.748762	95.5647	-6.5597
51	0.5	-0.735557	96.1058	-6.92748
52	0.5	-0.719228	96.6231	-7.2871
53	0.5	-0.706302	97.1219	-7.64025
54	0.5	-0.690309	97.5985	-7.9854
55	0.5	-0.674499	8.0534	-8.32265
56	0.5	-0.661955	98.4916	-8.65362
57	0.5	-0.646431	98.9095	-8.97684
58	0.5	-0.634124	99.3116	-9.2939
59	0.5	-0.618872	99.6946	-9.60334
60	0.5	-0.606775	100.063	-9.90673
61	0.5	-0.591776	100.413	-10.2026
62	0.5	-0.579873	100.749	-10.4926
63	0.5	-0.565108	101.069	-10.7751
64	0.5	-0.553384	101.375	-11.0518
65	0.5	-0.538836	101.665	-11.3212
66	0.5	-0.524401	101.94	-11.5834
67	0.5	-0.51293	102.203	-11.8399
68	0.5	-0.498687	102.452	-12.0892
69	0.5	-0.487364	102.689	-12.3329
70	0.5	-0.473299	102.913	-12.5696
71	0.5	-0.462114	103.127	-12.8006
72	0.5	-0.448213	103.328	-13.0247
73	0.5	-0.437153	103.519	-13.2433
74	0.5	-0.423405	103.698	-13.455
75	0.5	-0.412463	103.868	-13.6612
76	0.5	-0.398855	104.027	-13.8607
77	0.5	-0.385321	104.176	-14.0533
78	0.5	-0.374544	104.316	-14.2406
79	0.5	-0.361133	104.447	-14.4212
80	0.5	-0.350451	104.569	-14.5964
81	0.5	-0.337155	104.683	-14.765
82	0.5	-0.326561	104.79	-14.9282
83	0.5	-0.31337	104.888	-15.0849
84	0.5	-0.302855	104.98	-15.2364
85	0.5	-0.28976	105.064	-15.3812
86	0.5	-0.279319	105.142	-15.5209
87	0.5	-0.266311	105.213	-15.654
88	0.5	-0.253347	105.277	-15.7807
89	0.5	-0.243007	105.336	-15.9022
90	0.5	-0.230118	105.389	-16.0173
91	0.5	-0.219834	105.437	-16.1272
92	0.5	-0.207012	105.48	-16.2307
93	0.5	-0.196779	105.519	-16.3291
94	0.5	-0.184017	105.553	-16.4211
95	0.5	-0.173829	105.583	-16.508
96	0.5	-0.161119	105.609	-16.5886
97	0.5	-0.150969	105.632	-16.6641
98	0.5	-0.138305	105.651	-16.7332
99	0.5	-0.125661	105.666	-16.796
100	0.5	-0.115562	105.68	-16.8538
101	0.5	-0.102953	105.69	-16.9053
102	0.5	-0.0928787	105.699	-16.9517
103	0.5	-0.0802981	105.705	-16.9919
104	0.5	-0.0702426	105.71	-17.027
105	0.5	-0.0576847	105.714	-17.0559
106	0.5	-0.0476439	105.716	-17.0797
107	0.5	-0.0350997	105.717	-17.0972
108	0.5	-0.0250691	105.718	-17.1098
109	0.5	-0.0125328	105.718	-17.116
110	0.5	0	105.718	-17.116
111	0.5	0.0125328	105.718	-17.1098

112	0.5	0.0250691	105.719	-17.0972
113	0.5	0.0350997	105.72	-17.0797
114	0.5	0.0476439	105.722	-17.0559
115	0.5	0.0576847	105.726	-17.027
116	0.5	0.0702426	105.731	-16.9919
117	0.5	0.0802981	105.737	-16.9517
118	0.5	0.0928787	105.746	-16.9053
119	0.5	0.102953	105.756	-16.8538
120	0.5	0.115562	105.77	-16.796
121	0.5	0.125661	105.785	-16.7332
122	0.5	0.138305	105.805	-16.6641
123	0.5	0.150969	105.827	-16.5886
124	0.5	0.161119	105.853	-16.508
125	0.5	0.173829	105.883	-16.4211
126	0.5	0.184017	105.917	-16.3291
127	0.5	0.196779	105.956	-16.2307
128	0.5	0.207012	105.999	-16.1272
129	0.5	0.219834	106.047	-16.0173
130	0.5	0.230118	106.1	-15.9022
131	0.5	0.243007	106.159	-15.7807
132	0.5	0.253347	106.223	-15.654
133	0.5	0.266311	106.294	-15.5209
134	0.5	0.279319	106.372	-15.3812
135	0.5	0.28976	106.456	-15.2364
136	0.5	0.302855	106.548	-15.0849
137	0.5	0.31337	106.646	-14.9282
138	0.5	0.326561	106.753	-14.765
139	0.5	0.337155	106.867	-14.5964
140	0.5	0.350451	106.989	-14.4212
141	0.5	0.361133	107.12	-14.2406
142	0.5	0.374544	107.26	-14.0533
143	0.5	0.385321	107.409	-13.8607
144	0.5	0.398855	107.568	-13.6612
145	0.5	0.412463	107.738	-13.455
146	0.5	0.423405	107.917	-13.2433
147	0.5	0.437153	108.108	-13.0247
148	0.5	0.448213	108.309	-12.8006
149	0.5	0.462114	108.523	-12.5696
150	0.5	0.473299	108.747	-12.3329
151	0.5	0.487364	108.984	-12.0892
152	0.5	0.498687	109.233	-11.8399
153	0.5	0.51293	109.496	-11.5834
154	0.5	0.524401	109.771	-11.3212
155	0.5	0.538836	110.061	-11.0518
156	0.5	0.553384	110.368	-10.7751
157	0.5	0.565108	110.687	-10.4926
158	0.5	0.579873	111.023	-10.2026
159	0.5	0.591776	111.373	-9.90673
160	0.5	0.606775	111.741	-9.60334
161	0.5	0.618872	112.124	-9.2939
162	0.5	0.634124	112.527	-8.97684
163	0.5	0.646431	112.944	-8.65362
164	0.5	0.661955	113.383	-8.32265
165	0.5	0.67449	113.838	-7.9854
166	0.5	0.690309	114.314	-7.64025
167	0.5	0.706302	114.813	-7.2871
168	0.5	0.719228	115.33	-6.92748
169	0.5	0.735557	115.871	-6.5597
170	0.5	0.748762	116.432	-6.18532
171	0.5	0.765456	117.018	-5.80259
172	0.5	0.778966	117.625	-5.41311
173	0.5	0.796056	118.258	-5.01508

174	0.5	0.809896	118.914	-4.61014
175	0.5	0.827417	119.599	-4.19643
176	0.5	0.841621	120.307	-3.77562
177	0.5	0.859618	121.046	-3.34581
178	0.5	0.877897	121.817	-2.90686
179	0.5	0.892733	122.614	-2.46049
180	0.5	0.911562	123.445	-2.00471
181	0.5	0.926859	124.304	-1.54128
182	0.5	0.946291	125.199	-1.06814
183	0.5	0.9621	126.125	-0.587087
184	0.5	0.982202	127.09	-0.095986
185	0.5	0.998575	128.087	0.403302
186	0.5	1.01943	129.126	0.913015
187	0.5	1.03643	130.2	1.43123
188	0.5	1.05812	131.32	1.96029
189	0.5	1.08032	132.487	2.50045
190	0.5	1.09847	133.694	3.04969
191	0.5	1.12168	134.952	3.61053
192	0.5	1.14069	136.253	4.18087
193	0.5	1.16505	137.61	4.76339
194	0.5	1.18504	139.015	5.35592
195	0.5	1.21073	140.48	5.96128
196	0.5	1.23187	141.998	6.57721
197	0.5	1.25908	143.583	7.20676
198	0.5	1.28155	145.226	7.84753
199	0.5	1.31058	146.943	8.50282
200	0.5	1.34075	148.741	9.1732
201	0.5	1.36581	150.606	9.8561
202	0.5	1.39838	152.562	10.5553
203	0.5	1.42554	154.594	11.2681
204	0.5	1.46106	156.729	11.9986
205	0.5	1.49085	158.951	12.744
206	0.5	1.53007	161.292	13.509
207	0.5	1.56322	163.736	14.2907
208	0.5	1.60725	166.319	15.0943
209	0.5	1.64485	169.025	15.9167
210	0.5	1.6954	171.899	16.7644
211	0.5	1.75069	174.964	17.6398
212	0.5	1.79912	178.201	18.5393
213	0.5	1.86629	181.684	19.4725
214	0.5	1.92684	185.397	20.4359
215	0.5	2.01409	189.453	21.4429
216	0.5	2.09693	193.85	22.4914
217	0.88	2.22621	198.806	24.4505
218	1.1	2.36561	204.403	27.0526
219	1.7	2.65209	211.436	31.5612

Data Set Standard Deviation = 0.200939
Numerator = 996.108
Denominator = 1861.08
W Statistic = 0.53523 = 996.108 / 1861.08

5% Critical value of 0.976 exceeds 0.53523
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.53523
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Trichloroethylene

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-2.73337	-2.65209	7.03356	7.24913
2	-2.73337	-2.36561	12.6297	13.7152
3	-2.73337	-2.22621	17.5857	19.8003
4	-2.73337	-2.09693	21.9828	25.5319
5	-2.73337	-2.01409	26.0394	31.0372
6	-2.73337	-1.92684	29.7521	36.304
7	-2.73337	-1.86629	33.2351	41.4052
8	-2.73337	-1.79912	36.472	46.3229
9	-2.73337	-1.75069	39.5369	51.1081
10	-2.73337	-1.6954	42.4112	55.7423
11	-2.73337	-1.64485	45.1168	60.2383
12	-2.73337	-1.60725	47.7	64.6315
13	-2.73337	-1.56322	50.1437	68.9043
14	-2.73337	-1.53007	52.4848	73.0866
15	-2.73337	-1.49085	54.7074	77.1616
16	-2.73337	-1.46106	56.8421	81.1552
17	-2.73337	-1.42554	58.8743	85.0518
18	-2.73337	-1.39838	60.8297	88.874
19	-2.73337	-1.36581	62.6952	92.6073
20	-2.73337	-1.34075	64.4928	96.2721
21	-2.73337	-1.31058	66.2104	99.8544
22	-2.73337	-1.28155	67.8528	103.357
23	-2.73337	-1.25908	69.4381	106.799
24	-2.73337	-1.23187	70.9556	110.166
25	-2.73337	-1.21073	72.4214	113.475
26	-2.73337	-1.18504	73.8258	116.715
27	-2.73337	-1.16505	75.1831	119.899
28	-2.73337	-1.14069	76.4843	123.017
29	-2.73337	-1.12168	77.7424	126.083
30	-2.73337	-1.09847	78.9491	129.085
31	-2.73337	-1.08032	80.1162	132.038
32	-1.66073	-1.05812	81.2358	133.796
33	-1.23787	-1.03643	82.31	135.079
34	-0.891598	-1.01943	83.3492	135.987
35	-0.693147	-0.998575	84.3464	136.68
36	-0.693147	-0.982202	85.3111	137.36
37	-0.693147	-0.9621	86.2367	138.027
38	-0.693147	-0.946291	87.1322	138.683
39	-0.693147	-0.926859	87.9912	139.326
40	-0.693147	-0.911562	88.8222	139.958
41	-0.693147	-0.892733	89.6192	140.576
42	-0.693147	-0.877897	90.3899	141.185
43	-0.693147	-0.859618	91.1288	141.781
44	-0.693147	-0.841621	91.8371	142.364
45	-0.693147	-0.827417	92.5218	142.938
46	-0.693147	-0.809896	93.1777	143.499
47	-0.693147	-0.796056	93.8114	144.051
48	-0.693147	-0.778966	94.4182	144.591
49	-0.693147	-0.765456	95.0041	145.121

50	-0.693147	-0.748762	95.5647	145.64
51	-0.693147	-0.735557	96.1058	146.15
52	-0.693147	-0.719228	96.6231	146.649
53	-0.693147	-0.706302	97.1219	147.138
54	-0.693147	-0.690309	97.5985	147.617
55	-0.693147	-0.674499	8.0534	148.084
56	-0.693147	-0.661955	98.4916	148.543
57	-0.693147	-0.646431	98.9095	148.991
58	-0.693147	-0.634124	99.3116	149.431
59	-0.693147	-0.618872	99.6946	149.86
60	-0.693147	-0.606775	100.063	150.28
61	-0.693147	-0.591776	100.413	150.69
62	-0.693147	-0.579873	100.749	151.092
63	-0.693147	-0.565108	101.069	151.484
64	-0.693147	-0.553384	101.375	151.868
65	-0.693147	-0.538836	101.665	152.241
66	-0.693147	-0.524401	101.94	152.605
67	-0.693147	-0.51293	102.203	152.96
68	-0.693147	-0.498687	102.452	153.306
69	-0.693147	-0.487364	102.689	153.644
70	-0.693147	-0.473299	102.913	153.972
71	-0.693147	-0.462114	103.127	154.292
72	-0.693147	-0.448213	103.328	154.603
73	-0.693147	-0.437153	103.519	154.906
74	-0.693147	-0.423405	103.698	155.199
75	-0.693147	-0.412463	103.868	155.485
76	-0.693147	-0.398855	104.027	155.762
77	-0.693147	-0.385321	104.176	156.029
78	-0.693147	-0.374544	104.316	156.288
79	-0.693147	-0.361133	104.447	156.539
80	-0.693147	-0.350451	104.569	156.781
81	-0.693147	-0.337155	104.683	157.015
82	-0.693147	-0.326561	104.79	157.242
83	-0.693147	-0.31337	104.888	157.459
84	-0.693147	-0.302855	104.98	157.669
85	-0.693147	-0.28976	105.064	157.87
86	-0.693147	-0.279319	105.142	158.063
87	-0.693147	-0.266311	105.213	158.248
88	-0.693147	-0.253347	105.277	158.423
89	-0.693147	-0.243007	105.336	158.592
90	-0.693147	-0.230118	105.389	158.751
91	-0.693147	-0.219834	105.437	158.904
92	-0.693147	-0.207012	105.48	159.047
93	-0.693147	-0.196779	105.519	159.184
94	-0.693147	-0.184017	105.553	159.311
95	-0.693147	-0.173829	105.583	159.432
96	-0.693147	-0.161119	105.609	159.543
97	-0.693147	-0.150969	105.632	159.648
98	-0.693147	-0.138305	105.651	159.744
99	-0.693147	-0.125661	105.666	159.831
100	-0.693147	-0.115562	105.68	159.911
101	-0.693147	-0.102953	105.69	159.982
102	-0.693147	-0.0928787	105.699	160.047
103	-0.693147	-0.0802981	105.705	160.102
104	-0.693147	-0.0702426	105.71	160.151
105	-0.693147	-0.0576847	105.714	160.191
106	-0.693147	-0.0476439	105.716	160.224
107	-0.693147	-0.0350997	105.717	160.248
108	-0.693147	-0.0250691	105.718	160.266
109	-0.693147	-0.0125328	105.718	160.274
110	-0.693147	0	105.718	160.274
111	-0.693147	0.0125328	105.718	160.266

112	-0.693147	0.0250691	105.719	160.248
113	-0.693147	0.0350997	105.72	160.224
114	-0.693147	0.0476439	105.722	160.191
115	-0.693147	0.0576847	105.726	160.151
116	-0.693147	0.0702426	105.731	160.102
117	-0.693147	0.0802981	105.737	160.047
118	-0.693147	0.0928787	105.746	159.982
119	-0.693147	0.102953	105.756	159.911
120	-0.693147	0.115562	105.77	159.831
121	-0.693147	0.125661	105.785	159.744
122	-0.693147	0.138305	105.805	159.648
123	-0.693147	0.150969	105.827	159.543
124	-0.693147	0.161119	105.853	159.432
125	-0.693147	0.173829	105.883	159.311
126	-0.693147	0.184017	105.917	159.184
127	-0.693147	0.196779	105.956	159.047
128	-0.693147	0.207012	105.999	158.904
129	-0.693147	0.219834	106.047	158.751
130	-0.693147	0.230118	106.1	158.592
131	-0.693147	0.243007	106.159	158.423
132	-0.693147	0.253347	106.223	158.248
133	-0.693147	0.266311	106.294	158.063
134	-0.693147	0.279319	106.372	157.87
135	-0.693147	0.28976	106.456	157.669
136	-0.693147	0.302855	106.548	157.459
137	-0.693147	0.31337	106.646	157.242
138	-0.693147	0.326561	106.753	157.015
139	-0.693147	0.337155	106.867	156.781
140	-0.693147	0.350451	106.989	156.539
141	-0.693147	0.361133	107.12	156.288
142	-0.693147	0.374544	107.26	156.029
143	-0.693147	0.385321	107.409	155.762
144	-0.693147	0.398855	107.568	155.485
145	-0.693147	0.412463	107.738	155.199
146	-0.693147	0.423405	107.917	154.906
147	-0.693147	0.437153	108.108	154.603
148	-0.693147	0.448213	108.309	154.292
149	-0.693147	0.462114	108.523	153.972
150	-0.693147	0.473299	108.747	153.644
151	-0.693147	0.487364	108.984	153.306
152	-0.693147	0.498687	109.233	152.96
153	-0.693147	0.51293	109.496	152.605
154	-0.693147	0.524401	109.771	152.241
155	-0.693147	0.538836	110.061	151.868
156	-0.693147	0.553384	110.368	151.484
157	-0.693147	0.565108	110.687	151.092
158	-0.693147	0.579873	111.023	150.69
159	-0.693147	0.591776	111.373	150.28
160	-0.693147	0.606775	111.741	149.86
161	-0.693147	0.618872	112.124	149.431
162	-0.693147	0.634124	112.527	148.991
163	-0.693147	0.646431	112.944	148.543
164	-0.693147	0.661955	113.383	148.084
165	-0.693147	0.67449	113.838	147.617
166	-0.693147	0.690309	114.314	147.138
167	-0.693147	0.706302	114.813	146.649
168	-0.693147	0.719228	115.33	146.15
169	-0.693147	0.735557	115.871	145.64
170	-0.693147	0.748762	116.432	145.121
171	-0.693147	0.765456	117.018	144.591
172	-0.693147	0.778966	117.625	144.051
173	-0.693147	0.796056	118.258	143.499

