FINAL
NOVEMBER 2010 (N=21) GROUNDWATER AND METHANE MONITORING REPORT

FOR

THE LAMONT ROAD LCID (CLOSED) AND C&D LANDFILLS
NCDENR LANDFILL PERMIT #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

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LIST OF ACRONYMS

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

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1.0 INTRODUCTION

This is the Report for the November 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 November 2010. The monitoring is required by the North Carolina Department of Environmental and Natural Resources (NCDENR) Solid Waste Management Division. This was the twenty-first (N=21) 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.

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2.0 PROJECT HISTORY

2.1 Site Description and History

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

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

2.2 General Site Geology and Hydrology

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

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

2.3 Previous Investigation and Results

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

The previous sampling event, held in November of 2010 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, all 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 November 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).

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 3% Methane by volume, Methane monitoring well 13 was measured at 22.0 % Methane by volume.

Methane monitoring well 13 has registered above 5% Methane by volume for two consecutive sampling events. The USACE recommends that Ft. Bragg should, at a minimum, install a passive gas vent line in the area of monitoring well 13. The excessive landfill gas, seen at monitoring well 13, can sometimes lead to groundwater contamination issues.

CONCLUSIONS AND RECOMMENATIONS

The annual monitoring program consists of two sampling events conducted six months apart. This was the November 2010 sampling event for groundwater and methane monitoring performed by the USACE, Savannah District. It was the N=21 sampling event for the Lamont Road Landfills. Low levels of Appendix I VOCs and metals were detected, but all of the detections were at estimated levels and/or were below NC2L standards.

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 be volume of 22.0%. As stated above the USACE recommends that a passive gas vent line be installed in the vicinity of Methane monitoring well 13.

REFERENCES

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

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

FIGURES

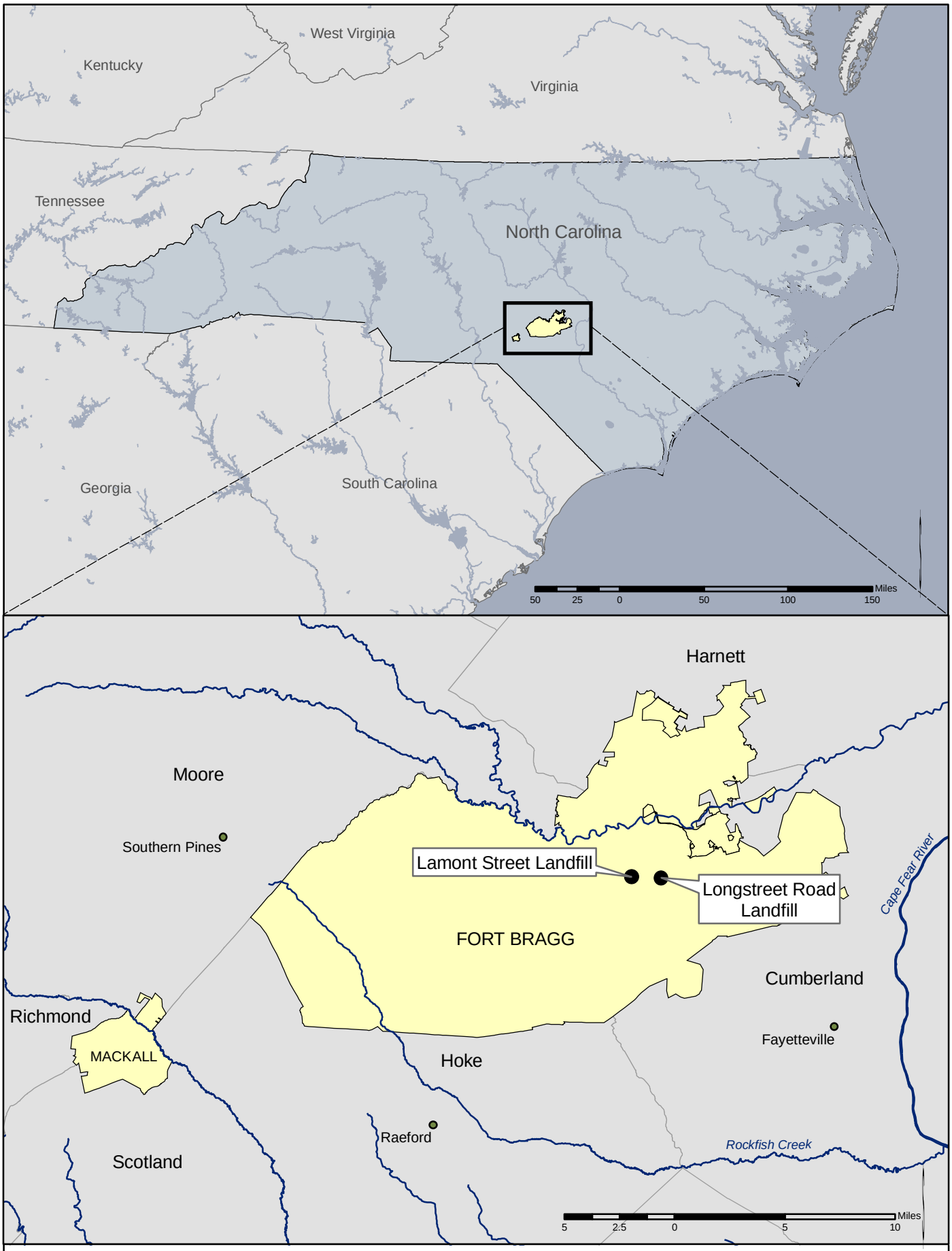

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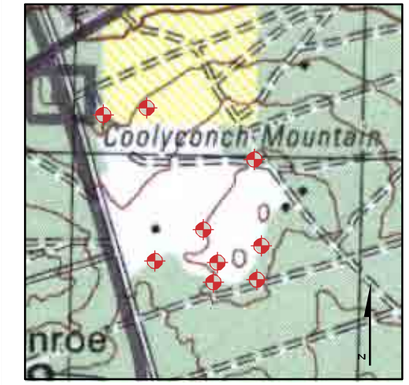
Figure 1

Site Map -- Ft. Bragg, NC



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

1 inch = 240 feet

0 112.5 225 450'

N

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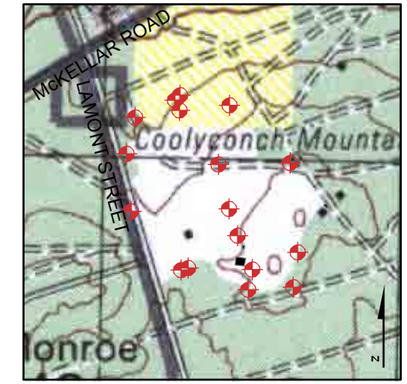
LOCATION MAP- LAMONT STREET LANDFILL

FT. BRAGG, NC

DATE: FEB 2011 | 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)

	% Methane	%Oxygen
Equipment Shed	0.0%	20.9%
Office	0.0%	20.9%
Trailer	0.0%	20.9%



METHANE SAMPLE
STREAM
BUILDING
ROAD
TRAIL

1 inch = 205 feet
0 100 200 400'
N

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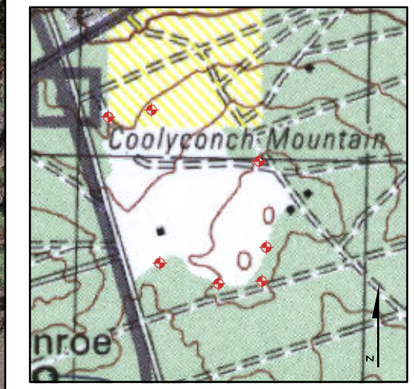
METHANE MONITORING RESULTS

LAMONT STREET LANDFILL
FT. BRAGG, NC

DATE: FEB 2011 | FIGURE 3



Groundwater Contour

Monitoring Well

Groundwater Direction

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

1 inch = 225 feet

0 110 220 440'

N

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LAMONT ST LANDFILL, FORT BRAGG, NC

POTENTIOMETRIC MAP

DATE: FEB 2011

FIGURE 4

LMW-8-11-10	
VOCs	(µg/L)
tetrachloroethene	0.19 J
trichloroethene	0.14 J
Appendix I Metals	(µg/L)
Arsenic	0.48 J
Barium	44
Cobalt	0.71
Chromium	0.16 J
Copper	0.75 J
Nickel	0.65 J
Selenium	0.66
Zinc	3.2
Nitrate/Nitrite	(µg/L)
NO3	610

LMW-9S-11-10	
Appendix II Inorganics	(µg/L)
Arsenic	1.2
Barium	53
Beryllium	0.071 J
Cobalt	0.26
Chromium	4.4
Copper	1.6
Lead	0.55
Nickel	0.44 J
Selenium	0.26 J
Vanadium	6.2
Zinc	3.6 J
Nitrate/Nitrite	(µg/L)
NO3	210 J

LMW-9D -11-10	
Appendix II Inorganics	(µg/L)
Arsenic	2
Barium	2.8
Cobalt	0.081 J
Chromium	0.58 J
Copper	0.53 J
Lead	0.44
Nickel	0.60 J
Thallium	0.13 J
Vanadium	2.3 J
Zinc	5.1 J
Nitrate/Nitrite	(µg/L)
NO3	97 J

LMW-9-11-10	
Appendix II Inorganics	(µg/L)
Arsenic	1.6
Barium	4
Beryllium	0.12 J
Cobalt	0.16 J
Chromium	2.1
Copper	1.7
Lead	0.57
Nickel	0.63 J
Vanadium	5
Zinc	4.5 J
Nitrate/Nitrite	(µg/L)
NO3	94 J

LMW-16-11-10	
Appendix II Inorganics	(µg/L)
Arsenic	0.54 J
Barium	10
Cobalt	0.078 J
Copper	0.46 J
Selenium	0.31 J
Zinc	5.4 J
Nitrate/Nitrite	(µg/L)
NO3	72 J

LMW-10-11-10	
VOCs	(µg/L)
Chloroform	0.20 J
Tetrachloroethene	0.27 J
Trichloroethene	.97 J
trichlorofluoromethane	7.3
Appendix II Inorganics	(µg/L)
Barium	14
Cobalt	0.16 J
Chromium	0.30 J
Copper	0.39 J
Zinc	5.3 J
Nitrate/Nitrite	(µg/L)
NO3	520

LMW-15R-11-10	
Appendix II Inorganics	(µg/L)
Barium	30
Beryllium	0.13 J
Cobalt	0.58
Chromium	0.24 J
Copper	2.3
Lead	0.16 J
Nickel	0.98 J
Zinc	8.3 J
Nitrate/Nitrite	(µg/L)
NO3	1,600

LMW-4 -11-10	
VOCs	(µg/L)
Dichlorodifluoromethane	0.81 J
Trichlorofluoromethane	1.7
Appendix II Inorganics	(µg/L)
Barium	14
Cobalt	0.29 J
Chromium	1
Copper	0.87 J
Lead	0.16 J
Nickel	1.1
Zinc	7.3

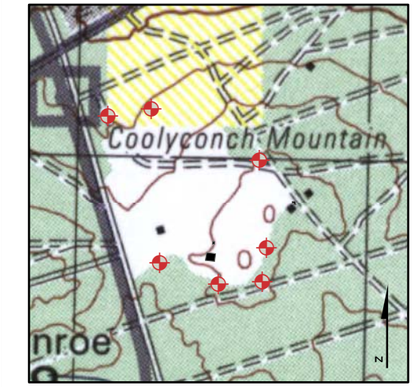
LMW-14R-11-10	
Appendix II Inorganics	(µg/L)
Barium	12
Cobalt	0.21
Chromium	0.60 J
Copper	0.96 J
Lead	0.11 J
Nickel	1.9
Zinc	4.5 J
Nitrate/Nitrite	(µg/L)
NO3	72 J

LMW-6 -11-10	
VOCs	(µg/L)
Tetrachloroehtene	0.22 J
Trichlorofluoromethane	0.48 J
Appendix II Inorganics	(µg/L)
Arsenic	0.52 J
Barium	79
Beryllium	0.16 J
Cobalt	1.1
Chromium	0.24 J
Copper	2.2
Lead	0.17 J
Nickel	1.9
Selenium	6
Thallium	0.18 J
Zinc	8.6 J
Nitrate/Nitrite	(µg/L)
NO3	1,400

LMW-3S -11-10	
VOCs	(µg/L)
Dichlorodifluoromethane	2.3
Trichlorofluoromethane	1.1
Appendix II Inorganics	(µg/L)
Arsenic	1
Barium	16
Beryllium	0.12 J
Cobalt	0.53
Chromium	4.1
Copper	1.7
Lead	1.7
Nickel	3.1
Tin	0.67 J
Vanadium	4.6 J
Zinc	11
Nitrate/Nitrite	(µg/L)
NO3	190 J

LMW-3-11-10	
VOCs	(µg/L)
Chloroform	0.42 J
Trichlorofluoromethane	0.52 J
Appendix II Inorganics	(µg/L)
Arsenic	0.44 J
Barium	13
Cobalt	0.51
Chromium	0.94 J
Copper	1.6
Lead	0.51
Nickel	3
Vanadium	1.8 J
Zinc	11
Nitrate/Nitrite	(µg/L)
NO3	190 J

LMW-7-11-10	
VOCs	(µg/L)
Acetone	7.5 J
Appendix II Inorganics	(µg/L)
Barium	5.2
Cadmium	0.6
Cobalt	0.19 J
Chromium	0.25 J
Copper	3.8
Lead	0.86
Nickel	1.7
Zinc	9.5 J
Nitrate/Nitrite	(µg/L)
NO3	560 J



MONITORING WELL

Building

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 = 468 feet

0 225 450 900'

N

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LAMONT ST LANDFILL, FORT BRAGG, NC

GROUNDWATER
ANALYTICAL RESULTS

DATE: FEB 2011 | 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	20–NOV-2010	14:50	0.0 %	16.3%	3.5%
Gas-MW-2	20–NOV-2010	14:43	0.0 %	18.7%	1.9%
Gas-MW-3	20–NOV-2010	14:30	0.0%	16.2%	3.2%
Gas-MW-4	20–NOV-2010	13:27	0.0%	20.0%	0.8%
Gas-MW-5	20–NOV-2010	13:30	0.0 %	17.2%	1.7%
Gas-MW-6	20–NOV-2010	13:35	0.0%	17.5%	2.7%
Gas-MW-7	20–NOV-2010	13:40	0.0%	15.6%	2.5%
Gas-MW-8	20–NOV-2010	13:53	0.0%	17.8%	1.8%
Gas-MW-9	20–NOV-2010	18:11	1.3%	2.6%	20.3%
Gas-MW-10	20–NOV-2010	14:12	2.3%	2.4%	20.3%
Gas-MW-11	20–NOV-2010	15:00	0.0%	19.5%	1.2%
Gas-MW-12	20–NOV-2010	14:56	0.0%	12.8%	4.4%
Gas-MW-13	20–NOV-2010	14:53	22.0%	2.7%	21.7%
Equipment Shed	20–NOV-2010	14:37	0.0%	20.9%	0.0%
Office	20–NOV-2010	14:40	0.0%	20.9%	0.0%
Trailer	20–NOV-2010	14:44	0.0%	20.9%	0.0%

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

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

Well ID	TOC Elev. (ft. amsl)	Water Level (ft. btoc) 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	Water Level (ft. btoc) 11/10	Water Level (ft. btoc) 11/10
LMW-3	408.32	101.3	307.02	102.18	306.14	103.2	305.12	102.21	306.11	87.27	321.05	102.13	306.19	102.79	305.56
LMW-3s	*	58.1	NA	59.19	NA	60.4	NA	59.12	NA	59.61	NA	58.91	NA	59.64	NA
LMW-4	441.79	74.71	367.08	75.42	366.37	74.65	367.14	74.74	367.05	75.39	366.4	74.83	366.96	75.33	366.46
LMW-6	431.45	79.12	352.33	80.3	351.15	81.65	349.8	80.15	351.3	80.75	350.7	80.04	351.41	80.93	350.52
LMW-7	436.62	125.42	311.2	125.87	310.75	125.63	310.99	124.78	311.84	128.8	307.82	124.54	312.08	124.78	311.84
LMW-8	354.07	45.48	308.59	48.68	305.39	76.66	277.41	46.85	307.22	304.86	49.21	46.86	307.21	48.95	305.12
LMW-9	364.79	84.71	280.08	82.16	282.63	80	284.79	80.71	284.08	87.27	277.52	80.73	284.06	82.43	282.36
LMW-9s	*	49.46	NA	52.46	NA	49.01	NA	51.01	NA	53.35	NA	51	NA	52.89	NA
LMW-9d	*	74.51	NA	76.95	NA	76.66	NA	75.41	NA	77.03	NA	75.48	NA	77.29	NA
LMW-10	428.68	75.13	353.55	76.81	351.87	76.48	352.2	76.38	352.3	72.11	356.57	NA	NA	76.89	NA
LMW-14R	*	48.82	NA	50.07	NA	49	NA	48.97	NA	50.06	NA	48.99	NA	50.25	NA
LMW-15R	*	37.85	NA	40.89	NA	37	NA	37.55	NA	40.31	NA	38.19	NA	40.28	NA
LMW-16	*	37.2	NA	86.02	NA	36.48	NA	37.5	NA	37.28	NA	36.61	NA	36	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-3-11-10	5.01	0.015	17.3	1.09	3.93	311.7
LMW-3s	GW-LMW-3s-11-10	4.90	0.023	18.6	159	3.06	281
LMW-4	GW-LMW-4-11-10	4.75	0.025	23.7	8.25	4.52	314.9
LMW-6	GW-LMW-6-11-10	4.55	0.276	17.7	4.36	0.52	342.9
LMW-7	GW-LMW-7-11-10	6.39	0.018	19.5	36.7	8.10	195.7
LMW-8	GW-LMW-8-11-10	5.61	0.190	17.7	7.70	5.70	45.2
LMW-9	GW-LMW-9-11-10	3.89	0.011	18.94	96.8	6.86	214.9
LMW-9s	GW-LMW-9s-11-10	4.33	0.160	18.7	9.6	0.53	144.4
LMW-9d	GW-LMW-9d-11-10	6.15	0.20	18.3	28.3	7.31	105
LMW-10	GW-LMW-10-11-10	4.99	0.021	19.1	9.5	6.54	149.0
LMW-14R	GW-LMW-14R-11-10	4.88	0.012	17.1	8.21	7.07	324
LMW-15R	GW-LMW-15R-11-10	4.59	0.038	18.9	9.39	6.22	338.4
LMW-16	GW-LMW-16-11-10	5.77	0.233	17.4	5.48	0.85	104.4

Note:

N.T.U. --- Nephelometric Turbidity Unit

ORP --- Oxidation Reduction Potential

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)	LMW-3 04/05	LMW-3 10/05	LMW-3 06/06	LMW-3 11/06	GW-LMW-3 06/07	GW-LMW-3 11/07	GW-LMW-3 05/08	GW-LMW-3 11/08	LMW-3 06/09	LMW-3 11/09	LMW-3 06/10	LMW-3 11/10	LMW-4 04/05	LMW-4 10/05	LMW-4 10/05 Dup	LMW-4 06/06	LMW-4 11/06	GW-LMW-4 06/07	GW-LMW-4 11/07	GW-LMW-4 05/08	GW-LMW-4 11/08	LMW-4 06/09	LMW-4 11/09	LMW-4 06/10	LMW-4 11/10	LMW-6 04/05	LMW-6 10/05	LMW-6 6/06	LMW-6 11/06	LMW-6 Dup 11/06	GW-LMW-6 06/07	GW-LMW-6 Dup 06/07	GW-LMW-6 11/07	GW-LMW-6 05/08	GW-LMW-6 11/08	GW-LMW-6 06/09	GW-LMW-6 11/09	LMW-6 06/10	LMW-6 11/10	LMW-7 04/05	LMW-7 10/05	LMW-7 6/06	LMW-7 6/06 Dup	LMW-7 11/06	GW-LMW-7 06/07	GW-LMW-7 11/07	GW-LMW-7 05/08	GW-LMW-7 11/08	GW-LMW-7 06/09	GW-LMW-7 11/09	LMW-7 06/10	LMW-7 11/10	LMW-8 04/05
			Lamont																																																							
VOCs (EPA 8260B)																																																									
1,1,2,2-tetrachloroethane	0.17	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
1,1-dichloroethane	700	810*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
1,2,3-trichloropropane	0.005	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
1,2,4-trimethylbenzene	350	15 *	<2	<2	<2	<2	<2	<2	<3	0.24 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.21 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
1,2-dibromo-3-chloropropane	0.025	0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
1,2-dibromoethane	0.0004	0.05	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
1,2-dichloroethane	0.38	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
1,2-dichloropropane	0.56	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
1,4-dichlorobenzene	75	75	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
2-butanone	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
acetone	700	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NA	<2	<2	<2	<2	<2	<2	<2	4.69 J	<2	<2	<2	<2	<2	<2	<2	NA	<2	<2	<2	<2	<2	<2	<2	282	4.22 J	<2	NS	NS	7.5 J	NA
acrolein	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
benzene	1	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
carbon disulfide	700	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
chlorobenzene	50	100	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
chloroethane	2800	4.6*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
chloroform	70	80	<2	<2	<2	<2	<2	<2	0.27 J	0.27 J	0.33 J	0.5 J	0.31 J	0.42 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
chloromethane (methyl chloride)	2.6	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.5 J	<2	NS	NS	<2	<2
cis-1,2-dichloroethene	70	70	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
dibromochloromethane	0.41	80	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
dichlorodifluoromethane	1400	390*	<2	<2	<2	<2	<2	<2	0.45 J	0.43 J	<2	0.41 J	<2	<2	<2	<2	<2	0.57J	0.92J	<2	<2	0.71 J	0.95 J	<2	1.1	<2	0.81 J	<2	<2	0.93J	2.67	2.80	<2	<2	<2	0.83 J	0.82 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.71 J	<2	<2	<2	NS	NS	<2	<2
diisopropyl ether	70	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
isopropylbenzene	70	660*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
m&p xylene	530#	10000#	<2	<2	<2	<2	<2	<2	<2	0.44 J	<2	<2	<2	<2	<2	0.25J	<2	<2	0.23J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.230J	<2	<2	<2	<2	NS	NS	<2	<2
methylene chloride (dichloromethane)	4.6	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
MTBE	200	13*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
o-xylene	530#	10000#	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
sec-butylbenzene	70	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
tetrachloroethene	0.7	5	<2	<2	<2	<2	<2	.025 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
toluene	1000	1000	<2	<2	<2	<2	<2	<2	<2	0.3 J	<2	<2	<2	<2	0.33 J	<2	<2	<2	0.47J	<2	<2	<2	0.25 J	< 2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.30 J	<2	<2	<2	<2	<2	1.07 J	<2	<2	<2	0.850J	<2	<2	<2	<2	0.5 J	NS	NS	<2	<2
trans-1,2-dichloroethene	70	100	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
trichloroethene	2.8	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
trichlorofluoromethane	2100	1300*	0.25 J	0.34J	0.52J	<2	<2	<2	0.74 J	0.63 J	0.84 J	0.68 J	0.58 J	0.52 J	2.37	0.68J	0.47J	2.53	2.37	<2	<2	3.79	2.66	0.82 J	2.4	2	1.7	0.63 J	1.54J	1.13J	<2	0.860J	<2	<2	<2	1.22 J	0.72 J	0.95 J	1.1	0.72 J	0.48 J	<2	<2	<2	<2	<2	2.5	4.79	<2	<2	<2	NS	NS	<2	<2
Total Xylenes	530	0.01	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.32 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
vinyl chloride	0.015	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<2	<2
Appendix 1 Metals (EPA 6010B/6020A)																																																								
Arsenic	10	10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.44 J	<2	<2	<2	<2	<2	1.13 J	<2	<2	<2	0.51 J	<2	<2	<2	<2	<2	<2	<2	<2	1.1 J	<2	<2	<2	<2	<2	<2	0.46 J	0.52 J	<2	<2	<2	<2	<2	1.05 J	<2	<2	**10.8**	<2	NS	NS	<2	<2
Barium	2000	2000	<10	7.2J	5.0J	7.4	5.33	<10	5.47	5.8	<10	6.4	5	13	14.2	12.5	11.8	10	13.6	24.7	1.14J	11.20	14.7	15	13	15	14	9.5 J	12.3	20	33.9	33.7	52.4	46.4	42	49.2	73.7	92	74	77	79	31.7	30	20	10	11.6	27.4	6.28	5.48 J	7	12	NS	NS	5.2	48.5
Beryllium	NA	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.071 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15 J	0.15 J	0.13 J	0.16 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15 J	NS	NS	NA	NA
Cadmium	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.701J	0.57J	<1	<1	<1	<1	<1	<1	1.2	NS	NS	0.6	<1
Cobalt	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	0.16 J	0.16 J	0.17 J	0.51	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.24	0.24	0.27	0.29 J	<2	<2	<2	0.734J	0.733J	<2	<2	<2	0.93 J	<2	1.4	1.2	1.2	1.1	<2	<2	<2	<2	1.03	<2	<2	<2	<4	0.63	NS	NS	0.19 J	<2
Chromium	50	100	<20	<20	<20	<20	<20	<20	<20	<20	< 20	1.1 B	0.76 J	0.94 J	10.8 J	<20	<20	<20	<20	21.7	<20	<20	<20	0.84 J	1 B	0.72 J	1	<20	<20	<20	<20	<20	4.74 J	3.75 J	<20	7.82	<20	< 20	<20	0.57 J	0.24 J	19.0 J	23.2	<20	<20	5.28	24.7	<20	7.18	<10	5.8	NS	NS	0.25 J	<20
Copper	1000	1000	<20	<20	<20	<20	<20	<20	<20	<20	< 20	1.1	<20	1.6	<20	<20	<20	<20	<20	8.06 J	5.45 J	8.80	<20	< 20	0.78 J	1.3	0.87 J	<20	<20	<20	<20	<20	7.78 J	<20	<20	2.70 J	<20	< 20	1.2	3	2.2	10.8 J	11.1	10J	<20	6.64	6.05 J	7.53 J	<20	<20	4	NS	NS	3.8	<20
Iron	300	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	53	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	130	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	52	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	<1	<1
Lead	15	15	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.37	0.17 J	0.51	<1	<1	0.534J	<1	0.644J	3.52	<1	0.644J	<1	0.13 J	0.3 J	0.19 J	0.16 J	<1	<1	<1	<1	<1	0.839 J	0.873 J	<1	<1	<1	0.084 J	<1	0.14 J	0.17 J	3.11	3.07	3.37	2.31	1.81	3.51	<1	<1	0.533 J	0.88	NS	NS	0.86	<1
Manganese	50	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.1 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.6	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	<1	<1
Nickel	100	730*	<50	<50	<50	<50	<50	<50	1.12 J	<50	<50	1.1	1.3 J	3	<50	<50	<50	<50	1.6J	6.98	3.46	5.38	<50	< 50	1.2	0.76 J	1.1	<50	<50	<50	1.13J	1.12J	5.53 J	<50	<50	2.06	<50	2.2	1.8 J	1.9	1.9	18.9 J	<50	<50	<50	4.23	7.73	4.71 J	2.42	3 J	5.5	NS	NS	1.7	<50
Selenium	50	50	<2	<2	<2	<2	<2	<2	<2	<2	0.54 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.8J	2.12	2.83	2.91	2.93	2.46	4.3	2.99 J	<2	3.2	2.6	3.2	6	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	NS	NS	<2	3.28
Silver	17.5	180	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	NS	<10	<10
Thallium	NA	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.18 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	<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	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	NS	<10	<10
Vanadium	NA	260*	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	1.8 J	<20	<20	<20	<20	<20	15.8	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	3.7 J	4.21	<20	<20	<20	<20	<20	<20	<20	12.6 J	18.5J	8.0J	<20	3.56J	14.8	<20	<20	<8	2.9 J	NS	NS	<20	<20
Zinc	2100	5000	<60	<60	<60	6.46J	<60	<60	12	<60	<60	32 B	8.5 J	11	<60	<60	<60	<60	11.1	47.0	<60	15.30	<60	6.7 J	16 B	6.9 J	7.3	<60	<60	20J	7.63J	7.85J	17.3 J	15.2 J	27 J	10.1	<60	<60	41	11	8.6 J	27.5 J	31.4J	40J	20J	21.6	51.0	<60	10.9	<50	<60	NS	NS	9.5 J	<60
Other Analyses																																																								
Nitrate/Nitrite as N (SM 4500)	10,000	10,000	NA	<40	NA	0.333	209	139	510	5220	N/A	870 J	780 J	190 J	NA	<40	<40	NA	0.050	**643,000**	107	370	44	N/A	40	840 J	<40	NA	<40	NA	1.15	1.14	1,220	1,290	950	1410	908	NA	5000	8,800	1,400	NA	<40	NA	NA	0.119	295	528	130	113	NA	NS	NS	560 J	NA

Note: NA – Not Available; NS – Not Sampled; U – Target analytes were not detected above the reporting limits; J – Analyte was present but concentration is an estimated value.
Data not recieved from laboratory

Bold–Concentration exceeds NC 2L Std. * No MCL, used PRG. #Used total values. **Used values for Chlordane. <> –