174	-0.693147		0.809896	118.914	142.938
175	-0.693147		0.827417	119.599	142.364
176	-0.693147		0.841621	120.307	141.781
177	-0.693147		0.859618	121.046	141.185
178	-0.693147		0.877897	121.817	140.576
179	-0.693147		0.892733	122.614	139.958
180	-0.693147		0.911562	123.445	139.326
181	-0.693147		0.926859	124.304	138.683
182	-0.693147		0.946291	125.199	138.027
183	-0.693147		0.9621	126.125	137.36
184	-0.693147		0.982202	127.09	136.68
185	-0.693147		0.998575	128.087	135.987
186	-0.693147		1.01943	129.126	135.281
187	-0.693147		1.03643	130.2	134.562
188	-0.693147		1.05812	131.32	133.829
189	-0.693147		1.08032	132.487	133.08
190	-0.693147		1.09847	133.694	132.319
191	-0.693147		1.12168	134.952	131.541
192	-0.693147		1.14069	136.253	130.751
193	-0.693147		1.16505	137.61	129.943
194	-0.693147		1.18504	139.015	129.122
195	-0.693147		1.21073	140.48	128.283
196	-0.693147		1.23187	141.998	127.429
197	-0.693147		1.25908	143.583	126.556
198	-0.693147		1.28155	145.226	125.668
199	-0.693147		1.31058	146.943	124.759
200	-0.693147		1.34075	148.741	123.83
201	-0.693147		1.36581	150.606	122.883
202	-0.693147		1.39838	152.562	121.914
203	-0.693147		1.42554	154.594	120.926
204	-0.693147		1.46106	156.729	119.913
205	-0.693147		1.49085	158.951	118.88
206	-0.693147		1.53007	161.292	117.819
207	-0.693147		1.56322	163.736	116.736
208	-0.693147		1.60725	166.319	115.621
209	-0.127833		1.64485	169.025	115.411
210	0	1.6954	171.899	115.411	
211	0	1.75069	174.964	115.411	
212	0	1.79912	178.201	115.411	
213	0	1.86629	181.684	115.411	
214	0	1.92684	185.397	115.411	
215	0	2.01409	189.453	115.411	
216	0	2.09693	193.85	115.411	
217	0	2.22621	198.806	115.411	
218	0.0953102		2.36561	204.403	115.637
219	0.530628		2.65209	211.436	117.044

Data Set Standard Deviation = 0.747603
Numerator = 13699.3
Denominator = 25761.9
W Statistic = 0.531765 = 13699.3 / 25761.9

5% Critical value of 0.976 exceeds 0.531765
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.531765
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Trichloroethylene

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 97.2603%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 18
Maximum Background Concentration = 0
Confidence Level = 69.2%
False Positive Rate = 30.8%

Location	Date	Samples	Mean	Significant
LMW-6	6/30/2010	1	-2.73337	FALSE
LMW-14R	6/30/2010	1	-2.73337	FALSE
LMW-15R	6/30/2010	1	-2.73337	FALSE
LMW-16	6/30/2010	1	-2.73337	FALSE
LMW-3	6/30/2010	1	-2.73337	FALSE
LMW-8	6/30/2010	1	-1.23787	FALSE
LMW-9	6/30/2010	1	-2.73337	FALSE
LMW-9D	6/30/2010	1	-2.73337	FALSE
LMW-9S	6/30/2010	1	-2.73337	FALSE
LMW-10	6/30/2010	1	0.0953102	TRUE
LMW-3S	6/30/2010	1	-2.73337	FALSE
LMW-7	6/11/2009	1	-2.73337	FALSE
LMW-12	11/20/2008	1	-0.693147	FALSE
LMW-13	11/20/2008	1	-0.693147	FALSE
LMW-11	11/20/2008	1	-0.693147	FALSE
MW-5	11/20/2008	1	-0.693147	FALSE

Mann-Kendall Trend Analysis

Parameter: Trichloroethylene

Location: LMW-10

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
ND<-0.693147	ND<-0.693147	0	0	0
ND<-0.693147	ND<-0.693147	0	0	0
ND<-0.693147	ND<-0.693147	0	0	0
ND<0 J	ND<-0.693147	0.693147	1	0
ND<0 J	ND<-0.693147	0.693147	2	0
ND<0 J	ND<-0.693147	0.693147	3	0
ND<0 J	ND<-0.693147	0.693147	4	0
ND<-0.693147	ND<-0.693147	0	4	0
ND<-0.693147	ND<-0.693147	0	4	0
ND<-0.693147	ND<-0.693147	0	4	0
ND<0 J	ND<-0.693147	0.693147	5	0
-0.127833 J	ND<-0.693147	0.565314	6	0
0.530628	ND<-0.693147	1.22378	7	0
0.0953102	ND<-0.693147	0.788457	8	0
ND<-0.693147	ND<-0.693147	0	8	0
ND<-0.693147	ND<-0.693147	0	8	0
ND<0 J	ND<-0.693147	0.693147	9	0
ND<0 J	ND<-0.693147	0.693147	10	0
ND<0 J	ND<-0.693147	0.693147	11	0
ND<0 J	ND<-0.693147	0.693147	12	0
ND<-0.693147	ND<-0.693147	0	12	0
ND<-0.693147	ND<-0.693147	0	12	0
ND<-0.693147	ND<-0.693147	0	12	0
ND<0 J	ND<-0.693147	0.693147	13	0
-0.127833 J	ND<-0.693147	0.565314	14	0
0.530628	ND<-0.693147	1.22378	15	0
0.0953102	ND<-0.693147	0.788457	16	0
ND<-0.693147	ND<-0.693147	0	16	0
ND<0 J	ND<-0.693147	0.693147	17	0
ND<0 J	ND<-0.693147	0.693147	18	0
ND<0 J	ND<-0.693147	0.693147	19	0
ND<0 J	ND<-0.693147	0.693147	20	0
ND<-0.693147	ND<-0.693147	0	20	0
ND<-0.693147	ND<-0.693147	0	20	0
ND<-0.693147	ND<-0.693147	0	20	0
ND<0 J	ND<-0.693147	0.693147	21	0
-0.127833 J	ND<-0.693147	0.565314	22	0
0.530628	ND<-0.693147	1.22378	23	0
0.0953102	ND<-0.693147	0.788457	24	0
ND<0 J	ND<-0.693147	0.693147	25	0
ND<0 J	ND<-0.693147	0.693147	26	0
ND<0 J	ND<-0.693147	0.693147	27	0
ND<0 J	ND<-0.693147	0.693147	28	0
ND<-0.693147	ND<-0.693147	0	28	0
ND<-0.693147	ND<-0.693147	0	28	0

ND<-0.693147	ND<-0.693147	0	28	0	
ND<0 J	ND<-0.693147	0.693147	29	0	
-0.127833 J	ND<-0.693147	0.565314	30	0	
0.530628	ND<-0.693147	1.22378	31	0	
0.0953102	ND<-0.693147	0.788457	32	0	
ND<0 J	ND<0 J	0	32	0	
ND<0 J	ND<0 J	0	32	0	
ND<0 J	ND<0 J	0	32	0	
ND<-0.693147	ND<0 J	-0.693147	32	1	
ND<-0.693147	ND<0 J	-0.693147	32	2	
ND<-0.693147	ND<0 J	-0.693147	32	3	
ND<0 J	ND<0 J	0	32	3	
-0.127833 J	ND<0 J	-0.127833	32	4	
0.530628	ND<0 J	0.530628	33	4	
0.0953102	ND<0 J	0.0953102	34	4	
ND<0 J	ND<0 J	0	34	4	
ND<0 J	ND<0 J	0	34	4	
ND<-0.693147	ND<0 J	-0.693147	34	5	
ND<-0.693147	ND<0 J	-0.693147	34	6	
ND<-0.693147	ND<0 J	-0.693147	34	7	
ND<0 J	ND<0 J	0	34	7	
-0.127833 J	ND<0 J	-0.127833	34	8	
0.530628	ND<0 J	0.530628	35	8	
0.0953102	ND<0 J	0.0953102	36	8	
ND<0 J	ND<0 J	0	36	8	
ND<-0.693147	ND<0 J	-0.693147	36	9	
ND<-0.693147	ND<0 J	-0.693147	36	10	
ND<-0.693147	ND<0 J	-0.693147	36	11	
ND<0 J	ND<0 J	0	36	11	
-0.127833 J	ND<0 J	-0.127833	36	12	
0.530628	ND<0 J	0.530628	37	12	
0.0953102	ND<0 J	0.0953102	38	12	
ND<-0.693147	ND<0 J	-0.693147	38	13	
ND<-0.693147	ND<0 J	-0.693147	38	14	
ND<-0.693147	ND<0 J	-0.693147	38	15	
ND<0 J	ND<0 J	0	38	15	
-0.127833 J	ND<0 J	-0.127833	38	16	
0.530628	ND<0 J	0.530628	39	16	
0.0953102	ND<0 J	0.0953102	40	16	
ND<-0.693147	ND<-0.693147	0	40	16	
ND<-0.693147	ND<-0.693147	0	40	16	
ND<0 J	ND<-0.693147	0.693147	41	16	
-0.127833 J	ND<-0.693147	0.565314	42	16	
0.530628	ND<-0.693147	1.22378	43	16	
0.0953102	ND<-0.693147	0.788457	44	16	
ND<-0.693147	ND<-0.693147	0	44	16	
ND<0 J	ND<-0.693147	0.693147	45	16	
-0.127833 J	ND<-0.693147	0.565314	46	16	
0.530628	ND<-0.693147	1.22378	47	16	
0.0953102	ND<-0.693147	0.788457	48	16	
ND<0 J	ND<-0.693147	0.693147	49	16	
-0.127833 J	ND<-0.693147	0.565314	50	16	
0.530628	ND<-0.693147	1.22378	51	16	
0.0953102	ND<-0.693147	0.788457	52	16	

-0.127833 J	ND<0 J	-0.127833	52	17
0.530628	ND<0 J	0.530628	53	17
0.0953102	ND<0 J	0.0953102	54	17

0.530628	-0.127833 J	0.658462	55	17
0.0953102	-0.127833 J	0.223144	56	17

0.0953102	0.530628	-0.435318	56	18

S Statistic = 56 - 18 = 38

Tied Group	Value	Members
1	-0.693147	7
2	0	5

Time Period	Observations
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
11/16/2009	1
6/30/2010	1

There are 0 time periods with multiple data

A = 1098
B = 0
C = 270
D = 0
E = 62
F = 0
a = 7350
b = 24570
c = 420
Group Variance = 347.333
Z-Score = 1.98531
Comparison Level at 1.0 - (0.05 / 2) = 97.5% confidence level = 1.97737 (two-tailed)
|1.98531| > 1.97737 indicating a trend

Concentrations (ppb)

Parameter: Trichlorofluoromethane

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 231
Total Non-Detect: 186
Percent Non-Detects: 80.5195%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	19	9 (47.3684%)	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
			11/16/2009	2.4	2.4
			11/16/2009	16 B	16 B
			6/30/2010	2	2

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-3S	9	4 (44.4444%)	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
			11/16/2009	13	13
			11/16/2009	0.97 J	0.97 J
			6/30/2010	1.4	1.4
LMW-6	19	12 (63.1579%)	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	
			11/16/2009	1.1	1.1	
			11/16/2009	41	41	
			6/30/2010	0.72 J	0.72 J	
LMW-8	19	18 (94.7368%)	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	
			11/16/2009	19	19	
			11/16/2009	ND<0.25 U	ND<0.25 U	
			6/30/2010	ND<0.25 U	ND<0.25 U	
LMW-3	21	17 (80.9524%)	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	
			11/16/2009	0.68 J	0.68 J	
			11/16/2009	32 B	32 B	
			6/30/2010	0.58 J	0.58 J	
LMW-15R		10	10 (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	
			6/30/2010	ND<0.25 U	ND<0.25 U	
LMW-14R		6	6 (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
			6/30/2010	ND<0.25 U		ND<0.25 U
LMW-10	16	7 (43.75%)	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	
			11/16/2009	13	13	
			11/16/2009	21	21	
			6/30/2010	5.8	5.8	
LMW-9S	13	10 (76.9231%)	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
			11/16/2009	ND<0.25 U		ND<0.25 U
			11/16/2009	ND<0.25 U		ND<0.25 U
			11/16/2009	ND<0.25 U		ND<0.25 U
			11/16/2009	26 B	26 B	
			11/16/2009	9.1 J B	9.1 J B	
			11/16/2009	15 B	15 B	
			6/30/2010	ND<0.25 U		ND<0.25 U
LMW-9D	9	8 (88.8889%)	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
			11/16/2009	25	25	
			11/16/2009	ND<0.25 U		ND<0.25 U
			6/30/2010	ND<0.25 U		ND<0.25 U
LMW-9	19	18 (94.7368%)	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
			11/16/2009	ND<0.25 U	ND<0.25 U
			11/16/2009	7 J	7 J
			6/30/2010	ND<0.25 U	ND<0.25 U
LMW-16	9	8 (88.8889%)	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
			11/16/2009	ND<0.25 U	ND<0.25 U
			11/16/2009	9.3 J B	9.3 J B
			6/30/2010	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-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	
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	

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Trichlorofluoromethane

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 231

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0	-2.65209	7.03356	0
2	0	-2.40892	12.8365	0
3	0	-2.25713	17.9311	0
4	0	-2.12007	22.4258	0
5	0	-2.03352	26.561	0
6	0	-1.95996	30.4025	0
7	0	-1.88079	33.9398	0
8	0	-1.82501	37.2705	0
9	0	-1.77438	40.4189	0
10	0	-1.71688	43.3666	0
11	0	-1.67466	46.1711	0
12	0	-1.63524	48.8451	0
13	0	-1.58927	51.3708	0
14	0.125	-1.55477	53.7882	-0.194347
15	0.125	-1.52203	56.1048	-0.384601
16	0.125	-1.49085	58.3274	-0.570957
17	0.125	-1.4538	60.4409	-0.752683
18	0.125	-1.42554	62.4731	-0.930876
19	0.125	-1.39838	64.4286	-1.10567
20	0.125	-1.36581	66.294	-1.2764
21	0.125	-1.34075	68.0916	-1.44399
22	0.125	-1.31652	69.8249	-1.60856
23	0.125	-1.28727	71.4819	-1.76947
24	0.125	-1.26464	73.0812	-1.92755
25	0.125	-1.24264	74.6254	-2.08288
26	0.125	-1.21596	76.104	-2.23487
27	0.125	-1.19522	77.5325	-2.38428
28	0.125	-1.17499	78.9131	-2.53115
29	0.125	-1.15035	80.2364	-2.67494
30	0.125	-1.13113	81.5159	-2.81633
31	0.125	-1.11232	82.7531	-2.95537
32	0.125	-1.0939	83.9497	-3.09211
33	0.125	-1.07138	85.0976	-3.22603
34	0.125	-1.05375	86.208	-3.35775
35	0.125	-1.03643	87.2822	-3.48731
36	0.5	-1.01522	88.3128	-3.99492
37	0.5	-0.998575	89.31	-4.4942
38	0.5	-0.982202	90.2747	-4.9853
39	0.5	-0.9621	91.2003	-5.46635
40	0.5	-0.946291	92.0958	-5.9395
41	0.5	-0.930718	92.962	-6.40486
42	0.5	-0.911562	93.793	-6.86064
43	0.5	-0.896473	94.5967	-7.30888
44	0.5	-0.881587	95.3738	-7.74967
45	0.5	-0.866894	96.1254	-8.18312
46	0.5	-0.848786	96.8458	-8.60751
47	0.5	-0.834498	97.5422	-9.02476
48	0.5	-0.820379	98.2152	-9.43495
49	0.5	-0.802956	98.8599	-9.83643

50	0.5	-0.789191	99.4828	-10.231
51	0.5	-0.775574	100.084	-10.6188
52	0.5	-0.758753	100.66	-10.9982
53	0.5	-0.745449	101.216	-11.3709
54	0.5	-0.732275	101.752	-11.737
55	0.5	-0.715986	102.265	-12.095
56	0.5	-0.703089	102.759	-12.4466
57	0.5	-0.690309	103.235	-12.7917
58	0.5	-0.67449	103.69	-13.129
59	0.5	-0.661955	104.129	-13.46
60	0.5	-0.649522	104.55	-13.7847
61	0.5	-0.637192	104.956	-14.1033
62	0.5	-0.621911	105.343	-14.4143
63	0.5	-0.609791	105.715	-14.7192
64	0.5	-0.597761	106.072	-15.0181
65	0.5	-0.582841	106.412	-15.3095
66	0.5	-0.570999	106.738	-15.595
67	0.5	-0.559237	107.051	-15.8746
68	0.5	-0.544642	107.347	-16.1469
69	0.5	-0.533048	107.632	-16.4134
70	0.5	-0.521527	107.904	-16.6742
71	0.5	-0.507221	108.161	-16.9278
72	0.5	-0.49585	108.407	-17.1757
73	0.5	-0.484544	108.642	-17.418
74	0.5	-0.473299	108.866	-17.6547
75	0.5	-0.459327	109.077	-17.8843
76	0.5	-0.448213	109.277	-18.1084
77	0.5	-0.437153	109.469	-18.327
78	0.5	-0.423405	109.648	-18.5387
79	0.5	-0.412463	109.818	-18.7449
80	0.5	-0.401571	109.979	-18.9457
81	0.5	-0.388022	110.13	-19.1397
82	0.5	-0.377233	110.272	-19.3283
83	0.5	-0.36649	110.406	-19.5116
84	0.5	-0.353118	110.531	-19.6882
85	0.5	-0.342466	110.648	-19.8594
86	0.5	-0.331854	110.758	-20.0253
87	0.5	-0.318639	110.86	-20.1846
88	0.5	-0.308108	110.955	-20.3387
89	0.5	-0.297612	111.043	-20.4875
90	0.5	-0.287147	111.126	-20.6311
91	0.5	-0.27411	111.201	-20.7681
92	0.5	-0.263715	111.271	-20.9
93	0.5	-0.253347	111.335	-21.0267
94	0.5	-0.240426	111.393	-21.1469
95	0.5	-0.230118	111.446	-21.2619
96	0.5	-0.219834	111.494	-21.3718
97	0.5	-0.207012	111.537	-21.4753
98	0.5	-0.196779	111.575	-21.5737
99	0.5	-0.186567	111.61	-21.667
100	0.5	-0.173829	111.641	-21.7539
101	0.5	-0.163659	111.667	-21.8358
102	0.5	-0.153505	111.691	-21.9125
103	0.5	-0.143367	111.711	-21.9842
104	0.5	-0.130716	111.728	-22.0496
105	0.5	-0.12061	111.743	-22.1099
106	0.5	-0.110516	111.755	-22.1651
107	0.5	-0.0979139	111.765	-22.2141
108	0.5	-0.0878447	111.773	-22.258
109	0.5	-0.0777834	111.779	-22.2969
110	0.5	-0.0652187	111.783	-22.3295
111	0.5	-0.0551734	111.786	-22.3571

112	0.5	-0.0451348	111.788	-22.3797
113	0.5	-0.0325917	111.789	-22.396
114	0.5	-0.0225612	111.79	-22.4072
115	0.5	-0.0125328	111.79	-22.4135
116	0.5	0	111.79	-22.4135
117	0.5	0.0125328	111.79	-22.4072
118	0.5	0.0225612	111.79	-22.396
119	0.5	0.0325917	111.791	-22.3797
120	0.5	0.0451348	111.793	-22.3571
121	0.5	0.0551734	111.796	-22.3295
122	0.5	0.0652187	111.801	-22.2969
123	0.5	0.0777834	111.807	-22.258
124	0.5	0.0878447	111.814	-22.2141
125	0.5	0.0979139	111.824	-22.1651
126	0.5	0.110516	111.836	-22.1099
127	0.5	0.12061	111.851	-22.0496
128	0.5	0.130716	111.868	-21.9842
129	0.5	0.143367	111.888	-21.9125
130	0.5	0.153505	111.912	-21.8358
131	0.5	0.163659	111.939	-21.7539
132	0.5	0.173829	111.969	-21.667
133	0.5	0.186567	112.004	-21.5737
134	0.5	0.196779	112.043	-21.4753
135	0.5	0.207012	112.085	-21.3718
136	0.5	0.219834	112.134	-21.2619
137	0.5	0.230118	112.187	-21.1469
138	0.5	0.240426	112.245	-21.0267
139	0.5	0.253347	112.309	-20.9
140	0.5	0.263715	112.378	-20.7681
141	0.5	0.27411	112.453	-20.6311
142	0.5	0.287147	112.536	-20.4875
143	0.5	0.297612	112.624	-20.3387
144	0.5	0.308108	112.719	-20.1846
145	0.5	0.318639	112.821	-20.0253
146	0.5	0.331854	112.931	-19.8594
147	0.5	0.342466	113.048	-19.6882
148	0.5	0.353118	113.173	-19.5116
149	0.5	0.36649	113.307	-19.3283
150	0.5	0.377233	113.45	-19.1397
151	0.5	0.388022	113.6	-18.9457
152	0.5	0.401571	113.761	-18.7449
153	0.5	0.412463	113.932	-18.5387
154	0.5	0.423405	114.111	-18.327
155	0.5	0.437153	114.302	-18.1084
156	0.5	0.448213	114.503	-17.8843
157	0.5	0.459327	114.714	-17.6547
158	0.5	0.473299	114.938	-17.418
159	0.5	0.484544	115.173	-17.1757
160	0.5	0.49585	115.418	-16.9278
161	0.5	0.507221	115.676	-16.6742
162	0.5	0.521527	115.948	-16.4134
163	0.5	0.533048	116.232	-16.1469
164	0.5	0.544642	116.528	-15.8746
165	0.5	0.559237	116.841	-15.595
166	0.5	0.570999	117.167	-15.3095
167	0.5	0.582841	117.507	-15.0181
168	0.5	0.597761	117.864	-14.7192
169	0.5	0.609791	118.236	-14.4143
170	0.5	0.621911	118.623	-14.1033
171	0.5	0.637192	119.029	-13.7847
172	0.5	0.649522	119.451	-13.46
173	0.5	0.661955	119.889	-13.129

174	0.5	0.67449	120.344	-12.7917
175	0.5	0.690309	120.82	-12.4466
176	0.5	0.703089	121.315	-12.095
177	0.5	0.715986	121.827	-11.737
178	0.5	0.732275	122.364	-11.3709
179	0.5	0.745449	122.919	-10.9982
180	0.5	0.758753	123.495	-10.6188
181	0.5	0.775574	124.097	-10.231
182	0.5	0.789191	124.719	-9.83643
183	0.5	0.802956	125.364	-9.43495
184	0.5	0.820379	126.037	-9.02476
185	0.5	0.834498	126.734	-8.60751
186	0.5	0.848786	127.454	-8.18312
187	0.58	0.866894	128.205	-7.68032
188	0.68	0.881587	128.983	-7.08084
189	0.72	0.896473	129.786	-6.43538
190	0.82	0.911562	130.617	-5.6879
191	0.84	0.930718	131.484	-4.9061
192	0.95	0.946291	132.379	-4.00712
193	0.97	0.9621	133.305	-3.07388
194	1	0.982202	134.269	-2.09168
195	1	0.998575	135.266	-1.09311
196	1	1.01522	136.297	-0.0778839
197	1	1.03643	137.371	0.958549
198	1.1	1.05375	138.482	2.11767
199	1.1	1.07138	139.63	3.29618
200	1.4	1.0939	140.826	4.82764
201	2	1.11232	142.063	7.05228
202	2	1.13113	143.343	9.31455
203	2	1.15035	144.666	11.6152
204	2	1.17499	146.047	13.9652
205	2	1.19522	147.475	16.3557
206	2	1.21596	148.954	18.7876
207	2	1.24264	150.498	21.2729
208	2.4	1.26464	152.097	24.308
209	3	1.28727	153.754	28.1698
210	3	1.31652	155.488	32.1194
211	3	1.34075	157.285	36.1416
212	3	1.36581	159.151	40.2391
213	4	1.39838	161.106	45.8326
214	5.8	1.42554	163.138	54.1007
215	6.6	1.4538	165.252	63.6958
216	7	1.49085	167.475	74.1318
217	7	1.52203	169.791	84.786
218	7	1.55477	172.208	95.6695
219	9.1	1.58927	174.734	110.132
220	9.3	1.63524	177.408	125.339
221	10	1.67466	180.213	142.086
222	13	1.71688	183.16	164.406
223	13	1.77438	186.309	187.473
224	15	1.82501	189.64	214.848
225	16	1.88079	193.177	244.94
226	19	1.95996	197.018	282.18
227	21	2.03352	201.154	324.883
228	25	2.12007	205.648	377.885
229	26	2.25713	210.743	436.571
230	32	2.40892	216.546	513.656
231	41	2.65209	223.579	622.392

Data Set Standard Deviation = 4.90853
Numerator = 387371

Denominator = 1.23898e+006
W Statistic = 0.312654 = 387371 / 1.23898e+006

5% Critical value of 0.976 exceeds 0.312654
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.312654
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Trichlorofluoromethane

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 231

i	x(i)	m(i)	sum(m^2)	sum(mx)	
1	-2.07944	-2.65209	7.03356	5.51486	
2	-2.07944	-2.40892	12.8365	10.5241	
3	-2.07944	-2.25713	17.9311	15.2176	
4	-2.07944	-2.12007	22.4258	19.6262	
5	-2.07944	-2.03352	26.561	23.8548	
6	-2.07944	-1.95996	30.4025	27.9304	
7	-2.07944	-1.88079	33.9398	31.8414	
8	-2.07944	-1.82501	37.2705	35.6364	
9	-2.07944	-1.77438	40.4189	39.3261	
10	-2.07944	-1.71688	43.3666	42.8963	
11	-2.07944	-1.67466	46.1711	46.3786	
12	-2.07944	-1.63524	48.8451	49.779	
13	-2.07944	-1.58927	51.3708	53.0838	
14	-2.07944	-1.55477	53.7882	56.3169	
15	-2.07944	-1.52203	56.1048	59.4818	
16	-2.07944	-1.49085	58.3274	62.582	
17	-2.07944	-1.4538	60.4409	65.6051	
18	-2.07944	-1.42554	62.4731	68.5694	
19	-2.07944	-1.39838	64.4286	71.4773	
20	-2.07944	-1.36581	66.294	74.3174	
21	-2.07944	-1.34075	68.0916	77.1054	
22	-2.07944	-1.31652	69.8249	79.843	
23	-0.693147	-1.28727	71.4819	80.7353	
24	-0.693147	-1.26464	73.0812	81.6119	
25	-0.693147	-1.24264	74.6254	82.4732	
26	-0.693147	-1.21596	76.104	83.3161	
27	-0.693147	-1.19522	77.5325	84.1445	
28	-0.693147	-1.17499	78.9131	84.959	
29	-0.693147	-1.15035	80.2364	85.7563	
30	-0.693147	-1.13113	81.5159	86.5404	
31	-0.693147	-1.11232	82.7531	87.3114	
32	-0.693147	-1.0939	83.9497	88.0696	
33	-0.693147	-1.07138	85.0976	88.8122	
34	-0.693147	-1.05375	86.208	89.5426	
35	-0.693147	-1.03643	87.2822	90.261	
36	-0.693147	-1.01522	88.3128	90.9647	
37	-0.693147	-0.998575		89.31	91.6569
38	-0.693147	-0.982202		90.2747	92.3377
39	-0.693147	-0.9621	91.2003	93.0046	
40	-0.693147	-0.946291		92.0958	93.6605
41	-0.693147	-0.930718		92.962	94.3056
42	-0.693147	-0.911562		93.793	94.9375
43	-0.693147	-0.896473		94.5967	95.5588
44	-0.693147	-0.881587		95.3738	96.1699
45	-0.693147	-0.866894		96.1254	96.7708
46	-0.693147	-0.848786		96.8458	97.3591
47	-0.693147	-0.834498		97.5422	97.9376
48	-0.693147	-0.820379		98.2152	98.5062
49	-0.693147	-0.802956		98.8599	99.0628

50	-0.693147	-0.789191	99.4828	99.6098
51	-0.693147	-0.775574	100.084	100.147
52	-0.693147	-0.758753	100.66	100.673
53	-0.693147	-0.745449	101.216	101.19
54	-0.693147	-0.732275	101.752	101.698
55	-0.693147	-0.715986	102.265	102.194
56	-0.693147	-0.703089	102.759	102.681
57	-0.693147	-0.690309	103.235	103.16
58	-0.693147	-0.67449103.69	103.627	
59	-0.693147	-0.661955	104.129	104.086
60	-0.693147	-0.649522	104.55	104.536
61	-0.693147	-0.637192	104.956	104.978
62	-0.693147	-0.621911	105.343	105.409
63	-0.693147	-0.609791	105.715	105.832
64	-0.693147	-0.597761	106.072	106.246
65	-0.693147	-0.582841	106.412	106.65
66	-0.693147	-0.570999	106.738	107.046
67	-0.693147	-0.559237	107.051	107.433
68	-0.693147	-0.544642	107.347	107.811
69	-0.693147	-0.533048	107.632	108.18
70	-0.693147	-0.521527	107.904	108.542
71	-0.693147	-0.507221	108.161	108.894
72	-0.693147	-0.49585108.407	109.237	
73	-0.693147	-0.484544	108.642	109.573
74	-0.693147	-0.473299	108.866	109.901
75	-0.693147	-0.459327	109.077	110.22
76	-0.693147	-0.448213	109.277	110.53
77	-0.693147	-0.437153	109.469	110.833
78	-0.693147	-0.423405	109.648	111.127
79	-0.693147	-0.412463	109.818	111.413
80	-0.693147	-0.401571	109.979	111.691
81	-0.693147	-0.388022	110.13	111.96
82	-0.693147	-0.377233	110.272	112.221
83	-0.693147	-0.36649110.406	112.475	
84	-0.693147	-0.353118	110.531	112.72
85	-0.693147	-0.342466	110.648	112.958
86	-0.693147	-0.331854	110.758	113.188
87	-0.693147	-0.318639	110.86	113.408
88	-0.693147	-0.308108	110.955	113.622
89	-0.693147	-0.297612	111.043	113.828
90	-0.693147	-0.287147	111.126	114.027
91	-0.693147	-0.27411111.201	114.217	
92	-0.693147	-0.263715	111.271	114.4
93	-0.693147	-0.253347	111.335	114.576
94	-0.693147	-0.240426	111.393	114.742
95	-0.693147	-0.230118	111.446	114.902
96	-0.693147	-0.219834	111.494	115.054
97	-0.693147	-0.207012	111.537	115.198
98	-0.693147	-0.196779	111.575	115.334
99	-0.693147	-0.186567	111.61	115.463
100	-0.693147	-0.173829	111.641	115.584
101	-0.693147	-0.163659	111.667	115.697
102	-0.693147	-0.153505	111.691	115.804
103	-0.693147	-0.143367	111.711	115.903
104	-0.693147	-0.130716	111.728	115.994
105	-0.693147	-0.12061111.743	116.077	
106	-0.693147	-0.110516	111.755	116.154
107	-0.693147	-0.0979139	111.765	116.222
108	-0.693147	-0.0878447	111.773	116.283
109	-0.693147	-0.0777834	111.779	116.337
110	-0.693147	-0.0652187	111.783	116.382
111	-0.693147	-0.0551734	111.786	116.42

112	-0.693147	-0.0451348	111.788	116.451
113	-0.693147	-0.0325917	111.789	116.474
114	-0.693147	-0.0225612	111.79	116.49
115	-0.693147	-0.0125328	111.79	116.498
116	-0.693147	0	111.79	116.498
117	-0.693147	0.0125328	111.79	116.49
118	-0.693147	0.0225612	111.79	116.474
119	-0.693147	0.0325917	111.791	116.451
120	-0.693147	0.0451348	111.793	116.42
121	-0.693147	0.0551734	111.796	116.382
122	-0.693147	0.0652187	111.801	116.337
123	-0.693147	0.0777834	111.807	116.283
124	-0.693147	0.0878447	111.814	116.222
125	-0.693147	0.0979139	111.824	116.154
126	-0.693147	0.110516	111.836	116.077
127	-0.693147	0.12061	111.851	115.994
128	-0.693147	0.130716	111.868	115.903
129	-0.693147	0.143367	111.888	115.804
130	-0.693147	0.153505	111.912	115.697
131	-0.693147	0.163659	111.939	115.584
132	-0.693147	0.173829	111.969	115.463
133	-0.693147	0.186567	112.004	115.334
134	-0.693147	0.196779	112.043	115.198
135	-0.693147	0.207012	112.085	115.054
136	-0.693147	0.219834	112.134	114.902
137	-0.693147	0.230118	112.187	114.742
138	-0.693147	0.240426	112.245	114.576
139	-0.693147	0.253347	112.309	114.4
140	-0.693147	0.263715	112.378	114.217
141	-0.693147	0.27411	112.453	114.027
142	-0.693147	0.287147	112.536	113.828
143	-0.693147	0.297612	112.624	113.622
144	-0.693147	0.308108	112.719	113.408
145	-0.693147	0.318639	112.821	113.188
146	-0.693147	0.331854	112.931	112.958
147	-0.693147	0.342466	113.048	112.72
148	-0.693147	0.353118	113.173	112.475
149	-0.693147	0.36649	113.307	112.221
150	-0.693147	0.377233	113.45	111.96
151	-0.693147	0.388022	113.6	111.691
152	-0.693147	0.401571	113.761	111.413
153	-0.693147	0.412463	113.932	111.127
154	-0.693147	0.423405	114.111	110.833
155	-0.693147	0.437153	114.302	110.53
156	-0.693147	0.448213	114.503	110.22
157	-0.693147	0.459327	114.714	109.901
158	-0.693147	0.473299	114.938	109.573
159	-0.693147	0.484544	115.173	109.237
160	-0.693147	0.49585	115.418	108.894
161	-0.693147	0.507221	115.676	108.542
162	-0.693147	0.521527	115.948	108.18
163	-0.693147	0.533048	116.232	107.811
164	-0.693147	0.544642	116.528	107.433
165	-0.693147	0.559237	116.841	107.046
166	-0.693147	0.570999	117.167	106.65
167	-0.693147	0.582841	117.507	106.246
168	-0.693147	0.597761	117.864	105.832
169	-0.693147	0.609791	118.236	105.409
170	-0.693147	0.621911	118.623	104.978
171	-0.693147	0.637192	119.029	104.536
172	-0.693147	0.649522	119.451	104.086
173	-0.693147	0.661955	119.889	103.627

174	-0.544727		0.67449	120.344	103.26
175	-0.385662		0.690309		120.82
176	-0.328504		0.703089		121.315
177	-0.198451		0.715986		121.827
178	-0.174353		0.732275		122.364
179	-0.0512933		0.745449		122.919
180	-0.0304592		0.758753		123.495
181	0	0.775574		124.097	102.432
182	0	0.789191		124.719	102.432
183	0	0.802956		125.364	102.432
184	0	0.820379		126.037	102.432
185	0	0.834498		126.734	102.432
186	0	0.848786		127.454	102.432
187	0	0.866894		128.205	102.432
188	0	0.881587		128.983	102.432
189	0	0.896473		129.786	102.432
190	0	0.911562		130.617	102.432
191	0	0.930718		131.484	102.432
192	0	0.946291		132.379	102.432
193	0	0.9621	133.305	102.432	
194	0	0.982202		134.269	102.432
195	0	0.998575		135.266	102.432
196	0	1.01522	136.297	102.432	
197	0	1.03643	137.371	102.432	
198	0.0953102		1.05375	138.482	102.532
199	0.0953102		1.07138	139.63	102.634
200	0.336472		1.0939	140.826	103.002
201	0.693147		1.11232	142.063	103.773
202	0.693147		1.13113	143.343	104.557
203	0.693147		1.15035	144.666	105.355
204	0.693147		1.17499	146.047	106.169
205	0.693147		1.19522	147.475	106.997
206	0.693147		1.21596	148.954	107.84
207	0.693147		1.24264	150.498	108.702
208	0.875469		1.26464	152.097	109.809
209	1.09861	1.28727	153.754	111.223	
210	1.09861	1.31652	155.488	112.669	
211	1.09861	1.34075	157.285	114.142	
212	1.09861	1.36581	159.151	115.643	
213	1.38629	1.39838	161.106	117.581	
214	1.75786	1.42554	163.138	120.087	
215	1.88707	1.4538	165.252	122.831	
216	1.94591	1.49085	167.475	125.732	
217	1.94591	1.52203	169.791	128.693	
218	1.94591	1.55477	172.208	131.719	
219	2.20827	1.58927	174.734	135.228	
220	2.23001	1.63524	177.408	138.875	
221	2.30259	1.67466	180.213	142.731	
222	2.56495	1.71688	183.16	147.135	
223	2.56495	1.77438	186.309	151.686	
224	2.70805	1.82501	189.64	156.628	
225	2.77259	1.88079	193.177	161.843	
226	2.94444	1.95996	197.018	167.614	
227	3.04452	2.03352	201.154	173.805	
228	3.21888	2.12007	205.648	180.629	
229	3.2581	2.25713	210.743	187.983	
230	3.46574	2.40892	216.546	196.332	
231	3.71357	2.65209	223.579	206.181	

Data Set Standard Deviation = 1.07832
Numerator = 42510.4

Denominator = 59793.5
W Statistic = 0.710954 = 42510.4 / 59793.5

5% Critical value of 0.976 exceeds 0.710954
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.710954
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Trichlorofluoromethane