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-9D 11/09	LMW-9D 06/10	LMW-9D 11/10	LMW-9S 11/06	GW-LMW-9S 06/07	GW-LMW-9S 11/07	GW-LMW-9S 05/08	GW-LMW-9S 11/08	LMW-9S 06/09	LMW-9S 11/09	LMW-9S 06/10	LMW-9S 11/10	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	LMW-16 11/10	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	LMW-14R 11/10	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	LMW-15R 11/10
VOCs (EPA 8260B)																																									
1,1,2,2-tetrachloroethane	0.17	NA	<2	<2	<2	<2	<2	**0.66 J**	<2	<2	<2	<2	<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
1,1-dichloroethane	700	810*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<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	**0.76 J**	<2	<2	<2	<2	<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
1,2,4-trimethylbenzene	350	15 *	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<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	0.3 J	<2	<2	<2
1,2-dibromo-3-chloropropane	0.025	0.2	<2	<2	<2	<2	<2	**0.82 J**	<2	<2	<2	<2	<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
1,2-dibromoethane	0.0004	0.05	<2	<2	<2	<2	<2	**0.43 J**	<2	<2	<2	<2	<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
1,2-dichloroethane	0.38	5	<2	<2	<2	<2	<2	**0.24 J**	<2	<2	<2	<2	<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
1,2-dichloropropane	0.56	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,4-dichlorobenzene	75	75	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-butanone	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<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	<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
acrolein	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
benzene	1	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
carbon disulfide	700	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chlorobenzene	50	100	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloroethane	2800	4.6*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloroform	70	80	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloromethane (methyl chloride)	2.6	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.8	<2	<2
cis-1,2-dichloroethene	70	70	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
dibromochloromethane	0.41	80	<2	<2	<2	<2	<2	0.20 J	<2	<2	<2	<2	<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
dichlorodifluoromethane	1400	390*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<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
diisopropyl ether	70	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
isopropylbenzene	70	660*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
m&p xylene	530#	10000#	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<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
methylene chloride (dichloromethane)	4.6	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MTBE	200	13*	<2	<2	<2	<2	<2	0.33 J	<2	<2	<2	<2	<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
o-xylene	530#	10000#	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.24 J	<2	<2	<2
sec-butylbenzene	70	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<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	<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
toluene	1000	1000	<2	<2	<2	<2	<2	<2	<2	0.20 J	<2	<2	<2	<2	<2	0.240J	<2	<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
trans-1,2-dichloroethene	70	100	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
trichloroethene	2.8	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
trichlorofluoromethane	2100	1300*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<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	<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
vinyl chloride	0.015	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Appendix I Metals (EPA 6010B/6020A)																																									
Arsenic	10	10	2	1.8	2	<2	1.68 J	4.54	<2	<2	2.1	0.47 J	0.57 J	1.2	<2	<2	2.13	<2	<2	9.27	0.56 J	0.59 J	0.5 J	0.54 J	<2	11	1.11 J	<2	<2	9.08	0.41 J	<2	<2	<2	NS	<2	<2	<2	**12.7**	2.5	<2	<2	<2
Barium	2000	2000	2.9	2.1	2.8	77.3	80.9	2	75.3	61	3.1	48	38	53	37.4	23.1	41.3	35	22.9	23	14	13	8.8	10	29	4 J	14.6	12	9.72	133	13	12	13	12	NS	38.5	27	24.3	37.6	42	14	36	30
Beryllium	NA	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.071 J	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	0.13 J
Cadmium	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.002 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt	NA	NA	<2	<2	0.081 J	1.27	1.04 J	<2	1.13	<4	<4	0.25	0.16 J	0.26	<2	<2	<2	<2	<2	<4	<4	0.08 J	0.098 J	0.078 J	<2	<4	<2	<2	0.51 J	<4	0.24	0.3	0.17 J	0.21	NS	<2	<2	0.65 J	<4	0.83	0.26	0.7	0.58
Chromium	50	100	1.1	0.5 J	0.58 J	<20	5.73	<20	<20	<10	<10	0.44 J	0.58 J	4.4	<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	0.60 J	NS	<20	<20	<20	<10	5.5	0.16 J	0.51 J	0.24 J
Copper	1000	1000	0.75 J	0.9 J	0.53 J	<20	<20	7	<20	<20	0.69 J	1.7	1.7	1.6	3.66J	<20	7.37 J	6	<20	5 J	0.36 J	0.59 J	<20	0.46 J	6	<20	<20	<20	<20	<20	0.81 J	0.92 J	<20	0.96 J	NS	5.33 J	5 J	<20	5.2 J	3.7	0.57 J	<20	2.3
Iron	300	NA	<1	150	<1	<1	<1	<1	<1	<1	<1	<1	360	<1	<1	<1	<1	<1	<1	<1	<1	<1	150	<1	<1	<1	<1	<1	<1	<1	<1	<1	43 J	<1	<1	<1	<1	<1	<1	<1	110	<1
Lead	15	15	0.31	0.23 J	0.44	<1	2.16	1.19	<1	0.761	0.71	0.21 J	0.11 J	0.55	0.559J	0.643J	5.28	2.62	<1	<1	<1	0.099 J	0.26 J	<1	4.21	<1	4.42	<1	<1	<1	0.22 J	0.14 J	0.10 J	0.11 J	NS	<1	<1	<1	1.08	0.89	<1	0.08 J	0.16 J
Manganese	50	NA	<1	1.5 J	<1	<1	<1	<1	<1	<1	<1	<1	13	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.1 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.3J	<1	<1	<1	<1	<1	<1	<1	<1	1.6 J	<1
Nickel	100	730*	0.69	0.53 J	0.60 J	1.15J	<50	<50	1.51 J	<6	0.55 J	0.97 J	<50	0.44 J	1.80J	1.03J	<50	<50	<50	<6	0.72	0.66	0.97 J	<50	<50	<6	<50	<50	2.39	3.2 J	2.2	1.6 J	0.84 J	1.9	NS	<50	<50	1.12 J	<6	3	0.8 J	1	0.98 J
Selenium	50	50	<2	<2	<2	4.56	4.53	<2	<2	<4	<4	<2	<2	0.26 J	<2	<2	<2	2.20 J	<2	<4	<4	<2	<2	0.31 J	2.50 J	<4	<2	<2	<2	<4	<4	<2	<2	<2	NS	<2	<2	<2	<4	0.24 J	<2	<2	<2
Silver	17.5	180	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10
Thallium	NA	2	<2	<2	0.13 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.17 J	<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	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10
Vanadium	NA	260*	2.3 J	1.8 J	2.3 J	<20	5.99	<20	<20	<8	2.5 J	<20	<20	6.2	<20	<20	41.9	69	<20	<8	<8	<20	<20	<20	26	<8	2.30 J	<20	<20	<8	<8	<20	<20	<20	NS	<20	<20	<20	<8	7.5	<20	<20	<20
Zinc	2100	5000	25	5.6	5.1 J	<60	<60	<60	32.2	<50	3.5 J	15 B	3.5 J	3.6 J	14.0	<60	16.5 J	<60	15.8	<50	<50	9.3 J	7.9 J	5.4 J	<60	<50	15.4 J	<60	18.2	<50	6.3 J	26 B	4.9 J	4.5 J	NS	<60	<60	39.3	<50	6.5 J	9.1 J	6.6 J	8.3 J
Other Analyses																																									
Nitrate/Nitrite as N (SM 4500)	10,000	10,000	430 J	580 J	97 J	0.19	1,000	147	<40	132	NA	770 J	600 J	210 J	4.78	0.0520	166	1020	380	33 J	NA	<40	< 40	72	1010	< 40	326	143	370	960	NA	<40	<40	72	2260	1,400	1620	<40	1460	NA	7,300 H	**21000**	1600

APPENDICES

APPENDIX A

GROUNDWATER SAMPLING LOGS

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

1. CLIENT:Ft. Bragg, NC
DATE: 11/21/2010 TIME: 1400
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,warm

Location: Lamont Landfill	**Sample ID:LMW-3s-11-10**

PRESERVATIVE: HNO3,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): 69.40 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 59.64 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 1.6 (gallons)
Flow Rate : 500 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 75 (minutes) Purge time: 1245
Amount Purged= 9.9 (gallons) Pump depth:

4. **FIELD PARAMETERS**

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

Time	1300	1315	1330	1340	1355	
pH	5.01	5.00	4.94	4.94	4.90	
Sp. Cond	0.023	0.024	0.023	0.023	0.023	
Temp. °C	17.5	18.6	19.1	18.9	18.6	
Turbidity	131	202	190	207	159	
DO	1.96	2.14	3.07	3.23	3.06	
ORP	289.5	291.4	270.5	273.3	281.0	
Water Level						

5. Field parameters stable turbidity > 10 NTU. More the 5x volume purged.

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

1. CLIENT:Ft. Bragg, NC
DATE: 11/21/2010 TIME: 1240
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,warm

Location: Lamont Landfill	**Sample ID:LMW-3-11-10**

PRESERVATIVE: HNO3,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): 125.00 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 102.76 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 3.7 (gallons)
Flow Rate : 250 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 40 (minutes) Purge time: 1200
Amount Purged= 2.6 (gallons) Pump depth:

4. **FIELD PARAMETERS**

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

Time	1215	1225	1235			
pH	4.87	4.94	5.01			
Sp. Cond	0.015	0.015	0.015			
Temp. °C	17.7	17.7	17.7			
Turbidity	1.41	1.23	1.09			
DO	4.46	4.10	3.93			
ORP	324.4	319.2	311.7			
Water Level						

5.

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

1. CLIENT:Ft. Bragg, NC
DATE: 11/21/2010 TIME: 0940
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,warm

Location: Lamont Landfill	**Sample ID:LMW-15R-11-10**

PRESERVATIVE: HNO3,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: XYES ☐ NO

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

3. **WELL EVACUATION DATA**
Well Depth (wd): 46.20 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 40.28 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 1.0 (gallons)
Flow Rate : 250 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 45 (minutes) Purge time: 855
Amount Purged= 3.0 (gallons) Pump depth:

4. **FIELD PARAMETERS**

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

Time	0910	0920	0925	0930	0935	
pH	4.41	4.54	4.56	4.57	4.59	
Sp. Cond	0.038	0.038	0.039	0.038	0.038	
Temp. °C	18.6	18.6	18.8	18.8	18.9	
Turbidity	190	45.7	22.2	14.6	9.39	
DO	6.26	6.28	6.16	6.14	6.22	
ORP	340.1	341.6	345.1	344.2	338.4	
Water Level						

5. LMW-DUP2-11-10 @ 1200

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

1. CLIENT:Ft. Bragg, NC
DATE: 11/21/2010 TIME: 1035
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,warm

Location: Lamont Landfill	**Sample ID:LMW-14R-11-10**

PRESERVATIVE: HNO3,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): 56.80 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 50.25 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 1.1 (gallons)
Flow Rate : 250 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 35 (minutes) Purge time: 1000
Amount Purged= 2.3 (gallons) Pump depth:

4. **FIELD PARAMETERS**

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

Time	1010	1020	1030			
pH	4.78	4.84	4.88			
Sp. Cond	0.012	0.012	0.012			
Temp. °C	17.0	17.0	17.1			
Turbidity	45.4	241.4	8.21			
DO	7.10	6.80	7.07			
ORP	316.8	319.0	324.0			
Water Level						

5. MS/MSD taken

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

1. CLIENT:Ft. Bragg, NC
DATE: 11/22/2010 TIME: 1155
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,warm

Location: Lamont Landfill	**Sample ID:LMW-7-11-10**

PRESERVATIVE: HNO3,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): 133.00 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 124.78 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 1.4 (gallons)
Flow Rate : 45 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 130 (minutes) Purge time: 945
Amount Purged= 1.5 (gallons) Pump depth:

4. **FIELD PARAMETERS**

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

Time	1104	1115	1130	1145		
pH	6.87	6.45	6.39	6.38		
Sp. Cond	0.016	0.016	0.017	0.018		
Temp. °C	19.0	19.3	19.7	19.5		
Turbidity	36.5	31.7	39.0	36.7		
DO	8.29	8.29	8.01	8.10		
ORP	190.0	187.5	187.4	195.7		
Water Level						

5. Field parameters stable. Turbidity > 10NTU

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

1. CLIENT:Ft. Bragg, NC
DATE: 11/21/2010 TIME: 1540
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,warm

Location: Lamont Landfill	**Sample ID:LMW-4-11-10**

PRESERVATIVE: HNO3,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): 83.00 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 75.33 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 1.3 (gallons)
Flow Rate : 250 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 80 (minutes) Purge time: 1420
Amount Purged= 5.3 (gallons) Pump depth:

4. **FIELD PARAMETERS**

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

Time	1435	1445	1455	1505	1510	
pH	4.70	4.72	4.75	4.74	4.75	
Sp. Cond	0.024	0.023	0.024	0.024	0.025	
Temp. °C	22.4	22.7	23.4	23.6	23.7	
Turbidity	4.34	3.97	5.17	7.39	8.25	
DO	4.49	4.41	4.39	4.39	4.52	
ORP	318.9	320.1	320.9	317.8	314.9	
Water Level						

5.

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

1. CLIENT:Ft. Bragg, NC
DATE: 11/21/2010 TIME: 1145
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Sunny,warm

Location: Lamont Landfill	**Sample ID:LMW-6-11-10**

PRESERVATIVE: HNO3,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): 94.00 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 80.93 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 2.2 (gallons)
Flow Rate : 250 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 40 (minutes) Purge time: 855
Amount Purged= 2.6 (gallons) Pump depth:

4. **FIELD PARAMETERS**

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

Time	1120	1130	1135	1140		
pH	4.48	4.50	4.53	4.55		
Sp. Cond	0.299	0.282	0.279	0.276		
Temp. °C	18.0	17.7	17.7	17.7		
Turbidity	19.1	7.44	5.61	4.36		
DO	0.77	0.48	0.49	0.52		
ORP	335.9	344.8	343.8	342.9		
Water Level						

5.

APPENDIX B

DATA VALIDATION REPORTS

QA LEVEL II - DATA EVALUATION CHECKLIST

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

Project Manager: Z. KIDWAI
Project Number: 680-63405-1
Validation Date: 3-JAN-2011

Laboratory: TEST AMERICA
SDG #:
Analytical Method (type and no.): SW846 8260B, SW846 6020A, SW846 7470A, MCAWW 300.0
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐
Sample Names LMW-9D-11-10, LMW-9S-11-10, LMW-DUP1-11-10, LMW-9-11-10
LMW-8-11-10, LMW-10-11-10, LMW-16-11-10, Trip Blank, LMW-15R-11-10, LMW-Dup2-11-10
LMW-14R-11-10, LMW-6-11-10, LMW-3-11-10, LMW-3s-11-10, LMW-4-11-10

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?	☒	☐	☐	* pH, Conductivity, Temperature,
b) Sampling team indicated?	☐	☒	☐	Dissolved Oxygen, ORP, Turbidity
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	
e) Sample type indicated (grab/composite)?	☐	☐	☒	
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?	☒	☐	☐	5x dilution used
b) Were hold times met for sample analysis?	☒	☐	☐	for lab control sample &
c) Were the correct preservatives used?	☒	☐	☐	matrix spike ~~and~~ duplicate
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)?	☒	☐	☐	~~DUP1 = LMW-3S~~
b) Were field dup. precision criteria met (note RPD)?	☐	☐	☐	DUP2 = LMW-15R
c) Were lab duplicates analyzed (note original and duplicate samples)?	☐	☒	☐	DUP1 = LMW-9S
d) Were lab dup. precision criteria met (note RPD)?	☐	☐	☒	DUP1 had hit 1,3-dichloropropane two orders magnitude greater than LMW-9S

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:
Project Number:
Validation Date:

Laboratory: TEST AMERICA
SDG #:
Analytical Method (type and no.): SW846 8260B, 6020A, 7470A + MCAWW 300.0
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐
Sample Names
Trip Blank, LMW-7-11-10, LMW-BLK-11-10

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?	☒	☐	☐	pH, Conductivity, Temperature,
b) Sampling team indicated?	☐	☒	☐	Dissolved Oxygen, ORP, Turbidit
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	
e) Sample type indicated (grab/composite)?	☐	☐	☒	
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?	☐	☒	☐	Field sampler Name not present on COC
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?	☒	☐	☐	5x dilution for
b) Were hold times met for sample analysis?	☒	☐	☐	Nitrate as NO3
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)?	☐	☐	☒	
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)?	FB ☒	☒	☐	~~[illegible]~~
b) Were field dup. precision criteria met (note RPD)?	FB ☒	☒	☐	No duplicates taken
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: _____

APPENDIX C

CHAIN OF CUSTODY AND LABORATORY ANALYTICAL REPORTS

(Electronic Only)

ANALYTICAL REPORT

Job Number: 680-63429-1

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
12/15/2010 5:05 PM

Kathryn Smith
Project Manager I
kathye.smith@testamericainc.com
12/15/2010

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: 680-63429-1

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: 680-63429-1

Method	Analyst	Analyst ID
SW846 8260B	Bearden, Robert	RB
SW846 6020A	Robertson, Bryn	BR
SW846 7470A	Vasquez, Juana	JV
MCAWW 300.0	Brazell, Connie	CB

SAMPLE SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-63429-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-63429-1	Trip Blank	Water	11/22/2010 0000	11/23/2010 1123
680-63429-2	LMW-7-11-10	Water	11/22/2010 1155	11/23/2010 1123
680-63429-3	LMW-BLK-11-10	Water	11/22/2010 1300	11/23/2010 1123

Client: U.S. Army Corps of Engineers

Job Number: 680-63429-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-63429-1

Client Matrix: Water

Date Sampled: 11/22/2010 0000

Date Received: 11/23/2010 1123

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187311	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0114.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1324		Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1324			

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: 680-63429-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-63429-1

Client Matrix: Water

Date Sampled: 11/22/2010 0000

Date Received: 11/23/2010 1123

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187311	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0114.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1324		Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1324			

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		70 - 130
4-Bromofluorobenzene	94		70 - 130
Dibromofluoromethane	101		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63429-1

Client Sample ID: **LMW-7-11-10**

Lab Sample ID: 680-63429-2

Client Matrix: Water

Date Sampled: 11/22/2010 1155

Date Received: 11/23/2010 1123

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187311	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0120.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1450		Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1450			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	7.5	J	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: 680-63429-1

Client Sample ID: **LMW-7-11-10**

Lab Sample ID: 680-63429-2

Client Matrix: Water

Date Sampled: 11/22/2010 1155

Date Received: 11/23/2010 1123

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187311	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0120.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1450		Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1450			

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		70 - 130
4-Bromofluorobenzene	96		70 - 130
Dibromofluoromethane	104		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63429-1

Client Sample ID: **LMW-BLK-11-10**

Lab Sample ID: 680-63429-3

Client Matrix: Water

Date Sampled: 11/22/2010 1300

Date Received: 11/23/2010 1123

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187311	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0118.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1421		Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1421			

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	0.24	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	0.25	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: 680-63429-1

Client Sample ID: **LMW-BLK-11-10**

Lab Sample ID: 680-63429-3

Client Matrix: Water

Date Sampled: 11/22/2010 1300

Date Received: 11/23/2010 1123

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187311	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0118.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1421		Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1421			

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)	103		70 - 130
4-Bromofluorobenzene	96		70 - 130
Dibromofluoromethane	104		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63429-1

Client Sample ID: **LMW-7-11-10**

Lab Sample ID: 680-63429-2

Client Matrix: Water

Date Sampled: 11/22/2010 1155

Date Received: 11/23/2010 1123

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-187476		Instrument ID:	ICPMSB
Preparation:	3030C	Prep Batch: 680-187173		Lab File ID:	187173.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/29/2010 2324			Final Weight/Volume:	50 mL
Date Prepared:	11/24/2010 1024				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.40	U	0.40	1.0
Barium	5.2		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.60		0.20	0.50
Chromium	0.25	J	0.16	1.0
Cobalt	0.19	J	0.078	0.20
Copper	3.8		0.21	1.0
Lead	0.86		0.080	0.30
Nickel	1.7		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	9.5	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-188222		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-187904		Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1619			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

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

Client: U.S. Army Corps of Engineers

Job Number: 680-63429-1

Client Sample ID: **LMW-BLK-11-10**

Lab Sample ID: 680-63429-3

Client Matrix: Water

Date Sampled: 11/22/2010 1300

Date Received: 11/23/2010 1123

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-187476		Instrument ID:	ICPMSB
Preparation:	3030C	Prep Batch: 680-187173		Lab File ID:	187173.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/29/2010 2359			Final Weight/Volume:	50 mL
Date Prepared:	11/24/2010 1024				

Analyte	Result (ug/L)	Qualifier	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
Copper	0.21	U	0.21	1.0
Lead	0.080	U	0.080	0.30
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

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-188222		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-187904		Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1622			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

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

General Chemistry

Client Sample ID: **LMW-7-11-10**

Lab Sample ID: 680-63429-2

Client Matrix: Water

Date Sampled: 11/22/2010 1155

Date Received: 11/23/2010 1123

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.56	J	mg/L	0.36	1.1	5.0	300.0

Analysis Batch: 680-187267 Date Analyzed: 11/24/2010 0019

General Chemistry

Client Sample ID: **LMW-BLK-11-10**

Lab Sample ID: 680-63429-3

Client Matrix: Water

Date Sampled: 11/22/2010 1300

Date Received: 11/23/2010 1123

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

Analysis Batch: 680-187267 Date Analyzed: 11/24/2010 0103

DATA REPORTING QUALIFIERS

Client: U.S. Army Corps of Engineers

Job Number: 680-63429-1

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
	U	Undetected at the Limit of Detection.

Client: U.S. Army Corps of Engineers

Job Number: 680-63429-1

Method Blank - Batch: 680-187311

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-187311/29	Analysis Batch:	680-187311	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq142.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1255			Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1255				

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: 680-63429-1

Method Blank - Batch: 680-187311

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-187311/29	Analysis Batch:	680-187311	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq142.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1255			Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1255				

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)	96	70 - 130
4-Bromofluorobenzene	93	70 - 130
Dibromofluoromethane	101	70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63429-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-187311

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-187311/26	Analysis Batch:	680-187311	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq134.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1100			Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1100				

LCSD Lab Sample ID:	LCSD 680-187311/27	Analysis Batch:	680-187311	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq136.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1129			Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1129				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Acetone	101	101	26 - 180	0	50		
Benzene	99	98	70 - 130	2	30		
Dichlorobromomethane	99	98	70 - 130	1	30		
Bromomethane	106	108	23 - 165	2	50		
Carbon disulfide	106	103	54 - 132	3	30		
Chlorobenzene	101	100	70 - 130	2	30		
Chlorodibromomethane	99	96	70 - 130	3	50		
Chloroethane	115	111	56 - 152	4	40		
Chloromethane	113	107	70 - 130	6	30		
Chloroform	99	99	70 - 130	0	30		
1,2-Dibromo-3-Chloropropane	107	105	70 - 130	1	50		
Ethylene Dibromide	97	96	70 - 130	1	30		
Dichlorodifluoromethane	107	102	44 - 146	5	50		
1,1-Dichloroethane	98	100	70 - 130	2	30		
1,2-Dichloroethane	93	91	70 - 130	2	30		
trans-1,2-Dichloroethene	98	100	70 - 130	2	30		
1,1-Dichloroethene	100	99	66 - 131	1	30		
Methylene Chloride	104	103	67 - 130	2	30		
1,2-Dichloropropane	95	96	70 - 130	1	30		
cis-1,3-Dichloropropene	98	95	70 - 130	3	30		
trans-1,3-Dichloropropene	102	100	70 - 130	2	50		
Ethylbenzene	102	100	70 - 130	2	30		
2-Butanone (MEK)	100	95	49 - 172	5	30		
4-Methyl-2-pentanone (MIBK)	95	92	70 - 130	2	30		
Styrene	104	101	70 - 130	3	30		
1,1,1,2-Tetrachloroethane	98	96	70 - 130	2	30		
1,1,2,2-Tetrachloroethane	99	97	70 - 130	3	30		
Tetrachloroethene	98	97	70 - 130	1	30		
Carbon tetrachloride	102	100	70 - 130	2	30		
Toluene	103	100	70 - 130	3	30		
Bromoform	105	103	70 - 130	2	30		
1,1,2-Trichloroethane	98	95	70 - 130	3	30		
1,1,1-Trichloroethane	99	100	70 - 130	0	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-63429-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-187311

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-187311/26	Analysis Batch:	680-187311	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq134.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1100			Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1100				

LCSD Lab Sample ID:	LCSD 680-187311/27	Analysis Batch:	680-187311	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq136.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1129			Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1129				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Trichloroethene	98	96	70 - 130	2	30		
Trichlorofluoromethane	94	95	55 - 156	1	30		
1,2,3-Trichloropropane	103	96	70 - 130	7	30		
Vinyl acetate	101	98	60 - 176	4	30		
Vinyl chloride	114	109	67 - 134	5	30		
Xylenes, Total	102	101	70 - 130	1	30		
2-Hexanone	99	97	42 - 185	2	30		
Chlorobromomethane	103	102	70 - 130	1	30		
cis-1,2-Dichloroethene	99	99	70 - 130	0	30		
1,3-Dichloropropane	97	94	70 - 130	4	30		
2,2-Dichloropropane	104	100	70 - 135	3	30		
1,1-Dichloropropene	98	96	70 - 130	3	30		
1,2-Dichlorobenzene	105	104	70 - 130	1	30		
1,3-Dichlorobenzene	105	102	70 - 130	2	30		
1,4-Dichlorobenzene	104	101	70 - 130	2	30		
1,2,4-Trichlorobenzene	104	101	65 - 130	2	30		
Dibromomethane	96	93	70 - 130	4	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	104	102	70 - 130
4-Bromofluorobenzene	99	98	70 - 130
Dibromofluoromethane	102	102	70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63429-1

Method Blank - Batch: 680-187173

Method: 6020A
Preparation: 3030C

Lab Sample ID:	MB 680-187173/3-A	Analysis Batch:	680-187476	Instrument ID:	ICPMSB
Client Matrix:	Water	Prep Batch:	680-187173	Lab File ID:	187173.chr
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	50 mL
Date Analyzed:	11/30/2010 0928			Final Weight/Volume:	50 mL
Date Prepared:	11/24/2010 1024				

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
Copper	0.21	U	0.21	1.0
Lead	0.080	U	0.080	0.30
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: 680-63429-1

Lab Control Sample - Batch: 680-187173

Method: 6020A
Preparation: 3030C

Lab Sample ID: LCS 680-187173/4-A
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 11/29/2010 2317
Date Prepared: 11/24/2010 1024

Analysis Batch: 680-187476
Prep Batch: 680-187173
Units: ug/L

Instrument ID: ICPMSB
Lab File ID: 187173.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	50.0	52.0	104	75 - 125	
Arsenic	100	103	103	75 - 125	
Barium	100	98.4	98	75 - 125	
Beryllium	50.0	48.9	98	75 - 125	
Cadmium	50.0	50.6	101	75 - 125	
Chromium	100	98.6	99	75 - 125	
Cobalt	50.0	47.3	95	75 - 125	
Copper	100	101	101	75 - 125	
Lead	50.0	49.6	99	75 - 125	
Nickel	100	101	101	75 - 125	
Selenium	100	102	102	75 - 125	
Silver	50.0	49.0	98	75 - 125	
Thallium	40.0	39.7	99	75 - 125	
Tin	100	92.2	92	75 - 125	
Vanadium	100	98.5	98	75 - 125	
Zinc	100	103	103	75 - 125	

Client: U.S. Army Corps of Engineers

Job Number: 680-63429-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-187173

Method: 6020A
Preparation: 3030C

MS Lab Sample ID:	680-63429-2	Analysis Batch:	680-187476	Instrument ID:	ICPMSB
Client Matrix:	Water	Prep Batch:	680-187173	Lab File ID:	187173.chr
Dilution:	5.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/29/2010 2345			Final Weight/Volume:	50 mL
Date Prepared:	11/24/2010 1024				

MSD Lab Sample ID:	680-63429-2	Analysis Batch:	680-187476	Instrument ID:	ICPMSB
Client Matrix:	Water	Prep Batch:	680-187173	Lab File ID:	187173.chr
Dilution:	5.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/29/2010 2352			Final Weight/Volume:	50 mL
Date Prepared:	11/24/2010 1024				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Antimony	105	104	75 - 125	2	20		
Arsenic	104	102	75 - 125	2	20		
Barium	99	99	75 - 125	0	20		
Beryllium	98	97	75 - 125	1	20		
Cadmium	101	100	75 - 125	1	20		
Chromium	100	99	75 - 125	1	20		
Cobalt	95	95	75 - 125	0	20		
Copper	102	100	75 - 125	1	20		
Lead	101	100	75 - 125	0	20		
Nickel	101	100	75 - 125	2	20		
Selenium	104	104	75 - 125	1	20		
Silver	98	98	75 - 125	0	20		
Thallium	101	100	75 - 125	1	20		
Tin	93	93	75 - 125	0	20		
Vanadium	100	99	75 - 125	1	20		
Zinc	103	102	75 - 125	0	20		

Client: U.S. Army Corps of Engineers

Job Number: 680-63429-1

Method Blank - Batch: 680-187904

Method: 7470A
Preparation: 7470A

Lab Sample ID: MB 680-187904/31-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/06/2010 1511
Date Prepared: 12/04/2010 1128

Analysis Batch: 680-188222
Prep Batch: 680-187904
Units: ug/L

Instrument ID: LEEMAN1
Lab File ID: b120610a.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/
Lab Control Sample Duplicate Recovery Report - Batch: 680-187904

Method: 7470A
Preparation: 7470A

LCS Lab Sample ID: LCS 680-187904/32-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/06/2010 1514
Date Prepared: 12/04/2010 1128

Analysis Batch: 680-188222
Prep Batch: 680-187904
Units: ug/L

Instrument ID: LEEMAN1
Lab File ID: b120610a.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 680-187904/33-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/06/2010 1517
Date Prepared: 12/04/2010 1128

Analysis Batch: 680-188222
Prep Batch: 680-187904
Units: ug/L

Instrument ID: LEEMAN1
Lab File ID: b120610a.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Mercury	99	95	80 - 120	4	20		

Client: U.S. Army Corps of Engineers

Job Number: 680-63429-1

Method Blank - Batch: 680-187267

Method: 300.0
Preparation: N/A

Lab Sample ID: MB 680-187267/7
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 11/23/2010 2322
Date Prepared: N/A

Analysis Batch: 680-187267
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0060.d
Initial Weight/Volume: 1 mL
Final Weight/Volume: 5 mL

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

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-187267

Method: 300.0
Preparation: N/A

LCS Lab Sample ID: LCS 680-187267/8
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 11/23/2010 2336
Date Prepared: N/A

Analysis Batch: 680-187267
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0061.d
Initial Weight/Volume: 1 mL
Final Weight/Volume: 5 mL
1 uL

LCSD Lab Sample ID: LCSD 680-187267/9
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 11/23/2010 2351
Date Prepared: N/A

Analysis Batch: 680-187267
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0062.d
Initial Weight/Volume: 1 mL
Final Weight/Volume: 5 mL
1 uL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Nitrate as NO3	100	100	90 - 110	0	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-63429-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-187267

Method: 300.0
Preparation: N/A

MS Lab Sample ID:	680-63429-3	Analysis Batch:	680-187267	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0068.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Date Analyzed:	11/24/2010 0117			Final Weight/Volume:	5 mL
Date Prepared:	N/A				1 uL

MSD Lab Sample ID:	680-63429-3	Analysis Batch:	680-187267	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0069.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Date Analyzed:	11/24/2010 0131			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	104	104	90 - 110	0	30		

Duplicate - Batch: 680-187267

Method: 300.0
Preparation: N/A

Lab Sample ID:	680-63429-2	Analysis Batch:	680-187267	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0065.d
Dilution:	5.0	Units:	mg/L	Initial Weight/Volume:	1 mL
Date Analyzed:	11/24/2010 0034			Final Weight/Volume:	5 mL
Date Prepared:	N/A				1 uL

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Nitrate as NO3	0.56	J	0.571	1	30	J

Serial Number 034231

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 (Camp LF)	PROJECT NO.	PROJECT LOCATION (STATE): NC
TAL (LAB) PROJECT MANAGER: Kathy Smith	P.O. NUMBER	CONTRACT NO.
CLIENT (SITE) PM: Kevin Habovak	CLIENT PHONE: 912 652 6053	CLIENT FAX
CLIENT NAME: USACE	CLIENT E-MAIL	
CLIENT ADDRESS: 100 W. Oglethorpe Avenue Savannah Georgia 31401		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

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	Nitrate 300	8270C								REMARKS
								ICE	ICE	ICE								
		Trip Blank		W				2										
11/10/10	1155	LMW-7-11-10	G	W				3	1	1								
11/10/10	1300	LMW-BIR-11-10	G	W				3	1	1								

PRESERVATIVE

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	22 Nov 2010	1525	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 McDaughtry	11/23/10	1123	YES ◯ NO ◯		680-63429	Temp 1.6

TAL 8240-680 (1008)

Login Sample Receipt Check List

Client: U.S. Army Corps of Engineers

Job Number: 680-63429-1

Login Number: 63429

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

ANALYTICAL REPORT

Job Number: 680-63405-1

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
12/15/2010 5:03 PM

Kathryn Smith
Project Manager I
kathye.smith@testamericainc.com
12/15/2010

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
Method(s) 8260B: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 187214 exceeded control limits for the following analyte: Chloromethane.