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	ND<-0.693147	93.5
	3/16/1999	ND<-0.693147	93.5
	9/23/1999	ND<-0.693147	93.5
	3/14/2000	ND<-0.693147	93.5
	9/23/2003	ND<-0.693147	93.5
	3/10/2004	ND<-0.693147	93.5
	10/12/2004	ND<-0.693147	93.5
	4/1/2005	0.693147	201
	10/26/2005	ND<0 J	93.5
	6/19/2006	0.693147	202
	11/18/2006	0.693147	203
	6/2/2007	1.09861	209
	11/15/2007	ND<-0.693147	93.5
	5/20/2008	1.09861	210
	11/20/2008	0.693147	204
	6/11/2009	-0.198451 J	190
	11/16/2009	0.875469	208
	11/16/2009	2.77259 B	225
	6/30/2010	0.693147	205

Rank Sum = 2898.5
Rank Mean = 152.553

Background Rank Sum = 2898.5
Background Rank Mean = 152.553

Compliance Wells

Well ID	Date	Result	Rank
LMW-3S	11/18/2006	ND<-0.693147	93.5
	6/2/2007	ND<-0.693147	93.5
	11/15/2007	0	194
	5/20/2008	ND<0 J	93.5
	11/20/2008	ND<0 J	93.5
	6/11/2009	0.0953102	198
	11/16/2009	2.56495	222
	11/16/2009	-0.0304592 J	193
	6/30/2010	0.336472	200

Rank Sum = 1381
Rank Mean = 153.444

LMW-6	1/16/1998	ND<-0.693147	93.5
	3/16/1999	ND<-0.693147	93.5
	9/23/1999	ND<-0.693147	93.5
	3/14/2000	ND<-0.693147	93.5
	9/23/2003	ND<-0.693147	93.5
	3/10/2004	ND<-0.693147	93.5

	10/12/2004	ND<-0.693147	93.5
	4/1/2005	ND<0 J	93.5
	10/26/2005	0	195
	6/19/2006	0	196
	11/18/2006	ND<-0.693147	93.5
	6/2/2007	ND<-0.693147	93.5
	11/15/2007	ND<0 J	93.5
	5/20/2008	0	197
	11/20/2008	ND<0 J	93.5
	6/11/2009	-0.0512933 J	192
	11/16/2009	0.0953102	199
	11/16/2009	3.71357	231
	6/30/2010	-0.328504 J	189

Rank Sum = 2521
Rank Mean = 132.684

LMW-8	1/16/1998	ND<-0.693147	93.5
	3/16/1999	ND<-0.693147	93.5
	9/23/1999	ND<-0.693147	93.5
	3/14/2000	ND<-0.693147	93.5
	9/23/2003	ND<-0.693147	93.5
	3/10/2004	ND<-0.693147	93.5
	10/12/2004	ND<-0.693147	93.5
	4/1/2005	ND<-0.693147	93.5
	10/26/2005	ND<-0.693147	93.5
	6/19/2006	ND<-0.693147	93.5
	11/18/2006	ND<-0.693147	93.5
	6/2/2007	ND<-0.693147	93.5
	11/15/2007	ND<-0.693147	93.5
	5/20/2008	ND<-0.693147	93.5
	11/20/2008	ND<-0.693147	93.5
	6/11/2009	ND<-2.07944 U	93.5
	11/16/2009	2.94444	226
	11/16/2009	ND<-2.07944 U	93.5
	6/30/2010	ND<-2.07944 U	93.5

Rank Sum = 1909
Rank Mean = 100.474

LMW-3	11/19/1996	ND<-0.693147	93.5
	3/24/1997	ND<-0.693147	93.5
	1/16/1998	ND<-0.693147	93.5
	3/16/1999	ND<-0.693147	93.5
	9/23/1999	ND<-0.693147	93.5
	3/14/2000	ND<-0.693147	93.5
	9/23/2003	ND<-0.693147	93.5
	3/10/2004	ND<-0.693147	93.5
	10/12/2004	ND<-0.693147	93.5
	4/1/2005	ND<0 J	93.5
	10/26/2005	ND<0 J	93.5
	6/19/2006	ND<0 J	93.5
	11/18/2006	ND<-0.693147	93.5
	6/2/2007	ND<-0.693147	93.5
	11/15/2007	ND<0 J	93.5
	5/20/2008	ND<0 J	93.5
	11/20/2008	ND<0 J	93.5
	6/11/2009	-0.174353 J	191
	11/16/2009	-0.385662 J	188
	11/16/2009	3.46574 B	230
	6/30/2010	-0.544727 J	187

Rank Sum = 2385.5
Rank Mean = 113.595

LMW-15R	11/18/2006	ND<-0.693147	93.5
	6/2/2007	ND<-0.693147	93.5
	11/15/2007	ND<-0.693147	93.5
	11/15/2007	ND<-0.693147	93.5
	5/20/2008	ND<-0.693147	93.5
	5/20/2008	ND<-0.693147	93.5
	11/20/2008	ND<-0.693147	93.5
	11/20/2008	ND<-0.693147	93.5
	6/11/2009	ND<-2.07944 U	93.5
	6/30/2010	ND<-2.07944 U	93.5

Rank Sum = 935
Rank Mean = 93.5

LMW-14R	6/2/2007	ND<-0.693147	93.5
	11/15/2007	ND<-0.693147	93.5
	5/20/2008	ND<-0.693147	93.5
	11/20/2008	ND<-0.693147	93.5
	6/11/2009	ND<-2.07944 U	93.5
	6/30/2010	ND<-2.07944 U	93.5

Rank Sum = 561
Rank Mean = 93.5

LMW-10	3/14/2000	ND<-0.693147	93.5
	9/23/2003	ND<-0.693147	93.5
	3/10/2004	ND<-0.693147	93.5
	10/12/2004	ND<-0.693147	93.5
	4/1/2005	ND<-0.693147	93.5
	10/26/2005	ND<0 J	93.5
	6/19/2006	0.693147	206
	11/18/2006	1.94591	216
	6/2/2007	1.09861	211
	11/15/2007	ND<-0.693147	93.5
	5/20/2008	2.30259	221
	11/20/2008	1.09861	212
	6/11/2009	1.88707	215
	11/16/2009	2.56495	223
	11/16/2009	3.04452	227
	6/30/2010	1.75786	214

Rank Sum = 2599.5
Rank Mean = 162.469

LMW-9S	11/18/2006	ND<-0.693147	93.5
	6/2/2007	ND<-0.693147	93.5
	11/15/2007	ND<-0.693147	93.5
	5/20/2008	ND<-0.693147	93.5
	11/20/2008	ND<-0.693147	93.5
	6/11/2009	ND<-2.07944 U	93.5
	11/16/2009	ND<-2.07944 U	93.5
	11/16/2009	ND<-2.07944 U	93.5
	11/16/2009	ND<-2.07944 U	93.5
	11/16/2009	3.2581 B	229
	11/16/2009	2.20827 J B	219
	11/16/2009	2.70805 B	224
	6/30/2010	ND<-2.07944 U	93.5

Rank Sum = 1607
Rank Mean = 123.615

LMW-9D	11/18/2006	ND<-0.693147	93.5
	6/2/2007	ND<-0.693147	93.5
	11/15/2007	ND<-0.693147	93.5
	5/20/2008	ND<-0.693147	93.5
	11/20/2008	ND<-0.693147	93.5

	6/11/2009	ND<-2.07944 U	93.5
	11/16/2009	3.21888	228
	11/16/2009	ND<-2.07944 U	93.5
	6/30/2010	ND<-2.07944 U	93.5

Rank Sum = 976
Rank Mean = 108.444

LMW-9	1/16/1998	ND<-0.693147	93.5
	3/16/1999	ND<-0.693147	93.5
	9/23/1999	ND<-0.693147	93.5
	3/14/2000	ND<-0.693147	93.5
	9/23/2003	ND<-0.693147	93.5
	3/10/2004	ND<-0.693147	93.5
	10/12/2004	ND<-0.693147	93.5
	4/1/2005	ND<-0.693147	93.5
	10/26/2005	ND<-0.693147	93.5
	6/19/2006	ND<-0.693147	93.5
	11/18/2006	ND<-0.693147	93.5
	6/2/2007	ND<-0.693147	93.5
	11/15/2007	ND<-0.693147	93.5
	5/20/2008	ND<-0.693147	93.5
	11/20/2008	ND<-0.693147	93.5
	6/11/2009	ND<-2.07944 U	93.5
	11/16/2009	ND<-2.07944 U	93.5
	11/16/2009	1.94591 J	217
	6/30/2010	ND<-2.07944 U	93.5

Rank Sum = 1900
Rank Mean = 100

LMW-16	11/18/2006	ND<-0.693147	93.5
	6/2/2007	ND<-0.693147	93.5
	11/15/2007	ND<-0.693147	93.5
	5/20/2008	ND<-0.693147	93.5
	11/20/2008	ND<-0.693147	93.5
	6/11/2009	ND<-2.07944 U	93.5
	11/16/2009	ND<-2.07944 U	93.5
	11/16/2009	2.23001 J B	220
	6/30/2010	ND<-2.07944 U	93.5

Rank Sum = 968
Rank Mean = 107.556

LMW-7	1/16/1998	ND<-0.693147	93.5
	3/16/1999	ND<-0.693147	93.5
	9/23/1999	ND<-0.693147	93.5
	3/14/2000	ND<-0.693147	93.5
	9/23/2003	ND<-0.693147	93.5
	3/10/2004	ND<-0.693147	93.5
	10/12/2004	ND<-0.693147	93.5
	4/1/2005	ND<-0.693147	93.5
	10/26/2005	ND<-0.693147	93.5
	6/19/2006	ND<-0.693147	93.5
	11/18/2006	ND<-0.693147	93.5
	6/2/2007	0.693147	207
	11/15/2007	1.38629	213
	5/20/2008	ND<-0.693147	93.5
	11/20/2008	ND<-0.693147	93.5
	6/11/2009	ND<-2.07944 U	93.5

Rank Sum = 1729
Rank Mean = 108.063

LMW-13	3/14/2000	ND<-0.693147	93.5
	9/23/2003	ND<-0.693147	93.5

	3/10/2004	ND<-0.693147	93.5
	10/12/2004	ND<-0.693147	93.5
	4/1/2005	ND<-0.693147	93.5
	10/26/2005	ND<-0.693147	93.5
	6/19/2006	ND<-0.693147	93.5
	6/2/2007	ND<-0.693147	93.5
	11/15/2007	ND<-0.693147	93.5
	5/20/2008	ND<-0.693147	93.5
	11/20/2008	ND<-0.693147	93.5

Rank Sum = 1028.5
Rank Mean = 93.5

LMW-12	3/14/2000	ND<-0.693147	93.5
	9/23/2003	ND<-0.693147	93.5
	3/10/2004	ND<-0.693147	93.5
	10/12/2004	ND<-0.693147	93.5
	4/1/2005	ND<-0.693147	93.5
	10/26/2005	ND<-0.693147	93.5
	6/19/2006	ND<-0.693147	93.5
	6/2/2007	ND<-0.693147	93.5
	11/15/2007	ND<-0.693147	93.5
	5/20/2008	ND<-0.693147	93.5
	11/20/2008	ND<-0.693147	93.5

Rank Sum = 1028.5
Rank Mean = 93.5

LMW-11	3/14/2000	ND<-0.693147	93.5
	9/23/2003	ND<-0.693147	93.5
	3/10/2004	ND<-0.693147	93.5
	10/12/2004	ND<-0.693147	93.5
	4/1/2005	ND<-0.693147	93.5
	10/26/2005	ND<-0.693147	93.5
	6/19/2006	ND<-0.693147	93.5
	6/2/2007	ND<-0.693147	93.5
	11/15/2007	ND<-0.693147	93.5
	5/20/2008	ND<-0.693147	93.5
	11/20/2008	ND<-0.693147	93.5

Rank Sum = 1028.5
Rank Mean = 93.5

MW-5	1/16/1998	ND<-0.693147	93.5
	3/16/1999	ND<-0.693147	93.5
	9/23/1999	ND<-0.693147	93.5
	3/14/2000	ND<-0.693147	93.5
	9/23/2003	ND<-0.693147	93.5
	3/10/2004	ND<-0.693147	93.5
	10/12/2004	ND<-0.693147	93.5
	4/1/2005	ND<-0.693147	93.5
	10/26/2005	ND<-0.693147	93.5
	6/19/2006	ND<-0.693147	93.5
	11/15/2007	1.94591	218
	5/20/2008	ND<-0.693147	93.5
	11/20/2008	ND<-0.693147	93.5

Rank Sum = 1340
Rank Mean = 103.077

Calculation Results:

Kruskal-Wallis H Statistic = 26.2659
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 54.9535
95% Confidence comparison value is 26.2962 at 16 degrees of freedom

26.2659 < 26.2962 indicating no significant group difference at 5% significance level
54.9535 > 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 152.553

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-3S	153.444	0.891813	62.9092
LMW-6	132.684	-19.868	50.4395
LMW-8	100.474	-52.078	50.4395
LMW-3	113.595	-38.957	49.2239
LMW-15R	93.5	-59.052	60.7372
LMW-14R	93.5	-59.052	72.8032
LMW-10	162.469	9.91612	52.7509
LMW-9S	123.615	-28.937	55.9576
LMW-9D	108.444	-44.108	62.9092
LMW-9	100	-52.552	50.4395
LMW-16	107.556	-44.997	62.9092
LMW-7	108.063	-44.490	52.7509
LMW-13	93.5	-59.052	58.9007
LMW-12	93.5	-59.052	58.9007
LMW-11	93.5	-59.052	58.9007
MW-5	103.077	-49.475	55.9576

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 152.553

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-3S	153.444	0.891813	74.3053
LMW-6	132.684	-19.868	59.5768
LMW-8	100.474	-52.078	59.5768
LMW-3	113.595	-38.957	58.141
LMW-15R	93.5	-59.052	71.74
LMW-14R	93.5	-59.052	85.9917
LMW-10	162.469	9.91612	62.3069
LMW-9S	123.615	-28.937	66.0945
LMW-9D	108.444	-44.108	74.3053
LMW-9	100	-52.552	59.5768
LMW-16	107.556	-44.997	74.3053
LMW-7	108.063	-44.490	62.3069
LMW-13	93.5	-59.052	69.5707
LMW-12	93.5	-59.052	69.5707
LMW-11	93.5	-59.052	69.5707
MW-5	103.077	-49.475	66.0945

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Trichlorofluoromethane

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 80.5195%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 19
Maximum Background Concentration = 2.77259
Confidence Level = 70.4%
False Positive Rate = 29.6%

Location	Date	Samples	Mean	Significant
LMW-3S	6/30/2010	1	0.336472	FALSE
LMW-6	6/30/2010	1	-0.328504	FALSE
LMW-8	6/30/2010	1	-2.07944	FALSE
LMW-3	6/30/2010	1	-0.544727	FALSE
LMW-15R	6/30/2010	1	-2.07944	FALSE
LMW-14R	6/30/2010	1	-2.07944	FALSE
LMW-10	6/30/2010	1	1.75786	FALSE
LMW-9S	6/30/2010	1	-2.07944	FALSE
LMW-9D	6/30/2010	1	-2.07944	FALSE
LMW-9	6/30/2010	1	-2.07944	FALSE
LMW-16	6/30/2010	1	-2.07944	FALSE
LMW-7	6/11/2009	1	-2.07944	FALSE
LMW-13	11/20/2008	1	-0.693147	FALSE
LMW-12	11/20/2008	1	-0.693147	FALSE
LMW-11	11/20/2008	1	-0.693147	FALSE
MW-5	11/20/2008	1	-0.693147	FALSE

Concentrations (ppb)

Parameter: Vanadium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 219
Total Non-Detect: 187
Percent Non-Detects: 85.3881%
Total Background Measurements: 18
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	18	17 (94.4444%)	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
			11/16/2009	ND<1.4 U	ND<1.4 U
			6/30/2010	ND<1.4 U	ND<1.4 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-8	18	17 (94.4444%)	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
			11/16/2009	ND<1.4 U	ND<1.4 U
			6/30/2010	ND<1.4 U	ND<1.4 U
LMW-10	15	13 (86.6667%)	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
			11/16/2009		ND<1.4 U	ND<1.4 U
			6/30/2010		ND<1.4 U	ND<1.4 U
LMW-9S	10	9 (90%)	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
			11/16/2009		ND<1.4 U	ND<1.4 U
			11/16/2009		ND<1.4 U	ND<1.4 U
			11/16/2009		ND<1.4 U	ND<1.4 U
			6/30/2010		ND<1.4 U	ND<1.4 U
LMW-9D	8	1 (12.5%)	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
			11/16/2009		2.3 J	2.3 J
			6/30/2010		1.8 J	1.8 J
LMW-9	18	12 (66.6667%)	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
			11/16/2009		ND<1.4 U	ND<1.4 U
			6/30/2010		ND<1.4 U	ND<1.4 U
LMW-6	18	17 (94.4444%)	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
			11/16/2009	ND<1.4 U		ND<1.4 U
			6/30/2010	ND<1.4 U		ND<1.4 U
LMW-3S	8	6 (75%)	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	
			11/16/2009	ND<1.4 U		ND<1.4 U
			6/30/2010	ND<1.4 U		ND<1.4 U
LMW-3	20	20 (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
			11/16/2009	ND<1.4 U		ND<1.4 U
			6/30/2010	ND<1.4 U		ND<1.4 U
LMW-14R	6	5 (83.3333%)	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
			6/30/2010	ND<1.4 U		ND<1.4 U
LMW-15R	10	9 (90%)	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	
			6/30/2010	ND<1.4 U		ND<1.4 U
LMW-16	8	7 (87.5%)	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

			11/16/2009	ND<1.4 U		ND<1.4 U
			6/30/2010	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-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-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	
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

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Vanadium

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.7	-2.65209	7.03356	-1.85646
2	0.7	-2.36561	12.6297	-3.51239
3	0.7	-2.22621	17.5857	-5.07073
4	0.7	-2.09693	21.9828	-6.53859
5	0.7	-2.01409	26.0394	-7.94845
6	0.7	-1.92684	29.7521	-9.29724
7	0.7	-1.86629	33.2351	-10.6036
8	0.7	-1.79912	36.472	-11.863
9	0.7	-1.75069	39.5369	-13.0885
10	0.7	-1.6954	42.4112	-14.2753
11	0.7	-1.64485	45.1168	-15.4267
12	0.7	-1.60725	47.7	-16.5518
13	0.7	-1.56322	50.1437	-17.646
14	0.7	-1.53007	52.4848	-18.7171
15	0.7	-1.49085	54.7074	-19.7607
16	0.7	-1.46106	56.8421	-20.7834
17	0.7	-1.42554	58.8743	-21.7813
18	0.7	-1.39838	60.8297	-22.7601
19	0.7	-1.36581	62.6952	-23.7162
20	0.7	-1.34075	64.4928	-24.6547
21	0.7	-1.31058	66.2104	-25.5721
22	0.7	-1.28155	67.8528	-26.4692
23	0.7	-1.25908	69.4381	-27.3506
24	0.7	-1.23187	70.9556	-28.2129
25	0.7	-1.21073	72.4214	-29.0604
26	0.7	-1.18504	73.8258	-29.8899
27	0.7	-1.16505	75.1831	-30.7055
28	0.7	-1.14069	76.4843	-31.5039
29	0.7	-1.12168	77.7424	-32.2891
30	0.7	-1.09847	78.9491	-33.058
31	1.8	-1.08032	80.1162	-35.0026
32	2	-1.05812	81.2358	-37.1189
33	2	-1.03643	82.31	-39.1917
34	2.1	-1.01943	83.3492	-41.3325
35	2.3	-0.998575	84.3464	-43.6293
36	2.5	-0.982202	85.3111	-46.0848
37	2.6	-0.9621	86.2367	-48.5862
38	2.9	-0.946291	87.1322	-51.3305
39	3	-0.926859	87.9912	-54.111
40	3	-0.911562	88.8222	-56.8457
41	3	-0.892733	89.6192	-59.5239
42	5	-0.877897	90.3899	-63.9134
43	5	-0.859618	91.1288	-68.2115
44	5	-0.841621	91.8371	-72.4196
45	5	-0.827417	92.5218	-76.5567
46	7	-0.809896	93.1777	-82.226
47	7	-0.796056	93.8114	-87.7983
48	7	-0.778966	94.4182	-93.2511
49	7.5	-0.765456	95.0041	-98.992

50	8	-0.748762	95.5647	-104.982
51	8	-0.735557	96.1058	-110.867
52	8	-0.719228	96.6231	-116.62
53	9	-0.706302	97.1219	-122.977
54	10	-0.690309	97.5985	-129.88
55	10	-0.674499	8.0534	-136.625
56	10	-0.661955	98.4916	-143.245
57	10	-0.646431	98.9095	-149.709
58	10	-0.634124	99.3116	-156.05
59	10	-0.618872	99.6946	-162.239
60	10	-0.606775	100.063	-168.307
61	10	-0.591776	100.413	-174.224
62	10	-0.579873	100.749	-180.023
63	10	-0.565108	101.069	-185.674
64	10	-0.553384	101.375	-191.208
65	10	-0.538836	101.665	-196.596
66	10	-0.524401	101.94	-201.84
67	10	-0.51293	102.203	-206.97
68	10	-0.498687	102.452	-211.957
69	10	-0.487364	102.689	-216.83
70	10	-0.473299	102.913	-221.563
71	10	-0.462114	103.127	-226.184
72	10	-0.448213	103.328	-230.667
73	10	-0.437153	103.519	-235.038
74	10	-0.423405	103.698	-239.272
75	10	-0.412463	103.868	-243.397
76	10	-0.398855	104.027	-247.385
77	10	-0.385321	104.176	-251.239
78	10	-0.374544	104.316	-254.984
79	10	-0.361133	104.447	-258.595
80	10	-0.350451	104.569	-262.1
81	10	-0.337155	104.683	-265.471
82	10	-0.326561	104.79	-268.737
83	10	-0.31337	104.888	-271.871
84	10	-0.302855	104.98	-274.899
85	10	-0.28976	105.064	-277.797
86	10	-0.279319	105.142	-280.59
87	10	-0.266311	105.213	-283.253
88	10	-0.253347	105.277	-285.787
89	10	-0.243007	105.336	-288.217
90	10	-0.230118	105.389	-290.518
91	10	-0.219834	105.437	-292.716
92	10	-0.207012	105.48	-294.786
93	10	-0.196779	105.519	-296.754
94	10	-0.184017	105.553	-298.594
95	10	-0.173829	105.583	-300.333
96	10	-0.161119	105.609	-301.944
97	10	-0.150969	105.632	-303.453
98	10	-0.138305	105.651	-304.836
99	10	-0.125661	105.666	-306.093
100	10	-0.115562	105.68	-307.249
101	10	-0.102953	105.69	-308.278
102	10	-0.0928787	105.699	-309.207
103	10	-0.0802981	105.705	-310.01
104	10	-0.0702426	105.71	-310.712
105	10	-0.0576847	105.714	-311.289
106	10	-0.0476439	105.716	-311.766
107	10	-0.0350997	105.717	-312.117
108	10	-0.0250691	105.718	-312.367
109	10	-0.0125328	105.718	-312.493
110	10	0	105.718	-312.493
111	10	0.0125328	105.718	-312.367

112	10	0.0250691	105.719	-312.117
113	10	0.0350997	105.72	-311.766
114	10	0.0476439	105.722	-311.289
115	10	0.0576847	105.726	-310.712
116	10	0.0702426	105.731	-310.01
117	10	0.0802981	105.737	-309.207
118	10	0.0928787	105.746	-308.278
119	10	0.102953	105.756	-307.249
120	10	0.115562	105.77	-306.093
121	10	0.125661	105.785	-304.836
122	10	0.138305	105.805	-303.453
123	10	0.150969	105.827	-301.944
124	10	0.161119	105.853	-300.333
125	10	0.173829	105.883	-298.594
126	10	0.184017	105.917	-296.754
127	10	0.196779	105.956	-294.786
128	10	0.207012	105.999	-292.716
129	10	0.219834	106.047	-290.518
130	10	0.230118	106.1	-288.217
131	10	0.243007	106.159	-285.787
132	10	0.253347	106.223	-283.253
133	10	0.266311	106.294	-280.59
134	10	0.279319	106.372	-277.797
135	10	0.28976	106.456	-274.899
136	10	0.302855	106.548	-271.871
137	10	0.31337	106.646	-268.737
138	10	0.326561	106.753	-265.471
139	10	0.337155	106.867	-262.1
140	10	0.350451	106.989	-258.595
141	10	0.361133	107.12	-254.984
142	10	0.374544	107.26	-251.239
143	10	0.385321	107.409	-247.385
144	10	0.398855	107.568	-243.397
145	10	0.412463	107.738	-239.272
146	10	0.423405	107.917	-235.038
147	10	0.437153	108.108	-230.667
148	10	0.448213	108.309	-226.184
149	10	0.462114	108.523	-221.563
150	10	0.473299	108.747	-216.83
151	10	0.487364	108.984	-211.957
152	10	0.498687	109.233	-206.97
153	10	0.51293	109.496	-201.84
154	10	0.524401	109.771	-196.596
155	10	0.538836	110.061	-191.208
156	10	0.553384	110.368	-185.674
157	10	0.565108	110.687	-180.023
158	10	0.579873	111.023	-174.224
159	10	0.591776	111.373	-168.307
160	10	0.606775	111.741	-162.239
161	10	0.618872	112.124	-156.05
162	10	0.634124	112.527	-149.709
163	10	0.646431	112.944	-143.245
164	10	0.661955	113.383	-136.625
165	10	0.67449	113.838	-129.88
166	10	0.690309	114.314	-122.977
167	10	0.706302	114.813	-115.914
168	10	0.719228	115.33	-108.722
169	10	0.735557	115.871	-101.366
170	10	0.748762	116.432	-93.8786
171	10	0.765456	117.018	-86.2241
172	10	0.778966	117.625	-78.4344
173	10	0.796056	118.258	-70.4739

174	10	0.809896		118.914	-62.3749
175	10	0.827417		119.599	-54.1007
176	10	0.841621		120.307	-45.6845
177	10	0.859618		121.046	-37.0883
178	10	0.877897		121.817	-28.3094
179	10	0.892733		122.614	-19.382
180	10	0.911562		123.445	-10.2664
181	10	0.926859		124.304	-0.997828
182	10	0.946291		125.199	8.46508
183	10	0.9621	126.125	18.0861	
184	10	0.982202		127.09	27.9081
185	10	0.998575		128.087	37.8938
186	10	1.01943	129.126	48.0881	
187	10	1.03643	130.2	58.4525	
188	10	1.05812	131.32	69.0337	
189	10	1.08032	132.487	79.8369	
190	10	1.09847	133.694	90.8216	
191	10	1.12168	134.952	102.038	
192	10	1.14069	136.253	113.445	
193	10	1.16505	137.61	125.096	
194	10	1.18504	139.015	136.946	
195	10	1.21073	140.48	149.053	
196	10	1.23187	141.998	161.372	
197	10	1.25908	143.583	173.963	
198	10	1.28155	145.226	186.778	
199	10	1.31058	146.943	199.884	
200	10	1.34075	148.741	213.292	
201	10	1.36581	150.606	226.95	
202	10	1.39838	152.562	240.934	
203	10	1.42554	154.594	255.189	
204	10	1.46106	156.729	269.8	
205	10	1.49085	158.951	284.708	
206	10	1.53007	161.292	300.009	
207	10	1.56322	163.736	315.641	
208	10	1.60725	166.319	331.714	
209	10	1.64485	169.025	348.162	
210	10	1.6954	171.899	365.116	
211	10	1.75069	174.964	382.623	
212	11	1.79912	178.201	402.413	
213	12	1.86629	181.684	424.809	
214	14	1.92684	185.397	451.784	
215	15	2.01409	189.453	481.996	
216	18	2.09693	193.85	519.741	
217	30	2.22621	198.806	586.527	
218	41	2.36561	204.403	683.517	
219	49	2.65209	211.436	813.469	

Data Set Standard Deviation = 5.23463
Numerator = 661732
Denominator = 1.26301e+006
W Statistic = 0.523931 = 661732 / 1.26301e+006

5% Critical value of 0.976 exceeds 0.523931
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.523931
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Vanadium

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 219

i	x(i)	m(i)	sum(m^2)	sum(mx)	
1	-0.356675	-2.65209	7.03356	0.945933	
2	-0.356675	-2.36561	12.6297	1.78969	
3	-0.356675	-2.22621	17.5857	2.58372	
4	-0.356675	-2.09693	21.9828	3.33164	
5	-0.356675	-2.01409	26.0394	4.05002	
6	-0.356675	-1.92684	29.7521	4.73727	
7	-0.356675	-1.86629	33.2351	5.40293	
8	-0.356675	-1.79912	36.472	6.04463	
9	-0.356675	-1.75069	39.5369	6.66906	
10	-0.356675	-1.6954	42.4112	7.27377	
11	-0.356675	-1.64485	45.1168	7.86044	
12	-0.356675	-1.6072	47.7	8.43371	
13	-0.356675	-1.56322	50.1437	8.99127	
14	-0.356675	-1.53007	52.4848	9.53701	
15	-0.356675	-1.49085	54.7074	10.0688	
16	-0.356675	-1.46106	56.8421	10.5899	
17	-0.356675	-1.42554	58.8743	11.0983	
18	-0.356675	-1.39838	60.8297	11.5971	
19	-0.356675	-1.36581	62.6952	12.0843	
20	-0.356675	-1.34075	64.4928	12.5625	
21	-0.356675	-1.31058	66.2104	13.0299	
22	-0.356675	-1.28155	67.8528	13.487	
23	-0.356675	-1.25908	69.4381	13.9361	
24	-0.356675	-1.23187	70.9556	14.3755	
25	-0.356675	-1.21073	72.4214	14.8073	
26	-0.356675	-1.18504	73.8258	15.23	
27	-0.356675	-1.16505	75.1831	15.6455	
28	-0.356675	-1.14069	76.4843	16.0524	
29	-0.356675	-1.12168	77.7424	16.4525	
30	-0.356675	-1.09847	78.9491	16.8443	
31	0.587787	-1.08032	80.1162	16.2093	
32	0.693147	-1.05812	81.2358	15.4758	
33	0.693147	-1.03643	82.31	14.7574	
34	0.741937	-1.01943	83.3492	14.0011	
35	0.832909	-0.998575	84.3464	13.1693	
36	0.916291	-0.982202	85.3111	12.2694	
37	0.955511	-0.9621	86.2367	11.3501	
38	1.06471	-0.946291	87.1322	10.3425	
39	1.09861	-0.926859	87.9912	9.32428	
40	1.09861	-0.911562	88.8222	8.32283	
41	1.09861	-0.892733	89.6192	7.34206	
42	1.60944	-0.877897	90.3899	5.92914	
43	1.60944	-0.859618	91.1288	4.54564	
44	1.60944	-0.841621	91.8371	3.1911	
45	1.60944	-0.827417	92.5218	1.85942	
46	1.94591	-0.809896	93.1777	0.28344	
47	1.94591	-0.796056	93.8114	-1.26561	
48	1.94591	-0.778966	94.4182	-2.78141	
49	2.0149	-0.765456	95.0041	-4.32373	

50	2.07944	-0.748762	95.5647	-5.88074
51	2.07944	-0.735557	96.1058	-7.41029
52	2.07944	-0.719228	96.6231	-8.90588
53	2.19722	-0.706302	97.1219	-10.4578
54	2.30259	-0.690309	97.5985	-12.0473
55	2.30259	-0.674499	8.0534	-13.6003
56	2.30259	-0.661955	98.4916	-15.1246
57	2.30259	-0.646431	98.9095	-16.613
58	2.30259	-0.634124	99.3116	-18.0731
59	2.30259	-0.618872	99.6946	-19.4982
60	2.30259	-0.606775	100.063	-20.8953
61	2.30259	-0.591776	100.413	-22.2579
62	2.30259	-0.579873	100.749	-23.5931
63	2.30259	-0.565108	101.069	-24.8943
64	2.30259	-0.553384	101.375	-26.1685
65	2.30259	-0.538836	101.665	-27.4093
66	2.30259	-0.524401	101.94	-28.6167
67	2.30259	-0.51293	102.203	-29.7978
68	2.30259	-0.498687	102.452	-30.9461
69	2.30259	-0.487364	102.689	-32.0683
70	2.30259	-0.473299	102.913	-33.1581
71	2.30259	-0.462114	103.127	-34.2221
72	2.30259	-0.448213	103.328	-35.2542
73	2.30259	-0.437153	103.519	-36.2608
74	2.30259	-0.423405	103.698	-37.2357
75	2.30259	-0.412463	103.868	-38.1854
76	2.30259	-0.398855	104.027	-39.1038
77	2.30259	-0.385321	104.176	-39.9911
78	2.30259	-0.374544	104.316	-40.8535
79	2.30259	-0.361133	104.447	-41.685
80	2.30259	-0.350451	104.569	-42.492
81	2.30259	-0.337155	104.683	-43.2683
82	2.30259	-0.326561	104.79	-44.0202
83	2.30259	-0.31337	104.888	-44.7418
84	2.30259	-0.302855	104.98	-45.4391
85	2.30259	-0.28976	105.064	-46.1063
86	2.30259	-0.279319	105.142	-46.7495
87	2.30259	-0.266311	105.213	-47.3627
88	2.30259	-0.253347	105.277	-47.946
89	2.30259	-0.243007	105.336	-48.5056
90	2.30259	-0.230118	105.389	-49.0355
91	2.30259	-0.219834	105.437	-49.5416
92	2.30259	-0.207012	105.48	-50.0183
93	2.30259	-0.196779	105.519	-50.4714
94	2.30259	-0.184017	105.553	-50.8951
95	2.30259	-0.173829	105.583	-51.2954
96	2.30259	-0.161119	105.609	-51.6664
97	2.30259	-0.150969	105.632	-52.014
98	2.30259	-0.138305	105.651	-52.3325
99	2.30259	-0.125661	105.666	-52.6218
100	2.30259	-0.115562	105.68	-52.8879
101	2.30259	-0.102953	105.69	-53.1249
102	2.30259	-0.0928787	105.699	-53.3388
103	2.30259	-0.0802981	105.705	-53.5237
104	2.30259	-0.0702426	105.71	-53.6854
105	2.30259	-0.0576847	105.714	-53.8183
106	2.30259	-0.0476439	105.716	-53.928
107	2.30259	-0.0350997	105.717	-54.0088
108	2.30259	-0.0250691	105.718	-54.0665
109	2.30259	-0.0125328	105.718	-54.0954
110	2.30259	0	105.718	-54.0954
111	2.30259	0.0125328	105.718	-54.0665

112	2.30259	0.0250691	105.719	-54.0088
113	2.30259	0.0350997	105.72	-53.928
114	2.30259	0.0476439	105.722	-53.8183
115	2.30259	0.0576847	105.726	-53.6854
116	2.30259	0.0702426	105.731	-53.5237
117	2.30259	0.0802981	105.737	-53.3388
118	2.30259	0.0928787	105.746	-53.1249
119	2.30259	0.102953	105.756	-52.8879
120	2.30259	0.115562	105.77	-52.6218
121	2.30259	0.125661	105.785	-52.3325
122	2.30259	0.138305	105.805	-52.014
123	2.30259	0.150969	105.827	-51.6664
124	2.30259	0.161119	105.853	-51.2954
125	2.30259	0.173829	105.883	-50.8951
126	2.30259	0.184017	105.917	-50.4714
127	2.30259	0.196779	105.956	-50.0183
128	2.30259	0.207012	105.999	-49.5416
129	2.30259	0.219834	106.047	-49.0355
130	2.30259	0.230118	106.1	-48.5056
131	2.30259	0.243007	106.159	-47.946
132	2.30259	0.253347	106.223	-47.3627
133	2.30259	0.266311	106.294	-46.7495
134	2.30259	0.279319	106.372	-46.1063
135	2.30259	0.28976	106.456	-45.4391
136	2.30259	0.302855	106.548	-44.7418
137	2.30259	0.31337	106.646	-44.0202
138	2.30259	0.326561	106.753	-43.2683
139	2.30259	0.337155	106.867	-42.492
140	2.30259	0.350451	106.989	-41.685
141	2.30259	0.361133	107.12	-40.8535
142	2.30259	0.374544	107.26	-39.9911
143	2.30259	0.385321	107.409	-39.1038
144	2.30259	0.398855	107.568	-38.1854
145	2.30259	0.412463	107.738	-37.2357
146	2.30259	0.423405	107.917	-36.2608
147	2.30259	0.437153	108.108	-35.2542
148	2.30259	0.448213	108.309	-34.2221
149	2.30259	0.462114	108.523	-33.1581
150	2.30259	0.473299	108.747	-32.0683
151	2.30259	0.487364	108.984	-30.9461
152	2.30259	0.498687	109.233	-29.7978
153	2.30259	0.51293	109.496	-28.6167
154	2.30259	0.524401	109.771	-27.4093
155	2.30259	0.538836	110.061	-26.1685
156	2.30259	0.553384	110.368	-24.8943
157	2.30259	0.565108	110.687	-23.5931
158	2.30259	0.579873	111.023	-22.2579
159	2.30259	0.591776	111.373	-20.8953
160	2.30259	0.606775	111.741	-19.4982
161	2.30259	0.618872	112.124	-18.0731
162	2.30259	0.634124	112.527	-16.613
163	2.30259	0.646431	112.944	-15.1246
164	2.30259	0.661955	113.383	-13.6003
165	2.30259	0.67449	113.838	-12.0473
166	2.30259	0.690309	114.314	-10.4578
167	2.30259	0.706302	114.813	-8.83146
168	2.30259	0.719228	115.33	-7.17538
169	2.30259	0.735557	115.871	-5.48169
170	2.30259	0.748762	116.432	-3.75761
171	2.30259	0.765456	117.018	-1.99508
172	2.30259	0.778966	117.625	-0.201443
173	2.30259	0.796056	118.258	1.63154