No other 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: 680-63405-1

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: 680-63405-1

Method	Analyst	Analyst ID
SW846 8260B	Bearden, Robert	RB
SW846 6020A	Robertson, Bryn	BR
SW846 7470A	Vasquez, Juana	JV
MCAWW 300.0	Brazell, Connie	CB

SAMPLE SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-63405-1	LMW-9D-11-10	Water	11/20/2010 1045	11/22/2010 1036
680-63405-2	LMW-9D-11-10	Water	11/21/2010 0850	11/22/2010 1036
680-63405-3	LMW-9S-11-10	Water	11/20/2010 1225	11/22/2010 1036
680-63405-4	LMW-9S-11-10	Water	11/21/2010 0905	11/22/2010 1036
680-63405-5	LMW-DUP1-11-10	Water	11/20/2010 0900	11/22/2010 1036
680-63405-6	LMW-DUP1-11-10	Water	11/21/2010 0900	11/22/2010 1036
680-63405-7	LWM-9-11-10	Water	11/21/2010 0840	11/22/2010 1036
680-63405-8	LWM-8-11-10	Water	11/21/2010 1055	11/22/2010 1036
680-63405-9	LWM-10-11-10	Water	11/21/2010 1315	11/22/2010 1036
680-63405-10	LWM-16-11-10	Water	11/21/2010 1455	11/22/2010 1036
680-63405-11	Trip Blank	Water	11/21/2010 0000	11/22/2010 1036
680-63405-12	LMW-15R-11-10	Water	11/21/2010 0940	11/22/2010 1036
680-63405-13	LMW-DUP2-11-10	Water	11/21/2010 1200	11/22/2010 1036
680-63405-14	LMW-14R-11-10	Water	11/21/2010 1035	11/22/2010 1036
680-63405-14MS	LMW-14R-11-10	Water	11/21/2010 1035	11/22/2010 1036
680-63405-14MSD	LMW-14R-11-10	Water	11/21/2010 1035	11/22/2010 1036
680-63405-15	LMW-6-11-10	Water	11/21/2010 1145	11/22/2010 1036
680-63405-16	LMW-3-11-10	Water	11/21/2010 1240	11/22/2010 1036
680-63405-17	LMW-3S-11-10	Water	11/21/2010 1400	11/22/2010 1036
680-63405-18	LMW-4-11-10	Water	11/21/2010 1540	11/22/2010 1036

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-9D-11-10**

Lab Sample ID: 680-63405-1

Client Matrix: Water

Date Sampled: 11/20/2010 1045

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 11/24/2010 1659

Date Prepared: 11/24/2010 1659

Analysis Batch: 680-187218

Instrument ID: MSO

Lab File ID: o0097.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: 680-63405-1

Client Sample ID: **LMW-9D-11-10**

Lab Sample ID: 680-63405-1

Client Matrix: Water

Date Sampled: 11/20/2010 1045

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187218	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0097.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1659		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1659			

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)	104		70 - 130
4-Bromofluorobenzene	99		70 - 130
Dibromofluoromethane	95		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-9S-11-10**

Lab Sample ID: 680-63405-3

Client Matrix: Water

Date Sampled: 11/20/2010 1225

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187218	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0099.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1728		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 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: 680-63405-1

Client Sample ID: **LMW-9S-11-10**

Lab Sample ID: 680-63405-3

Client Matrix: Water

Date Sampled: 11/20/2010 1225

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187218	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0099.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1728		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 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)	103		70 - 130
4-Bromofluorobenzene	100		70 - 130
Dibromofluoromethane	96		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-DUP1-11-10**

Lab Sample ID: 680-63405-5

Client Matrix: Water

Date Sampled: 11/20/2010 0900

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187218	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0101.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1757		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1757			

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: 680-63405-1

Client Sample ID: **LMW-DUP1-11-10**

Lab Sample ID: 680-63405-5

Client Matrix: Water

Date Sampled: 11/20/2010 0900

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187218	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0101.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1757		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 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	1.6		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)	104		70 - 130
4-Bromofluorobenzene	101		70 - 130
Dibromofluoromethane	93		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LWM-9-11-10**

Lab Sample ID: 680-63405-7

Client Matrix: Water

Date Sampled: 11/21/2010 0840

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 11/24/2010 1825

Date Prepared: 11/24/2010 1825

Analysis Batch: 680-187218

Instrument ID: MSO

Lab File ID: o0103.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: 680-63405-1

Client Sample ID: **LWM-9-11-10**

Lab Sample ID: 680-63405-7

Client Matrix: Water

Date Sampled: 11/21/2010 0840

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187218	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0103.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1825		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1825			

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		70 - 130
4-Bromofluorobenzene	100		70 - 130
Dibromofluoromethane	97		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LWM-8-11-10**

Lab Sample ID: 680-63405-8

Client Matrix: Water

Date Sampled: 11/21/2010 1055

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187218	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0105.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1854		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1854			

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	0.19	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	0.14	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: 680-63405-1

Client Sample ID: **LWM-8-11-10**

Lab Sample ID: 680-63405-8

Client Matrix: Water

Date Sampled: 11/21/2010 1055

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187218	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0105.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1854		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1854			

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	0.67	J	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)	103		70 - 130
4-Bromofluorobenzene	105		70 - 130
Dibromofluoromethane	95		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LWM-10-11-10**

Lab Sample ID: 680-63405-9

Client Matrix: Water

Date Sampled: 11/21/2010 1315

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187214	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0096.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1645		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1645			

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 Q	0.33	1.0
Chloroform	0.20	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	0.27	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	0.97	J	0.13	1.0
Trichlorofluoromethane	7.3		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: 680-63405-1

Client Sample ID: **LWM-10-11-10**

Lab Sample ID: 680-63405-9

Client Matrix: Water

Date Sampled: 11/21/2010 1315

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187214	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0096.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1645		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1645			

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)	103		70 - 130
4-Bromofluorobenzene	97		70 - 130
Dibromofluoromethane	96		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LWM-16-11-10**

Lab Sample ID: 680-63405-10

Client Matrix: Water

Date Sampled: 11/21/2010 1455

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187214	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0098.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1714		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1714			

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 Q	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: 680-63405-1

Client Sample ID: **LWM-16-11-10**

Lab Sample ID: 680-63405-10

Client Matrix: Water

Date Sampled: 11/21/2010 1455

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187214	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0098.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1714		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1714			

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)	93		70 - 130
4-Bromofluorobenzene	93		70 - 130
Dibromofluoromethane	94		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-63405-11

Client Matrix: Water

Date Sampled: 11/21/2010 0000

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187214	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0100.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1742		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1742			

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 Q	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: 680-63405-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-63405-11

Client Matrix: Water

Date Sampled: 11/21/2010 0000

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187214	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0100.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1742		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1742			

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)	91		70 - 130
4-Bromofluorobenzene	93		70 - 130
Dibromofluoromethane	92		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-15R-11-10**

Lab Sample ID: 680-63405-12

Client Matrix: Water

Date Sampled: 11/21/2010 0940

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B

Preparation: 5030B

Dilution: 1.0

Date Analyzed: 11/26/2010 1533

Date Prepared: 11/26/2010 1533

Analysis Batch: 680-187308

Instrument ID: MSO

Lab File ID: o0123.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: 680-63405-1

Client Sample ID: **LMW-15R-11-10**

Lab Sample ID: 680-63405-12

Client Matrix: Water

Date Sampled: 11/21/2010 0940

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187308	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0123.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1533		Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1533			

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)	105		70 - 130
4-Bromofluorobenzene	95		70 - 130
Dibromofluoromethane	99		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-DUP2-11-10**

Lab Sample ID: 680-63405-13

Client Matrix: Water

Date Sampled: 11/21/2010 1200

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187308	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0125.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1602		Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1602			

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: 680-63405-1

Client Sample ID: **LMW-DUP2-11-10**

Lab Sample ID: 680-63405-13

Client Matrix: Water

Date Sampled: 11/21/2010 1200

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187308	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0125.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1602		Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1602			

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)	106		70 - 130
4-Bromofluorobenzene	97		70 - 130
Dibromofluoromethane	99		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-14R-11-10**

Lab Sample ID: 680-63405-14

Client Matrix: Water

Date Sampled: 11/21/2010 1035

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187308	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0117.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1407		Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1407			

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 J	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: 680-63405-1

Client Sample ID: **LMW-14R-11-10**

Lab Sample ID: 680-63405-14

Client Matrix: Water

Date Sampled: 11/21/2010 1035

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187308	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0117.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1407		Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1407			

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)	104		70 - 130
4-Bromofluorobenzene	95		70 - 130
Dibromofluoromethane	99		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-6-11-10**

Lab Sample ID: 680-63405-15

Client Matrix: Water

Date Sampled: 11/21/2010 1145

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187214	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0108.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1937		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1937			

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 Q	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	0.22	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	0.13	U	0.13	1.0
Trichlorofluoromethane	0.48	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: 680-63405-1

Client Sample ID: **LMW-6-11-10**

Lab Sample ID: 680-63405-15

Client Matrix: Water

Date Sampled: 11/21/2010 1145

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187214	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0108.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1937		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1937			

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		70 - 130
4-Bromofluorobenzene	98		70 - 130
Dibromofluoromethane	98		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-3-11-10**

Lab Sample ID: 680-63405-16

Client Matrix: Water

Date Sampled: 11/21/2010 1240

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187214	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0110.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 2006		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 2006			

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 Q	0.33	1.0
Chloroform	0.42	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: 680-63405-1

Client Sample ID: **LMW-3-11-10**

Lab Sample ID: 680-63405-16

Client Matrix: Water

Date Sampled: 11/21/2010 1240

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187214	Instrument ID:	MSO2
Preparation:	5030B		Lab File ID:	o0110.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 2006		Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 2006			

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		70 - 130
4-Bromofluorobenzene	98		70 - 130
Dibromofluoromethane	100		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-3S-11-10**

Lab Sample ID: 680-63405-17

Client Matrix: Water

Date Sampled: 11/21/2010 1400

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187308	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0119.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1436		Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1436			

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	2.3		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	1.1		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: 680-63405-1

Client Sample ID: **LMW-3S-11-10**

Lab Sample ID: 680-63405-17

Client Matrix: Water

Date Sampled: 11/21/2010 1400

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187308	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0119.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1436		Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1436			

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)	105		70 - 130
4-Bromofluorobenzene	97		70 - 130
Dibromofluoromethane	98		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-4-11-10**

Lab Sample ID: 680-63405-18

Client Matrix: Water

Date Sampled: 11/21/2010 1540

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187308	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0121.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1504		Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1504			

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	0.81	J	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	1.7		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: 680-63405-1

Client Sample ID: **LMW-4-11-10**

Lab Sample ID: 680-63405-18

Client Matrix: Water

Date Sampled: 11/21/2010 1540

Date Received: 11/22/2010 1036

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-187308	Instrument ID:	MSO
Preparation:	5030B		Lab File ID:	o0121.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1504		Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1504			

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)	105		70 - 130
4-Bromofluorobenzene	97		70 - 130
Dibromofluoromethane	97		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-9D-11-10**

Lab Sample ID: 680-63405-2

Client Matrix: Water

Date Sampled: 11/21/2010 0850

Date Received: 11/22/2010 1036

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-187359		Instrument ID:	ICPMSB
Preparation:	3030C	Prep Batch: 680-186894		Lab File ID:	186894.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2010 0455			Final Weight/Volume:	50 mL
Date Prepared:	11/22/2010 1608				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	2.0		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	0.58	J	0.16	1.0
Cobalt	0.081	J	0.078	0.20
Copper	0.53	J	0.21	1.0
Lead	0.44		0.080	0.30
Nickel	0.60	J	0.40	1.0
Selenium	0.21	U	0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.13	J	0.10	0.20
Tin	0.40	U	0.40	1.0
Vanadium	2.3	J	1.4	5.0
Zinc	5.1	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-188222		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-187904		Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1519			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

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

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-9S-11-10**

Lab Sample ID: 680-63405-4

Client Matrix: Water

Date Sampled: 11/21/2010 0905

Date Received: 11/22/2010 1036

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-187359		Instrument ID:	ICPMSB
Preparation:	3030C	Prep Batch: 680-186894		Lab File ID:	186894.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2010 0502			Final Weight/Volume:	50 mL
Date Prepared:	11/22/2010 1608				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	1.2		0.40	1.0
Barium	53		0.15	1.0
Beryllium	0.071	J	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	4.4		0.16	1.0
Cobalt	0.26		0.078	0.20
Copper	1.6		0.21	1.0
Lead	0.55		0.080	0.30
Nickel	0.44	J	0.40	1.0
Selenium	0.26	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	6.2		1.4	5.0
Zinc	3.6	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-188222		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-187904		Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1522			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.23		0.091	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-DUP1-11-10**

Lab Sample ID: 680-63405-6

Client Matrix: Water

Date Sampled: 11/21/2010 0900

Date Received: 11/22/2010 1036

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-187359		Instrument ID:	ICPMSB
Preparation:	3030C	Prep Batch: 680-186894		Lab File ID:	186894.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2010 0509			Final Weight/Volume:	50 mL
Date Prepared:	11/22/2010 1608				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	1.0		0.40	1.0
Barium	50		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	2.8		0.16	1.0
Cobalt	0.26		0.078	0.20
Copper	1.1		0.21	1.0
Lead	0.42		0.080	0.30
Nickel	0.41	J	0.40	1.0
Selenium	0.23	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	4.3	J	1.4	5.0
Zinc	4.2	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-188222		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-187904		Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1526			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

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

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LWM-9-11-10**

Lab Sample ID: 680-63405-7

Client Matrix: Water

Date Sampled: 11/21/2010 0840

Date Received: 11/22/2010 1036

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-187359		Instrument ID:	ICPMSB
Preparation:	3030C	Prep Batch: 680-186894		Lab File ID:	186894.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2010 0516			Final Weight/Volume:	50 mL
Date Prepared:	11/22/2010 1608				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	1.6		0.40	1.0
Barium	4.0		0.15	1.0
Beryllium	0.12	J	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	2.1		0.16	1.0
Cobalt	0.16	J	0.078	0.20
Copper	1.7		0.21	1.0
Lead	0.57		0.080	0.30
Nickel	0.63	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	5.0		1.4	5.0
Zinc	4.5	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-188222		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-187904		Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1529			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

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

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LWM-8-11-10**

Lab Sample ID: 680-63405-8

Client Matrix: Water

Date Sampled: 11/21/2010 1055

Date Received: 11/22/2010 1036

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-187359		Instrument ID:	ICPMSB
Preparation:	3030C	Prep Batch: 680-186894		Lab File ID:	186894.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2010 0523			Final Weight/Volume:	50 mL
Date Prepared:	11/22/2010 1608				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.48	J	0.40	1.0
Barium	44		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.16	J	0.16	1.0
Cobalt	0.71		0.078	0.20
Copper	0.75	J	0.21	1.0
Lead	0.080	U	0.080	0.30
Nickel	0.65	J	0.40	1.0
Selenium	0.66		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	3.2	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-188222		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-187904		Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1532			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.26		0.091	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LWM-10-11-10**

Lab Sample ID: 680-63405-9

Client Matrix: Water

Date Sampled: 11/21/2010 1315

Date Received: 11/22/2010 1036

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-187359		Instrument ID:	ICPMSB
Preparation:	3030C	Prep Batch: 680-186894		Lab File ID:	186894.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2010 0531			Final Weight/Volume:	50 mL
Date Prepared:	11/22/2010 1608				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.40	U	0.40	1.0
Barium	14		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.30	J	0.16	1.0
Cobalt	0.16	J	0.078	0.20
Copper	0.39	J	0.21	1.0
Lead	0.080	U	0.080	0.30
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	5.3	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-188222		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-187904		Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1535			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

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

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LWM-16-11-10**

Lab Sample ID: 680-63405-10

Client Matrix: Water

Date Sampled: 11/21/2010 1455

Date Received: 11/22/2010 1036

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-187359		Instrument ID:	ICPMSB
Preparation:	3030C	Prep Batch: 680-186894		Lab File ID:	186894.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2010 0538			Final Weight/Volume:	50 mL
Date Prepared:	11/22/2010 1608				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.54	J	0.40	1.0
Barium	10		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	J	0.078	0.20
Copper	0.46	J	0.21	1.0
Lead	0.080	U	0.080	0.30
Nickel	0.40	U	0.40	1.0
Selenium	0.31	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	5.4	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-188222		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-187904		Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1544			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

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

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-15R-11-10**

Lab Sample ID: 680-63405-12

Client Matrix: Water

Date Sampled: 11/21/2010 0940

Date Received: 11/22/2010 1036

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-187359		Instrument ID:	ICPMSB
Preparation:	3030C	Prep Batch: 680-186894		Lab File ID:	186894.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2010 0545			Final Weight/Volume:	50 mL
Date Prepared:	11/22/2010 1608				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.40	U	0.40	1.0
Barium	30		0.15	1.0
Beryllium	0.13	J	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.24	J	0.16	1.0
Cobalt	0.58		0.078	0.20
Copper	2.3		0.21	1.0
Lead	0.16	J	0.080	0.30
Nickel	0.98	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	8.3	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-188222		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-187904		Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1547			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

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

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-DUP2-11-10**

Lab Sample ID: 680-63405-13

Client Matrix: Water

Date Sampled: 11/21/2010 1200

Date Received: 11/22/2010 1036

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-187359		Instrument ID:	ICPMSB
Preparation:	3030C	Prep Batch: 680-186894		Lab File ID:	186894.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2010 0606			Final Weight/Volume:	50 mL
Date Prepared:	11/22/2010 1608				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.40	U	0.40	1.0
Barium	33		0.15	1.0
Beryllium	0.13	J	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.34	J	0.16	1.0
Cobalt	0.63		0.078	0.20
Copper	1.9		0.21	1.0
Lead	0.13	J	0.080	0.30
Nickel	1.1		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	6.7	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-188222		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-187904		Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1550			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

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

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-14R-11-10**

Lab Sample ID: 680-63405-14

Client Matrix: Water

Date Sampled: 11/21/2010 1035

Date Received: 11/22/2010 1036

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-187359		Instrument ID:	ICPMSB
Preparation:	3030C	Prep Batch: 680-186894		Lab File ID:	186894.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2010 0613			Final Weight/Volume:	50 mL
Date Prepared:	11/22/2010 1608				

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	0.60	J	0.16	1.0
Cobalt	0.21		0.078	0.20
Copper	0.96	J	0.21	1.0
Lead	0.11	J	0.080	0.30
Nickel	1.9		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	4.5	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-188222		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-187904		Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1553			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

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

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-6-11-10**

Lab Sample ID: 680-63405-15

Client Matrix: Water

Date Sampled: 11/21/2010 1145

Date Received: 11/22/2010 1036

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-187359		Instrument ID:	ICPMSB
Preparation:	3030C	Prep Batch: 680-186894		Lab File ID:	186894.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2010 0649			Final Weight/Volume:	50 mL
Date Prepared:	11/22/2010 1608				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.52	J	0.40	1.0
Barium	79		0.15	1.0
Beryllium	0.16	J	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	0.24	J	0.16	1.0
Cobalt	1.1		0.078	0.20
Copper	2.2		0.21	1.0
Lead	0.17	J	0.080	0.30
Nickel	1.9		0.40	1.0
Selenium	6.0		0.21	0.50
Silver	0.10	U	0.10	0.20
Thallium	0.18	J	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: 680-188222		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-187904		Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1601			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

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

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-3-11-10**

Lab Sample ID: 680-63405-16

Client Matrix: Water

Date Sampled: 11/21/2010 1240

Date Received: 11/22/2010 1036

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-187359		Instrument ID:	ICPMSB
Preparation:	3030C	Prep Batch: 680-186894		Lab File ID:	186894.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2010 0656			Final Weight/Volume:	50 mL
Date Prepared:	11/22/2010 1608				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.44	J	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	0.94	J	0.16	1.0
Cobalt	0.51		0.078	0.20
Copper	1.6		0.21	1.0
Lead	0.51		0.080	0.30
Nickel	3.0		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	1.8	J	1.4	5.0
Zinc	11		2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-188222		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-187904		Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1604			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

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

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-3S-11-10**

Lab Sample ID: 680-63405-17

Client Matrix: Water

Date Sampled: 11/21/2010 1400

Date Received: 11/22/2010 1036

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-187359		Instrument ID:	ICPMSB
Preparation:	3030C	Prep Batch: 680-186894		Lab File ID:	186894.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2010 0703			Final Weight/Volume:	50 mL
Date Prepared:	11/22/2010 1608				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	1.0		0.40	1.0
Barium	16		0.15	1.0
Beryllium	0.12	J	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	4.1		0.16	1.0
Cobalt	0.53		0.078	0.20
Copper	1.7		0.21	1.0
Lead	1.7		0.080	0.30
Nickel	3.1		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	0.67	J	0.40	1.0
Vanadium	4.6	J	1.4	5.0
Zinc	11		2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-188222		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-187904		Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1607			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

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

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Client Sample ID: **LMW-4-11-10**

Lab Sample ID: 680-63405-18

Client Matrix: Water

Date Sampled: 11/21/2010 1540

Date Received: 11/22/2010 1036

6020A Metals (ICP/MS)

Method:	6020A	Analysis Batch: 680-187359		Instrument ID:	ICPMSB
Preparation:	3030C	Prep Batch: 680-186894		Lab File ID:	186894.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2010 0710			Final Weight/Volume:	50 mL
Date Prepared:	11/22/2010 1608				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	0.99	U	0.99	2.0
Arsenic	0.40	U	0.40	1.0
Barium	14		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Cadmium	0.20	U	0.20	0.50
Chromium	1.0		0.16	1.0
Cobalt	0.29		0.078	0.20
Copper	0.87	J	0.21	1.0
Lead	0.16	J	0.080	0.30
Nickel	1.1		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	7.3	J	2.6	10

7470A Mercury (CVAA)

Method:	7470A	Analysis Batch: 680-188222		Instrument ID:	LEEMAN1
Preparation:	7470A	Prep Batch: 680-187904		Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1610			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

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

General Chemistry

Client Sample ID: **LMW-9D-11-10**

Lab Sample ID: 680-63405-2

Client Matrix: Water

Date Sampled: 11/21/2010 0850

Date Received: 11/22/2010 1036

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.097	J	mg/L	0.072	0.22	1.0	300.0

Analysis Batch: 680-187836 Date Analyzed: 11/22/2010 1257

General Chemistry

Client Sample ID: **LMW-9S-11-10**

Lab Sample ID: 680-63405-4

Client Matrix: Water

Date Sampled: 11/21/2010 0905

Date Received: 11/22/2010 1036

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.21	J	mg/L	0.072	0.22	1.0	300.0

Analysis Batch: 680-187836 Date Analyzed: 11/22/2010 1310

General Chemistry

Client Sample ID: **LMW-DUP1-11-10**

Lab Sample ID: 680-63405-6

Client Matrix: Water

Date Sampled: 11/21/2010 0900

Date Received: 11/22/2010 1036

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.072	U	mg/L	0.072	0.22	1.0	300.0

Analysis Batch: 680-187836 Date Analyzed: 11/22/2010 1324

General Chemistry

Client Sample ID: **LWM-9-11-10**

Lab Sample ID: 680-63405-7

Client Matrix: Water

Date Sampled: 11/21/2010 0840

Date Received: 11/22/2010 1036

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.094	J	mg/L	0.072	0.22	1.0	300.0

Analysis Batch: 680-187836 Date Analyzed: 11/22/2010 1337

General Chemistry

Client Sample ID: **LWM-8-11-10**

Lab Sample ID: 680-63405-8

Client Matrix: Water

Date Sampled: 11/21/2010 1055

Date Received: 11/22/2010 1036

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.61		mg/L	0.072	0.22	1.0	300.0

Analysis Batch: 680-187836 Date Analyzed: 11/22/2010 1404

General Chemistry

Client Sample ID: **LWM-10-11-10**

Lab Sample ID: 680-63405-9

Client Matrix: Water

Date Sampled: 11/21/2010 1315

Date Received: 11/22/2010 1036

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.52		mg/L	0.072	0.22	1.0	300.0

Analysis Batch: 680-187836 Date Analyzed: 11/22/2010 1417

General Chemistry

Client Sample ID: **LWM-16-11-10**

Lab Sample ID: 680-63405-10

Client Matrix: Water

Date Sampled: 11/21/2010 1455

Date Received: 11/22/2010 1036

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.072	U	mg/L	0.072	0.22	1.0	300.0

Analysis Batch: 680-187836 Date Analyzed: 11/22/2010 1431

General Chemistry

Client Sample ID: **LMW-15R-11-10**

Lab Sample ID: 680-63405-12

Client Matrix: Water

Date Sampled: 11/21/2010 0940

Date Received: 11/22/2010 1036

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	1.6		mg/L	0.072	0.22	1.0	300.0

Analysis Batch: 680-187836 Date Analyzed: 11/22/2010 1444

General Chemistry

Client Sample ID: **LMW-DUP2-11-10**

Lab Sample ID: 680-63405-13

Client Matrix: Water

Date Sampled: 11/21/2010 1200

Date Received: 11/22/2010 1036

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	1.6		mg/L	0.072	0.22	1.0	300.0

Analysis Batch: 680-187836 Date Analyzed: 11/22/2010 1457

General Chemistry

Client Sample ID: **LMW-14R-11-10**

Lab Sample ID: 680-63405-14

Client Matrix: Water

Date Sampled: 11/21/2010 1035

Date Received: 11/22/2010 1036

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.072	U	mg/L	0.072	0.22	1.0	300.0

Analysis Batch: 680-187836 Date Analyzed: 11/22/2010 1538

General Chemistry

Client Sample ID: **LMW-6-11-10**

Lab Sample ID: 680-63405-15

Client Matrix: Water

Date Sampled: 11/21/2010 1145

Date Received: 11/22/2010 1036

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	1.4		mg/L	0.072	0.22	1.0	300.0

Analysis Batch: 680-187836 Date Analyzed: 11/22/2010 1618

General Chemistry

Client Sample ID: **LMW-3-11-10**

Lab Sample ID: 680-63405-16

Client Matrix: Water

Date Sampled: 11/21/2010 1240

Date Received: 11/22/2010 1036

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.19	J	mg/L	0.072	0.22	1.0	300.0

Analysis Batch: 680-187836 Date Analyzed: 11/22/2010 1631

General Chemistry

Client Sample ID: **LMW-3S-11-10**

Lab Sample ID: 680-63405-17

Client Matrix: Water

Date Sampled: 11/21/2010 1400

Date Received: 11/22/2010 1036

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.088	J	mg/L	0.072	0.22	1.0	300.0

Analysis Batch: 680-187836 Date Analyzed: 11/22/2010 1645

General Chemistry

Client Sample ID: **LMW-4-11-10**

Lab Sample ID: 680-63405-18

Client Matrix: Water

Date Sampled: 11/21/2010 1540

Date Received: 11/22/2010 1036

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as NO3	0.072	U	mg/L	0.072	0.22	1.0	300.0

Analysis Batch: 680-187836 Date Analyzed: 11/22/2010 1658

DATA REPORTING QUALIFIERS

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Lab Section	Qualifier	Description
GC/MS VOA		
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
	Q	One or more quality control criteria failed.
	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: 680-63405-1

Method Blank - Batch: 680-187214

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-187214/9	Analysis Batch:	680-187214	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq090.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1147			Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1147				

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: 680-63405-1

Method Blank - Batch: 680-187214

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-187214/9	Analysis Batch:	680-187214	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq090.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1147			Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1147				

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)	106	70 - 130
4-Bromofluorobenzene	99	70 - 130
Dibromofluoromethane	98	70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-187214

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-187214/6	Analysis Batch:	680-187214	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq082.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 0949			Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 0949				

LCSD Lab Sample ID:	LCSD 680-187214/7	Analysis Batch:	680-187214	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq084.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1018			Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1018				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Acetone	80	101	26 - 180	23	50		
Benzene	99	101	70 - 130	1	30		
Dichlorobromomethane	103	103	70 - 130	1	30		
Bromomethane	81	106	23 - 165	27	50		
Carbon disulfide	83	105	54 - 132	23	30		
Chlorobenzene	104	104	70 - 130	0	30		
Chlorodibromomethane	115	104	70 - 130	10	50		
Chloroethane	66	91	56 - 152	31	40		
Chloromethane	71	99	70 - 130	32	30		Q
Chloroform	102	103	70 - 130	1	30		
1,2-Dibromo-3-Chloropropane	102	121	70 - 130	17	50		
Ethylene Dibromide	100	109	70 - 130	8	30		
Dichlorodifluoromethane	81	104	44 - 146	25	50		
1,1-Dichloroethane	101	99	70 - 130	2	30		
1,2-Dichloroethane	99	98	70 - 130	1	30		
trans-1,2-Dichloroethene	97	93	70 - 130	4	30		
1,1-Dichloroethene	94	97	66 - 131	3	30		
Methylene Chloride	84	107	67 - 130	24	30		
1,2-Dichloropropane	101	100	70 - 130	1	30		
cis-1,3-Dichloropropene	103	105	70 - 130	1	30		
trans-1,3-Dichloropropene	100	103	70 - 130	3	50		
Ethylbenzene	103	105	70 - 130	2	30		
2-Butanone (MEK)	97	101	49 - 172	4	30		
4-Methyl-2-pentanone (MIBK)	96	102	70 - 130	6	30		
Styrene	95	101	70 - 130	7	30		
1,1,1,2-Tetrachloroethane	106	97	70 - 130	9	30		
1,1,2,2-Tetrachloroethane	106	110	70 - 130	4	30		
Tetrachloroethene	106	97	70 - 130	9	30		
Carbon tetrachloride	99	98	70 - 130	1	30		
Toluene	96	106	70 - 130	10	30		
Bromoform	112	111	70 - 130	2	30		
1,1,2-Trichloroethane	98	100	70 - 130	2	30		
1,1,1-Trichloroethane	100	99	70 - 130	2	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-187214

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-187214/6	Analysis Batch:	680-187214	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq082.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 0949			Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 0949				