174	2.30259	0.809896		118.914	3.4964
175	2.30259	0.827417		119.599	5.4016
176	2.30259	0.841621		120.307	7.3395
177	2.30259	0.859618		121.046	9.31884
178	2.30259	0.877897		121.817	11.3403
179	2.30259	0.892733		122.614	13.3959
180	2.30259	0.911562		123.445	15.4948
181	2.30259	0.926859		124.304	17.629
182	2.30259	0.946291		125.199	19.8079
183	2.30259	0.9621	126.125	22.0232	
184	2.30259	0.982202		127.09	24.2848
185	2.30259	0.998575		128.087	26.5841
186	2.30259	1.01943	129.126	28.9314	
187	2.30259	1.03643	130.2	31.3179	
188	2.30259	1.05812	131.32	33.7543	
189	2.30259	1.08032	132.487	36.2419	
190	2.30259	1.09847	133.694	38.7712	
191	2.30259	1.12168	134.952	41.3539	
192	2.30259	1.14069	136.253	43.9805	
193	2.30259	1.16505	137.61	46.6631	
194	2.30259	1.18504	139.015	49.3918	
195	2.30259	1.21073	140.48	52.1796	
196	2.30259	1.23187	141.998	55.016	
197	2.30259	1.25908	143.583	57.9152	
198	2.30259	1.28155	145.226	60.8661	
199	2.30259	1.31058	146.943	63.8838	
200	2.30259	1.34075	148.741	66.971	
201	2.30259	1.36581	150.606	70.1159	
202	2.30259	1.39838	152.562	73.3358	
203	2.30259	1.42554	154.594	76.6182	
204	2.30259	1.46106	156.729	79.9824	
205	2.30259	1.49085	158.951	83.4152	
206	2.30259	1.53007	161.292	86.9383	
207	2.30259	1.56322	163.736	90.5378	
208	2.30259	1.60725	166.319	94.2386	
209	2.30259	1.64485	169.025	98.026	
210	2.30259	1.6954	171.899	101.93	
211	2.30259	1.75069	174.964	105.961	
212	2.3979	1.79912	178.201	110.275	
213	2.48491	1.86629	181.684	114.913	
214	2.63906	1.92684	185.397	119.998	
215	2.70805	2.01409	189.453	125.452	
216	2.89037	2.09693	193.85	131.513	
217	3.4012	2.22621	198.806	139.085	
218	3.71357	2.36561	204.403	147.869	
219	3.89182	2.65209	211.436	158.191	

Data Set Standard Deviation = 0.964084
Numerator = 25024.4
Denominator = 42841.5
W Statistic = 0.584114 = 25024.4 / 42841.5

5% Critical value of 0.976 exceeds 0.584114
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.584114
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Vanadium

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	ND<2.30259	94
	3/16/1999	ND<2.30259	94
	9/23/1999	ND<2.30259	94
	3/14/2000	ND<2.30259	94
	9/23/2003	ND<2.30259	94
	3/10/2004	ND<2.30259	94
	10/12/2004	ND<2.30259	94
	4/1/2005	ND<2.30259	94
	10/26/2005	ND<2.30259	94
	6/19/2006	ND<2.30259	94
	11/18/2006	ND<2.30259	94
	6/2/2007	2.70805	215
	11/15/2007	ND<2.30259	94
	5/20/2008	ND<2.30259	94
	11/20/2008	ND<2.30259	94
	6/11/2009	ND<-0.356675 U	94
	11/16/2009	ND<-0.356675 U	94
	6/30/2010	ND<-0.356675 U	94

Rank Sum = 1813
Rank Mean = 100.722

Background Rank Sum = 1813
Background Rank Mean = 100.722

Compliance Wells

Well ID	Date	Result	Rank
LMW-8	1/16/1998	ND<2.30259	94
	3/16/1999	ND<2.30259	94
	9/23/1999	1.94591 J	203
	3/14/2000	ND<2.30259	94
	9/23/2003	ND<2.30259	94
	3/10/2004	ND<2.30259	94
	10/12/2004	ND<2.30259	94
	4/1/2005	ND<2.30259	94
	10/26/2005	ND<2.30259	94
	6/19/2006	ND<2.30259	94
	11/18/2006	ND<2.30259	94
	6/2/2007	ND<2.30259	94
	11/15/2007	ND<2.30259	94
	5/20/2008	ND<2.30259	94
	11/20/2008	ND<2.30259	94
	6/11/2009	ND<-0.356675 U	94
	11/16/2009	ND<-0.356675 U	94
	6/30/2010	ND<-0.356675 U	94

Rank Sum = 1801
Rank Mean = 100.056

LMW-10	3/14/2000	ND<2.30259	94
	9/23/2003	ND<2.30259	94
	3/10/2004	ND<2.30259	94
	10/12/2004	ND<2.30259	94
	4/1/2005	ND<2.30259	94
	10/26/2005	ND<2.30259	94
	6/19/2006	2.07944 J	207
	11/18/2006	ND<2.30259	94
	6/2/2007	1.09861 J	196
	11/15/2007	ND<2.30259	94
	5/20/2008	ND<2.30259	94
	11/20/2008	ND<2.30259	94
	6/11/2009	ND<-0.356675 U	94
	11/16/2009	ND<-0.356675 U	94
	6/30/2010	ND<-0.356675 U	94

Rank Sum = 1625
Rank Mean = 108.333

LMW-9S	11/18/2006	ND<2.30259	94
	6/2/2007	1.60944	199
	11/15/2007	ND<2.30259	94
	5/20/2008	ND<2.30259	94
	11/20/2008	ND<2.30259	94
	6/11/2009	ND<-0.356675 U	94
	11/16/2009	ND<-0.356675 U	94
	11/16/2009	ND<-0.356675 U	94
	11/16/2009	ND<-0.356675 U	94
	6/30/2010	ND<-0.356675 U	94

Rank Sum = 1045
Rank Mean = 104.5

LMW-9D	11/18/2006	2.30259 J	211
	6/2/2007	1.60944	200
	11/15/2007	ND<2.30259	94
	5/20/2008	1.60944 J	201
	11/20/2008	1.60944 J	202
	6/11/2009	0.916291 J	193
	11/16/2009	0.832909 J	192
	6/30/2010	0.587787 J	188

Rank Sum = 1481
Rank Mean = 185.125

LMW-9	1/16/1998	ND<2.30259	94
	3/16/1999	ND<2.30259	94
	9/23/1999	ND<2.30259	94
	3/14/2000	ND<2.30259	94
	9/23/2003	ND<2.30259	94
	3/10/2004	ND<2.30259	94
	10/12/2004	ND<2.30259	94
	4/1/2005	2.07944 J	208
	10/26/2005	2.3979 J	212
	6/19/2006	3.4012	217
	11/18/2006	ND<2.30259	94
	6/2/2007	1.94591	204
	11/15/2007	ND<2.30259	94
	5/20/2008	0.693147 J	189
	11/20/2008	ND<2.30259	94
	6/11/2009	0.955511 J	194
	11/16/2009	ND<-0.356675 U	94
	6/30/2010	ND<-0.356675 U	94

Rank Sum = 2352

Rank Mean = 130.667

LMW-6	1/16/1998	ND<2.30259	94
	3/16/1999	ND<2.30259	94
	9/23/1999	ND<2.30259	94
	3/14/2000	ND<2.30259	94
	9/23/2003	ND<2.30259	94
	3/10/2004	ND<2.30259	94
	10/12/2004	ND<2.30259	94
	4/1/2005	ND<2.30259	94
	10/26/2005	ND<2.30259	94
	6/19/2006	ND<2.30259	94
	11/18/2006	ND<2.30259	94
	6/2/2007	1.09861	197
	11/15/2007	ND<2.30259	94
	5/20/2008	ND<2.30259	94
	11/20/2008	ND<2.30259	94
	6/11/2009	ND<-0.356675 U	94
	11/16/2009	ND<-0.356675 U	94
	6/30/2010	ND<-0.356675 U	94

Rank Sum = 1795
Rank Mean = 99.7222

LMW-3S	11/18/2006	ND<2.30259	94
	6/2/2007	2.19722	210
	11/15/2007	ND<2.30259	94
	5/20/2008	ND<2.30259	94
	11/20/2008	ND<2.30259	94
	6/11/2009	0.741937 J	191
	11/16/2009	ND<-0.356675 U	94
	6/30/2010	ND<-0.356675 U	94

Rank Sum = 965
Rank Mean = 120.625

LMW-3	11/19/1996	ND<2.30259	94
	3/24/1997	ND<2.30259	94
	1/16/1998	ND<2.30259	94
	3/16/1999	ND<2.30259	94
	9/23/1999	ND<2.30259	94
	3/14/2000	ND<2.30259	94
	9/23/2003	ND<2.30259	94
	3/10/2004	ND<2.30259	94
	10/12/2004	ND<2.30259	94
	4/1/2005	ND<2.30259	94
	10/26/2005	ND<2.30259	94
	6/19/2006	ND<2.30259	94
	11/18/2006	ND<2.30259	94
	6/2/2007	ND<2.30259	94
	11/15/2007	ND<2.30259	94
	5/20/2008	ND<2.30259	94
	11/20/2008	ND<2.30259	94
	6/11/2009	ND<-0.356675 U	94
	11/16/2009	ND<-0.356675 U	94
	6/30/2010	ND<-0.356675 U	94

Rank Sum = 1880
Rank Mean = 94

LMW-14R	6/2/2007	0.693147 J	190
	11/15/2007	ND<2.30259	94
	5/20/2008	ND<2.30259	94
	11/20/2008	ND<2.30259	94
	6/11/2009	ND<-0.356675 U	94

	6/30/2010	ND<-0.356675 U	94

Rank Sum = 660
Rank Mean = 110

LMW-15R	11/18/2006	ND<2.30259	94
	6/2/2007	ND<2.30259	94
	11/15/2007	ND<2.30259	94
	11/15/2007	ND<2.30259	94
	5/20/2008	ND<2.30259	94
	5/20/2008	ND<2.30259	94
	11/20/2008	ND<2.30259	94
	11/20/2008	ND<2.30259	94
	6/11/2009	2.0149	206
	6/30/2010	ND<-0.356675 U	94

Rank Sum = 1052
Rank Mean = 105.2

LMW-16	11/18/2006	ND<2.30259	94
	6/2/2007	3.71357	218
	11/15/2007	ND<2.30259	94
	5/20/2008	ND<2.30259	94
	11/20/2008	ND<2.30259	94
	6/11/2009	ND<-0.356675 U	94
	11/16/2009	ND<-0.356675 U	94
	6/30/2010	ND<-0.356675 U	94

Rank Sum = 876
Rank Mean = 109.5

LMW-7	1/16/1998	ND<2.30259	94
	3/16/1999	1.94591 J	205
	9/23/1999	3.89182	219
	3/14/2000	ND<2.30259	94
	9/23/2003	ND<2.30259	94
	3/10/2004	ND<2.30259	94
	10/12/2004	ND<2.30259	94
	4/1/2005	2.48491 J	213
	10/26/2005	2.89037 J	216
	6/19/2006	2.07944 J	209
	11/18/2006	1.09861 J	198
	6/2/2007	2.63906	214
	11/15/2007	ND<2.30259	94
	5/20/2008	ND<2.30259	94
	11/20/2008	ND<2.30259	94
	6/11/2009	1.06471 J	195

Rank Sum = 2421
Rank Mean = 151.313

LMW-11	3/14/2000	ND<2.30259	94
	9/23/2003	ND<2.30259	94
	3/10/2004	ND<2.30259	94
	10/12/2004	ND<2.30259	94
	4/1/2005	ND<2.30259	94
	10/26/2005	ND<2.30259	94
	6/19/2006	ND<2.30259	94
	6/2/2007	ND<2.30259	94
	11/15/2007	ND<2.30259	94
	5/20/2008	ND<2.30259	94
	11/20/2008	ND<2.30259	94

Rank Sum = 1034
Rank Mean = 94

LMW-13	3/14/2000	ND<2.30259	94

	9/23/2003	ND<2.30259	94
	3/10/2004	ND<2.30259	94
	10/12/2004	ND<2.30259	94
	4/1/2005	ND<2.30259	94
	10/26/2005	ND<2.30259	94
	6/19/2006	ND<2.30259	94
	6/2/2007	ND<2.30259	94
	11/15/2007	ND<2.30259	94
	5/20/2008	ND<2.30259	94
	11/20/2008	ND<2.30259	94

Rank Sum = 1034
Rank Mean = 94

LMW-12	3/14/2000	ND<2.30259	94
	9/23/2003	ND<2.30259	94
	3/10/2004	ND<2.30259	94
	10/12/2004	ND<2.30259	94
	4/1/2005	ND<2.30259	94
	10/26/2005	ND<2.30259	94
	6/19/2006	ND<2.30259	94
	6/2/2007	ND<2.30259	94
	11/15/2007	ND<2.30259	94
	5/20/2008	ND<2.30259	94
	11/20/2008	ND<2.30259	94

Rank Sum = 1034
Rank Mean = 94

MW-5	1/16/1998	ND<2.30259	94
	3/16/1999	ND<2.30259	94
	9/23/1999	ND<2.30259	94
	3/14/2000	ND<2.30259	94
	9/23/2003	ND<2.30259	94
	3/10/2004	ND<2.30259	94
	10/12/2004	ND<2.30259	94
	4/1/2005	ND<2.30259	94
	10/26/2005	ND<2.30259	94
	6/19/2006	ND<2.30259	94
	11/15/2007	ND<2.30259	94
	5/20/2008	ND<2.30259	94
	11/20/2008	ND<2.30259	94

Rank Sum = 1222
Rank Mean = 94

Calculation Results:

Kruskal-Wallis H Statistic = 25.8411
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 68.4663
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
25.8411 < 26.2962 indicating no significant group difference at 5% significance level
68.4663 > 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 100.722

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-8	100.056	-0.666667	49.1355
LMW-10	108.333	7.61111	51.5337
LMW-9S	104.5	3.77778	58.1379
LMW-9D	185.125	84.4028	62.6357
LMW-9	130.667	29.9444	49.1355

LMW-6	99.7222	-1	49.1355	
LMW-3S	120.625	19.9028	62.6357	
LMW-3	94	-6.7222	47.8913	
LMW-14R		110	9.27778	69.488
LMW-15R		105.2	4.47778	58.1379
LMW-16	109.5	8.77778	62.6357	
LMW-7	151.313	50.5903	50.6477	
LMW-11	94	-6.7222	56.4135	
LMW-13	94	-6.7222	56.4135	
LMW-12	94	-6.7222	56.4135	
MW-5	94	-6.7222	53.6524	

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 100.722

Well	Mean Rank	Dif from Bkg	Critical Value	
LMW-8	100.056	-0.666667	58.0365	
LMW-10	108.333	7.61111	60.8692	
LMW-9S	104.5	3.77778	68.6697	
LMW-9D	185.125	84.4028	73.9823	
LMW-9	130.667	29.9444	58.0365	
LMW-6	99.7222	-1	58.0365	
LMW-3S	120.625	19.9028	73.9823	
LMW-3	94	-6.7222	56.567	
LMW-14R		110	9.27778	82.076
LMW-15R		105.2	4.47778	68.6697
LMW-16	109.5	8.77778	73.9823	
LMW-7	151.313	50.5903	59.8226	
LMW-11	94	-6.7222	66.6329	
LMW-13	94	-6.7222	66.6329	
LMW-12	94	-6.7222	66.6329	
MW-5	94	-6.7222	63.3717	

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Vanadium

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 85.3881%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 18
Maximum Background Concentration = 2.70805
Confidence Level = 69.2%
False Positive Rate = 30.8%

Location	Date	Samples	Mean	Significant
LMW-8	6/30/2010	1	-0.356675	FALSE
LMW-10	6/30/2010	1	-0.356675	FALSE
LMW-9S	6/30/2010	1	-0.356675	FALSE
LMW-9D	6/30/2010	1	0.587787	FALSE
LMW-9	6/30/2010	1	-0.356675	FALSE
LMW-6	6/30/2010	1	-0.356675	FALSE
LMW-3S	6/30/2010	1	-0.356675	FALSE
LMW-3	6/30/2010	1	-0.356675	FALSE
LMW-14R	6/30/2010	1	-0.356675	FALSE
LMW-15R	6/30/2010	1	-0.356675	FALSE
LMW-16	6/30/2010	1	-0.356675	FALSE
LMW-7	6/11/2009	1	1.06471	FALSE
LMW-11	11/20/2008	1	2.30259	FALSE
LMW-13	11/20/2008	1	2.30259	FALSE
LMW-12	11/20/2008	1	2.30259	FALSE
MW-5	11/20/2008	1	2.30259	FALSE

Mann-Kendall Trend Analysis

Parameter: Vanadium

Location: LMW-9D

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives	
1.60944		2.30259 J	-0.693147	0	1
ND<2.30259		2.30259 J	0 0	1	
1.60944 J		2.30259 J	-0.693147	0	2
1.60944 J		2.30259 J	-0.693147	0	3
0.916291 J		2.30259 J	-1.386290	4	
0.832909 J		2.30259 J	-1.469680	5	
0.587787 J		2.30259 J	-1.7148 0	6	
ND<2.30259		1.60944	0.693147	1	6
1.60944 J		1.60944	0 1	6	
1.60944 J		1.60944	0 1	6	
0.916291 J		1.60944	-0.693147	1	7
0.832909 J		1.60944	-0.776529	1	8
0.587787 J		1.60944	-1.021651	9	
1.60944 J		ND<2.30259	-0.693147	1	10
1.60944 J		ND<2.30259	-0.693147	1	11
0.916291 J		ND<2.30259	-1.386291	12	
0.832909 J		ND<2.30259	-1.469681	13	
0.587787 J		ND<2.30259	-1.7148 1	14	
1.60944 J		1.60944 J	0 1	14	
0.916291 J		1.60944 J	-0.693147	1	15
0.832909 J		1.60944 J	-0.776529	1	16
0.587787 J		1.60944 J	-1.021651	17	
0.916291 J		1.60944 J	-0.693147	1	18
0.832909 J		1.60944 J	-0.776529	1	19
0.587787 J		1.60944 J	-1.021651	20	
0.832909 J		0.916291 J	-0.0833816	1	21
0.587787 J		0.916291 J	-0.328504	1	22
0.587787 J		0.832909 J	-0.245122	1	23