LCSD Lab Sample ID:	LCSD 680-187214/7	Analysis Batch:	680-187214	Instrument ID:	MSO2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq084.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1018			Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1018				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Trichloroethene	100	99	70 - 130	1	30		
Trichlorofluoromethane	80	83	55 - 156	3	30		
1,2,3-Trichloropropane	108	108	70 - 130	1	30		
Vinyl acetate	168	155	60 - 176	8	30		
Vinyl chloride	76	97	67 - 134	24	30		
Xylenes, Total	94	100	70 - 130	6	30		
2-Hexanone	105	101	42 - 185	4	30		
Chlorobromomethane	93	108	70 - 130	14	30		
cis-1,2-Dichloroethene	100	100	70 - 130	0	30		
1,3-Dichloropropane	100	106	70 - 130	6	30		
2,2-Dichloropropane	112	110	70 - 135	2	30		
1,1-Dichloropropene	102	97	70 - 130	5	30		
1,2-Dichlorobenzene	103	119	70 - 130	14	30		
1,3-Dichlorobenzene	101	117	70 - 130	15	30		
1,4-Dichlorobenzene	102	119	70 - 130	16	30		
1,2,4-Trichlorobenzene	97	117	65 - 130	18	30		
Dibromomethane	92	99	70 - 130	7	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	94	106	70 - 130
4-Bromofluorobenzene	104	112	70 - 130
Dibromofluoromethane	101	104	70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Method Blank - Batch: 680-187218

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-187218/12	Analysis Batch:	680-187218	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq089.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1133			Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1133				

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: 680-63405-1

Method Blank - Batch: 680-187218

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-187218/12	Analysis Batch:	680-187218	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq089.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 1133			Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1133				

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)	103	70 - 130
4-Bromofluorobenzene	101	70 - 130
Dibromofluoromethane	96	70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-187218

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-187218/9	Analysis Batch:	680-187218	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq081.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 0935			Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 0935				

LCSD Lab Sample ID:	LCSD 680-187218/10	Analysis Batch:	680-187218	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:	11/24/2010 1003			Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1003				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Acetone	99	103	26 - 180	4	50		
Benzene	101	101	70 - 130	0	30		
Dichlorobromomethane	111	109	70 - 130	2	30		
Bromomethane	92	86	23 - 165	6	50		
Carbon disulfide	95	97	54 - 132	3	30		
Chlorobenzene	101	102	70 - 130	2	30		
Chlorodibromomethane	110	111	70 - 130	1	50		
Chloroethane	81	78	56 - 152	4	40		
Chloromethane	87	84	70 - 130	4	30		
Chloroform	105	104	70 - 130	1	30		
1,2-Dibromo-3-Chloropropane	107	106	70 - 130	1	50		
Ethylene Dibromide	108	106	70 - 130	2	30		
Dichlorodifluoromethane	98	100	44 - 146	2	50		
1,1-Dichloroethane	101	100	70 - 130	1	30		
1,2-Dichloroethane	102	101	70 - 130	1	30		
trans-1,2-Dichloroethene	95	97	70 - 130	1	30		
1,1-Dichloroethene	93	95	66 - 131	2	30		
Methylene Chloride	98	99	67 - 130	1	30		
1,2-Dichloropropane	101	101	70 - 130	0	30		
cis-1,3-Dichloropropene	105	105	70 - 130	0	30		
trans-1,3-Dichloropropene	108	106	70 - 130	2	50		
Ethylbenzene	100	100	70 - 130	0	30		
2-Butanone (MEK)	102	103	49 - 172	1	30		
4-Methyl-2-pentanone (MIBK)	102	101	70 - 130	1	30		
Styrene	99	99	70 - 130	1	30		
1,1,1,2-Tetrachloroethane	101	103	70 - 130	2	30		
1,1,2,2-Tetrachloroethane	109	108	70 - 130	1	30		
Tetrachloroethene	102	101	70 - 130	1	30		
Carbon tetrachloride	102	101	70 - 130	1	30		
Toluene	104	105	70 - 130	1	30		
Bromoform	116	117	70 - 130	1	30		
1,1,2-Trichloroethane	104	105	70 - 130	1	30		
1,1,1-Trichloroethane	101	101	70 - 130	0	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-187218

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-187218/9	Analysis Batch:	680-187218	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq081.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/24/2010 0935			Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 0935				

LCSD Lab Sample ID:	LCSD 680-187218/10	Analysis Batch:	680-187218	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:	11/24/2010 1003			Final Weight/Volume:	5 mL
Date Prepared:	11/24/2010 1003				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Trichloroethene	100	99	70 - 130	1	30		
Trichlorofluoromethane	92	88	55 - 156	5	30		
1,2,3-Trichloropropane	112	112	70 - 130	0	30		
Vinyl acetate	154	153	60 - 176	1	30		
Vinyl chloride	87	85	67 - 134	2	30		
Xylenes, Total	96	97	70 - 130	1	30		
2-Hexanone	107	105	42 - 185	2	30		
Chlorobromomethane	101	95	70 - 130	5	30		
cis-1,2-Dichloroethene	102	101	70 - 130	1	30		
1,3-Dichloropropane	103	102	70 - 130	1	30		
2,2-Dichloropropane	112	111	70 - 135	1	30		
1,1-Dichloropropene	99	98	70 - 130	1	30		
1,2-Dichlorobenzene	108	105	70 - 130	2	30		
1,3-Dichlorobenzene	103	103	70 - 130	0	30		
1,4-Dichlorobenzene	106	105	70 - 130	1	30		
1,2,4-Trichlorobenzene	109	109	65 - 130	1	30		
Dibromomethane	99	96	70 - 130	3	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	102	103	70 - 130
4-Bromofluorobenzene	110	110	70 - 130
Dibromofluoromethane	102	101	70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Method Blank - Batch: 680-187308

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-187308/12	Analysis Batch:	680-187308	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq141.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1241			Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1241				

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: 680-63405-1

Method Blank - Batch: 680-187308

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-187308/12	Analysis Batch:	680-187308	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq141.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1241			Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1241				

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)	105	70 - 130
4-Bromofluorobenzene	98	70 - 130
Dibromofluoromethane	99	70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-187308

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID: LCS 680-187308/9
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/26/2010 1046
Date Prepared: 11/26/2010 1046

Analysis Batch: 680-187308
Prep Batch: N/A
Units: ug/L

Instrument ID: MSO
Lab File ID: oq133.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

LCSD Lab Sample ID: LCSD 680-187308/10
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/26/2010 1114
Date Prepared: 11/26/2010 1114

Analysis Batch: 680-187308
Prep Batch: N/A
Units: ug/L

Instrument ID: MSO
Lab File ID: oq135.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	109	100	26 - 180	9	50		
Benzene	103	99	70 - 130	3	30		
Dichlorobromomethane	103	100	70 - 130	4	30		
Bromomethane	66	54	23 - 165	20	50		
Carbon disulfide	99	96	54 - 132	3	30		
Chlorobenzene	101	99	70 - 130	2	30		
Chlorodibromomethane	110	108	70 - 130	2	50		
Chloroethane	103	97	56 - 152	7	40		
Chloromethane	98	89	70 - 130	10	30		
Chloroform	102	100	70 - 130	2	30		
1,2-Dibromo-3-Chloropropane	112	112	70 - 130	0	50		
Ethylene Dibromide	105	103	70 - 130	2	30		
Dichlorodifluoromethane	99	102	44 - 146	3	50		
1,1-Dichloroethane	104	101	70 - 130	3	30		
1,2-Dichloroethane	100	97	70 - 130	2	30		
trans-1,2-Dichloroethene	101	100	70 - 130	1	30		
1,1-Dichloroethene	99	97	66 - 131	2	30		
Methylene Chloride	100	98	67 - 130	2	30		
1,2-Dichloropropane	98	97	70 - 130	1	30		
cis-1,3-Dichloropropene	100	99	70 - 130	2	30		
trans-1,3-Dichloropropene	102	100	70 - 130	2	50		
Ethylbenzene	100	97	70 - 130	3	30		
2-Butanone (MEK)	113	107	49 - 172	5	30		
4-Methyl-2-pentanone (MIBK)	103	101	70 - 130	2	30		
Styrene	97	95	70 - 130	3	30		
1,1,1,2-Tetrachloroethane	105	103	70 - 130	2	30		
1,1,2,2-Tetrachloroethane	102	99	70 - 130	3	30		
Tetrachloroethene	100	99	70 - 130	2	30		
Carbon tetrachloride	104	100	70 - 130	3	30		
Toluene	97	95	70 - 130	2	30		
Bromoform	109	107	70 - 130	2	30		
1,1,2-Trichloroethane	99	95	70 - 130	4	30		
1,1,1-Trichloroethane	102	99	70 - 130	3	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-187308

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-187308/9	Analysis Batch:	680-187308	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq133.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1046			Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1046				

LCSD Lab Sample ID:	LCSD 680-187308/10	Analysis Batch:	680-187308	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	oq135.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 1114			Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 1114				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Trichloroethene	99	96	70 - 130	3	30		
Trichlorofluoromethane	100	95	55 - 156	5	30		
1,2,3-Trichloropropane	106	107	70 - 130	1	30		
Vinyl acetate	109	106	60 - 176	2	30		
Vinyl chloride	100	78	67 - 134	25	30		
Xylenes, Total	99	96	70 - 130	3	30		
2-Hexanone	102	101	42 - 185	1	30		
Chlorobromomethane	101	98	70 - 130	3	30		
cis-1,2-Dichloroethene	103	102	70 - 130	1	30		
1,3-Dichloropropane	102	100	70 - 130	2	30		
2,2-Dichloropropane	105	102	70 - 135	2	30		
1,1-Dichloropropene	99	96	70 - 130	3	30		
1,2-Dichlorobenzene	103	101	70 - 130	2	30		
1,3-Dichlorobenzene	102	100	70 - 130	2	30		
1,4-Dichlorobenzene	101	99	70 - 130	2	30		
1,2,4-Trichlorobenzene	108	109	65 - 130	0	30		
Dibromomethane	97	96	70 - 130	1	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	101	98	70 - 130
4-Bromofluorobenzene	99	96	70 - 130
Dibromofluoromethane	100	99	70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-187308

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	680-63405-14	Analysis Batch:	680-187308	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	o0143.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 2021			Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 2021				

MSD Lab Sample ID:	680-63405-14	Analysis Batch:	680-187308	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	o0145.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 2049			Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 2049				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Acetone	92	102	26 - 180	10	50		
Benzene	103	104	70 - 130	1	30		
Dichlorobromomethane	99	101	70 - 130	2	30		
Bromomethane	128	64	23 - 165	67	50		J
Carbon disulfide	103	106	54 - 132	3	30		
Chlorobenzene	101	100	70 - 130	1	30		
Chlorodibromomethane	101	101	70 - 130	0	50		
Chloroethane	122	112	56 - 152	9	40		
Chloromethane	102	108	70 - 130	6	30		
Chloroform	105	109	70 - 130	3	30		
1,2-Dibromo-3-Chloropropane	100	105	70 - 130	5	50		
Ethylene Dibromide	98	98	70 - 130	1	30		
Dichlorodifluoromethane	120	126	44 - 146	5	50		
1,1-Dichloroethane	107	109	70 - 130	2	30		
1,2-Dichloroethane	100	101	70 - 130	1	30		
trans-1,2-Dichloroethene	105	107	70 - 130	2	30		
1,1-Dichloroethene	112	113	66 - 131	1	30		
Methylene Chloride	101	108	67 - 130	6	30		
1,2-Dichloropropane	102	103	70 - 130	1	30		
cis-1,3-Dichloropropene	96	97	70 - 130	2	30		
trans-1,3-Dichloropropene	93	95	70 - 130	2	50		
Ethylbenzene	103	102	70 - 130	1	30		
2-Butanone (MEK)	93	102	49 - 172	9	30		
4-Methyl-2-pentanone (MIBK)	89	93	70 - 130	4	30		
Styrene	96	95	70 - 130	1	30		
1,1,1,2-Tetrachloroethane	107	108	70 - 130	1	30		
1,1,2,2-Tetrachloroethane	102	104	70 - 130	2	30		
Tetrachloroethene	102	101	70 - 130	2	30		
Carbon tetrachloride	105	106	70 - 130	1	30		
Toluene	101	101	70 - 130	0	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-187308

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	680-63405-14	Analysis Batch:	680-187308	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	o0143.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 2021			Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 2021				

MSD Lab Sample ID:	680-63405-14	Analysis Batch:	680-187308	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	o0145.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Date Analyzed:	11/26/2010 2049			Final Weight/Volume:	5 mL
Date Prepared:	11/26/2010 2049				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Bromoform	95	100	70 - 130	6	30		
1,1,2-Trichloroethane	99	100	70 - 130	1	30		
1,1,1-Trichloroethane	103	105	70 - 130	2	30		
Trichloroethene	99	100	70 - 130	1	30		
Trichlorofluoromethane	113	111	55 - 156	1	30		
1,2,3-Trichloropropane	101	100	70 - 130	1	30		
Vinyl acetate	86	90	60 - 176	4	30		
Vinyl chloride	111	110	67 - 134	1	30		
Xylenes, Total	100	100	70 - 130	0	30		
2-Hexanone	87	89	42 - 185	2	30		
Chlorobromomethane	103	108	70 - 130	5	30		
cis-1,2-Dichloroethene	106	109	70 - 130	3	30		
1,3-Dichloropropane	103	102	70 - 130	1	30		
2,2-Dichloropropane	90	93	70 - 135	4	30		
1,1-Dichloropropene	106	107	70 - 130	1	30		
1,2-Dichlorobenzene	100	101	70 - 130	1	30		
1,3-Dichlorobenzene	97	99	70 - 130	2	30		
1,4-Dichlorobenzene	98	99	70 - 130	1	30		
1,2,4-Trichlorobenzene	98	101	65 - 130	3	30		
Dibromomethane	95	96	70 - 130	1	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	101	102	70 - 130
4-Bromofluorobenzene	97	97	70 - 130
Dibromofluoromethane	101	103	70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Method Blank - Batch: 680-186894

Method: 6020A
Preparation: 3030C

Lab Sample ID:	MB 680-186894/15-A	Analysis Batch:	680-187359	Instrument ID:	ICPMSB
Client Matrix:	Water	Prep Batch:	680-186894	Lab File ID:	186894.chr
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2010 0441			Final Weight/Volume:	50 mL
Date Prepared:	11/22/2010 1608				

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
Copper	0.21	U	0.21	1.0
Lead	0.080	U	0.080	0.30
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: 680-63405-1

Lab Control Sample - Batch: 680-186894

Method: 6020A
Preparation: 3030C

Lab Sample ID: LCS 680-186894/16-A
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 11/24/2010 1336
Date Prepared: 11/22/2010 1608

Analysis Batch: 680-187359
Prep Batch: 680-186894
Units: ug/L

Instrument ID: ICPMSB
Lab File ID: 186894.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	50.0	54.8	110	75 - 125	
Arsenic	100	100	100	75 - 125	
Barium	100	102	102	75 - 125	
Beryllium	50.0	48.1	96	75 - 125	
Cadmium	50.0	50.2	100	75 - 125	
Chromium	100	93.0	93	75 - 125	
Cobalt	50.0	45.5	91	75 - 125	
Copper	100	96.2	96	75 - 125	
Lead	50.0	51.4	103	75 - 125	
Nickel	100	96.0	96	75 - 125	
Selenium	100	101	101	75 - 125	
Silver	50.0	50.4	101	75 - 125	
Thallium	40.0	40.6	102	75 - 125	
Tin	100	93.6	94	75 - 125	
Vanadium	100	92.0	92	75 - 125	
Zinc	100	99.8	100	75 - 125	

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-186894

Method: 6020A
Preparation: 3030C

MS Lab Sample ID:	680-63405-14	Analysis Batch:	680-187359	Instrument ID:	ICPMSB
Client Matrix:	Water	Prep Batch:	680-186894	Lab File ID:	186894.chr
Dilution:	5.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2010 1343			Final Weight/Volume:	50 mL
Date Prepared:	11/22/2010 1608				

MSD Lab Sample ID:	680-63405-14	Analysis Batch:	680-187359	Instrument ID:	ICPMSB
Client Matrix:	Water	Prep Batch:	680-186894	Lab File ID:	186894.chr
Dilution:	5.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2010 1350			Final Weight/Volume:	50 mL
Date Prepared:	11/22/2010 1608				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Antimony	113	114	75 - 125	1	20		
Arsenic	108	102	75 - 125	6	20		
Barium	105	107	75 - 125	2	20		
Beryllium	99	99	75 - 125	0	20		
Cadmium	103	104	75 - 125	1	20		
Chromium	101	95	75 - 125	6	20		
Cobalt	94	94	75 - 125	0	20		
Copper	103	103	75 - 125	1	20		
Lead	106	107	75 - 125	1	20		
Nickel	104	98	75 - 125	6	20		
Selenium	103	103	75 - 125	0	20		
Silver	103	104	75 - 125	1	20		
Thallium	107	107	75 - 125	0	20		
Tin	97	98	75 - 125	0	20		
Vanadium	99	94	75 - 125	4	20		
Zinc	100	101	75 - 125	1	20		

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Method Blank - Batch: 680-187904

Method: 7470A
Preparation: 7470A

Lab Sample ID: MB 680-187904/31-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/06/2010 1511
Date Prepared: 12/04/2010 1128

Analysis Batch: 680-188222
Prep Batch: 680-187904
Units: ug/L

Instrument ID: LEEMAN1
Lab File ID: b120610a.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/
Lab Control Sample Duplicate Recovery Report - Batch: 680-187904

Method: 7470A
Preparation: 7470A

LCS Lab Sample ID: LCS 680-187904/32-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/06/2010 1514
Date Prepared: 12/04/2010 1128

Analysis Batch: 680-188222
Prep Batch: 680-187904
Units: ug/L

Instrument ID: LEEMAN1
Lab File ID: b120610a.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 680-187904/33-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/06/2010 1517
Date Prepared: 12/04/2010 1128

Analysis Batch: 680-188222
Prep Batch: 680-187904
Units: ug/L

Instrument ID: LEEMAN1
Lab File ID: b120610a.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Mercury	99	95	80 - 120	4	20		

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-187904

Method: 7470A
Preparation: 7470A

MS Lab Sample ID:	680-63405-14	Analysis Batch:	680-188222	Instrument ID:	LEEMAN1
Client Matrix:	Water	Prep Batch:	680-187904	Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1556			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

MSD Lab Sample ID:	680-63405-14	Analysis Batch:	680-188222	Instrument ID:	LEEMAN1
Client Matrix:	Water	Prep Batch:	680-187904	Lab File ID:	b120610a.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/06/2010 1558			Final Weight/Volume:	50 mL
Date Prepared:	12/04/2010 1128				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Mercury	99	97	80 - 120	2	20		

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Method Blank - Batch: 680-187836

Method: 300.0
Preparation: N/A

Lab Sample ID: MB 680-187836/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/22/2010 1217
Date Prepared: N/A

Analysis Batch: 680-187836
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	0.072	U	0.072	0.22

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-187836

Method: 300.0
Preparation: N/A

LCS Lab Sample ID: LCS 680-187836/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/22/2010 1230
Date Prepared: N/A

Analysis Batch: 680-187836
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
1 uL

LCSD Lab Sample ID: LCSD 680-187836/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/22/2010 1243
Date Prepared: N/A

Analysis Batch: 680-187836
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0007.d
Initial Weight/Volume: 1 mL
Final Weight/Volume: 5 mL
1 uL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Nitrate as NO3	96	96	90 - 110	0	30		

Matrix Spike - Batch: 680-187836

Method: 300.0
Preparation: N/A

Lab Sample ID: 680-63405-7
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/22/2010 1350
Date Prepared: N/A

Analysis Batch: 680-187836
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0012.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	0.094	J	4.42	4.66	103	90 - 110	

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-187836

Method: 300.0
Preparation: N/A

MS Lab Sample ID:	680-63405-14	Analysis Batch:	680-187836	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0021.d
Dilution:	1.0			Initial Weight/Volume:	1 mL
Date Analyzed:	11/22/2010 1551			Final Weight/Volume:	5 mL
Date Prepared:	N/A				1 uL

MSD Lab Sample ID:	680-63405-14	Analysis Batch:	680-187836	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0022.d
Dilution:	1.0			Initial Weight/Volume:	1 mL
Date Analyzed:	11/22/2010 1605			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	103	103	90 - 110	1	30		

Serial Number 033945

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: Lamont Landfill	PROJECT NO.	PROJECT LOCATION (STATE): NC
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
CLIENT (SITE) PM: Kevin Haborak	CLIENT PHONE: 912-652-6083	CLIENT FAX: 912-652-5311
CLIENT NAME: Fort Brags / USACE	CLIENT E-MAIL	
CLIENT ADDRESS: 100 W Oglethorpe Ave Savannah GA 31401		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 2

STANDARD REPORT DELIVERY ◯

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSIS / PRESERVATIVE / 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, ...)	82608 (ICE)	300.0 (ICE)	3030C (HNO_3)								REMARKS
11-20-10	1045	LMW-9D-11-10	G	X				3										
11-21-10	0850	LMW-9D-11-10	G	X					1	1								
11-20-10	1225	LMW-9s-11-10	G	X				3										
11-21-10	0905	LMW-9s-11-10	G	X					1	1								
11-20-10	0900	LMW-DUP1-11-10	G	X				3										
11-21-10	0900	LMW-DUP1-11-10	G	X					1	1								
11-21-10	0840	LMW-9-11-10	G	X				3	1	1								
11-21-10	1055	LMW-8-11-10	G	X				3	1	1								
11-21-10	1315	LMW-10-11-10	G	X				3	1	1								
11-21-10	1455	LMW-16-11-10	G	X				3	1	1								
~~11-21-10~~		Trip Blank		X				2										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Sarah Gilly	11-22-10	1012						
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 Daughtry	11/22/10	1030	YES ◯ NO ◯		680-63405	Temp 3.8

TA1.8240-680 (1008)

Serial Number 033553

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

(X) 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 LF)	PROJECT NO.	PROJECT LOCATION (STATE): NC
TAL (LAB) PROJECT MANAGER: Kathy Smith	P.O. NUMBER	CONTRACT NO.
CLIENT (SITE) PM: Kevin Halbjiak	CLIENT PHONE: 912 652 6083	CLIENT FAX: 912652 5311
CLIENT NAME: USACE	CLIENT E-MAIL	
CLIENT ADDRESS: 100 West Oglethorpe Avenue Savannah GA 31401		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 2 OF 2

STANDARD REPORT DELIVERY ( )

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

PRESERVATIVE: HCl | HNO3 | HCl

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	8260	6020	300.0								REMARKS
								NUMBER OF CONTAINERS SUBMITTED										
11-21-10	0940	LMW-15R-11-10	G	X				3	1	1								
	1200	LMW-DUP2-11-10						3	1	1								
	1035	LMW-14R-11-10						6	2	2								MS/MSD
	1145	LMW-6-11-10						3	1	1								
	1240	LMW-3-11-10						3	1	1								
	1400	LMW-35-11-10						3	1	1								
	1540	LMW-4-11-10	G	X				3	1	1								

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Scott Gerdy	11-22-10	1012						
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
Ruth A Daughtry	11/22/10	1036	YES ( ) NO ( )		680 63405	Temp 3.8

TAL8240-680 (1207)

Login Sample Receipt Check List

Client: U.S. Army Corps of Engineers

Job Number: 680-63405-1

Login Number: 63405

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	
Is the Field Sampler's name present on COC?	False	
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	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	

APPENDIX D

STATISTICAL REPORTS
(Electronic Only)

US Army Corps
of Engineers
Savannah District

DIRECTORATE OF PUBLIC
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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 N21

Permit No. 26G and 26-08

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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 November, 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 did not indicate that the data represented a SSI.

Analysis of the acetone data using data using the Non-Parametric Prediction Limit test indicated a possible SSI in monitoring well LMW-7. 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 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 possible 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 at the group level, no single well was indicated to have an SSI. Therefore, the Non-Parametric Prediction Limit was used to test if the data contained SSIs. The Non-Parametric Prediction Limit did not indicate that the data contained SSIs for any of the wells.

Analysis of the copper data using the Kruskal-Wallis test indicated a possible SSI at the group level, no single well was indicated to have an SSI. Therefore, the Non-Parametric Prediction Limit was used to test if the data contained SSIs. The Non-Parametric Prediction Limit did not indicate that the data contained SSIs for any of the wells.

Analysis of the 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 (for either well) or the Shewhart-CUSUM Control Chart (for LMW-8). The SSI for LMW-6 was confirmed by the Shewhart-CUSUM Control Chart. The fluctuations in the LMW-8 data are not SSIs. Since the statistical tests are inconclusive for LMW-6, further data is needed to confirm the SSI.

Analysis of the trichlorofluoromethane data using the Kruskal-Wallis test indicated a possible SSI at the group level, no single well was indicated to have an SSI. Therefore, the Non-Parametric Prediction Limit was used to test if the data contained SSIs. The Non-Parametric Prediction Limit 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, dichlorodifluoromethane, and selenium 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: January 2010

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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 twenty-first round of sampling (N=21) were conducted during November 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.

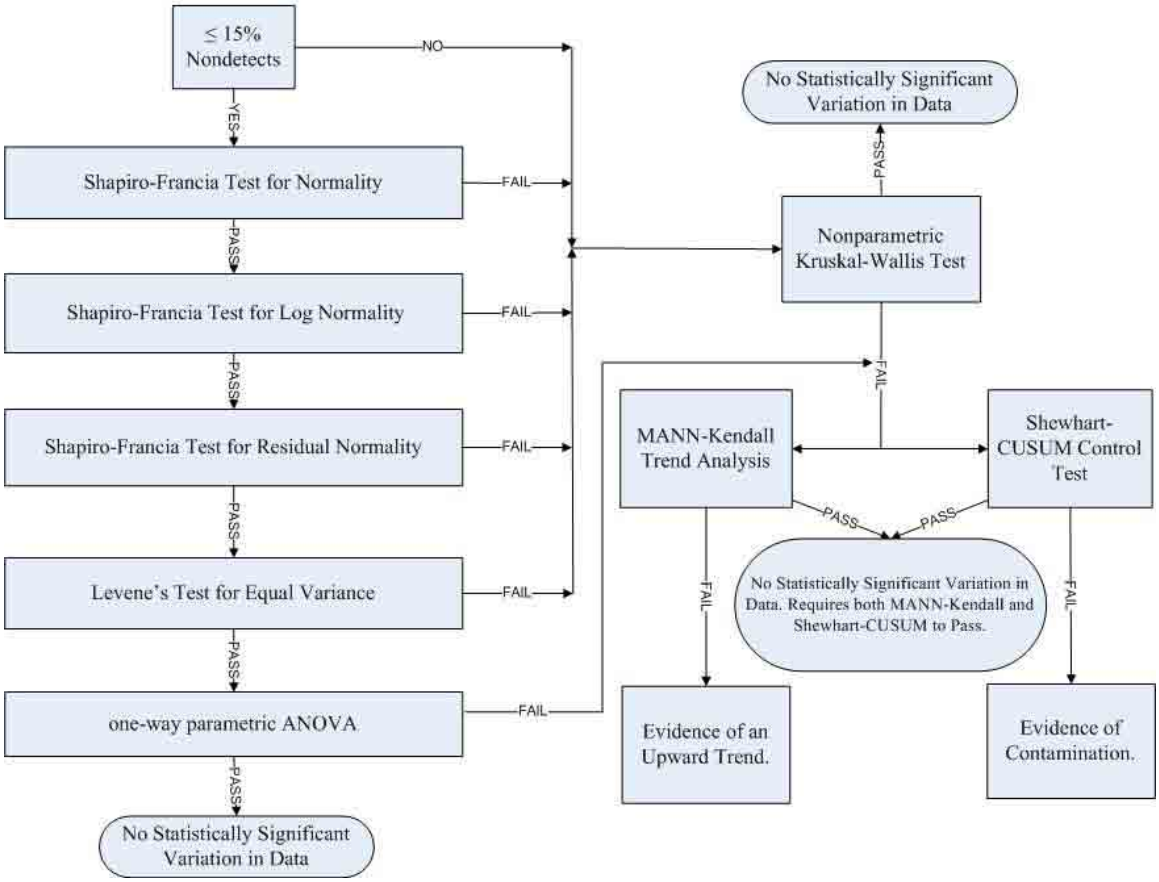
In this case, the Kruskal-Wallis Test performs post-hoc comparisons between background and compliance well data to determine which wells, if any, show evidence of contamination. If the difference between the average ranks and the mean background rank of any individual well exceeds the critical difference 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 November, 2010. 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 did not indicate that the data represented a SSI.

Analysis of the acetone data using data using the Non-Parametric Prediction Limit test indicated a possible SSI in monitoring well LMW-7. 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 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 possible 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 at the group level, no single well was indicated to have an SSI. Therefore, the Non-Parametric Prediction Limit was used to test if the data contained SSIs. The Non-Parametric Prediction Limit did not indicate that the data contained SSIs for any of the wells.

Analysis of the copper data using the Kruskal-Wallis test indicated a possible SSI at the group level, no single well was indicated to have an SSI. Therefore, the Non-Parametric Prediction Limit was used to test if the data contained SSIs. The Non-Parametric Prediction Limit did not indicate that the data contained SSIs for any of the wells.

Analysis of the 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 (for either well) or the Shewhart-CUSUM Control Chart (for LMW-8). The SSI for LMW-6 was confirmed by the Shewhart-CUSUM Control Chart. The fluctuations in the LMW-8 data are not SSIs. Since the statistical tests are inconclusive for LMW-6, further data is needed to confirm the SSI.

Analysis of the trichlorofluoromethane data using the Kruskal-Wallis test indicated a possible SSI at the group level, no single well was indicated to have an SSI. Therefore, the Non-Parametric Prediction Limit was used to test if the data contained SSIs. The Non-Parametric Prediction Limit 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, dichlorodifluoromethane, and selenium 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 (ug/L)

Parameter: 1,2-cis-Dichloroethylene

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 220
Total Non-Detect: 217
Percent Non-Detects: 98.6364%
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
			6/30/2010	ND<0.15 U	ND<0.15 U
			11/17/2010	ND<0.15 U	ND<0.15 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
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
			6/30/2010	ND<0.15 U	ND<0.15 U
			11/17/2010	ND<0.15 U	ND<0.15 U
LMW-7	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
			11/17/2010	ND<0.15 U		ND<0.15 U
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
			6/30/2010	ND<0.15 U		ND<0.15 U
			11/17/2010	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
			6/30/2010	ND<0.15 U		ND<0.15 U
			11/17/2010	ND<0.15 U		ND<0.15 U
LMW-14R	7	7 (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
			11/17/2010	ND<0.15 U		ND<0.15 U
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
			6/30/2010	ND<0.15 U	ND<0.15 U
			11/17/2010	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
			6/30/2010	ND<0.15 U	ND<0.15 U
			11/17/2010	ND<0.15 U	ND<0.15 U
LMW-9S	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
			6/30/2010	ND<0.15 U	ND<0.15 U
			11/17/2010	ND<0.15 U	ND<0.15 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<0.15 U	ND<0.15 U
			6/30/2010	ND<0.15 U	ND<0.15 U
			11/17/2010	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
			6/30/2010	ND<0.15 U	ND<0.15 U
			11/17/2010	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<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	
			11/17/2010	0.67 J	0.67 J	
LMW-15R	11	11 (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	
			11/17/2010	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-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-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

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 = 220

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	-1.65463	45.149	-0.953029
12	0.075	-1.60725	47.7323	-1.07357
13	0.075	-1.57179	50.2028	-1.19146
14	0.075	-1.53007	52.5439	-1.30621
15	0.075	-1.49852	54.7894	-1.4186
16	0.075	-1.46106	56.9241	-1.52818
17	0.075	-1.4325	58.9762	-1.63562
18	0.075	-1.39838	60.9316	-1.7405
19	0.075	-1.3722	62.8146	-1.84341
20	0.075	-1.34075	64.6122	-1.94397
21	0.075	-1.31058	66.3298	-2.04226
22	0.075	-1.28727	67.9869	-2.13881
23	0.075	-1.25908	69.5722	-2.23324
24	0.075	-1.23724	71.1029	-2.32603
25	0.075	-1.21073	72.5688	-2.41683
26	0.075	-1.19012	73.9852	-2.50609
27	0.075	-1.16505	75.3425	-2.59347
28	0.075	-1.1455	76.6547	-2.67939
29	0.075	-1.12168	77.9129	-2.76351
30	0.075	-1.10306	79.1296	-2.84624
31	0.075	-1.08032	80.2967	-2.92726
32	0.075	-1.06252	81.4257	-3.00695
33	0.075	-1.04073	82.5088	-3.08501
34	0.075	-1.02365	83.5566	-3.16178
35	0.075	-1.00271	84.5621	-3.23699
36	0.075	-0.986272	85.5348	-3.31096
37	0.075	-0.966088	86.4681	-3.38341
38	0.075	-0.950222	87.3711	-3.45468
39	0.075	-0.930718	88.2373	-3.52448
40	0.5	-0.915365	89.0752	-3.98217
41	0.5	-0.896473	89.8788	-4.4304
42	0.5	-0.877897	90.6496	-4.86935
43	0.5	-0.863249	91.3947	-5.30098
44	0.5	-0.845198	92.1091	-5.72357
45	0.5	-0.830953	92.7996	-6.13905
46	0.5	-0.813379	93.4612	-6.54574
47	0.5	-0.7995	94.1004	-6.94549
48	0.5	-0.782366	94.7125	-7.33667
49	0.5	-0.768821	95.3036	-7.72108

50	0.5	-0.752084	95.8692	-8.09713
51	0.5	-0.738846	96.4151	-8.46655
52	0.5	-0.722479	96.9371	-8.82779
53	0.5	-0.709522	97.4405	-9.18255
54	0.5	-0.693493	97.9214	-9.5293
55	0.5	-0.680797	98.3849	-9.86969
56	0.5	-0.665079	98.8272	-10.2022
57	0.5	-0.652622	99.2531	-10.5285
58	0.5	-0.637192	99.6592	-10.8471
59	0.5	-0.624956	100.05	-11.1596
60	0.5	-0.609791	100.422	-11.4645
61	0.5	-0.594766	100.775	-11.7619
62	0.5	-0.582841	101.115	-12.0533
63	0.5	-0.568052	101.438	-12.3373
64	0.5	-0.556308	101.747	-12.6155
65	0.5	-0.541736	102.041	-12.8864
66	0.5	-0.530162	102.322	-13.1514
67	0.5	-0.515791	102.588	-13.4093
68	0.5	-0.504372	102.842	-13.6615
69	0.5	-0.490189	103.082	-13.9066
70	0.5	-0.478914	103.312	-14.1461
71	0.5	-0.464904	103.528	-14.3785
72	0.5	-0.453763	103.734	-14.6054
73	0.5	-0.439913	103.927	-14.8254
74	0.5	-0.428895	104.111	-15.0398
75	0.5	-0.415193	104.284	-15.2474
76	0.5	-0.40429	104.447	-15.4496
77	0.5	-0.390726	104.6	-15.6449
78	0.5	-0.379927	104.744	-15.8349
79	0.5	-0.36649	104.878	-16.0181
80	0.5	-0.355788	105.005	-16.196
81	0.5	-0.342466	105.122	-16.3673
82	0.5	-0.329206	105.231	-16.5319
83	0.5	-0.318639	105.332	-16.6912
84	0.5	-0.305481	105.426	-16.8439
85	0.5	-0.294992	105.513	-16.9914
86	0.5	-0.281926	105.592	-17.1324
87	0.5	-0.271509	105.666	-17.2681
88	0.5	-0.258527	105.733	-17.3974
89	0.5	-0.248174	105.794	-17.5215
90	0.5	-0.235269	105.85	-17.6391
91	0.5	-0.224974	105.9	-17.7516
92	0.5	-0.212137	105.945	-17.8577
93	0.5	-0.201894	105.986	-17.9586
94	0.5	-0.189118	106.022	-18.0532
95	0.5	-0.17892	106.054	-18.1426
96	0.5	-0.166199	106.081	-18.2257
97	0.5	-0.156042	106.106	-18.3038
98	0.5	-0.143367	106.126	-18.3754
99	0.5	-0.133244	106.144	-18.4421
100	0.5	-0.12061	106.159	-18.5024
101	0.5	-0.107995	106.17	-18.5564
102	0.5	-0.0979139	106.18	-18.6053
103	0.5	-0.0853288	106.187	-18.648
104	0.5	-0.0752698	106.193	-18.6856
105	0.5	-0.0627062	106.197	-18.717
106	0.5	-0.0526632	106.199	-18.7433
107	0.5	-0.0401167	106.201	-18.7634
108	0.5	-0.0300838	106.202	-18.7784
109	0.5	-0.0175476	106.202	-18.7872
110	0.5	-0.00751925	106.202	-18.7909
111	0.5	0.00751925	106.202	-18.7872

112	0.5	0.0175476	106.203	-18.7784
113	0.5	0.0300838	106.204	-18.7634
114	0.5	0.0401167	106.205	-18.7433
115	0.5	0.0526632	106.208	-18.717
116	0.5	0.0627062	106.212	-18.6856
117	0.5	0.0752698	106.218	-18.648
118	0.5	0.0853288	106.225	-18.6053
119	0.5	0.0979139	106.234	-18.5564
120	0.5	0.107995	106.246	-18.5024
121	0.5	0.12061	106.261	-18.4421
122	0.5	0.133244	106.278	-18.3754
123	0.5	0.143367	106.299	-18.3038
124	0.5	0.156042	106.323	-18.2257
125	0.5	0.166199	106.351	-18.1426
126	0.5	0.17892	106.383	-18.0532
127	0.5	0.189118	106.419	-17.9586
128	0.5	0.201894	106.459	-17.8577
129	0.5	0.212137	106.504	-17.7516
130	0.5	0.224974	106.555	-17.6391
131	0.5	0.235269	106.61	-17.5215
132	0.5	0.248174	106.672	-17.3974
133	0.5	0.258527	106.739	-17.2681
134	0.5	0.271509	106.813	-17.1324
135	0.5	0.281926	106.892	-16.9914
136	0.5	0.294992	106.979	-16.8439
137	0.5	0.305481	107.072	-16.6912
138	0.5	0.318639	107.174	-16.5319
139	0.5	0.329206	107.282	-16.3673
140	0.5	0.342466	107.4	-16.196
141	0.5	0.355788	107.526	-16.0181
142	0.5	0.36649	107.661	-15.8349
143	0.5	0.379927	107.805	-15.6449
144	0.5	0.390726	107.958	-15.4496
145	0.5	0.40429	108.121	-15.2474
146	0.5	0.415193	108.293	-15.0398
147	0.5	0.428895	108.477	-14.8254
148	0.5	0.439913	108.671	-14.6054
149	0.5	0.453763	108.877	-14.3785
150	0.5	0.464904	109.093	-14.1461
151	0.5	0.478914	109.322	-13.9066
152	0.5	0.490189	109.563	-13.6615
153	0.5	0.504372	109.817	-13.4093
154	0.5	0.515791	110.083	-13.1514
155	0.5	0.530162	110.364	-12.8864
156	0.5	0.541736	110.657	-12.6155
157	0.5	0.556308	110.967	-12.3373
158	0.5	0.568052	111.29	-12.0533
159	0.5	0.582841	111.629	-11.7619
160	0.5	0.594766	111.983	-11.4645
161	0.5	0.609791	112.355	-11.1596
162	0.5	0.624956	112.746	-10.8471
163	0.5	0.637192	113.152	-10.5285
164	0.5	0.652622	113.577	-10.2022
165	0.5	0.665079	114.02	-9.86969
166	0.5	0.680797	114.483	-9.5293
167	0.5	0.693493	114.964	-9.18255
168	0.5	0.709522	115.468	-8.82779
169	0.5	0.722479	115.99	-8.46655
170	0.5	0.738846	116.535	-8.09713
171	0.5	0.752084	117.101	-7.72108
172	0.5	0.768821	117.692	-7.33667
173	0.5	0.782366	118.304	-6.94549

174	0.5	0.7995	118.943	-6.54574
175	0.5	0.813379	119.605	-6.13905
176	0.5	0.830953	120.296	-5.72357
177	0.5	0.845198	121.01	-5.30098
178	0.5	0.863249	121.755	-4.86935
179	0.5	0.877897	122.526	-4.4304
180	0.5	0.896473	123.329	-3.98217
181	0.5	0.915365	124.167	-3.52448
182	0.5	0.930718	125.034	-3.05912
183	0.5	0.950222	125.937	-2.58401
184	0.5	0.966088	126.87	-2.10097
185	0.5	0.986272	127.843	-1.60783
186	0.5	1.00271	128.848	-1.10648
187	0.5	1.02365	129.896	-0.594652
188	0.5	1.04073	130.979	-0.0742857
189	0.5	1.06252	132.108	0.456974
190	0.5	1.08032	133.275	0.997134
191	0.5	1.10306	134.492	1.54867
192	0.5	1.12168	135.75	2.1095
193	0.5	1.1455	137.062	2.68226
194	0.5	1.16505	138.419	3.26478
195	0.5	1.19012	139.836	3.85984
196	0.5	1.21073	141.302	4.4652
197	0.5	1.23724	142.832	5.08382
198	0.5	1.25908	144.418	5.71336
199	0.5	1.28727	146.075	6.357
200	0.5	1.31058	147.792	7.01229
201	0.5	1.34075	149.59	7.68267
202	0.5	1.3722	151.473	8.36877
203	0.5	1.39838	153.428	9.06796
204	0.5	1.4325	155.481	9.78421
205	0.5	1.46106	157.615	10.5147
206	0.5	1.49852	159.861	11.264
207	0.5	1.53007	162.202	12.029
208	0.5	1.57179	164.672	12.8149
209	0.5	1.60725	167.256	13.6185
210	0.5	1.65463	169.993	14.4459
211	0.5	1.6954	172.868	15.2936
212	0.5	1.75069	175.933	16.1689
213	0.5	1.79912	179.17	17.0685
214	0.5	1.86629	182.653	18.0016
215	0.5	1.92684	186.365	18.965
216	0.5	2.01409	190.422	19.9721
217	0.5	2.09693	194.819	21.0205
218	0.67	2.22621	199.775	22.5121
219	1.1	2.36561	205.371	25.1143
220	2.4	2.65209	212.405	31.4793

Data Set Standard Deviation = 0.217956
Numerator = 990.945
Denominator = 2209.77
W Statistic = 0.448438 = 990.945 / 2209.77

5% Critical value of 0.976 exceeds 0.448438
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.448438
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 = 220

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	-1.65463	45.149	57.1099
12	-2.59027	-1.60725	47.7323	61.2731
13	-2.59027	-1.57179	50.2028	65.3445
14	-2.59027	-1.53007	52.5439	69.3078
15	-2.59027	-1.49852	54.7894	73.1893
16	-2.59027	-1.46106	56.9241	76.9738
17	-2.59027	-1.4325	58.9762	80.6844
18	-2.59027	-1.39838	60.9316	84.3066
19	-2.59027	-1.3722	62.8146	87.861
20	-2.59027	-1.34075	64.6122	91.3339
21	-2.59027	-1.31058	66.3298	94.7286
22	-2.59027	-1.28727	67.9869	98.063
23	-2.59027	-1.25908	69.5722	101.324
24	-2.59027	-1.23724	71.1029	104.529
25	-2.59027	-1.21073	72.5688	107.665
26	-2.59027	-1.19012	73.9852	110.748
27	-2.59027	-1.16505	75.3425	113.766
28	-2.59027	-1.1455	76.6547	116.733
29	-2.59027	-1.12168	77.9129	119.638
30	-2.59027	-1.10306	79.1296	122.496
31	-2.59027	-1.08032	80.2967	125.294
32	-2.59027	-1.06252	81.4257	128.046
33	-2.59027	-1.04073	82.5088	130.742
34	-2.59027	-1.02365	83.5566	133.393
35	-2.59027	-1.00271	84.5621	135.991
36	-0.693147	-0.986272	85.5348	136.674
37	-0.693147	-0.966088	86.4681	137.344
38	-0.693147	-0.950222	87.3711	138.003
39	-0.693147	-0.930718	88.2373	138.648
40	-0.693147	-0.915365	89.0752	139.282
41	-0.693147	-0.896473	89.8788	139.904
42	-0.693147	-0.877897	90.6496	140.512
43	-0.693147	-0.863249	91.3947	141.11
44	-0.693147	-0.845198	92.1091	141.696
45	-0.693147	-0.830953	92.7996	142.272
46	-0.693147	-0.813379	93.4612	142.836
47	-0.693147	-0.7995	94.1004	143.39
48	-0.693147	-0.782366	94.7125	143.933
49	-0.693147	-0.768821	95.3036	144.465

50	-0.693147	-0.752084	95.8692	144.987
51	-0.693147	-0.738846	96.4151	145.499
52	-0.693147	-0.722479	96.9371	146
53	-0.693147	-0.709522	97.4405	146.491
54	-0.693147	-0.693493	97.9214	146.972
55	-0.693147	-0.680797	98.3849	147.444
56	-0.693147	-0.665079	98.8272	147.905
57	-0.693147	-0.652622	99.2531	148.357
58	-0.693147	-0.637192	99.6592	148.799
59	-0.693147	-0.624956	100.05	149.232
60	-0.693147	-0.609791	100.422	149.655
61	-0.693147	-0.594766	100.775	150.067
62	-0.693147	-0.582841	101.115	150.471
63	-0.693147	-0.568052	101.438	150.865
64	-0.693147	-0.556308	101.747	151.251
65	-0.693147	-0.541736	102.041	151.626
66	-0.693147	-0.530162	102.322	151.994
67	-0.693147	-0.515791	102.588	152.351
68	-0.693147	-0.504372	102.842	152.701
69	-0.693147	-0.490189	103.082	153.04
70	-0.693147	-0.478914	103.312	153.372
71	-0.693147	-0.464904	103.528	153.695
72	-0.693147	-0.453763	103.734	154.009
73	-0.693147	-0.439913	103.927	154.314
74	-0.693147	-0.428895	104.111	154.611
75	-0.693147	-0.415193	104.284	154.899
76	-0.693147	-0.40429	104.447	155.179
77	-0.693147	-0.390726	104.6	155.45
78	-0.693147	-0.379927	104.744	155.714
79	-0.693147	-0.36649	104.878	155.968
80	-0.693147	-0.355788	105.005	156.214
81	-0.693147	-0.342466	105.122	156.452
82	-0.693147	-0.329206	105.231	156.68
83	-0.693147	-0.318639	105.332	156.901
84	-0.693147	-0.305481	105.426	157.112
85	-0.693147	-0.294992	105.513	157.317
86	-0.693147	-0.281926	105.592	157.512
87	-0.693147	-0.271509	105.666	157.7
88	-0.693147	-0.258527	105.733	157.88
89	-0.693147	-0.248174	105.794	158.052
90	-0.693147	-0.235269	105.85	158.215
91	-0.693147	-0.224974	105.9	158.371
92	-0.693147	-0.212137	105.945	158.518
93	-0.693147	-0.201894	105.986	158.658
94	-0.693147	-0.189118	106.022	158.789
95	-0.693147	-0.17892	106.054	158.913
96	-0.693147	-0.166199	106.081	159.028
97	-0.693147	-0.156042	106.106	159.136
98	-0.693147	-0.143367	106.126	159.236
99	-0.693147	-0.133244	106.144	159.328
100	-0.693147	-0.12061	106.159	159.412
101	-0.693147	-0.107995	106.17	159.486
102	-0.693147	-0.0979139	106.18	159.554
103	-0.693147	-0.0853288	106.187	159.613
104	-0.693147	-0.0752698	106.193	159.666
105	-0.693147	-0.0627062	106.197	159.709
106	-0.693147	-0.0526632	106.199	159.746
107	-0.693147	-0.0401167	106.201	159.773
108	-0.693147	-0.0300838	106.202	159.794
109	-0.693147	-0.0175476	106.202	159.806
110	-0.693147	-0.00751925	106.202	159.812
111	-0.693147	0.00751925	106.202	159.806

112	-0.693147	0.0175476	106.203	159.794
113	-0.693147	0.0300838	106.204	159.773
114	-0.693147	0.0401167	106.205	159.746
115	-0.693147	0.0526632	106.208	159.709
116	-0.693147	0.0627062	106.212	159.666
117	-0.693147	0.0752698	106.218	159.613
118	-0.693147	0.0853288	106.225	159.554
119	-0.693147	0.0979139	106.234	159.486
120	-0.693147	0.107995	106.246	159.412
121	-0.693147	0.12061	106.261	159.328
122	-0.693147	0.133244	106.278	159.236
123	-0.693147	0.143367	106.299	159.136
124	-0.693147	0.156042	106.323	159.028
125	-0.693147	0.166199	106.351	158.913
126	-0.693147	0.17892	106.383	158.789
127	-0.693147	0.189118	106.419	158.658
128	-0.693147	0.201894	106.459	158.518
129	-0.693147	0.212137	106.504	158.371
130	-0.693147	0.224974	106.555	158.215
131	-0.693147	0.235269	106.61	158.052
132	-0.693147	0.248174	106.672	157.88
133	-0.693147	0.258527	106.739	157.7
134	-0.693147	0.271509	106.813	157.512
135	-0.693147	0.281926	106.892	157.317
136	-0.693147	0.294992	106.979	157.112
137	-0.693147	0.305481	107.072	156.901
138	-0.693147	0.318639	107.174	156.68
139	-0.693147	0.329206	107.282	156.452
140	-0.693147	0.342466	107.4	156.214
141	-0.693147	0.355788	107.526	155.968
142	-0.693147	0.36649	107.661	155.714
143	-0.693147	0.379927	107.805	155.45
144	-0.693147	0.390726	107.958	155.179
145	-0.693147	0.40429	108.121	154.899
146	-0.693147	0.415193	108.293	154.611
147	-0.693147	0.428895	108.477	154.314
148	-0.693147	0.439913	108.671	154.009
149	-0.693147	0.453763	108.877	153.695
150	-0.693147	0.464904	109.093	153.372
151	-0.693147	0.478914	109.322	153.04
152	-0.693147	0.490189	109.563	152.701
153	-0.693147	0.504372	109.817	152.351
154	-0.693147	0.515791	110.083	151.994
155	-0.693147	0.530162	110.364	151.626
156	-0.693147	0.541736	110.657	151.251
157	-0.693147	0.556308	110.967	150.865
158	-0.693147	0.568052	111.29	150.471
159	-0.693147	0.582841	111.629	150.067
160	-0.693147	0.594766	111.983	149.655
161	-0.693147	0.609791	112.355	149.232
162	-0.693147	0.624956	112.746	148.799
163	-0.693147	0.637192	113.152	148.357
164	-0.693147	0.652622	113.577	147.905
165	-0.693147	0.665079	114.02	147.444
166	-0.693147	0.680797	114.483	146.972
167	-0.693147	0.693493	114.964	146.491
168	-0.693147	0.709522	115.468	146
169	-0.693147	0.722479	115.99	145.499
170	-0.693147	0.738846	116.535	144.987
171	-0.693147	0.752084	117.101	144.465
172	-0.693147	0.768821	117.692	143.933
173	-0.693147	0.782366	118.304	143.39

174	-0.693147		0.7995	118.943	142.836
175	-0.693147		0.813379		119.605	142.272
176	-0.693147		0.830953		120.296	141.696
177	-0.693147		0.845198		121.01	141.11
178	-0.693147		0.863249		121.755	140.512
179	-0.693147		0.877897		122.526	139.904
180	-0.693147		0.896473		123.329	139.282
181	-0.693147		0.915365		124.167	138.648
182	-0.693147		0.930718		125.034	138.003
183	-0.693147		0.950222		125.937	137.344
184	-0.693147		0.966088		126.87	136.674
185	-0.693147		0.986272		127.843	135.991
186	-0.693147		1.00271	128.848	135.296
187	-0.693147		1.02365	129.896	134.586
188	-0.693147		1.04073	130.979	133.865
189	-0.693147		1.06252	132.108	133.128
190	-0.693147		1.08032	133.275	132.379
191	-0.693147		1.10306	134.492	131.615
192	-0.693147		1.12168	135.75	130.837
193	-0.693147		1.1455	137.062	130.043
194	-0.693147		1.16505	138.419	129.236
195	-0.693147		1.19012	139.836	128.411
196	-0.693147		1.21073	141.302	127.572
197	-0.693147		1.23724	142.832	126.714
198	-0.693147		1.25908	144.418	125.841
199	-0.693147		1.28727	146.075	124.949
200	-0.693147		1.31058	147.792	124.041
201	-0.693147		1.34075	149.59	123.111
202	-0.693147		1.3722	151.473	122.16
203	-0.693147		1.39838	153.428	121.191
204	-0.693147		1.4325	155.481	120.198
205	-0.693147		1.46106	157.615	119.185
206	-0.693147		1.49852	159.861	118.147
207	-0.693147		1.53007	162.202	117.086
208	-0.693147		1.57179	164.672	115.997
209	-0.693147		1.60725	167.256	114.882
210	-0.693147		1.65463	169.993	113.736
211	-0.693147		1.6954	172.868	112.56
212	-0.693147		1.75069	175.933	111.347
213	-0.693147		1.79912	179.17	110.1
214	-0.400478		1.86629	182.653	109.352
215	0	1.92684	186.365	109.352	
216	0	2.01409	190.422	109.352	
217	0	2.09693	194.819	109.352	
218	0	2.22621	199.775	109.352	
219	0.0953102		2.36561	205.371	109.578
220	0.875469		2.65209	212.405	111.9

Data Set Standard Deviation = 0.721984
Numerator = 12521.6
Denominator = 24247.3
W Statistic = 0.51641 = 12521.6 / 24247.3

5% Critical value of 0.976 exceeds 0.51641
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.51641
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 = 98.6364%
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-3S	11/17/2010	1	-2.59027	FALSE
LMW-7	11/17/2010	1	-2.59027	FALSE
LMW-9	11/17/2010	1	-2.59027	FALSE
LMW-3	11/17/2010	1	-2.59027	FALSE
LMW-14R	11/17/2010	1	-2.59027	FALSE
LMW-6	11/17/2010	1	-2.59027	FALSE
LMW-9D	11/17/2010	1	-2.59027	FALSE
LMW-9S	11/17/2010	1	-2.59027	FALSE
LMW-10	11/17/2010	1	-2.59027	FALSE
LMW-16	11/17/2010	1	-2.59027	FALSE
LMW-8	11/17/2010	1	-0.400478	FALSE
LMW-15R	11/17/2010	1	-2.59027	FALSE
MW-5	11/20/2008	1	-0.693147	FALSE
LMW-11	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

Concentrations (ug/L)

Parameter: Acetone

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 232
Total Non-Detect: 228
Percent Non-Detects: 98.2759%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	19	19 (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<5 U	ND<5 U
			11/16/2009	ND<5 U	ND<5 U
			6/30/2010	ND<5 U	ND<5 U
			11/17/2010	ND<5 U	ND<5 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-3S	9	9 (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<5 U	ND<5 U
			11/16/2009	ND<5 U	ND<5 U
			6/30/2010	ND<5 U	ND<5 U
			11/17/2010	ND<5 U	ND<5 U
LMW-3	21	21 (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<5 U	ND<5 U	
			11/16/2009	ND<5 U	ND<5 U	
			6/30/2010	ND<5 U	ND<5 U	
			11/17/2010	ND<5 U	ND<5 U	
LMW-9	19	19 (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<5 U	ND<5 U	
			11/16/2009	ND<5 U	ND<5 U	
			6/30/2010	ND<5 U	ND<5 U	
			11/17/2010	ND<5 U	ND<5 U	
LMW-15R	11	11 (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<5 U	ND<5 U	
			6/30/2010	ND<5 U	ND<5 U	
			11/17/2010	ND<5 U	ND<5 U	
LMW-16	9	9 (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<5 U	ND<5 U	
			11/16/2009	ND<5 U	ND<5 U	
			6/30/2010	ND<5 U	ND<5 U	
			11/17/2010	ND<5 U	ND<5 U	
LMW-10	16	16 (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<5 U	ND<5 U	
			11/16/2009	ND<5 U	ND<5 U	
			6/30/2010	ND<5 U	ND<5 U	
			11/17/2010	ND<5 U	ND<5 U	
LMW-8	19	19 (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<5 U	ND<5 U	
			11/16/2009	ND<5 U	ND<5 U	
			6/30/2010	ND<5 U	ND<5 U	
			11/17/2010	ND<5 U	ND<5 U	
LMW-9D	9	9 (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<5 U	ND<5 U	
			11/16/2009	ND<5 U	ND<5 U	
			6/30/2010	ND<5 U	ND<5 U	
			11/17/2010	ND<5 U	ND<5 U	
LMW-14R	10	10 (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<5 U	ND<5 U	
			11/16/2009	ND<5 U	ND<5 U	
			11/16/2009	ND<5 U	ND<5 U	
			11/16/2009	ND<5 U	ND<5 U	
			6/30/2010	ND<5 U	ND<5 U	
			11/17/2010	ND<5 U	ND<5 U	
LMW-7	17	14 (82.3529%)	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	282	282	

			11/20/2008	4	4	
			6/11/2009	ND<5 U	ND<5 U	
			11/17/2010	7.5 J	7.5 J	
LMW-9S	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<5 U	ND<5 U	
			6/30/2010	ND<5 U	ND<5 U	
			11/17/2010	ND<5 U	ND<5 U	
LMW-6	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	4	4	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<5 U	ND<5 U	
			11/16/2009	ND<5 U	ND<5 U	
			6/30/2010	ND<5 U	ND<5 U	
			11/17/2010	ND<5 U	ND<5 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: Acetone

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.5	-2.65209	7.03356	-1.32604
2	0.5	-2.40892	12.8365	-2.53051
3	0.5	-2.25713	17.9311	-3.65907
4	0.5	-2.12007	22.4258	-4.7191
5	0.5	-2.03352	26.561	-5.73586
6	0.5	-1.95996	30.4025	-6.71585
7	0.5	-1.88079	33.9398	-7.65624
8	0.5	-1.82501	37.2705	-8.56874
9	0.5	-1.77438	40.4189	-9.45593
10	0.5	-1.72793	43.4046	-10.3199
11	0.5	-1.67466	46.2091	-11.1572
12	0.5	-1.63524	48.8831	-11.9748
13	0.5	-1.59819	51.4373	-12.7739
14	0.5	-1.55477	53.8547	-13.5513
15	0.5	-1.52203	56.1712	-14.3123
16	0.5	-1.49085	58.3939	-15.0578
17	0.5	-1.46106	60.5286	-15.7883
18	0.5	-1.42554	62.5608	-16.5011
19	0.5	-1.39838	64.5162	-17.2003
20	0.5	-1.3722	66.3992	-17.8864
21	0.5	-1.34075	68.1968	-18.5567
22	0.5	-1.31652	69.93	-19.215
23	0.5	-1.29303	71.6019	-19.8615
24	0.5	-1.26464	73.2013	-20.4938
25	0.5	-1.24264	74.7454	-21.1152
26	0.5	-1.22123	76.2368	-21.7258
27	0.5	-1.20036	77.6777	-22.326
28	0.5	-1.17499	79.0583	-22.9134
29	0.5	-1.15522	80.3928	-23.4911
30	0.5	-1.1359	81.6831	-24.059
31	0.5	-1.11232	82.9203	-24.6152
32	0.5	-1.0939	84.1169	-25.1621
33	0.5	-1.07584	85.2744	-25.7
34	0.5	-1.05812	86.394	-26.2291
35	0.5	-1.03643	87.4682	-26.7473
36	0.5	-1.01943	88.5074	-27.257
37	0.5	-1.00271	89.5128	-27.7584
38	0.5	-0.982202	90.4776	-28.2495
39	0.5	-0.966088	91.4109	-28.7325
40	0.5	-0.950222	92.3138	-29.2076
41	0.5	-0.93459	93.1873	-29.6749
42	0.5	-0.915365	94.0252	-30.1326
43	0.5	-0.900227	94.8356	-30.5827
44	0.5	-0.885291	95.6193	-31.0254
45	0.5	-0.866894	96.3708	-31.4588
46	0.5	-0.852385	97.0974	-31.885
47	0.5	-0.838054	97.7997	-32.304
48	0.5	-0.820379	98.4727	-32.7142
49	0.5	-0.806422	99.123	-33.1174

50	0.5	-0.792618	99.7513	-33.5137
51	0.5	-0.778966	100.358	-33.9032
52	0.5	-0.7621	100.939	-34.2843
53	0.5	-0.748762	101.5	-34.6587
54	0.5	-0.735557	102.041	-35.0264
55	0.5	-0.719228	102.558	-35.3861
56	0.5	-0.706302	103.057	-35.7392
57	0.5	-0.693493	103.538	-36.086
58	0.5	-0.680797	104.001	-36.4264
59	0.5	-0.665079	104.443	-36.7589
60	0.5	-0.652622	104.869	-37.0852
61	0.5	-0.640266	105.279	-37.4053
62	0.5	-0.624956	105.67	-37.7178
63	0.5	-0.612813	106.045	-38.0242
64	0.5	-0.60076	106.406	-38.3246
65	0.5	-0.588793	106.753	-38.619
66	0.5	-0.573953	107.082	-38.906
67	0.5	-0.56217	107.398	-39.1871
68	0.5	-0.550465	107.701	-39.4623
69	0.5	-0.53594	107.989	-39.7303
70	0.5	-0.524401	108.264	-39.9925
71	0.5	-0.51293	108.527	-40.2489
72	0.5	-0.498687	108.776	-40.4983
73	0.5	-0.487364	109.013	-40.742
74	0.5	-0.476105	109.24	-40.98
75	0.5	-0.464904	109.456	-41.2125
76	0.5	-0.450985	109.659	-41.4379
77	0.5	-0.439913	109.853	-41.6579
78	0.5	-0.428895	110.037	-41.8724
79	0.5	-0.415193	110.209	-42.0799
80	0.5	-0.40429	110.373	-42.2821
81	0.5	-0.393433	110.527	-42.4788
82	0.5	-0.382622	110.674	-42.6701
83	0.5	-0.369171	110.81	-42.8547
84	0.5	-0.358459	110.939	-43.0339
85	0.5	-0.347787	111.059	-43.2078
86	0.5	-0.334503	111.171	-43.3751
87	0.5	-0.323919	111.276	-43.537
88	0.5	-0.31337	111.374	-43.6937
89	0.5	-0.302855	111.466	-43.8452
90	0.5	-0.28976	111.55	-43.99
91	0.5	-0.279319	111.628	-44.1297
92	0.5	-0.268908	111.7	-44.2641
93	0.5	-0.255936	111.766	-44.3921
94	0.5	-0.24559	111.826	-44.5149
95	0.5	-0.235269	111.882	-44.6325
96	0.5	-0.222403	111.931	-44.7437
97	0.5	-0.212137	111.976	-44.8498
98	0.5	-0.201894	112.017	-44.9508
99	0.5	-0.191671	112.054	-45.0466
100	0.5	-0.17892	112.086	-45.1361
101	0.5	-0.168741	112.114	-45.2204
102	0.5	-0.158579	112.139	-45.2997
103	0.5	-0.1459	112.161	-45.3727
104	0.5	-0.135774	112.179	-45.4406
105	0.5	-0.125661	112.195	-45.5034
106	0.5	-0.115562	112.208	-45.5612
107	0.5	-0.102953	112.219	-45.6126
108	0.5	-0.0928787	112.227	-45.6591
109	0.5	-0.0828129	112.234	-45.7005
110	0.5	-0.0702426	112.239	-45.7356
111	0.5	-0.0601949	112.243	-45.7657