S Statistic = 1 - 23 = -22
Comparing at 1.0 - (0.05 / 2) = 97.5% confidence level (two-tailed)
Probability of obtaining S >= |-22| is 0.0056
0.0056 < 0.05 indicating a trend

Concentrations (ppb)

Parameter: Zinc

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 207
Total Non-Detect: 139
Percent Non-Detects: 67.1498%
Total Background Measurements: 17
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	17	11 (64.7059%)	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
			6/30/2010	6.9 J	6.9 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-3S	7	1 (14.2857%)	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
			6/30/2010	14 Q	14 Q
LMW-10	14	12 (85.7143%)	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
			6/30/2010	3.6 J	3.6 J
LMW-15R	10	6 (60%)	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		ND<60	ND<60
			5/20/2008		39 J	39 J
			11/20/2008		ND<60	ND<60
			11/20/2008		ND<60	ND<60
			6/11/2009		6.5 J	6.5 J
			6/30/2010		6.6 J	6.6 J
LMW-3	19	13 (68.4211%)	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
			6/30/2010		8.5 J	8.5 J
LMW-14R	6	2 (33.3333%)	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
			6/30/2010		4.9 J	4.9 J
LMW-6	17	8 (47.0588%)	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
			6/30/2010		11	11
LMW-8	17	13 (76.4706%)	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
			6/30/2010		4.5 J	4.5 J
LMW-9	17	12 (70.5882%)	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
			6/30/2010		4.4 J	4.4 J
LMW-9D	7	3 (42.8571%)	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
			6/30/2010		5.6 J	5.6 J
LMW-9S	7	4 (57.1429%)	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
			6/30/2010		3.5 J	3.5 J
LMW-16	7	3 (42.8571%)	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
			6/30/2010		7.9 J	7.9 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-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-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	
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-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	

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Zinc

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 207

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	1.3	-2.65209	7.03356	-3.44771
2	1.3	-2.36561	12.6297	-6.52301
3	1.3	-2.19728	17.4578	-9.37948
4	3.5	-2.07485	21.7627	-16.6415
5	3.5	-1.97737	25.6727	-23.5622
6	3.6	-1.91103	29.3248	-30.442
7	4.4	-1.83843	32.7046	-38.531
8	4.5	-1.77438	35.853	-46.5157
9	4.9	-1.71688	38.8007	-54.9285
10	5	-1.66456	41.5715	-63.2513
11	5.2	-1.62576	44.2146	-71.7052
12	5.6	-1.58047	46.7124	-80.5558
13	6	-1.5382	49.0785	-89.785
14	6.3	-1.49852	51.324	-99.2257
15	6.5	-1.46106	53.4587	-108.723
16	6.6	-1.4325	55.5108	-118.177
17	6.7	-1.39838	57.4663	-127.546
18	6.9	-1.36581	59.3317	-136.97
19	7	-1.33462	61.1129	-146.313
20	7	-1.30469	62.8151	-155.445
21	7	-1.28155	64.4575	-164.416
22	7.3	-1.25357	66.0289	-173.567
23	7.9	-1.22653	67.5333	-183.257
24	8.2	-1.20036	68.9741	-193.1
25	8.2	-1.17499	70.3547	-202.735
26	8.5	-1.15035	71.678	-212.513
27	10	-1.13113	72.9575	-223.824
28	10	-1.10768	74.1845	-234.901
29	10	-1.08482	75.3613	-245.749
30	11	-1.06252	76.4903	-257.437
31	11	-1.04073	77.5734	-268.885
32	12	-1.02365	78.6212	-281.169
33	14	-1.00271	79.6267	-295.207
34	14	-0.982202	80.5914	-308.957
35	15	-0.9621	81.517	-323.389
36	15	-0.942375	82.4051	-337.525
37	15	-0.926859	83.2642	-351.427
38	15	-0.907769	84.0882	-365.044
39	16	-0.889006	84.8785	-379.268
40	16	-0.87055	85.6364	-393.197
41	17	-0.852385	86.363	-407.687
42	17	-0.838054	87.0653	-421.934
43	18	-0.820379	87.7383	-436.701
44	18	-0.802956	88.3831	-451.154
45	18	-0.785774	89.0005	-465.298
46	20	-0.768821	89.5916	-480.675
47	20	-0.755415	90.1622	-495.783
48	20	-0.738846	90.7081	-510.56
49	20	-0.722479	91.2301	-525.01

50	21	-0.706302	91.729	-539.842
51	27	-0.690309	92.2055	-558.48
52	27	-0.6744992.6604	-576.691	
53	29	-0.661955	93.0986	-595.888
54	30	-0.646431	93.5165	-615.281
55	30	-0.631062	93.9147	-634.213
56	30	-0.615839	94.294	-652.688
57	30	-0.6007694.6549	-670.711	
58	30	-0.588793	95.0016	-688.375
59	30	-0.573953	95.331	-705.593
60	30	-0.559237	95.6437	-722.37
61	30	-0.544642	95.9404	-738.71
62	30	-0.530162	96.2214	-754.615
63	30	-0.518658	96.4905	-770.174
64	30	-0.504372	96.7448	-785.305
65	30	-0.490189	96.9851	-800.011
66	30	-0.476105	97.2118	-814.294
67	30	-0.462114	97.4254	-828.158
68	30	-0.450985	97.6287	-841.687
69	30	-0.437153	97.8198	-854.802
70	30	-0.423405	97.9991	-867.504
71	30	-0.409735	98.167	-879.796
72	30	-0.396142	98.3239	-891.68
73	30	-0.385321	98.4724	-903.24
74	30	-0.371856	98.6107	-914.396
75	30	-0.358459	98.7392	-925.149
76	30	-0.345126	98.8583	-935.503
77	30	-0.331854	98.9684	-945.459
78	30	-0.318639	99.0699	-955.018
79	30	-0.308108	99.1649	-964.261
80	30	-0.294992	99.2519	-973.111
81	30	-0.281926	99.3314	-981.569
82	30	-0.268908	99.4037	-989.636
83	30	-0.255936	99.4692	-997.314
84	30	-0.2455999.5295	-1004.68	
85	30	-0.232693	99.5836	-1011.66
86	30	-0.219834	99.632	-1018.26
87	30	-0.207012	99.6748	-1024.47
88	30	-0.194225	99.7126	-1030.29
89	30	-0.184017	99.7464	-1035.82
90	30	-0.171285	99.7758	-1040.95
91	30	-0.158579	99.8009	-1045.71
92	30	-0.1459 99.8222	-1050.09	
93	30	-0.133244	99.8399	-1054.09
94	30	-0.123135	99.8551	-1057.78
95	30	-0.110516	99.8673	-1061.1
96	30	-0.0979139	99.8769	-1064.03
97	30	-0.0853288	99.8842	-1066.59
98	30	-0.0727562	99.8895	-1068.77
99	30	-0.0627062	99.8934	-1070.66
100	30	-0.0501541	99.8959	-1072.16
101	30	-0.0376076	99.8973	-1073.29
102	30	-0.0250691	99.898	-1074.04
103	30	-0.0125328	99.8981	-1074.42
104	30	0 99.8981	-1074.42	
105	30	0.0125328	99.8983	-1074.04
106	30	0.0250691	99.8989	-1073.29
107	30	0.0376076	99.9003	-1072.16
108	30	0.0501541	99.9028	-1070.66
109	30	0.0627062	99.9068	-1068.77
110	30	0.0727562	99.9121	-1066.59
111	30	0.0853288	99.9193	-1064.03

112	30	0.0979139	99.9289	-1061.1
113	30	0.110516	99.9411	-1057.78
114	30	0.123135	99.9563	-1054.09
115	30	0.133244	99.9741	-1050.09
116	30	0.1459	99.9954	-1045.71
117	30	0.158579	100.02	-1040.95
118	30	0.171285	100.05	-1035.82
119	30	0.184017	100.084	-1030.29
120	30	0.194225	100.121	-1024.47
121	30	0.207012	100.164	-1018.26
122	30	0.219834	100.213	-1011.66
123	30	0.232693	100.267	-1004.68
124	30	0.24559	100.327	-997.314
125	30	0.255936	100.393	-989.636
126	30	0.268908	100.465	-981.569
127	30	0.281926	100.544	-973.111
128	30	0.294992	100.631	-964.261
129	30	0.308108	100.726	-955.018
130	30	0.318639	100.828	-945.459
131	30	0.331854	100.938	-935.503
132	30	0.345126	101.057	-925.149
133	30	0.358459	101.186	-914.396
134	30	0.371856	101.324	-903.24
135	30	0.385321	101.472	-891.68
136	30	0.396142	101.629	-879.796
137	30	0.409735	101.797	-867.504
138	30	0.423405	101.976	-854.802
139	30	0.437153	102.168	-841.687
140	30	0.450985	102.371	-828.158
141	30	0.462114	102.584	-814.294
142	30	0.476105	102.811	-800.011
143	30	0.490189	103.051	-785.305
144	30	0.504372	103.306	-770.174
145	30	0.518658	103.575	-754.615
146	30	0.530162	103.856	-738.71
147	30	0.544642	104.153	-722.37
148	30	0.559237	104.465	-705.593
149	30	0.573953	104.795	-688.375
150	30	0.588793	105.141	-670.711
151	30	0.60076	105.502	-652.688
152	30	0.615839	105.882	-634.213
153	30	0.631062	106.28	-615.281
154	30	0.646431	106.698	-595.888
155	30	0.661955	107.136	-576.03
156	30	0.67449	107.591	-555.795
157	30	0.690309	108.067	-535.086
158	30	0.706302	108.566	-513.896
159	30	0.722479	109.088	-492.222
160	30	0.738846	109.634	-470.057
161	30	0.755415	110.205	-447.394
162	30	0.768821	110.796	-424.33
163	30	0.785774	111.413	-400.756
164	30	0.802956	112.058	-376.668
165	30	0.820379	112.731	-352.056
166	30	0.838054	113.433	-326.915
167	30	0.852385	114.16	-301.343
168	30	0.87055	114.918	-275.227
169	30	0.889006	115.708	-248.557
170	30	0.907769	116.532	-221.323
171	30	0.926859	117.391	-193.518
172	30	0.942375	118.279	-165.246
173	30	0.9621	119.205	-136.383

174	30	0.982202	120.17	-106.917
175	30	1.00271	121.175	-76.836
176	30	1.02365	122.223	-46.1265
177	30	1.04073	123.306	-14.9045
178	30	1.06252	124.435	16.9711
179	30	1.08482	125.612	49.5158
180	30	1.10768	126.839	82.7462
181	30	1.13113	128.118	116.68
182	30	1.15035	129.442	151.191
183	30	1.17499	130.822	186.44
184	30	1.20036	132.263	222.451
185	30	1.22653	133.767	259.247
186	30	1.25357	135.339	296.854
187	30	1.28155	136.981	335.3
188	30	1.30469	138.683	374.441
189	30	1.33462	140.465	414.48
190	30	1.36581	142.33	455.454
191	31	1.39838	144.285	498.804
192	32	1.4325	146.338	544.644
193	36	1.46106	148.472	597.242
194	39	1.49852	150.718	655.684
195	40	1.5382	153.084	717.212
196	40	1.58047	155.582	780.431
197	40	1.62576	158.225	845.461
198	40	1.66456	160.996	912.043
199	47	1.71688	163.943	992.737
200	48	1.77438	167.092	1077.91
201	50	1.83843	170.471	1169.83
202	51	1.91103	174.124	1267.29
203	53	1.97737	178.034	1372.09
204	66	2.07485	182.339	1509.03
205	69	2.19728	187.167	1660.64
206	90	2.36561	192.763	1873.55
207	90	2.65209	199.796	2112.24

Data Set Standard Deviation = 12.3732
Numerator = 4.46155e+006
Denominator = 6.30114e+006
W Statistic = 0.708054 = 4.46155e+006 / 6.30114e+006

5% Critical value of 0.976 exceeds 0.708054
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.708054
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Zinc

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 207

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.262364	-2.652097.03356	-0.695813	
2	0.262364	-2.3656112.6297	-1.31647	
3	0.262364	-2.1972817.4578	-1.89295	
4	1.25276	-2.0748521.7627	-4.49225	
5	1.25276	-1.9773725.6727	-6.96942	
6	1.28093	-1.9110329.3248	-9.41733	
7	1.4816	-1.8384332.7046	-12.1411	
8	1.50408	-1.7743835.853	-14.8099	
9	1.58924	-1.7168838.8007	-17.5385	
10	1.60944	-1.6645641.5715	-20.2175	
11	1.64866	-1.6257644.2146	-22.8978	
12	1.72277	-1.5804746.7124	-25.6206	
13	1.79176	-1.5382 49.0785	-28.3767	
14	1.84055	-1.4985251.324	-31.1348	
15	1.8718	-1.4610653.4587	-33.8696	
16	1.88707	-1.4325 55.5108	-36.5728	
17	1.90211	-1.3983857.4663	-39.2327	
18	1.93152	-1.3658159.3317	-41.8708	
19	1.94591	-1.3346261.1129	-44.4678	
20	1.94591	-1.3046962.8151	-47.0066	
21	1.94591	-1.2815564.4575	-49.5004	
22	1.98787	-1.2535766.0289	-51.9923	
23	2.06686	-1.2265367.5333	-54.5274	
24	2.10413	-1.2003668.9741	-57.0531	
25	2.10413	-1.1749970.3547	-59.5255	
26	2.14007	-1.1503571.678	-61.9873	
27	2.30259	-1.1311372.9575	-64.5918	
28	2.30259	-1.1076874.1845	-67.1423	
29	2.30259	-1.0848275.3613	-69.6402	
30	2.3979	-1.0625276.4903	-72.188	
31	2.3979	-1.0407377.5734	-74.6836	
32	2.48491	-1.0236578.6212	-77.2273	
33	2.63906	-1.0027179.6267	-79.8735	
34	2.63906	-0.982202	80.5914	-82.4656
35	2.70805	-0.9621 81.517	-85.071	
36	2.70805	-0.942375	82.4051	-87.623
37	2.70805	-0.926859	83.2642	-90.133
38	2.70805	-0.907769	84.0882	-92.5913
39	2.77259	-0.889006	84.8785	-95.0561
40	2.77259	-0.8705585.6364	-97.4698	
41	2.83321	-0.852385	86.363	-99.8848
42	2.83321	-0.838054	87.0653	-102.259
43	2.89037	-0.820379	87.7383	-104.63
44	2.89037	-0.802956	88.3831	-106.951
45	2.89037	-0.785774	89.0005	-109.222
46	2.99573	-0.768821	89.5916	-111.526
47	2.99573	-0.755415	90.1622	-113.789
48	2.99573	-0.738846	90.7081	-116.002
49	2.99573	-0.722479	91.2301	-118.166

50	3.04452	-0.706302	91.729	-120.317
51	3.29584	-0.690309	92.2055	-122.592
52	3.29584	-0.6744992.6604	-124.815	
53	3.3673	-0.661955	93.0986	-127.044
54	3.4012	-0.646431	93.5165	-129.242
55	3.4012	-0.631062	93.9147	-131.389
56	3.4012	-0.615839	94.294	-133.483
57	3.4012	-0.6007694.6549	-135.527	
58	3.4012	-0.588793	95.0016	-137.529
59	3.4012	-0.573953	95.331	-139.481
60	3.4012	-0.559237	95.6437	-141.384
61	3.4012	-0.544642	95.9404	-143.236
62	3.4012	-0.530162	96.2214	-145.039
63	3.4012	-0.518658	96.4905	-146.803
64	3.4012	-0.504372	96.7448	-148.519
65	3.4012	-0.490189	96.9851	-150.186
66	3.4012	-0.476105	97.2118	-151.805
67	3.4012	-0.462114	97.4254	-153.377
68	3.4012	-0.450985	97.6287	-154.911
69	3.4012	-0.437153	97.8198	-156.398
70	3.4012	-0.423405	97.9991	-157.838
71	3.4012	-0.409735	98.167	-159.231
72	3.4012	-0.396142	98.3239	-160.579
73	3.4012	-0.385321	98.4724	-161.889
74	3.4012	-0.371856	98.6107	-163.154
75	3.4012	-0.358459	98.7392	-164.373
76	3.4012	-0.345126	98.8583	-165.547
77	3.4012	-0.331854	98.9684	-166.676
78	3.4012	-0.318639	99.0699	-167.76
79	3.4012	-0.308108	99.1649	-168.807
80	3.4012	-0.294992	99.2519	-169.811
81	3.4012	-0.281926	99.3314	-170.77
82	3.4012	-0.268908	99.4037	-171.684
83	3.4012	-0.255936	99.4692	-172.555
84	3.4012	-0.2455999.5295	-173.39	
85	3.4012	-0.232693	99.5836	-174.182
86	3.4012	-0.219834	99.632	-174.929
87	3.4012	-0.207012	99.6748	-175.633
88	3.4012	-0.194225	99.7126	-176.294
89	3.4012	-0.184017	99.7464	-176.92
90	3.4012	-0.171285	99.7758	-177.502
91	3.4012	-0.158579	99.8009	-178.042
92	3.4012	-0.1459 99.8222	-178.538	
93	3.4012	-0.133244	99.8399	-178.991
94	3.4012	-0.123135	99.8551	-179.41
95	3.4012	-0.110516	99.8673	-179.786
96	3.4012	-0.0979139	99.8769	-180.119
97	3.4012	-0.0853288	99.8842	-180.409
98	3.4012	-0.0727562	99.8895	-180.657
99	3.4012	-0.0627062	99.8934	-180.87
100	3.4012	-0.0501541	99.8959	-181.04
101	3.4012	-0.0376076	99.8973	-181.168
102	3.4012	-0.0250691	99.898	-181.254
103	3.4012	-0.0125328	99.8981	-181.296
104	3.4012	0 99.8981	-181.296	
105	3.4012	0.0125328	99.8983	-181.254
106	3.4012	0.0250691	99.8989	-181.168
107	3.4012	0.0376076	99.9003	-181.04
108	3.4012	0.0501541	99.9028	-180.87
109	3.4012	0.0627062	99.9068	-180.657
110	3.4012	0.0727562	99.9121	-180.409
111	3.4012	0.0853288	99.9193	-180.119