112	0.5	-0.0501541	112.245	-45.7908
113	0.5	-0.0401167	112.247	-45.8108
114	0.5	-0.0275759	112.248	-45.8246
115	0.5	-0.0175476	112.248	-45.8334
116	0.5	-0.00751925	112.248	-45.8372
117	0.5	0.00751925	112.248	-45.8334
118	0.5	0.0175476	112.248	-45.8246
119	0.5	0.0275759	112.249	-45.8108
120	0.5	0.0401167	112.251	-45.7908
121	0.5	0.0501541	112.253	-45.7657
122	0.5	0.0601949	112.257	-45.7356
123	0.5	0.0702426	112.262	-45.7005
124	0.5	0.0828129	112.269	-45.6591
125	0.5	0.0928787	112.277	-45.6126
126	0.5	0.102953	112.288	-45.5612
127	0.5	0.115562	112.301	-45.5034
128	0.5	0.125661	112.317	-45.4406
129	0.5	0.135774	112.335	-45.3727
130	0.5	0.1459	112.357	-45.2997
131	0.5	0.158579	112.382	-45.2204
132	0.5	0.168741	112.41	-45.1361
133	0.5	0.17892	112.442	-45.0466
134	0.5	0.191671	112.479	-44.9508
135	0.5	0.201894	112.52	-44.8498
136	0.5	0.212137	112.565	-44.7437
137	0.5	0.222403	112.614	-44.6325
138	0.5	0.235269	112.67	-44.5149
139	0.5	0.24559	112.73	-44.3921
140	0.5	0.255936	112.796	-44.2641
141	0.5	0.268908	112.868	-44.1297
142	0.5	0.279319	112.946	-43.99
143	0.5	0.28976	113.03	-43.8452
144	0.5	0.302855	113.122	-43.6937
145	0.5	0.31337	113.22	-43.537
146	0.5	0.323919	113.325	-43.3751
147	0.5	0.334503	113.437	-43.2078
148	0.5	0.347787	113.558	-43.0339
149	0.5	0.358459	113.686	-42.8547
150	0.5	0.369171	113.822	-42.6701
151	0.5	0.382622	113.969	-42.4788
152	0.5	0.393433	114.123	-42.2821
153	0.5	0.40429	114.287	-42.0799
154	0.5	0.415193	114.459	-41.8724
155	0.5	0.428895	114.643	-41.6579
156	0.5	0.439913	114.837	-41.4379
157	0.5	0.450985	115.04	-41.2125
158	0.5	0.464904	115.256	-40.98
159	0.5	0.476105	115.483	-40.742
160	0.5	0.487364	115.721	-40.4983
161	0.5	0.498687	115.969	-40.2489
162	0.5	0.51293	116.232	-39.9925
163	0.5	0.524401	116.507	-39.7303
164	0.5	0.53594	116.795	-39.4623
165	0.5	0.550465	117.098	-39.1871
166	0.5	0.56217	117.414	-38.906
167	0.5	0.573953	117.743	-38.619
168	0.5	0.588793	118.09	-38.3246
169	0.5	0.60076	118.451	-38.0242
170	0.5	0.612813	118.826	-37.7178
171	0.5	0.624956	119.217	-37.4053
172	0.5	0.640266	119.627	-37.0852
173	0.5	0.652622	120.053	-36.7589

174	0.5	0.665079		120.495	-36.4264
175	0.5	0.680797		120.958	-36.086
176	0.5	0.693493		121.439	-35.7392
177	0.5	0.706302		121.938	-35.3861
178	0.5	0.719228		122.455	-35.0264
179	0.5	0.735557		122.997	-34.6587
180	2.5	0.748762		123.557	-32.7868
181	2.5	0.7621	124.138	-30.8815	
182	2.5	0.778966		124.745	-28.9341
183	2.5	0.792618		125.373	-26.9525
184	2.5	0.806422		126.023	-24.9365
185	2.5	0.820379		126.696	-22.8855
186	2.5	0.838054		127.399	-20.7904
187	2.5	0.852385		128.125	-18.6594
188	2.5	0.866894		128.877	-16.4922
189	2.5	0.885291		129.66	-14.279
190	2.5	0.900227		130.471	-12.0284
191	2.5	0.915365		131.309	-9.74
192	2.5	0.93459	132.182	-7.40353	
193	2.5	0.950222		133.085	-5.02798
194	2.5	0.966088		134.018	-2.61276
195	2.5	0.982202		134.983	-0.15725
196	2.5	1.00271	135.989	2.34953	
197	2.5	1.01943	137.028	4.8981	
198	2.5	1.03643	138.102	7.48918	
199	2.5	1.05812	139.222	10.1345	
200	2.5	1.07584	140.379	12.8241	
201	2.5	1.0939	141.576	15.5588	
202	2.5	1.11232	142.813	18.3396	
203	2.5	1.1359	144.103	21.1794	
204	2.5	1.15522	145.438	24.0674	
205	2.5	1.17499	146.818	27.0049	
206	2.5	1.20036	148.259	30.0058	
207	2.5	1.22123	149.751	33.0589	
208	2.5	1.24264	151.295	36.1655	
209	2.5	1.26464	152.894	39.3271	
210	2.5	1.29303	154.566	42.5596	
211	2.5	1.31652	156.299	45.8509	
212	2.5	1.34075	158.097	49.2028	
213	2.5	1.3722	159.98	52.6333	
214	2.5	1.39838	161.935	56.1293	
215	2.5	1.42554	163.967	59.6931	
216	2.5	1.46106	166.102	63.3458	
217	2.5	1.49085	168.325	67.0729	
218	2.5	1.52203	170.641	70.878	
219	2.5	1.55477	173.059	74.7649	
220	2.5	1.59819	175.613	78.7604	
221	2.5	1.63524	178.287	82.8485	
222	2.5	1.67466	181.091	87.0352	
223	2.5	1.72793	184.077	91.355	
224	2.5	1.77438	187.226	95.7909	
225	2.5	1.82501	190.556	100.353	
226	2.5	1.88079	194.094	105.055	
227	2.5	1.95996	197.935	109.955	
228	2.5	2.03352	202.07	115.039	
229	4	2.12007	206.565	123.519	
230	4	2.25713	211.66	132.548	
231	7.5	2.40892	217.462	150.615	
232	282	2.65209	224.496	898.503	

Data Set Standard Deviation = 18.4748

Numerator = 807308
Denominator = 1.77002e+007
W Statistic = 0.04561 = 807308 / 1.77002e+007

5% Critical value of 0.976 exceeds 0.04561
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.04561
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Acetone

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-0.693147	-2.65209	7.03356	1.83829
2	-0.693147	-2.40892	12.8365	3.50803
3	-0.693147	-2.25713	17.9311	5.07255
4	-0.693147	-2.12007	22.4258	6.54207
5	-0.693147	-2.03352	26.561	7.9516
6	-0.693147	-1.95996	30.4025	9.31014
7	-0.693147	-1.88079	33.9398	10.6138
8	-0.693147	-1.82501	37.2705	11.8788
9	-0.693147	-1.77438	40.4189	13.1087
10	-0.693147	-1.72793	43.4046	14.3064
11	-0.693147	-1.67466	46.2091	15.4672
12	-0.693147	-1.63524	48.8831	16.6007
13	-0.693147	-1.59819	51.4373	17.7084
14	-0.693147	-1.55477	53.8547	18.7861
15	-0.693147	-1.52203	56.1712	19.8411
16	-0.693147	-1.49085	58.3939	20.8745
17	-0.693147	-1.46106	60.5286	21.8872
18	-0.693147	-1.42554	62.5608	22.8753
19	-0.693147	-1.39838	64.5162	23.8446
20	-0.693147	-1.3722	66.3992	24.7958
21	-0.693147	-1.34075	68.1968	25.7251
22	-0.693147	-1.31652	69.93	26.6376
23	-0.693147	-1.29303	71.6019	27.5339
24	-0.693147	-1.26464	73.2013	28.4105
25	-0.693147	-1.24264	74.7454	29.2718
26	-0.693147	-1.22123	76.2368	30.1183
27	-0.693147	-1.20036	77.6777	30.9503
28	-0.693147	-1.17499	79.0583	31.7648
29	-0.693147	-1.15522	80.3928	32.5655
30	-0.693147	-1.1359	81.6831	33.3529
31	-0.693147	-1.11232	82.9203	34.1239
32	-0.693147	-1.0939	84.1169	34.8821
33	-0.693147	-1.07584	85.2744	35.6278
34	-0.693147	-1.05812	86.394	36.3612
35	-0.693147	-1.03643	87.4682	37.0796
36	-0.693147	-1.01943	88.5074	37.7863
37	-0.693147	-1.00271	89.5128	38.4813
38	-0.693147	-0.982202	90.4776	39.1621
39	-0.693147	-0.966088	91.4109	39.8317
40	-0.693147	-0.950222	92.3138	40.4904
41	-0.693147	-0.93459	93.1873	41.1382
42	-0.693147	-0.915365	94.0252	41.7727
43	-0.693147	-0.900227	94.8356	42.3967
44	-0.693147	-0.885291	95.6193	43.0103
45	-0.693147	-0.866894	96.3708	43.6112
46	-0.693147	-0.852385	97.0974	44.202
47	-0.693147	-0.838054	97.7997	44.7829
48	-0.693147	-0.820379	98.4727	45.3516
49	-0.693147	-0.806422	99.123	45.9105

50	-0.693147	-0.792618	99.7513	46.4599
51	-0.693147	-0.778966	100.358	46.9999
52	-0.693147	-0.7621	100.939	47.5281
53	-0.693147	-0.748762	101.5	48.0471
54	-0.693147	-0.735557	102.041	48.557
55	-0.693147	-0.719228	102.558	49.0555
56	-0.693147	-0.706302	103.057	49.5451
57	-0.693147	-0.693493	103.538	50.0258
58	-0.693147	-0.680797	104.001	50.4976
59	-0.693147	-0.665079	104.443	50.9586
60	-0.693147	-0.652622	104.869	51.411
61	-0.693147	-0.640266	105.279	51.8548
62	-0.693147	-0.624956	105.67	52.288
63	-0.693147	-0.612813	106.045	52.7128
64	-0.693147	-0.60076	106.406	53.1292
65	-0.693147	-0.588793	106.753	53.5373
66	-0.693147	-0.573953	107.082	53.9351
67	-0.693147	-0.56217	107.398	54.3248
68	-0.693147	-0.550465	107.701	54.7063
69	-0.693147	-0.53594	107.989	55.0778
70	-0.693147	-0.524401	108.264	55.4413
71	-0.693147	-0.51293	108.527	55.7969
72	-0.693147	-0.498687	108.776	56.1425
73	-0.693147	-0.487364	109.013	56.4803
74	-0.693147	-0.476105	109.24	56.8103
75	-0.693147	-0.464904	109.456	57.1326
76	-0.693147	-0.450985	109.659	57.4452
77	-0.693147	-0.439913	109.853	57.7501
78	-0.693147	-0.428895	110.037	58.0474
79	-0.693147	-0.415193	110.209	58.3352
80	-0.693147	-0.40429	110.373	58.6154
81	-0.693147	-0.393433	110.527	58.8881
82	-0.693147	-0.382622	110.674	59.1533
83	-0.693147	-0.369171	110.81	59.4092
84	-0.693147	-0.358459	110.939	59.6577
85	-0.693147	-0.347787	111.059	59.8988
86	-0.693147	-0.334503	111.171	60.1306
87	-0.693147	-0.323919	111.276	60.3552
88	-0.693147	-0.31337	111.374	60.5724
89	-0.693147	-0.302855	111.466	60.7823
90	-0.693147	-0.28976	111.55	60.9831
91	-0.693147	-0.279319	111.628	61.1767
92	-0.693147	-0.268908	111.7	61.3631
93	-0.693147	-0.255936	111.766	61.5405
94	-0.693147	-0.24559	111.826	61.7108
95	-0.693147	-0.235269	111.882	61.8738
96	-0.693147	-0.222403	111.931	62.028
97	-0.693147	-0.212137	111.976	62.175
98	-0.693147	-0.201894	112.017	62.315
99	-0.693147	-0.191671	112.054	62.4478
100	-0.693147	-0.17892	112.086	62.5719
101	-0.693147	-0.168741	112.114	62.6888
102	-0.693147	-0.158579	112.139	62.7987
103	-0.693147	-0.1459	112.161	62.8999
104	-0.693147	-0.135774	112.179	62.994
105	-0.693147	-0.125661	112.195	63.0811
106	-0.693147	-0.115562	112.208	63.1612
107	-0.693147	-0.102953	112.219	63.2325
108	-0.693147	-0.0928787	112.227	63.2969
109	-0.693147	-0.0828129	112.234	63.3543
110	-0.693147	-0.0702426	112.239	63.403
111	-0.693147	-0.0601949	112.243	63.4447

112	-0.693147	-0.0501541	112.245	63.4795
113	-0.693147	-0.0401167	112.247	63.5073
114	-0.693147	-0.0275759	112.248	63.5264
115	-0.693147	-0.0175476	112.248	63.5386
116	-0.693147	-0.00751925	112.248	63.5438
117	-0.693147	0.00751925	112.248	63.5386
118	-0.693147	0.0175476	112.248	63.5264
119	-0.693147	0.0275759	112.249	63.5073
120	-0.693147	0.0401167	112.251	63.4795
121	-0.693147	0.0501541	112.253	63.4447
122	-0.693147	0.0601949	112.257	63.403
123	-0.693147	0.0702426	112.262	63.3543
124	-0.693147	0.0828129	112.269	63.2969
125	-0.693147	0.0928787	112.277	63.2325
126	-0.693147	0.102953	112.288	63.1612
127	-0.693147	0.115562	112.301	63.0811
128	-0.693147	0.125661	112.317	62.994
129	-0.693147	0.135774	112.335	62.8999
130	-0.693147	0.1459	112.357	62.7987
131	-0.693147	0.158579	112.382	62.6888
132	-0.693147	0.168741	112.41	62.5719
133	-0.693147	0.17892	112.442	62.4478
134	-0.693147	0.191671	112.479	62.315
135	-0.693147	0.201894	112.52	62.175
136	-0.693147	0.212137	112.565	62.028
137	-0.693147	0.222403	112.614	61.8738
138	-0.693147	0.235269	112.67	61.7108
139	-0.693147	0.24559	112.73	61.5405
140	-0.693147	0.255936	112.796	61.3631
141	-0.693147	0.268908	112.868	61.1767
142	-0.693147	0.279319	112.946	60.9831
143	-0.693147	0.28976	113.03	60.7823
144	-0.693147	0.302855	113.122	60.5724
145	-0.693147	0.31337	113.22	60.3552
146	-0.693147	0.323919	113.325	60.1306
147	-0.693147	0.334503	113.437	59.8988
148	-0.693147	0.347787	113.558	59.6577
149	-0.693147	0.358459	113.686	59.4092
150	-0.693147	0.369171	113.822	59.1533
151	-0.693147	0.382622	113.969	58.8881
152	-0.693147	0.393433	114.123	58.6154
153	-0.693147	0.40429	114.287	58.3352
154	-0.693147	0.415193	114.459	58.0474
155	-0.693147	0.428895	114.643	57.7501
156	-0.693147	0.439913	114.837	57.4452
157	-0.693147	0.450985	115.04	57.1326
158	-0.693147	0.464904	115.256	56.8103
159	-0.693147	0.476105	115.483	56.4803
160	-0.693147	0.487364	115.721	56.1425
161	-0.693147	0.498687	115.969	55.7969
162	-0.693147	0.51293	116.232	55.4413
163	-0.693147	0.524401	116.507	55.0778
164	-0.693147	0.53594	116.795	54.7063
165	-0.693147	0.550465	117.098	54.3248
166	-0.693147	0.56217	117.414	53.9351
167	-0.693147	0.573953	117.743	53.5373
168	-0.693147	0.588793	118.09	53.1292
169	-0.693147	0.60076	118.451	52.7128
170	-0.693147	0.612813	118.826	52.288
171	-0.693147	0.624956	119.217	51.8548
172	-0.693147	0.640266	119.627	51.411
173	-0.693147	0.652622	120.053	50.9586

174	-0.693147		0.665079	120.495	50.4976
175	-0.693147		0.680797	120.958	50.0258
176	-0.693147		0.693493	121.439	49.5451
177	-0.693147		0.706302	121.938	49.0555
178	-0.693147		0.719228	122.455	48.557
179	-0.693147		0.735557	122.997	48.0471
180	0.916291		0.748762	123.557	48.7332
181	0.916291		0.7621	124.138	49.4315
182	0.916291		0.778966	124.745	50.1453
183	0.916291		0.792618	125.373	50.8715
184	0.916291		0.806422	126.023	51.6104
185	0.916291		0.820379	126.696	52.3621
186	0.916291		0.838054	127.399	53.13
187	0.916291		0.852385	128.125	53.9111
188	0.916291		0.866894	128.877	54.7054
189	0.916291		0.885291	129.66	55.5166
190	0.916291		0.900227	130.471	56.3415
191	0.916291		0.915365	131.309	57.1802
192	0.916291		0.93459	132.182	58.0366
193	0.916291		0.950222	133.085	58.9072
194	0.916291		0.966088	134.018	59.7925
195	0.916291		0.982202	134.983	60.6924
196	0.916291		1.00271	135.989	61.6112
197	0.916291		1.01943	137.028	62.5453
198	0.916291		1.03643	138.102	63.495
199	0.916291		1.05812	139.222	64.4645
200	0.916291		1.07584	140.379	65.4503
201	0.916291		1.0939	141.576	66.4526
202	0.916291		1.11232	142.813	67.4718
203	0.916291		1.1359	144.103	68.5127
204	0.916291		1.15522	145.438	69.5712
205	0.916291		1.17499	146.818	70.6478
206	0.916291		1.20036	148.259	71.7477
207	0.916291		1.22123	149.751	72.8667
208	0.916291		1.24264	151.295	74.0053
209	0.916291		1.26464	152.894	75.1641
210	0.916291		1.29303	154.566	76.3489
211	0.916291		1.31652	156.299	77.5552
212	0.916291		1.34075	158.097	78.7837
213	0.916291		1.3722	159.98	80.0411
214	0.916291		1.39838	161.935	81.3224
215	0.916291		1.42554	163.967	82.6286
216	0.916291		1.46106	166.102	83.9673
217	0.916291		1.49085	168.325	85.3334
218	0.916291		1.52203	170.641	86.728
219	0.916291		1.55477	173.059	88.1526
220	0.916291		1.59819	175.613	89.617
221	0.916291		1.63524	178.287	91.1154
222	0.916291		1.67466	181.091	92.6499
223	0.916291		1.72793	184.077	94.2332
224	0.916291		1.77438	187.226	95.859
225	0.916291		1.82501	190.556	97.5312
226	0.916291		1.88079	194.094	99.2546
227	0.916291		1.95996	197.935	101.05
228	0.916291		2.03352	202.07	102.914
229	1.38629	2.12007	206.565	105.853	
230	1.38629	2.25713	211.66	108.982	
231	2.0149	2.40892	217.462	113.836	
232	5.64191	2.65209	224.496	128.798	

Data Set Standard Deviation = 0.79638

Numerator = 16589
Denominator = 32889.8
W Statistic = 0.504383 = 16589 / 32889.8

5% Critical value of 0.976 exceeds 0.504383
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.504383
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Acetone

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

Total Percent Non-Detects = 98.2759%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 19
Maximum Background Concentration = 0.916291
Confidence Level = 70.4%
False Positive Rate = 29.6%

Location	Date	Samples	Mean	Significant
LMW-3S	11/17/2010	1	0.916291	FALSE
LMW-3	11/17/2010	1	0.916291	FALSE
LMW-9	11/17/2010	1	0.916291	FALSE
LMW-15R	11/17/2010	1	0.916291	FALSE
LMW-16	11/17/2010	1	0.916291	FALSE
LMW-10	11/17/2010	1	0.916291	FALSE
LMW-8	11/17/2010	1	0.916291	FALSE
LMW-9D	11/17/2010	1	0.916291	FALSE
LMW-14R	11/17/2010	1	0.916291	FALSE
LMW-7	11/17/2010	1	2.0149	TRUE
LMW-9S	11/17/2010	1	0.916291	FALSE
LMW-6	11/17/2010	1	0.916291	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

Mann-Kendall Trend Analysis

Parameter: Acetone

Location: LMW-7

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<-0.693147	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
5.64191	ND<-0.693147	6.33505	1	0
1.38629	ND<-0.693147	2.07944	2	0
ND<0.916291 U	ND<-0.693147	1.60944	3	0
2.0149 J	ND<-0.693147	2.70805	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<-0.693147	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<-0.693147	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<-0.693147	ND<-0.693147	0	4	0
ND<-0.693147	ND<-0.693147	0	4	0
5.64191	ND<-0.693147	6.33505	5	0
1.38629	ND<-0.693147	2.07944	6	0
ND<0.916291 U	ND<-0.693147	1.60944	7	0
2.0149 J	ND<-0.693147	2.70805	8	0
ND<-0.693147	ND<-0.693147	0	8	0
ND<-0.693147	ND<-0.693147	0	8	0
ND<-0.693147	ND<-0.693147	0	8	0
ND<-0.693147	ND<-0.693147	0	8	0
ND<-0.693147	ND<-0.693147	0	8	0
ND<-0.693147	ND<-0.693147	0	8	0
ND<-0.693147	ND<-0.693147	0	8	0
ND<-0.693147	ND<-0.693147	0	8	0
ND<-0.693147	ND<-0.693147	0	8	0
ND<-0.693147	ND<-0.693147	0	8	0
5.64191	ND<-0.693147	6.33505	9	0
1.38629	ND<-0.693147	2.07944	10	0
ND<0.916291 U	ND<-0.693147	1.60944	11	0
2.0149 J	ND<-0.693147	2.70805	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<-0.693147	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
5.64191	ND<-0.693147	6.33505	13	0
1.38629	ND<-0.693147	2.07944	14	0
ND<0.916291 U	ND<-0.693147	1.60944	15	0
2.0149 J	ND<-0.693147	2.70805	16	0
ND<-0.693147	ND<-0.693147	0	16	0
ND<-0.693147	ND<-0.693147	0	16	0
ND<-0.693147	ND<-0.693147	0	16	0
ND<-0.693147	ND<-0.693147	0	16	0
ND<-0.693147	ND<-0.693147	0	16	0
ND<-0.693147	ND<-0.693147	0	16	0
ND<-0.693147	ND<-0.693147	0	16	0
ND<-0.693147	ND<-0.693147	0	16	0
5.64191	ND<-0.693147	6.33505	17	0
1.38629	ND<-0.693147	2.07944	18	0
ND<0.916291 U	ND<-0.693147	1.60944	19	0
2.0149 J	ND<-0.693147	2.70805	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<-0.693147	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<-0.693147	ND<-0.693147	0	20	0
5.64191	ND<-0.693147	6.33505	21	0
1.38629	ND<-0.693147	2.07944	22	0
ND<0.916291 U	ND<-0.693147	1.60944	23	0
2.0149 J	ND<-0.693147	2.70805	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<-0.693147	ND<-0.693147	0	24	0
ND<-0.693147	ND<-0.693147	0	24	0
ND<-0.693147	ND<-0.693147	0	24	0
5.64191	ND<-0.693147	6.33505	25	0
1.38629	ND<-0.693147	2.07944	26	0
ND<0.916291 U	ND<-0.693147	1.60944	27	0
2.0149 J	ND<-0.693147	2.70805	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<-0.693147	ND<-0.693147	0	28	0
ND<-0.693147	ND<-0.693147	0	28	0
5.64191	ND<-0.693147	6.33505	29	0
1.38629	ND<-0.693147	2.07944	30	0
ND<0.916291 U	ND<-0.693147	1.60944	31	0
2.0149 J	ND<-0.693147	2.70805	32	0
ND<-0.693147	ND<-0.693147	0	32	0
ND<-0.693147	ND<-0.693147	0	32	0

ND<-0.693147	ND<-0.693147	0	32	0
ND<-0.693147	ND<-0.693147	0	32	0
5.64191	ND<-0.693147	6.33505	33	0
1.38629	ND<-0.693147	2.07944	34	0
ND<0.916291 U	ND<-0.693147	1.60944	35	0
2.0149 J	ND<-0.693147	2.70805	36	0
ND<-0.693147	ND<-0.693147	0	36	0
ND<-0.693147	ND<-0.693147	0	36	0
ND<-0.693147	ND<-0.693147	0	36	0
5.64191	ND<-0.693147	6.33505	37	0
1.38629	ND<-0.693147	2.07944	38	0
ND<0.916291 U	ND<-0.693147	1.60944	39	0
2.0149 J	ND<-0.693147	2.70805	40	0
ND<-0.693147	ND<-0.693147	0	40	0
ND<-0.693147	ND<-0.693147	0	40	0
5.64191	ND<-0.693147	6.33505	41	0
1.38629	ND<-0.693147	2.07944	42	0
ND<0.916291 U	ND<-0.693147	1.60944	43	0
2.0149 J	ND<-0.693147	2.70805	44	0
ND<-0.693147	ND<-0.693147	0	44	0
5.64191	ND<-0.693147	6.33505	45	0
1.38629	ND<-0.693147	2.07944	46	0
ND<0.916291 U	ND<-0.693147	1.60944	47	0
2.0149 J	ND<-0.693147	2.70805	48	0
5.64191	ND<-0.693147	6.33505	49	0
1.38629	ND<-0.693147	2.07944	50	0
ND<0.916291 U	ND<-0.693147	1.60944	51	0
2.0149 J	ND<-0.693147	2.70805	52	0
1.38629	5.64191	-4.2556	52	1
ND<0.916291 U	5.64191	-4.7256	52	2
2.0149 J	5.64191	-3.627	52	3
ND<0.916291 U	1.38629	-0.470004	52	4
2.0149 J	1.38629	0.628609	53	4
2.0149 J	ND<0.916291 U	1.09861	54	4

S Statistic = 54 - 4 = 50

Tied Group	Value	Members
1	-0.693147	13

Time Period	Observations
1/16/1998	1
3/16/1999	1
9/23/1999	1
3/14/2000	1
9/23/2003	1
3/10/2004	1
10/12/2004	1
4/1/2005	1
10/26/2005	1
6/19/2006	1
11/18/2006	1

6/2/2007	1
11/15/2007	1
5/20/2008	1
11/20/2008	1
6/11/2009	1
11/17/2010	1

There are 0 time periods with multiple data

A = 4836
B = 0
C = 1716
D = 0
E = 156
F = 0
a = 10608
b = 36720
c = 544
Group Variance = 320.667
Z-Score = 2.73633
Comparison Level at 1.0 - (0.05 / 2) = 97.5% confidence level = 1.97737 (two-tailed)
|2.73633| > 1.97737 indicating a trend

Concentrations (ug/L)

Parameter: Arsenic

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 232
Total Non-Detect: 173
Percent Non-Detects: 74.569%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	19	17 (89.4737%)	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
			11/17/2010	ND<0.4 U	ND<0.4 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9D9		1 (11.1111%)	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
			11/17/2010	2	2
LMW-14R		10	6 (60%) 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	ND<0.4 U	ND<0.4 U
			11/16/2009	0.47 J	0.47 J
			11/16/2009	ND<0.4 U	ND<0.4 U
			6/30/2010	ND<0.4 U	ND<0.4 U
			11/17/2010	ND<0.4 U	ND<0.4 U
LMW-6	19	15 (78.9474%)	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	
			11/17/2010	0.52 J	0.52 J	
LMW-15R	11	10 (90.9091%)	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
			11/17/2010	ND<0.4 U		ND<0.4 U
LMW-9	19	11 (57.8947%)	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	
			11/17/2010	1.6	1.6	
LMW-7	17	13 (76.4706%)	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	
			11/17/2010	ND<0.4 U		ND<0.4 U
LMW-3	21	19 (90.4762%)	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
			11/17/2010	0.44 J	0.44 J	
LMW-9S	8	3 (37.5%)	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	
			11/17/2010	1.2	1.2	
LMW-10	16	13 (81.25%)	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
			11/17/2010	ND<0.4 U		ND<0.4 U
LMW-16	9	3 (33.3333%)	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	
			11/17/2010	0.54 J	0.54 J	
LMW-8	19	15 (78.9474%)	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	
			11/17/2010	0.48 J	0.48 J	
LMW-3S	9	7 (77.7778%)	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	
			11/17/2010	1	1	
MW-5	13	11 (84.6154%)	1/16/1998	ND<2	ND<2	
			3/16/1999	ND<2	ND<2	
			9/23/1999	ND<2	ND<2	
			3/14/2000	34	34	
			9/23/2003	ND<2	ND<2	
			3/10/2004	60	60	
			10/12/2004	ND<2	ND<2	
			4/1/2005	ND<2	ND<2	
			10/26/2005	ND<2	ND<2	
			6/19/2006	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
LMW-12	11	10 (90.9091%)	3/14/2000	57	57	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	
			10/12/2004	ND<2	ND<2	
			4/1/2005	ND<2	ND<2	
			10/26/2005	ND<2	ND<2	
			6/19/2006	ND<2	ND<2	
			6/2/2007	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
LMW-11	11	9 (81.8182%)	3/14/2000	12	12	
			9/23/2003	ND<2	ND<2	
			3/10/2004	18	18	

			10/12/2004	ND<2	ND<2	
			4/1/2005	ND<2	ND<2	
			10/26/2005	ND<2	ND<2	
			6/19/2006	ND<2	ND<2	
			6/2/2007	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
LMW-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	

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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.2	-2.65209	7.03356	-0.530417
2	0.2	-2.40892	12.8365	-1.0122
3	0.2	-2.25713	17.9311	-1.46363
4	0.2	-2.12007	22.4258	-1.88764
5	0.2	-2.03352	26.561	-2.29435
6	0.2	-1.95996	30.4025	-2.68634
7	0.2	-1.88079	33.9398	-3.0625
8	0.2	-1.82501	37.2705	-3.4275
9	0.2	-1.77438	40.4189	-3.78237
10	0.2	-1.72793	43.4046	-4.12796
11	0.2	-1.67466	46.2091	-4.46289
12	0.2	-1.63524	48.8831	-4.78994
13	0.2	-1.59819	51.4373	-5.10958
14	0.2	-1.55477	53.8547	-5.42053
15	0.2	-1.52203	56.1712	-5.72494
16	0.2	-1.49085	58.3939	-6.02311
17	0.2	-1.46106	60.5286	-6.31532
18	0.2	-1.42554	62.5608	-6.60043
19	0.2	-1.39838	64.5162	-6.8801
20	0.2	-1.3722	66.3992	-7.15455
21	0.2	-1.34075	68.1968	-7.4227
22	0.41	-1.31652	69.93	-7.96247
23	0.42	-1.29303	71.6019	-8.50554
24	0.43	-1.26464	73.2013	-9.04934
25	0.44	-1.24264	74.7454	-9.5961
26	0.46	-1.22123	76.2368	-10.1579
27	0.46	-1.20036	77.6777	-10.71
28	0.47	-1.17499	79.0583	-11.2623
29	0.48	-1.15522	80.3928	-11.8168
30	0.49	-1.1359	81.6831	-12.3734
31	0.5	-1.11232	82.9203	-12.9295
32	0.52	-1.0939	84.1169	-13.4984
33	0.53	-1.07584	85.2744	-14.0686
34	0.54	-1.05812	86.394	-14.6399
35	0.56	-1.03643	87.4682	-15.2203
36	0.57	-1.01943	88.5074	-15.8014
37	0.58	-1.00271	89.5128	-16.383
38	0.59	-0.982202	90.4776	-16.9625
39	0.65	-0.966088	91.4109	-17.5904
40	0.73	-0.950222	92.3138	-18.2841
41	1	-0.93459	93.1873	-19.2187
42	1	-0.915365	94.0252	-20.1341
43	1	-0.900227	94.8356	-21.0343
44	1	-0.885291	95.6193	-21.9196
45	1	-0.866894	96.3708	-22.7865
46	1	-0.852385	97.0974	-23.6389
47	1	-0.838054	97.7997	-24.4769
48	1	-0.820379	98.4727	-25.2973
49	1	-0.806422	99.123	-26.1037

50	1	-0.792618	99.7513	-26.8963
51	1	-0.778966	100.358	-27.6753
52	1	-0.7621	100.939	-28.4374
53	1	-0.748762	101.5	-29.1862
54	1	-0.735557	102.041	-29.9217
55	1	-0.719228	102.558	-30.6409
56	1	-0.706302	103.057	-31.3472
57	1	-0.693493	103.538	-32.0407
58	1	-0.680797	104.001	-32.7215
59	1	-0.665079	104.443	-33.3866
60	1	-0.652622	104.869	-34.0392
61	1	-0.640266	105.279	-34.6795
62	1	-0.624956	105.67	-35.3045
63	1	-0.612813	106.045	-35.9173
64	1	-0.60076	106.406	-36.518
65	1	-0.588793	106.753	-37.1068
66	1	-0.573953	107.082	-37.6808
67	1	-0.56217	107.398	-38.2429
68	1	-0.550465	107.701	-38.7934
69	1	-0.53594	107.989	-39.3294
70	1	-0.524401	108.264	-39.8538
71	1	-0.51293	108.527	-40.3667
72	1	-0.498687	108.776	-40.8654
73	1	-0.487364	109.013	-41.3527
74	1	-0.476105	109.24	-41.8288
75	1	-0.464904	109.456	-42.2937
76	1	-0.450985	109.659	-42.7447
77	1	-0.439913	109.853	-43.1846
78	1	-0.428895	110.037	-43.6135
79	1	-0.415193	110.209	-44.0287
80	1	-0.40429	110.373	-44.433
81	1	-0.393433	110.527	-44.8265
82	1	-0.382622	110.674	-45.2091
83	1	-0.369171	110.81	-45.5782
84	1	-0.358459	110.939	-45.9367
85	1	-0.347787	111.059	-46.2845
86	1	-0.334503	111.171	-46.619
87	1	-0.323919	111.276	-46.9429
88	1	-0.31337	111.374	-47.2563
89	1	-0.302855	111.466	-47.5591
90	1	-0.28976	111.55	-47.8489
91	1	-0.279319	111.628	-48.1282
92	1	-0.268908	111.7	-48.3971
93	1	-0.255936	111.766	-48.6531
94	1	-0.24559	111.826	-48.8987
95	1	-0.235269	111.882	-49.1339
96	1	-0.222403	111.931	-49.3563
97	1	-0.212137	111.976	-49.5685
98	1	-0.201894	112.017	-49.7704
99	1	-0.191671	112.054	-49.962
100	1	-0.17892	112.086	-50.1409
101	1	-0.168741	112.114	-50.3097
102	1	-0.158579	112.139	-50.4683
103	1	-0.1459	112.161	-50.6142
104	1	-0.135774	112.179	-50.7499
105	1	-0.125661	112.195	-50.8756
106	1	-0.115562	112.208	-50.9912
107	1	-0.102953	112.219	-51.0941
108	1	-0.0928787	112.227	-51.187
109	1	-0.0828129	112.234	-51.2698
110	1	-0.0702426	112.239	-51.3401
111	1	-0.0601949	112.243	-51.4002

112	1	-0.0501541	112.245	-51.4504
113	1	-0.0401167	112.247	-51.4905
114	1	-0.0275759	112.248	-51.5181
115	1	-0.0175476	112.248	-51.5356
116	1	-0.00751925	112.248	-51.5432
117	1	0.00751925	112.248	-51.5356
118	1	0.0175476	112.248	-51.5181
119	1	0.0275759	112.249	-51.4905
120	1	0.0401167	112.251	-51.4504
121	1	0.0501541	112.253	-51.4002
122	1	0.0601949	112.257	-51.3401
123	1	0.0702426	112.262	-51.2698
124	1	0.0828129	112.269	-51.187
125	1	0.0928787	112.277	-51.0941
126	1	0.102953	112.288	-50.9912
127	1	0.115562	112.301	-50.8756
128	1	0.125661	112.317	-50.7499
129	1	0.135774	112.335	-50.6142
130	1	0.1459	112.357	-50.4683
131	1	0.158579	112.382	-50.3097
132	1	0.168741	112.41	-50.1409
133	1	0.17892	112.442	-49.962
134	1	0.191671	112.479	-49.7704
135	1	0.201894	112.52	-49.5685
136	1	0.212137	112.565	-49.3563
137	1	0.222403	112.614	-49.1339
138	1	0.235269	112.67	-48.8987
139	1	0.24559	112.73	-48.6531
140	1	0.255936	112.796	-48.3971
141	1	0.268908	112.868	-48.1282
142	1	0.279319	112.946	-47.8489
143	1	0.28976	113.03	-47.5591
144	1	0.302855	113.122	-47.2563
145	1	0.31337	113.22	-46.9429
146	1	0.323919	113.325	-46.619
147	1	0.334503	113.437	-46.2845
148	1	0.347787	113.558	-45.9367
149	1	0.358459	113.686	-45.5782
150	1	0.369171	113.822	-45.2091
151	1	0.382622	113.969	-44.8265
152	1	0.393433	114.123	-44.433
153	1	0.40429	114.287	-44.0287
154	1	0.415193	114.459	-43.6135
155	1	0.428895	114.643	-43.1846
156	1	0.439913	114.837	-42.7447
157	1	0.450985	115.04	-42.2937
158	1	0.464904	115.256	-41.8288
159	1	0.476105	115.483	-41.3527
160	1	0.487364	115.721	-40.8654
161	1	0.498687	115.969	-40.3667
162	1	0.51293	116.232	-39.8538
163	1	0.524401	116.507	-39.3294
164	1	0.53594	116.795	-38.7934
165	1	0.550465	117.098	-38.2429
166	1	0.56217	117.414	-37.6808
167	1	0.573953	117.743	-37.1068
168	1	0.588793	118.09	-36.518
169	1	0.60076	118.451	-35.9173
170	1	0.612813	118.826	-35.3045
171	1	0.624956	119.217	-34.6795
172	1	0.640266	119.627	-34.0392
173	1	0.652622	120.053	-33.3866

174	1	0.665079	120.495	-32.7215
175	1	0.680797	120.958	-32.0407
176	1	0.693493	121.439	-31.3472
177	1	0.706302	121.938	-30.6409
178	1	0.719228	122.455	-29.9217
179	1	0.735557	122.997	-29.1862
180	1	0.748762	123.557	-28.4374
181	1	0.7621	124.138	-27.6753
182	1	0.778966	124.745	-26.8963
183	1	0.792618	125.373	-26.1037
184	1	0.806422	126.023	-25.2973
185	1	0.820379	126.696	-24.4769
186	1	0.838054	127.399	-23.6389
187	1	0.852385	128.125	-22.7865
188	1	0.866894	128.877	-21.9196
189	1	0.885291	129.66	-21.0343
190	1	0.900227	130.471	-20.1341
191	1	0.915365	131.309	-19.2187
192	1	0.93459	132.182	-18.2841
193	1	0.950222	133.085	-17.3339
194	1	0.966088	134.018	-16.3678
195	1	0.982202	134.983	-15.3856
196	1	1.00271	135.989	-14.3829
197	1	1.01943	137.028	-13.3635
198	1	1.03643	138.102	-12.327
199	1	1.05812	139.222	-11.2689
200	1	1.07584	140.379	-10.1931
201	1	1.0939	141.576	-9.09917
202	1	1.11232	142.813	-7.98684
203	1	1.1359	144.103	-6.85095
204	1.1	1.15522	145.438	-5.58021
205	1.1	1.17499	146.818	-4.28772
206	1.2	1.20036	148.259	-2.84729
207	1.6	1.22123	149.751	-0.893321
208	1.8	1.24264	151.295	1.34344
209	2	1.26464	152.894	3.87272
210	2	1.29303	154.566	6.45878
211	2	1.31652	156.299	9.09183
212	2.1	1.34075	158.097	11.9074
213	2.5	1.3722	159.98	15.3379
214	3	1.39838	161.935	19.533
215	3	1.42554	163.967	23.8097
216	3	1.46106	166.102	28.1929
217	4	1.49085	168.325	34.1563
218	7	1.52203	170.641	44.8105
219	7	1.55477	173.059	55.6939
220	8	1.59819	175.613	68.4794
221	9	1.63524	178.287	83.1966
222	9	1.67466	181.091	98.2685
223	10	1.72793	184.077	115.548
224	10	1.77438	187.226	133.292
225	12	1.82501	190.556	155.192
226	16	1.88079	194.094	185.284
227	18	1.95996	197.935	220.564
228	23	2.03352	202.07	267.335
229	25	2.12007	206.565	320.336
230	34	2.25713	211.66	397.079
231	57	2.40892	217.462	534.387
232	60	2.65209	224.496	693.513

Data Set Standard Deviation = 6.41951

Numerator = 480960
Denominator = 2.1371e+006
W Statistic = 0.225053 = 480960 / 2.1371e+006

5% Critical value of 0.976 exceeds 0.225053
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.225053
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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)	
1	-1.60944	-2.65209	7.03356	4.26837	
2	-1.60944	-2.40892	12.8365	8.14538	
3	-1.60944	-2.25713	17.9311	11.7781	
4	-1.60944	-2.12007	22.4258	15.1902	
5	-1.60944	-2.03352	26.561	18.463	
6	-1.60944	-1.95996	30.4025	21.6175	
7	-1.60944	-1.88079	33.9398	24.6445	
8	-1.60944	-1.82501	37.2705	27.5817	
9	-1.60944	-1.77438	40.4189	30.4375	
10	-1.60944	-1.72793	43.4046	33.2185	
11	-1.60944	-1.67466	46.2091	35.9137	
12	-1.60944	-1.63524	48.8831	38.5455	
13	-1.60944	-1.59819	51.4373	41.1177	
14	-1.60944	-1.55477	53.8547	43.62	
15	-1.60944	-1.52203	56.1712	46.0697	
16	-1.60944	-1.49085	58.3939	48.4691	
17	-1.60944	-1.46106	60.5286	50.8206	
18	-1.60944	-1.42554	62.5608	53.1149	
19	-1.60944	-1.39838	64.5162	55.3655	
20	-1.60944	-1.3722	66.3992	57.574	
21	-1.60944	-1.34075	68.1968	59.7318	
22	-0.891598	-1.31652	69.93	60.9056	
23	-0.867501	-1.29303	71.6019	62.0274	
24	-0.84397	-1.26464	73.2013	63.0947	
25	-0.820981	-1.24264	74.7454	64.1149	
26	-0.776529	-1.22123	76.2368	65.0632	
27	-0.776529	-1.20036	77.6777	65.9953	
28	-0.755023	-1.17499	79.0583	66.8824	
29	-0.733969	-1.15522	80.3928	67.7303	
30	-0.71335	-1.1359	81.6831	68.5406	
31	-0.693147	-1.11232	82.9203	69.3116	
32	-0.653926	-1.0939	84.1169	70.027	
33	-0.634878	-1.07584	85.2744	70.71	
34	-0.616186	-1.05812	86.394	71.362	
35	-0.579818	-1.03643	87.4682	71.9629	
36	-0.562119	-1.01943	88.5074	72.536	
37	-0.544727	-1.00271	89.5128	73.0822	
38	-0.527633	-0.982202	90.4776	73.6004	
39	-0.430783	-0.966088	91.4109	74.0166	
40	-0.314711	-0.950222	92.3138	74.3156	
41	0	-0.934599	93.1873	74.3156	
42	0	-0.915365	94.0252	74.3156	
43	0	-0.900227	94.8356	74.3156	
44	0	-0.885291	95.6193	74.3156	
45	0	-0.866894	96.3708	74.3156	
46	0	-0.852385	97.0974	74.3156	
47	0	-0.838054	97.7997	74.3156	
48	0	-0.820379	98.4727	74.3156	
49	0	-0.806422	99.123	74.3156	

50	0	-0.792618	99.7513	74.3156
51	0	-0.778966	100.358	74.3156
52	0	-0.7621	100.939	74.3156
53	0	-0.748762	101.5	74.3156
54	0	-0.735557	102.041	74.3156
55	0	-0.719228	102.558	74.3156
56	0	-0.706302	103.057	74.3156
57	0	-0.693493	103.538	74.3156
58	0	-0.680797	104.001	74.3156
59	0	-0.665079	104.443	74.3156
60	0	-0.652622	104.869	74.3156
61	0	-0.640266	105.279	74.3156
62	0	-0.624956	105.67	74.3156
63	0	-0.612813	106.045	74.3156
64	0	-0.60076	106.406	74.3156
65	0	-0.588793	106.753	74.3156
66	0	-0.573953	107.082	74.3156
67	0	-0.56217	107.398	74.3156
68	0	-0.550465	107.701	74.3156
69	0	-0.53594	107.989	74.3156
70	0	-0.524401	108.264	74.3156
71	0	-0.51293	108.527	74.3156
72	0	-0.498687	108.776	74.3156
73	0	-0.487364	109.013	74.3156
74	0	-0.476105	109.24	74.3156
75	0	-0.464904	109.456	74.3156
76	0	-0.450985	109.659	74.3156
77	0	-0.439913	109.853	74.3156
78	0	-0.428895	110.037	74.3156
79	0	-0.415193	110.209	74.3156
80	0	-0.40429	110.373	74.3156
81	0	-0.393433	110.527	74.3156
82	0	-0.382622	110.674	74.3156
83	0	-0.369171	110.81	74.3156
84	0	-0.358459	110.939	74.3156
85	0	-0.347787	111.059	74.3156
86	0	-0.334503	111.171	74.3156
87	0	-0.323919	111.276	74.3156
88	0	-0.31337	111.374	74.3156
89	0	-0.302855	111.466	74.3156
90	0	-0.28976	111.55	74.3156
91	0	-0.279319	111.628	74.3156
92	0	-0.268908	111.7	74.3156
93	0	-0.255936	111.766	74.3156
94	0	-0.24559	111.826	74.3156
95	0	-0.235269	111.882	74.3156
96	0	-0.222403	111.931	74.3156
97	0	-0.212137	111.976	74.3156
98	0	-0.201894	112.017	74.3156
99	0	-0.191671	112.054	74.3156
100	0	-0.17892	112.086	74.3156
101	0	-0.168741	112.114	74.3156
102	0	-0.158579	112.139	74.3156
103	0	-0.1459	112.161	74.3156
104	0	-0.135774	112.179	74.3156
105	0	-0.125661	112.195	74.3156
106	0	-0.115562	112.208	74.3156
107	0	-0.102953	112.219	74.3156
108	0	-0.0928787	112.227	74.3156
109	0	-0.0828129	112.234	74.3156
110	0	-0.0702426	112.239	74.3156
111	0	-0.0601949	112.243	74.3156

112	0	-0.0501541	112.245	74.3156
113	0	-0.0401167	112.247	74.3156
114	0	-0.0275759	112.248	74.3156
115	0	-0.0175476	112.248	74.3156
116	0	-0.00751925	112.248	74.3156
117	0	0.00751925	112.248	74.3156
118	0	0.0175476	112.248	74.3156
119	0	0.0275759	112.249	74.3156
120	0	0.0401167	112.251	74.3156
121	0	0.0501541	112.253	74.3156
122	0	0.0601949	112.257	74.3156
123	0	0.0702426	112.262	74.3156
124	0	0.0828129	112.269	74.3156
125	0	0.0928787	112.277	74.3156
126	0	0.102953	112.288	74.3156
127	0	0.115562	112.301	74.3156
128	0	0.125661	112.317	74.3156
129	0	0.135774	112.335	74.3156
130	0	0.1459	112.357	74.3156
131	0	0.158579	112.382	74.3156
132	0	0.168741	112.41	74.3156
133	0	0.17892	112.442	74.3156
134	0	0.191671	112.479	74.3156
135	0	0.201894	112.52	74.3156
136	0	0.212137	112.565	74.3156
137	0	0.222403	112.614	74.3156
138	0	0.235269	112.67	74.3156
139	0	0.24559	112.73	74.3156
140	0	0.255936	112.796	74.3156
141	0	0.268908	112.868	74.3156
142	0	0.279319	112.946	74.3156
143	0	0.28976	113.03	74.3156
144	0	0.302855	113.122	74.3156
145	0	0.31337	113.22	74.3156
146	0	0.323919	113.325	74.3156
147	0	0.334503	113.437	74.3156
148	0	0.347787	113.558	74.3156
149	0	0.358459	113.686	74.3156
150	0	0.369171	113.822	74.3156
151	0	0.382622	113.969	74.3156
152	0	0.393433	114.123	74.3156
153	0	0.40429	114.287	74.3156
154	0	0.415193	114.459	74.3156
155	0	0.428895	114.643	74.3156
156	0	0.439913	114.837	74.3156
157	0	0.450985	115.04	74.3156
158	0	0.464904	115.256	74.3156
159	0	0.476105	115.483	74.3156
160	0	0.487364	115.721	74.3156
161	0	0.498687	115.969	74.3156
162	0	0.51293	116.232	74.3156
163	0	0.524401	116.507	74.3156
164	0	0.53594	116.795	74.3156
165	0	0.550465	117.098	74.3156
166	0	0.56217	117.414	74.3156
167	0	0.573953	117.743	74.3156
168	0	0.588793	118.09	74.3156
169	0	0.60076	118.451	74.3156
170	0	0.612813	118.826	74.3156
171	0	0.624956	119.217	74.3156
172	0	0.640266	119.627	74.3156
173	0	0.652622	120.053	74.3156

174	0	0.665079		120.495	74.3156
175	0	0.680797		120.958	74.3156
176	0	0.693493		121.439	74.3156
177	0	0.706302		121.938	74.3156
178	0	0.719228		122.455	74.3156
179	0	0.735557		122.997	74.3156
180	0	0.748762		123.557	74.3156
181	0	0.7621	124.138	74.3156	
182	0	0.778966		124.745	74.3156
183	0	0.792618		125.373	74.3156
184	0	0.806422		126.023	74.3156
185	0	0.820379		126.696	74.3156
186	0	0.838054		127.399	74.3156
187	0	0.852385		128.125	74.3156
188	0	0.866894		128.877	74.3156
189	0	0.885291		129.66	74.3156
190	0	0.900227		130.471	74.3156
191	0	0.915365		131.309	74.3156
192	0	0.93459	132.182	74.3156	
193	0	0.950222		133.085	74.3156
194	0	0.966088		134.018	74.3156
195	0	0.982202		134.983	74.3156
196	0	1.00271	135.989	74.3156	
197	0	1.01943	137.028	74.3156	
198	0	1.03643	138.102	74.3156	
199	0	1.05812	139.222	74.3156	
200	0	1.07584	140.379	74.3156	
201	0	1.0939	141.576	74.3156	
202	0	1.11232	142.813	74.3156	
203	0	1.1359	144.103	74.3156	
204	0.0953102		1.15522	145.438	74.4257
205	0.0953102		1.17499	146.818	74.5377
206	0.182322		1.20036	148.259	74.7566
207	0.470004		1.22123	149.751	75.3306
208	0.587787		1.24264	151.295	76.061
209	0.693147		1.26464	152.894	76.9375
210	0.693147		1.29303	154.566	77.8338
211	0.693147		1.31652	156.299	78.7463
212	0.741937		1.34075	158.097	79.7411
213	0.916291		1.3722	159.98	80.9984
214	1.09861	1.39838	161.935	82.5347	
215	1.09861	1.42554	163.967	84.1008	
216	1.09861	1.46106	166.102	85.706	
217	1.38629	1.49085	168.325	87.7727	
218	1.94591	1.52203	170.641	90.7345	
219	1.94591	1.55477	173.059	93.7599	
220	2.07944	1.59819	175.613	97.0833	
221	2.19722	1.63524	178.287	100.676	
222	2.19722	1.67466	181.091	104.356	
223	2.30259	1.72793	184.077	108.335	
224	2.30259	1.77438	187.226	112.42	
225	2.48491	1.82501	190.556	116.955	
226	2.77259	1.88079	194.094	122.17	
227	2.89037	1.95996	197.935	127.835	
228	3.13549	2.03352	202.07	134.211	
229	3.21888	2.12007	206.565	141.035	
230	3.52636	2.25713	211.66	148.995	
231	4.04305	2.40892	217.462	158.734	
232	4.09434	2.65209	224.496	169.593	

Data Set Standard Deviation = 0.91257

Numerator = 28761.7
Denominator = 43187
W Statistic = 0.665979 = 28761.7 / 43187

5% Critical value of 0.976 exceeds 0.665979
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.665979
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	87
	3/16/1999	ND<0	87
	9/23/1999	ND<0	87
	3/14/2000	ND<0	87
	9/23/2003	ND<0	87
	3/10/2004	ND<0	87
	10/12/2004	ND<0	87
	4/1/2005	ND<0	87
	10/26/2005	ND<0	87
	6/19/2006	ND<0	87
	11/18/2006	ND<0	87
	6/2/2007	0 J	193
	11/15/2007	0 J	194
	5/20/2008	ND<0	87
	11/20/2008	ND<0	87
	6/11/2009	ND<-1.60944 U	87
	11/16/2009	ND<-1.60944 U	87
	6/30/2010	ND<-1.60944 U	87
	11/17/2010	ND<-1.60944 U	87

Rank Sum = 1866
Rank Mean = 98.2105

Background Rank Sum = 1866
Background Rank Mean = 98.2105

Compliance Wells

Well ID	Date	Result	Rank
LMW-9D	11/18/2006	1.94591	218
	6/2/2007	1.94591	219
	11/15/2007	ND<0	87
	5/20/2008	1.09861	214
	11/20/2008	1.09861	215
	6/11/2009	0.741937	212
	11/16/2009	0.693147	209
	6/30/2010	0.587787	208
	11/17/2010	0.693147	210

Rank Sum = 1792
Rank Mean = 199.111

LMW-14R	6/2/2007	0 J	195
	11/15/2007	ND<0	87
	5/20/2008	ND<0	87
	11/20/2008	2.19722	221
	6/11/2009	-0.891598 J	174
	11/16/2009	ND<-1.60944 U	87

	11/16/2009	-0.755023 J	180
	11/16/2009	ND<-1.60944 U	87
	6/30/2010	ND<-1.60944 U	87
	11/17/2010	ND<-1.60944 U	87

Rank Sum = 1292
Rank Mean = 129.2

LMW-6	1/16/1998	ND<0	87
	3/16/1999	ND<0	87
	9/23/1999	ND<0	87
	3/14/2000	ND<0	87
	9/23/2003	ND<0	87
	3/10/2004	ND<0	87
	10/12/2004	ND<0	87
	4/1/2005	ND<0	87
	10/26/2005	ND<0	87
	6/19/2006	ND<0	87
	11/18/2006	ND<0	87
	6/2/2007	0 J	196
	11/15/2007	ND<0	87
	5/20/2008	ND<0	87
	11/20/2008	ND<0	87
	6/11/2009	-0.430783 J B	191
	11/16/2009	ND<-1.60944 U	87
	6/30/2010	-0.776529 J	178
	11/17/2010	-0.653926 J	184

Rank Sum = 2054
Rank Mean = 108.105

LMW-15R	11/18/2006	ND<0	87
	6/2/2007	ND<0	87
	11/15/2007	ND<0	87
	11/15/2007	ND<0	87
	5/20/2008	ND<0	87
	5/20/2008	ND<0	87
	11/20/2008	ND<0	87
	11/20/2008	ND<0	87
	6/11/2009	0.916291	213
	6/30/2010	ND<-1.60944 U	87
	11/17/2010	ND<-1.60944 U	87

Rank Sum = 1083
Rank Mean = 98.4545

LMW-9	1/16/1998	ND<0	87
	3/16/1999	ND<0	87
	9/23/1999	1.09861	216
	3/14/2000	ND<0	87
	9/23/2003	ND<0	87
	3/10/2004	ND<0	87
	10/12/2004	ND<0	87
	4/1/2005	0 J	197
	10/26/2005	ND<0	87
	6/19/2006	0 J	198
	11/18/2006	ND<0	87
	6/2/2007	0 J	199
	11/15/2007	ND<0	87
	5/20/2008	ND<0	87
	11/20/2008	2.07944	220
	6/11/2009	0.0953102 J	204
	11/16/2009	ND<-1.60944 U	87
	6/30/2010	-0.544727 J	189
	11/17/2010	0.470004	207

Rank Sum = 2587
Rank Mean = 136.158

LMW-7	1/16/1998	ND<0	87
	3/16/1999	ND<0	87
	9/23/1999	ND<0	87
	3/14/2000	2.30259	223
	9/23/2003	ND<0	87
	3/10/2004	ND<0	87
	10/12/2004	ND<0	87
	4/1/2005	ND<0	87
	10/26/2005	ND<0	87
	6/19/2006	ND<0	87
	11/18/2006	ND<0	87
	6/2/2007	0 J	200
	11/15/2007	ND<0	87
	5/20/2008	ND<0	87
	11/20/2008	2.30259	224
	6/11/2009	0.0953102 J B	205
	11/17/2010	ND<-1.60944 U	87

Rank Sum = 1983
Rank Mean = 116.647

LMW-3	11/19/1996	ND<0	87
	3/24/1997	ND<0	87
	1/16/1998	ND<0	87
	3/16/1999	ND<0	87
	9/23/1999	ND<0	87
	3/14/2000	ND<0	87
	9/23/2003	ND<0	87
	3/10/2004	ND<0	87
	10/12/2004	ND<0	87
	4/1/2005	ND<0	87
	10/26/2005	ND<0	87
	6/19/2006	ND<0	87
	11/18/2006	ND<0	87
	6/2/2007	ND<0	87
	11/15/2007	ND<0	87
	5/20/2008	ND<0	87
	11/20/2008	ND<0	87
	6/11/2009	-0.867501 J B	175
	11/16/2009	ND<-1.60944 U	87
	6/30/2010	ND<-1.60944 U	87
	11/17/2010	-0.820981 J	177

Rank Sum = 2005
Rank Mean = 95.4762

LMW-9S	11/18/2006	ND<0	87
	6/2/2007	0 J	201
	11/15/2007	1.38629	217
	5/20/2008	ND<0	87
	11/20/2008	ND<0	87
	6/11/2009	-0.776529 J	179
	6/30/2010	-0.562119 J	188
	11/17/2010	0.182322	206

Rank Sum = 1252
Rank Mean = 156.5

LMW-10	3/14/2000	3.13549	228
	9/23/2003	ND<0	87
	3/10/2004	3.21888	229
	10/12/2004	ND<0	87

	4/1/2005	ND<0	87	
	10/26/2005	ND<0	87	
	6/19/2006	ND<0	87	
	11/18/2006	ND<0	87	
	6/2/2007	0 J	202	
	11/15/2007	ND<0	87	
	5/20/2008	ND<0	87	
	11/20/2008	ND<0	87	
	6/11/2009	ND<-1.60944 U	87	
	11/16/2009	ND<-1.60944 U	87	
	6/30/2010	ND<-1.60944 U	87	
	11/17/2010	ND<-1.60944 U	87	
Rank Sum = 1790				
Rank Mean = 111.875				
LMW-16	11/18/2006	ND<0	87	
	6/2/2007	0.693147	211	
	11/15/2007	ND<0	87	
	5/20/2008	ND<0	87	
	11/20/2008	2.19722		222
	6/11/2009	-0.579818 J		187
	11/16/2009	-0.527633 J		190
	6/30/2010	-0.693147 J		183
	11/17/2010	-0.616186 J		186
Rank Sum = 1440				
Rank Mean = 160				
LMW-8	1/16/1998	ND<0	87	
	3/16/1999	ND<0	87	
	9/23/1999	ND<0	87	
	3/14/2000	ND<0	87	
	9/23/2003	ND<0	87	
	3/10/2004	ND<0	87	
	10/12/2004	ND<0	87	
	4/1/2005	ND<0	87	
	10/26/2005	ND<0	87	
	6/19/2006	ND<0	87	
	11/18/2006	ND<0	87	
	6/2/2007	ND<0	87	
	11/15/2007	ND<0	87	
	5/20/2008	ND<0	87	
	11/20/2008	ND<0	87	
	6/11/2009	-0.71335 J		182
	11/16/2009	-0.634878 J		185
	6/30/2010	-0.84397 J		176
	11/17/2010	-0.733969 J		181
Rank Sum = 2029				
Rank Mean = 106.789				
LMW-3S	11/18/2006	ND<0	87	
	6/2/2007	ND<0	87	
	11/15/2007	ND<0	87	
	5/20/2008	ND<0	87	
	11/20/2008	ND<0	87	
	6/11/2009	-0.314711 J B		192
	11/16/2009	ND<-1.60944 U	87	
	6/30/2010	ND<-1.60944 U	87	
	11/17/2010	0	203	
Rank Sum = 1004				
Rank Mean = 111.556				
MW-5	1/16/1998	ND<0	87	