112	3.4012	0.0979139	99.9289	-179.786
113	3.4012	0.110516	99.9411	-179.41
114	3.4012	0.123135	99.9563	-178.991
115	3.4012	0.133244	99.9741	-178.538
116	3.4012	0.1459	99.9954	-178.042
117	3.4012	0.158579	100.02	-177.502
118	3.4012	0.171285	100.05	-176.92
119	3.4012	0.184017	100.084	-176.294
120	3.4012	0.194225	100.121	-175.633
121	3.4012	0.207012	100.164	-174.929
122	3.4012	0.219834	100.213	-174.182
123	3.4012	0.232693	100.267	-173.39
124	3.4012	0.24559	100.327	-172.555
125	3.4012	0.255936	100.393	-171.684
126	3.4012	0.268908	100.465	-170.77
127	3.4012	0.281926	100.544	-169.811
128	3.4012	0.294992	100.631	-168.807
129	3.4012	0.308108	100.726	-167.76
130	3.4012	0.318639	100.828	-166.676
131	3.4012	0.331854	100.938	-165.547
132	3.4012	0.345126	101.057	-164.373
133	3.4012	0.358459	101.186	-163.154
134	3.4012	0.371856	101.324	-161.889
135	3.4012	0.385321	101.472	-160.579
136	3.4012	0.396142	101.629	-159.231
137	3.4012	0.409735	101.797	-157.838
138	3.4012	0.423405	101.976	-156.398
139	3.4012	0.437153	102.168	-154.911
140	3.4012	0.450985	102.371	-153.377
141	3.4012	0.462114	102.584	-151.805
142	3.4012	0.476105	102.811	-150.186
143	3.4012	0.490189	103.051	-148.519
144	3.4012	0.504372	103.306	-146.803
145	3.4012	0.518658	103.575	-145.039
146	3.4012	0.530162	103.856	-143.236
147	3.4012	0.544642	104.153	-141.384
148	3.4012	0.559237	104.465	-139.481
149	3.4012	0.573953	104.795	-137.529
150	3.4012	0.588793	105.141	-135.527
151	3.4012	0.60076	105.502	-133.483
152	3.4012	0.615839	105.882	-131.389
153	3.4012	0.631062	106.28	-129.242
154	3.4012	0.646431	106.698	-127.044
155	3.4012	0.661955	107.136	-124.792
156	3.4012	0.67449	107.591	-122.498
157	3.4012	0.690309	108.067	-120.15
158	3.4012	0.706302	108.566	-117.748
159	3.4012	0.722479	109.088	-115.291
160	3.4012	0.738846	109.634	-112.778
161	3.4012	0.755415	110.205	-110.209
162	3.4012	0.768821	110.796	-107.594
163	3.4012	0.785774	111.413	-104.921
164	3.4012	0.802956	112.058	-102.19
165	3.4012	0.820379	112.731	-99.3998
166	3.4012	0.838054	113.433	-96.5494
167	3.4012	0.852385	114.16	-93.6503
168	3.4012	0.87055	114.918	-90.6894
169	3.4012	0.889006	115.708	-87.6657
170	3.4012	0.907769	116.532	-84.5782
171	3.4012	0.926859	117.391	-81.4258
172	3.4012	0.942375	118.279	-78.2206
173	3.4012	0.9621	119.205	-74.9483

174	3.4012	0.982202		120.17	-71.6076
175	3.4012	1.00271	121.175	-68.1972	
176	3.4012	1.02365	122.223	-64.7156	
177	3.4012	1.04073	123.306	-61.1758	
178	3.4012	1.06252	124.435	-57.562	
179	3.4012	1.08482	125.612	-53.8723	
180	3.4012	1.10768	126.839	-50.1049	
181	3.4012	1.13113	128.118	-46.2577	
182	3.4012	1.15035	129.442	-42.3451	
183	3.4012	1.17499	130.822	-38.3487	
184	3.4012	1.20036	132.263	-34.2661	
185	3.4012	1.22653	133.767	-30.0944	
186	3.4012	1.25357	135.339	-25.8308	
187	3.4012	1.28155	136.981	-21.472	
188	3.4012	1.30469	138.683	-17.0345	
189	3.4012	1.33462	140.465	-12.4951	
190	3.4012	1.36581	142.33	-7.84977	
191	3.43399	1.39838	144.285	-3.04777	
192	3.46574	1.4325	146.338	1.91692	
193	3.58352	1.46106	148.472	7.15264	
194	3.66356	1.49852	150.718	12.6425	
195	3.68888	1.5382	153.084	18.3168	
196	3.68888	1.58047	155.582	24.1469	
197	3.68888	1.62576	158.225	30.1442	
198	3.68888	1.66456	160.996	36.2845	
199	3.85015	1.71688	163.943	42.8948	
200	3.8712	1.77438	167.092	49.7638	
201	3.91202	1.83843	170.471	56.9557	
202	3.93183	1.91103	174.124	64.4696	
203	3.97029	1.97737	178.034	72.3203	
204	4.18965	2.07485	182.339	81.0132	
205	4.23411	2.19728	187.167	90.3167	
206	4.49981	2.36561	192.763	100.962	
207	4.49981	2.65209	199.796	112.895	

Data Set Standard Deviation = 0.680101
Numerator = 12745.4
Denominator = 19037.1
W Statistic = 0.669501 = 12745.4 / 19037.1

5% Critical value of 0.976 exceeds 0.669501
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.669501
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Zinc

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Kruskal Wallis Ranks

Background Wells

Well ID	Date	Result	Rank
LMW-4	1/16/1998	ND<3.4012	70
	3/16/1999	3.91202 J	201
	9/23/1999	ND<3.4012	70
	3/14/2000	ND<3.4012	70
	9/23/2003	ND<3.4012	70
	3/10/2004	ND<3.4012	70
	10/12/2004	ND<3.4012	70
	4/1/2005	ND<3.4012	70
	10/26/2005	ND<3.4012	70
	6/19/2006	ND<3.4012	70
	11/18/2006	2.3979 J	166
	6/2/2007	3.85015	199
	11/15/2007	ND<3.4012	70
	5/20/2008	2.70805 J	171
	11/20/2008	ND<3.4012	70
	6/11/2009	1.90211 J	153
	6/30/2010	1.93152 J	154

Rank Sum = 1814
Rank Mean = 106.706

Background Rank Sum = 1814
Background Rank Mean = 106.706

Compliance Wells

Well ID	Date	Result	Rank
LMW-3S	11/18/2006	2.30259 J	163
	6/2/2007	2.77259 J	175
	11/15/2007	3.8712 J	200
	5/20/2008	2.70805 J	172
	11/20/2008	ND<3.4012	70
	6/11/2009	2.89037 B	179
	6/30/2010	2.63906 Q	169

Rank Sum = 1128
Rank Mean = 161.143

LMW-10	3/14/2000	ND<3.4012	70
	9/23/2003	ND<3.4012	70
	3/10/2004	ND<3.4012	70
	10/12/2004	ND<3.4012	70
	4/1/2005	ND<3.4012	70
	10/26/2005	ND<3.4012	70
	6/19/2006	ND<3.4012	70
	11/18/2006	ND<3.4012	70
	6/2/2007	ND<3.4012	70
	11/15/2007	ND<3.4012	70

	5/20/2008	3.68888 J	195
	11/20/2008	ND<3.4012	70
	6/11/2009	ND<0.262364 U	70
	6/30/2010	1.28093 J	142

Rank Sum = 1177
Rank Mean = 84.0714

LMW-15R	11/18/2006	2.63906 J	170
	6/2/2007	ND<3.4012	70
	11/15/2007	ND<3.4012	70
	11/15/2007	ND<3.4012	70
	5/20/2008	ND<3.4012	70
	5/20/2008	3.66356 J	194
	11/20/2008	ND<3.4012	70
	11/20/2008	ND<3.4012	70
	6/11/2009	1.8718 J	151
	6/30/2010	1.88707 J	152

Rank Sum = 1087
Rank Mean = 108.7

LMW-3	11/19/1996	ND<3.4012	70
	3/24/1997	ND<3.4012	70
	1/16/1998	ND<3.4012	70
	3/16/1999	2.99573 J	182
	9/23/1999	ND<3.4012	70
	3/14/2000	ND<3.4012	70
	9/23/2003	ND<3.4012	70
	3/10/2004	ND<3.4012	70
	10/12/2004	ND<3.4012	70
	4/1/2005	ND<3.4012	70
	10/26/2005	ND<3.4012	70
	6/19/2006	ND<3.4012	70
	11/18/2006	1.79176 J	149
	6/2/2007	ND<3.4012	70
	11/15/2007	4.18965	204
	5/20/2008	2.48491 J	168
	11/20/2008	ND<3.4012	70
	6/11/2009	1.98787 J B	158
	6/30/2010	2.14007 J	162

Rank Sum = 1933
Rank Mean = 101.737

LMW-14R	6/2/2007	2.70805 J	173
	11/15/2007	ND<3.4012	70
	5/20/2008	2.89037 J	180
	11/20/2008	ND<3.4012	70
	6/11/2009	1.84055 J	150
	6/30/2010	1.58924 J	145

Rank Sum = 788
Rank Mean = 131.333

LMW-6	1/16/1998	ND<3.4012	70
	3/16/1999	3.4012 J	190
	9/23/1999	3.97029 J	203
	3/14/2000	ND<3.4012	70
	9/23/2003	ND<3.4012	70
	3/10/2004	ND<3.4012	70
	10/12/2004	ND<3.4012	70
	4/1/2005	ND<3.4012	70
	10/26/2005	ND<3.4012	70
	6/19/2006	2.99573 J	183
	11/18/2006	1.94591 J	155

	6/2/2007	2.83321 J	177
	11/15/2007	3.29584 J	187
	5/20/2008	2.30259 J	164
	11/20/2008	ND<3.4012	70
	6/11/2009	2.10413 J B	160
	6/30/2010	2.3979	167

Rank Sum = 2146
Rank Mean = 126.235

LMW-8	1/16/1998	ND<3.4012	70
	3/16/1999	4.49981	206
	9/23/1999	ND<3.4012	70
	3/14/2000	ND<3.4012	70
	9/23/2003	ND<3.4012	70
	3/10/2004	ND<3.4012	70
	10/12/2004	ND<3.4012	70
	4/1/2005	ND<3.4012	70
	10/26/2005	ND<3.4012	70
	6/19/2006	ND<3.4012	70
	11/18/2006	ND<3.4012	70
	6/2/2007	ND<3.4012	70
	11/15/2007	ND<3.4012	70
	5/20/2008	1.60944 J	146
	11/20/2008	ND<3.4012	70
	6/11/2009	2.10413 J	161
	6/30/2010	1.50408 J	144

Rank Sum = 1567
Rank Mean = 92.1765

LMW-9	1/16/1998	ND<3.4012	70
	3/16/1999	4.49981	207
	9/23/1999	ND<3.4012	70
	3/14/2000	ND<3.4012	70
	9/23/2003	ND<3.4012	70
	3/10/2004	ND<3.4012	70
	10/12/2004	ND<3.4012	70
	4/1/2005	ND<3.4012	70
	10/26/2005	ND<3.4012	70
	6/19/2006	2.99573 J	184
	11/18/2006	ND<3.4012	70
	6/2/2007	2.83321 J	178
	11/15/2007	ND<3.4012	70
	5/20/2008	1.94591 J	156
	11/20/2008	ND<3.4012	70
	6/11/2009	ND<0.262364 U	70
	6/30/2010	1.4816 J	143

Rank Sum = 1708
Rank Mean = 100.471

LMW-9D	11/18/2006	1.94591 J	157
	6/2/2007	ND<3.4012	70
	11/15/2007	ND<3.4012	70
	5/20/2008	2.89037 J	181
	11/20/2008	ND<3.4012	70
	6/11/2009	1.25276 J	140
	6/30/2010	1.72277 J	148

Rank Sum = 836
Rank Mean = 119.429

LMW-9S	11/18/2006	ND<3.4012	70
	6/2/2007	ND<3.4012	70
	11/15/2007	ND<3.4012	70

	5/20/2008	3.46574 J	192
	11/20/2008	ND<3.4012	70
	6/11/2009	1.64866 J	147
	6/30/2010	1.25276 J	141

Rank Sum = 760
Rank Mean = 108.571

LMW-16	11/18/2006	ND<3.4012	70
	6/2/2007	2.77259 J	176
	11/15/2007	4.23411	205
	5/20/2008	2.70805 J	174
	11/20/2008	ND<3.4012	70
	6/11/2009	ND<0.262364 U	70
	6/30/2010	2.06686 J	159

Rank Sum = 924
Rank Mean = 132

LMW-7	1/16/1998	ND<3.4012	70
	3/16/1999	2.99573 J	185
	9/23/1999	3.68888 J	196
	3/14/2000	ND<3.4012	70
	9/23/2003	ND<3.4012	70
	3/10/2004	ND<3.4012	70
	10/12/2004	ND<3.4012	70
	4/1/2005	3.29584 J	188
	10/26/2005	3.43399 J	191
	6/19/2006	3.68888 J	197
	11/18/2006	3.04452 J	186
	6/2/2007	3.93183	202
	11/15/2007	ND<3.4012	70
	5/20/2008	2.30259 J	165
	11/20/2008	ND<3.4012	70
	6/11/2009	3.3673 B	189

Rank Sum = 2189
Rank Mean = 136.813

LMW-11	3/14/2000	ND<3.4012	70
	9/23/2003	ND<3.4012	70
	3/10/2004	ND<3.4012	70
	10/12/2004	ND<3.4012	70
	4/1/2005	ND<3.4012	70
	10/26/2005	ND<3.4012	70
	6/19/2006	ND<3.4012	70
	6/2/2007	ND<3.4012	70
	11/15/2007	ND<3.4012	70
	5/20/2008	ND<3.4012	70
	11/20/2008	ND<3.4012	70

Rank Sum = 770
Rank Mean = 70

LMW-12	3/14/2000	ND<3.4012	70
	9/23/2003	ND<3.4012	70
	3/10/2004	ND<3.4012	70
	10/12/2004	ND<3.4012	70
	4/1/2005	ND<3.4012	70
	10/26/2005	ND<3.4012	70
	6/19/2006	ND<3.4012	70
	6/2/2007	ND<3.4012	70
	11/15/2007	ND<3.4012	70
	5/20/2008	ND<3.4012	70
	11/20/2008	ND<3.4012	70

Rank Sum = 770

Rank Mean = 70

MW-5	1/16/1998	ND<3.4012	70
	3/16/1999	3.68888 J	198
	9/23/1999	3.58352 J	193
	3/14/2000	ND<3.4012	70
	9/23/2003	ND<3.4012	70
	3/10/2004	ND<3.4012	70
	10/12/2004	ND<3.4012	70
	4/1/2005	ND<3.4012	70
	10/26/2005	ND<3.4012	70
	6/19/2006	ND<3.4012	70
	11/15/2007	ND<3.4012	70
	5/20/2008	ND<3.4012	70
	11/20/2008	ND<3.4012	70

Rank Sum = 1161
Rank Mean = 89.3077

LMW-13	3/14/2000	ND<3.4012	70
	9/23/2003	ND<3.4012	70
	3/10/2004	ND<3.4012	70
	10/12/2004	ND<3.4012	70
	4/1/2005	ND<3.4012	70
	10/26/2005	ND<3.4012	70
	6/19/2006	ND<3.4012	70
	6/2/2007	ND<3.4012	70
	11/15/2007	ND<3.4012	70
	5/20/2008	ND<3.4012	70
	11/20/2008	ND<3.4012	70

Rank Sum = 770
Rank Mean = 70

Calculation Results:

Kruskal-Wallis H Statistic = 30.6068
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 43.8981
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
30.6068 > 26.2962 indicating a significant group difference at 5% significance level
43.8981 > 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 106.706

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-3S	161.143	54.437	62.5795
LMW-10	84.0714	-22.6345	50.2912
LMW-15R	108.7	1.99412	55.5338
LMW-3	101.737	-4.96904	46.5211
LMW-14R	131.333	24.6275	66.1704
LMW-6	126.235	19.5294	47.7959
LMW-8	92.1765	-14.5294	47.7959
LMW-9	100.471	-6.23529	47.7959
LMW-9D	119.429	12.7227	62.5795
LMW-9S	108.571	1.86555	62.5795
LMW-16	132	25.2941	62.5795
LMW-7	136.813	30.1066	48.5369
LMW-11	70	-36.7059	53.921
LMW-12	70	-36.7059	53.921
MW-5	89.3077	-17.3982	51.341
LMW-13	70	-36.7059	53.921

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 106.706

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-3S	161.143	54.437	73.9159
LMW-10	84.0714	-22.6345	59.4016
LMW-15R	108.7	1.99412	65.5939
LMW-3	101.737	-4.96904	54.9485
LMW-14R	131.333	24.6275	78.1573
LMW-6	126.235	19.5294	56.4542
LMW-8	92.1765	-14.5294	56.4542
LMW-9	100.471	-6.23529	56.4542
LMW-9D	119.429	12.7227	73.9159
LMW-9S	108.571	1.86555	73.9159
LMW-16	132	25.2941	73.9159
LMW-7	136.813	30.1066	57.3295
LMW-11	70	-36.7059	63.6889
LMW-12	70	-36.7059	63.6889
MW-5	89.3077	-17.3982	60.6416
LMW-13	70	-36.7059	63.6889

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Zinc

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 67.1498%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 17
Maximum Background Concentration = 3.91202
Confidence Level = 68%
False Positive Rate = 32%

Location	Date	Samples	Mean	Significant
LMW-3S	6/30/2010	1	2.63906	FALSE
LMW-10	6/30/2010	1	1.28093	FALSE
LMW-15R	6/30/2010	1	1.88707	FALSE
LMW-3	6/30/2010	1	2.14007	FALSE
LMW-14R	6/30/2010	1	1.58924	FALSE
LMW-6	6/30/2010	1	2.3979	FALSE
LMW-8	6/30/2010	1	1.50408	FALSE
LMW-9	6/30/2010	1	1.4816	FALSE
LMW-9D	6/30/2010	1	1.72277	FALSE
LMW-9S	6/30/2010	1	1.25276	FALSE
LMW-16	6/30/2010	1	2.06686	FALSE
LMW-7	6/11/2009	1	3.3673	FALSE
LMW-11	11/20/2008	1	3.4012	FALSE
LMW-12	11/20/2008	1	3.4012	FALSE
MW-5	11/20/2008	1	3.4012	FALSE
LMW-13	11/20/2008	1	3.4012	FALSE