	3/16/1999	ND<0	87	
	9/23/1999	ND<0	87	
	3/14/2000	3.52636		230
	9/23/2003	ND<0	87	
	3/10/2004	4.09434		232
	10/12/2004	ND<0	87	
	4/1/2005	ND<0	87	
	10/26/2005	ND<0	87	
	6/19/2006	ND<0	87	
	11/15/2007	ND<0	87	
	5/20/2008	ND<0	87	
	11/20/2008	ND<0	87	

Rank Sum = 1419
Rank Mean = 109.154

LMW-12	3/14/2000	4.04305		231
	9/23/2003	ND<0	87	
	3/10/2004	ND<0	87	
	10/12/2004	ND<0	87	
	4/1/2005	ND<0	87	
	10/26/2005	ND<0	87	
	6/19/2006	ND<0	87	
	6/2/2007	ND<0	87	
	11/15/2007	ND<0	87	
	5/20/2008	ND<0	87	
	11/20/2008	ND<0	87	

Rank Sum = 1101
Rank Mean = 100.091

LMW-11	3/14/2000	2.48491		225
	9/23/2003	ND<0	87	
	3/10/2004	2.89037		227
	10/12/2004	ND<0	87	
	4/1/2005	ND<0	87	
	10/26/2005	ND<0	87	
	6/19/2006	ND<0	87	
	6/2/2007	ND<0	87	
	11/15/2007	ND<0	87	
	5/20/2008	ND<0	87	
	11/20/2008	ND<0	87	

Rank Sum = 1235
Rank Mean = 112.273

LMW-13	3/14/2000	2.77259		226
	9/23/2003	ND<0	87	
	3/10/2004	ND<0	87	
	10/12/2004	ND<0	87	
	4/1/2005	ND<0	87	
	10/26/2005	ND<0	87	
	6/19/2006	ND<0	87	
	6/2/2007	ND<0	87	
	11/15/2007	ND<0	87	
	5/20/2008	ND<0	87	
	11/20/2008	ND<0	87	

Rank Sum = 1096
Rank Mean = 99.6364

Calculation Results:

Kruskal-Wallis H Statistic = 28.8829
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 49.3418

95% Confidence comparison value is 26.2962 at 16 degrees of freedom
28.8829 > 26.2962 indicating a significant group difference at 5% significance level
49.3418 > 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 98.2105

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9D	199.111	100.901	63.1809
LMW-14R	129.2	30.9895	60.9996
LMW-6	108.105	9.89474	50.6574
LMW-15R	98.4545	0.244019	59.1551
LMW-9	136.158	37.9474	50.6574
LMW-7	116.647	18.4365	52.1261
LMW-3	95.4762	-2.73434	49.4366
LMW-9S	156.5	58.2895	65.8059
LMW-10	111.875	13.6645	52.9788
LMW-16	160	61.7895	63.1809
LMW-8	106.789	8.57895	50.6574
LMW-3S	111.556	13.345	63.1809
MW-5	109.154	10.9433	56.1994
LMW-12	100.091	1.88038	59.1551
LMW-11	112.273	14.0622	59.1551
LMW-13	99.6364	1.42584	59.1551

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 98.2105

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9D	199.111	100.901	74.6263
LMW-14R	129.2	30.9895	72.0499
LMW-6	108.105	9.89474	59.8342
LMW-15R	98.4545	0.244019	69.8712
LMW-9	136.158	37.9474	59.8342
LMW-7	116.647	18.4365	61.5688
LMW-3	95.4762	-2.73434	58.3922
LMW-9S	156.5	58.2895	77.7268
LMW-10	111.875	13.6645	62.5761
LMW-16	160	61.7895	74.6263
LMW-8	106.789	8.57895	59.8342
LMW-3S	111.556	13.345	74.6263
MW-5	109.154	10.9433	66.38
LMW-12	100.091	1.88038	69.8712
LMW-11	112.273	14.0622	69.8712
LMW-13	99.6364	1.42584	69.8712

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		
0.693147	1.94591	-1.252760	7		
ND<0	1.94591	-1.94591	0	8	
1.09861	1.94591	-0.847298	0	9	
1.09861	1.94591	-0.847298	0	10	
0.741937	1.94591	-1.203970	11		
0.693147	1.94591	-1.252760	12		
0.587787	1.94591	-1.358120	13		
0.693147	1.94591	-1.252760	14		
1.09861	ND<0	1.09861	1	14	
1.09861	ND<0	1.09861	2	14	
0.741937	ND<0	0.741937	3	14	
0.693147	ND<0	0.693147	4	14	
0.587787	ND<0	0.587787	5	14	
0.693147	ND<0	0.693147	6	14	
1.09861	1.09861	0	6	14	
0.741937	1.09861	-0.356675	6	15	
0.693147	1.09861	-0.405465	6	16	
0.587787	1.09861	-0.510826	6	17	
0.693147	1.09861	-0.405465	6	18	
0.741937	1.09861	-0.356675	6	19	
0.693147	1.09861	-0.405465	6	20	
0.587787	1.09861	-0.510826	6	21	
0.693147	1.09861	-0.405465	6	22	
0.693147	0.741937	-0.0487902	6	23	
0.587787	0.741937	-0.154151	6	24	
0.693147	0.741937	-0.0487902	6	25	
0.587787	0.693147	-0.105361	6	26	
0.693147	0.693147	0	6	26	
0.693147	0.587787	0.105361	7	26	

S Statistic = 7 - 26 = -19
Comparing at 1.0 - (0.05 / 2) = 97.5% confidence level (two-tailed)

Failed to calculate probability for S = -19
Table out of range

Concentrations (ug/L)

Parameter: Barium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 232
Total Non-Detect: 88
Percent Non-Detects: 37.931%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	19	5 (26.3158%)	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
			11/17/2010	14	14

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9	19	7 (36.8421%)	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
			11/17/2010	4	4
LMW-7	17	5 (29.4118%)	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	
			11/17/2010	5.2	5.2	
LMW-15R	11	3 (27.2727%)	11/18/2006	37	37	
			6/2/2007	38	38	
			11/15/2007	27	27	
			11/15/2007	ND<10	ND<10	
			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	
			11/17/2010	30	30	
LMW-3S	9	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	
			11/17/2010	16	16	
LMW-14R	10	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	
			11/17/2010	12	12	
LMW-6	19	5 (26.3158%)	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	
			11/17/2010	79	79	
LMW-8	19	5 (26.3158%)	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	
			11/17/2010	44	44	
LMW-16	9	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	
			11/17/2010	10	10	
LMW-3	21	9 (42.8571%)	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	
			11/17/2010	13	13	
LMW-10	16	6 (37.5%)	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	
			11/17/2010	14	14	
LMW-9S	8	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	
			11/17/2010	53	53	
LMW-9D	9	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	
			11/17/2010	2.8	2.8	
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	
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-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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	2	-2.65209	7.03356	-5.30417
2	2	-2.40892	12.8365	-10.122
3	2.1	-2.25713	17.9311	-14.862
4	2.8	-2.12007	22.4258	-20.7982
5	2.8	-2.03352	26.561	-26.492
6	2.9	-1.95996	30.4025	-32.1759
7	2.9	-1.88079	33.9398	-37.6302
8	3	-1.82501	37.2705	-43.1052
9	3	-1.77438	40.4189	-48.4284
10	3	-1.72793	43.4046	-53.6122
11	3.1	-1.67466	46.2091	-58.8036
12	3.1	-1.63524	48.8831	-63.8728
13	4	-1.59819	51.4373	-70.2656
14	4	-1.55477	53.8547	-76.4847
15	5	-1.52203	56.1712	-84.0949
16	5	-1.49085	58.3939	-91.5491
17	5	-1.46106	60.5286	-98.8544
18	5	-1.42554	62.5608	-105.982
19	5	-1.39838	64.5162	-112.974
20	5	-1.3722	66.3992	-119.835
21	5	-1.34075	68.1968	-126.539
22	5	-1.31652	69.93	-133.121
23	5	-1.29303	71.6019	-139.587
24	5	-1.26464	73.2013	-145.91
25	5	-1.24264	74.7454	-152.123
26	5	-1.22123	76.2368	-158.229
27	5	-1.20036	77.6777	-164.231
28	5	-1.17499	79.0583	-170.106
29	5	-1.15522	80.3928	-175.882
30	5	-1.1359	81.6831	-181.561
31	5	-1.11232	82.9203	-187.123
32	5	-1.0939	84.1169	-192.593
33	5	-1.07584	85.2744	-197.972
34	5	-1.05812	86.394	-203.262
35	5	-1.03643	87.4682	-208.445
36	5	-1.01943	88.5074	-213.542
37	5	-1.00271	89.5128	-218.555
38	5	-0.982202	90.4776	-223.466
39	5	-0.966088	91.4109	-228.297
40	5	-0.950222	92.3138	-233.048
41	5	-0.93459	93.1873	-237.721
42	5	-0.915365	94.0252	-242.298
43	5	-0.900227	94.8356	-246.799
44	5	-0.885291	95.6193	-251.225
45	5	-0.866894	96.3708	-255.56
46	5	-0.852385	97.0974	-259.822
47	5	-0.838054	97.7997	-264.012
48	5	-0.820379	98.4727	-268.114
49	5	-0.806422	99.123	-272.146

50	5	-0.792618	99.7513	-276.109
51	5	-0.778966	100.358	-280.004
52	5	-0.7621	100.939	-283.814
53	5	-0.748762	101.5	-287.558
54	5	-0.735557	102.041	-291.236
55	5	-0.719228	102.558	-294.832
56	5	-0.706302	103.057	-298.363
57	5	-0.693493	103.538	-301.831
58	5	-0.680797	104.001	-305.235
59	5	-0.665079	104.443	-308.56
60	5	-0.652622	104.869	-311.823
61	5	-0.640266	105.279	-315.025
62	5	-0.624956	105.67	-318.15
63	5	-0.612813	106.045	-321.214
64	5	-0.60076	106.406	-324.217
65	5	-0.588793	106.753	-327.161
66	5	-0.573953	107.082	-330.031
67	5	-0.56217	107.398	-332.842
68	5	-0.550465	107.701	-335.594
69	5	-0.53594	107.989	-338.274
70	5	-0.524401	108.264	-340.896
71	5	-0.51293	108.527	-343.461
72	5	-0.498687	108.776	-345.954
73	5	-0.487364	109.013	-348.391
74	5	-0.476105	109.24	-350.771
75	5	-0.464904	109.456	-353.096
76	5	-0.450985	109.659	-355.351
77	5	-0.439913	109.853	-357.55
78	5	-0.428895	110.037	-359.695
79	5	-0.415193	110.209	-361.771
80	5	-0.40429	110.373	-363.792
81	5	-0.393433	110.527	-365.76
82	5	-0.382622	110.674	-367.673
83	5	-0.369171	110.81	-369.518
84	5	-0.358459	110.939	-371.311
85	5	-0.347787	111.059	-373.05
86	5	-0.334503	111.171	-374.722
87	5	-0.323919	111.276	-376.342
88	5	-0.31337	111.374	-377.909
89	5	-0.302855	111.466	-379.423
90	5	-0.28976	111.55	-380.872
91	5	-0.279319	111.628	-382.268
92	5	-0.268908	111.7	-383.613
93	5	-0.255936	111.766	-384.893
94	5	-0.24559	111.826	-386.121
95	5	-0.235269	111.882	-387.297
96	5	-0.222403	111.931	-388.409
97	5	-0.212137	111.976	-389.47
98	5	-0.201894	112.017	-390.479
99	5	-0.191671	112.054	-391.437
100	5	-0.17892	112.086	-392.332
101	5	-0.168741	112.114	-393.176
102	5	-0.158579	112.139	-393.969
103	5	-0.1459	112.161	-394.698
104	5	-0.135774	112.179	-395.377
105	5	-0.125661	112.195	-396.005
106	5	-0.115562	112.208	-396.583
107	5	-0.102953	112.219	-397.098
108	5	-0.0928787	112.227	-397.562
109	5	-0.0828129	112.234	-397.976
110	5	-0.0702426	112.239	-398.328
111	5.2	-0.0601949	112.243	-398.641

112	6	-0.0501541	112.245	-398.941
113	6	-0.0401167	112.247	-399.182
114	6.4	-0.0275759	112.248	-399.359
115	7	-0.0175476	112.248	-399.481
116	7	-0.00751925	112.248	-399.534
117	7	0.00751925	112.248	-399.481
118	7	0.0175476	112.248	-399.359
119	7.2	0.0275759	112.249	-399.16
120	8	0.0401167	112.251	-398.839
121	8	0.0501541	112.253	-398.438
122	8	0.0601949	112.257	-397.956
123	8	0.0702426	112.262	-397.394
124	8.8	0.0828129	112.269	-396.666
125	9	0.0928787	112.277	-395.83
126	9	0.102953	112.288	-394.903
127	9	0.115562	112.301	-393.863
128	10	0.125661	112.317	-392.607
129	10	0.135774	112.335	-391.249
130	10	0.1459	112.357	-389.79
131	10	0.158579	112.382	-388.204
132	10	0.168741	112.41	-386.517
133	10	0.17892	112.442	-384.727
134	10	0.191671	112.479	-382.811
135	11	0.201894	112.52	-380.59
136	11	0.212137	112.565	-378.256
137	11	0.222403	112.614	-375.81
138	12	0.235269	112.67	-372.987
139	12	0.24559	112.73	-370.04
140	12	0.255936	112.796	-366.968
141	12	0.268908	112.868	-363.741
142	12	0.279319	112.946	-360.39
143	12	0.28976	113.03	-356.912
144	12	0.302855	113.122	-353.278
145	12	0.31337	113.22	-349.518
146	12	0.323919	113.325	-345.631
147	12	0.334503	113.437	-341.617
148	12	0.347787	113.558	-337.443
149	12	0.358459	113.686	-333.142
150	13	0.369171	113.822	-328.343
151	13	0.382622	113.969	-323.368
152	13	0.393433	114.123	-318.254
153	13	0.40429	114.287	-312.998
154	13	0.415193	114.459	-307.601
155	13	0.428895	114.643	-302.025
156	13	0.439913	114.837	-296.306
157	13	0.450985	115.04	-290.443
158	13	0.464904	115.256	-284.399
159	13	0.476105	115.483	-278.21
160	13	0.487364	115.721	-271.874
161	13	0.498687	115.969	-265.391
162	13	0.51293	116.232	-258.723
163	13	0.524401	116.507	-251.906
164	14	0.53594	116.795	-244.403
165	14	0.550465	117.098	-236.696
166	14	0.56217	117.414	-228.826
167	14	0.573953	117.743	-220.791
168	14	0.588793	118.09	-212.548
169	14	0.60076	118.451	-204.137
170	14	0.612813	118.826	-195.558
171	15	0.624956	119.217	-186.183
172	16	0.640266	119.627	-175.939
173	17	0.652622	120.053	-164.844

174	18	0.665079		120.495	-152.873
175	18	0.680797		120.958	-140.619
176	20	0.693493		121.439	-126.749
177	20	0.706302		121.938	-112.623
178	20	0.719228		122.455	-98.2382
179	20	0.735557		122.997	-83.5271
180	20	0.748762		123.557	-68.5518
181	20	0.7621	124.138	-53.3099	
182	21	0.778966		124.745	-36.9516
183	22	0.792618		125.373	-19.514
184	22	0.806422		126.023	-1.77269
185	22	0.820379		126.696	16.2756
186	23	0.838054		127.399	35.5509
187	23	0.852385		128.125	55.1557
188	24	0.866894		128.877	75.9612
189	24	0.885291		129.66	97.2082
190	27	0.900227		130.471	121.514
191	27	0.915365		131.309	146.229
192	28	0.93459	132.182	172.398	
193	29	0.950222		133.085	199.954
194	30	0.966088		134.018	228.937
195	30	0.982202		134.983	258.403
196	30	1.00271	135.989	288.484	
197	31	1.01943	137.028	320.086	
198	32	1.03643	138.102	353.252	
199	33	1.05812	139.222	388.17	
200	34	1.07584	140.379	424.749	
201	34	1.0939	141.576	461.941	
202	35	1.11232	142.813	500.872	
203	36	1.1359	144.103	541.765	
204	37	1.15522	145.438	584.508	
205	38	1.17499	146.818	629.157	
206	38	1.20036	148.259	674.771	
207	38	1.22123	149.751	721.178	
208	38	1.24264	151.295	768.398	
209	40	1.26464	152.894	818.984	
210	40	1.29303	154.566	870.705	
211	40	1.31652	156.299	923.366	
212	41	1.34075	158.097	978.337	
213	41	1.3722	159.98	1034.6	
214	42	1.39838	161.935	1093.33	
215	42	1.42554	163.967	1153.2	
216	44	1.46106	166.102	1217.49	
217	48	1.49085	168.325	1289.05	
218	48	1.52203	170.641	1362.11	
219	49	1.55477	173.059	1438.29	
220	52	1.59819	175.613	1521.4	
221	53	1.63524	178.287	1608.06	
222	61	1.67466	181.091	1710.22	
223	73	1.72793	184.077	1836.36	
224	74	1.77438	187.226	1967.66	
225	75	1.82501	190.556	2104.54	
226	77	1.88079	194.094	2249.36	
227	77	1.95996	197.935	2400.27	
228	79	2.03352	202.07	2560.92	
229	80	2.12007	206.565	2730.53	
230	92	2.25713	211.66	2938.18	
231	109	2.40892	217.462	3200.76	
232	120	2.65209	224.496	3519.01	

Data Set Standard Deviation = 19.2839

Numerator = 1.23834e+007
Denominator = 1.92846e+007
W Statistic = 0.64214 = 1.23834e+007 / 1.92846e+007

5% Critical value of 0.976 exceeds 0.64214
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.64214
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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.693147	-2.65209	7.03356	-1.83829
2	0.693147	-2.40892	12.8365	-3.50803
3	0.741937	-2.25713	17.9311	-5.18267
4	1.02962	-2.12007	22.4258	-7.36554
5	1.02962	-2.03352	26.561	-9.45929
6	1.06471	-1.95996	30.4025	-11.5461
7	1.06471	-1.88079	33.9398	-13.5486
8	1.09861	-1.82501	37.2705	-15.5536
9	1.09861	-1.77438	40.4189	-17.5029
10	1.09861	-1.72793	43.4046	-19.4012
11	1.1314	-1.67466	46.2091	-21.2959
12	1.1314	-1.63524	48.8831	-23.1461
13	1.38629	-1.59819	51.4373	-25.3616
14	1.38629	-1.55477	53.8547	-27.517
15	1.60944	-1.52203	56.1712	-29.9666
16	1.60944	-1.49085	58.3939	-32.366
17	1.60944	-1.46106	60.5286	-34.7175
18	1.60944	-1.42554	62.5608	-37.0119
19	1.60944	-1.39838	64.5162	-39.2625
20	1.60944	-1.3722	66.3992	-41.4709
21	1.60944	-1.34075	68.1968	-43.6288
22	1.60944	-1.31652	69.93	-45.7477
23	1.60944	-1.29303	71.6019	-47.8287
24	1.60944	-1.26464	73.2013	-49.8641
25	1.60944	-1.24264	74.7454	-51.864
26	1.60944	-1.22123	76.2368	-53.8295
27	1.60944	-1.20036	77.6777	-55.7614
28	1.60944	-1.17499	79.0583	-57.6525
29	1.60944	-1.15522	80.3928	-59.5117
30	1.60944	-1.1359	81.6831	-61.3399
31	1.60944	-1.11232	82.9203	-63.1301
32	1.60944	-1.0939	84.1169	-64.8907
33	1.60944	-1.07584	85.2744	-66.6222
34	1.60944	-1.05812	86.394	-68.3251
35	1.60944	-1.03643	87.4682	-69.9932
36	1.60944	-1.01943	88.5074	-71.6339
37	1.60944	-1.00271	89.5128	-73.2477
38	1.60944	-0.982202	90.4776	-74.8285
39	1.60944	-0.966088	91.4109	-76.3834
40	1.60944	-0.950222	92.3138	-77.9127
41	1.60944	-0.93459	93.1873	-79.4169
42	1.60944	-0.915365	94.0252	-80.8901
43	1.60944	-0.900227	94.8356	-82.339
44	1.60944	-0.885291	95.6193	-83.7638
45	1.60944	-0.866894	96.3708	-85.159
46	1.60944	-0.852385	97.0974	-86.5308
47	1.60944	-0.838054	97.7997	-87.8796
48	1.60944	-0.820379	98.4727	-89.2
49	1.60944	-0.806422	99.123	-90.4979

50	1.60944	-0.792618	99.7513	-91.7735
51	1.60944	-0.778966	100.358	-93.0272
52	1.60944	-0.7621	100.939	-94.2538
53	1.60944	-0.748762	101.5	-95.4589
54	1.60944	-0.735557	102.041	-96.6427
55	1.60944	-0.719228	102.558	-97.8003
56	1.60944	-0.706302	103.057	-98.937
57	1.60944	-0.693493	103.538	-100.053
58	1.60944	-0.680797	104.001	-101.149
59	1.60944	-0.665079	104.443	-102.219
60	1.60944	-0.652622	104.869	-103.27
61	1.60944	-0.640266	105.279	-104.3
62	1.60944	-0.624956	105.67	-105.306
63	1.60944	-0.612813	106.045	-106.292
64	1.60944	-0.60076	106.406	-107.259
65	1.60944	-0.588793	106.753	-108.207
66	1.60944	-0.573953	107.082	-109.13
67	1.60944	-0.56217	107.398	-110.035
68	1.60944	-0.550465	107.701	-110.921
69	1.60944	-0.53594	107.989	-111.784
70	1.60944	-0.524401	108.264	-112.628
71	1.60944	-0.51293	108.527	-113.453
72	1.60944	-0.498687	108.776	-114.256
73	1.60944	-0.487364	109.013	-115.04
74	1.60944	-0.476105	109.24	-115.806
75	1.60944	-0.464904	109.456	-116.555
76	1.60944	-0.450985	109.659	-117.281
77	1.60944	-0.439913	109.853	-117.989
78	1.60944	-0.428895	110.037	-118.679
79	1.60944	-0.415193	110.209	-119.347
80	1.60944	-0.40429	110.373	-119.998
81	1.60944	-0.393433	110.527	-120.631
82	1.60944	-0.382622	110.674	-121.247
83	1.60944	-0.369171	110.81	-121.841
84	1.60944	-0.358459	110.939	-122.418
85	1.60944	-0.347787	111.059	-122.978
86	1.60944	-0.334503	111.171	-123.516
87	1.60944	-0.323919	111.276	-124.037
88	1.60944	-0.31337	111.374	-124.542
89	1.60944	-0.302855	111.466	-125.029
90	1.60944	-0.28976	111.55	-125.495
91	1.60944	-0.279319	111.628	-125.945
92	1.60944	-0.268908	111.7	-126.378
93	1.60944	-0.255936	111.766	-126.79
94	1.60944	-0.24559	111.826	-127.185
95	1.60944	-0.235269	111.882	-127.564
96	1.60944	-0.222403	111.931	-127.922
97	1.60944	-0.212137	111.976	-128.263
98	1.60944	-0.201894	112.017	-128.588
99	1.60944	-0.191671	112.054	-128.896
100	1.60944	-0.17892	112.086	-129.184
101	1.60944	-0.168741	112.114	-129.456
102	1.60944	-0.158579	112.139	-129.711
103	1.60944	-0.1459	112.161	-129.946
104	1.60944	-0.135774	112.179	-130.164
105	1.60944	-0.125661	112.195	-130.367
106	1.60944	-0.115562	112.208	-130.553
107	1.60944	-0.102953	112.219	-130.718
108	1.60944	-0.0928787	112.227	-130.868
109	1.60944	-0.0828129	112.234	-131.001
110	1.60944	-0.0702426	112.239	-131.114
111	1.64866	-0.0601949	112.243	-131.213

112	1.79176	-0.0501541	112.245	-131.303
113	1.79176	-0.0401167	112.247	-131.375
114	1.8563	-0.0275759	112.248	-131.426
115	1.94591	-0.0175476	112.248	-131.461
116	1.94591	-0.00751925	112.248	-131.475
117	1.94591	0.00751925	112.248	-131.461
118	1.94591	0.0175476	112.248	-131.426
119	1.97408	0.0275759	112.249	-131.372
120	2.07944	0.0401167	112.251	-131.289
121	2.07944	0.0501541	112.253	-131.184
122	2.07944	0.0601949	112.257	-131.059
123	2.07944	0.0702426	112.262	-130.913
124	2.17475	0.0828129	112.269	-130.733
125	2.19722	0.0928787	112.277	-130.529
126	2.19722	0.102953	112.288	-130.303
127	2.19722	0.115562	112.301	-130.049
128	2.30259	0.125661	112.317	-129.759
129	2.30259	0.135774	112.335	-129.447
130	2.30259	0.1459	112.357	-129.111
131	2.30259	0.158579	112.382	-128.746
132	2.30259	0.168741	112.41	-128.357
133	2.30259	0.17892	112.442	-127.945
134	2.30259	0.191671	112.479	-127.504
135	2.3979	0.201894	112.52	-127.02
136	2.3979	0.212137	112.565	-126.511
137	2.3979	0.222403	112.614	-125.978
138	2.48491	0.235269	112.67	-125.393
139	2.48491	0.24559	112.73	-124.783
140	2.48491	0.255936	112.796	-124.147
141	2.48491	0.268908	112.868	-123.479
142	2.48491	0.279319	112.946	-122.784
143	2.48491	0.28976	113.03	-122.064
144	2.48491	0.302855	113.122	-121.312
145	2.48491	0.31337	113.22	-120.533
146	2.48491	0.323919	113.325	-119.728
147	2.48491	0.334503	113.437	-118.897
148	2.48491	0.347787	113.558	-118.033
149	2.48491	0.358459	113.686	-117.142
150	2.56495	0.369171	113.822	-116.195
151	2.56495	0.382622	113.969	-115.214
152	2.56495	0.393433	114.123	-114.205
153	2.56495	0.40429	114.287	-113.168
154	2.56495	0.415193	114.459	-112.103
155	2.56495	0.428895	114.643	-111.003
156	2.56495	0.439913	114.837	-109.874
157	2.56495	0.450985	115.04	-108.718
158	2.56495	0.464904	115.256	-107.525
159	2.56495	0.476105	115.483	-106.304
160	2.56495	0.487364	115.721	-105.054
161	2.56495	0.498687	115.969	-103.775
162	2.56495	0.51293	116.232	-102.459
163	2.56495	0.524401	116.507	-101.114
164	2.63906	0.53594	116.795	-99.6997
165	2.63906	0.550465	117.098	-98.247
166	2.63906	0.56217	117.414	-96.7634
167	2.63906	0.573953	117.743	-95.2487
168	2.63906	0.588793	118.09	-93.6948
169	2.63906	0.60076	118.451	-92.1094
170	2.63906	0.612813	118.826	-90.4921
171	2.70805	0.624956	119.217	-88.7997
172	2.77259	0.640266	119.627	-87.0245
173	2.83321	0.652622	120.053	-85.1755

174	2.89037	0.665079	120.495	-83.2532
175	2.89037	0.680797	120.958	-81.2854
176	2.99573	0.693493	121.439	-79.2079
177	2.99573	0.706302	121.938	-77.092
178	2.99573	0.719228	122.455	-74.9374
179	2.99573	0.735557	122.997	-72.7338
180	2.99573	0.748762	123.557	-70.4908
181	2.99573	0.7621	124.138	-68.2077
182	3.04452	0.778966	124.745	-65.8361
183	3.09104	0.792618	125.373	-63.3861
184	3.09104	0.806422	126.023	-60.8934
185	3.09104	0.820379	126.696	-58.3576
186	3.13549	0.838054	127.399	-55.7299
187	3.13549	0.852385	128.125	-53.0572
188	3.17805	0.866894	128.877	-50.3022
189	3.17805	0.885291	129.66	-47.4887
190	3.29584	0.900227	130.471	-44.5217
191	3.29584	0.915365	131.309	-41.5048
192	3.3322	0.93459	132.182	-38.3906
193	3.3673	0.950222	133.085	-35.1909
194	3.4012	0.966088	134.018	-31.905
195	3.4012	0.982202	134.983	-28.5644
196	3.4012	1.00271	135.989	-25.1539
197	3.43399	1.01943	137.028	-21.6532
198	3.46574	1.03643	138.102	-18.0612
199	3.49651	1.05812	139.222	-14.3615
200	3.52636	1.07584	140.379	-10.5677
201	3.52636	1.0939	141.576	-6.71025
202	3.55535	1.11232	142.813	-2.75556
203	3.58352	1.1359	144.103	1.31494
204	3.61092	1.15522	145.438	5.48635
205	3.63759	1.17499	146.818	9.76047
206	3.63759	1.20036	148.259	14.1269
207	3.63759	1.22123	149.751	18.5692
208	3.63759	1.24264	151.295	23.0894
209	3.68888	1.26464	152.894	27.7545
210	3.68888	1.29303	154.566	32.5244
211	3.68888	1.31652	156.299	37.3809
212	3.71357	1.34075	158.097	42.3599
213	3.71357	1.3722	159.98	47.4556
214	3.73767	1.39838	161.935	52.6823
215	3.73767	1.42554	163.967	58.0105
216	3.78419	1.46106	166.102	63.5394
217	3.8712	1.49085	168.325	69.3108
218	3.8712	1.52203	170.641	75.2029
219	3.89182	1.55477	173.059	81.2538
220	3.95124	1.59819	175.613	87.5687
221	3.97029	1.63524	178.287	94.061
222	4.11087	1.67466	181.091	100.945
223	4.29046	1.72793	184.077	108.359
224	4.30407	1.77438	187.226	115.996
225	4.31749	1.82501	190.556	123.875
226	4.34381	1.88079	194.094	132.045
227	4.34381	1.95996	197.935	140.559
228	4.36945	2.03352	202.07	149.444
229	4.38203	2.12007	206.565	158.734
230	4.52179	2.25713	211.66	168.941
231	4.69135	2.40892	217.462	180.242
232	4.78749	2.65209	224.496	192.939

Data Set Standard Deviation = 0.900896

Numerator = 37225.3
Denominator = 42089.1
W Statistic = 0.88444 = 37225.3 / 42089.1

5% Critical value of 0.976 exceeds 0.88444
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.88444
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	176
	9/23/1999	2.07944 J	120
	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	164
	10/26/2005	2.48491	138
	6/19/2006	2.30259	128
	11/18/2006	2.56495	150
	6/2/2007	3.17805	188
	11/15/2007	2.56495	151
	5/20/2008	2.3979	135
	11/20/2008	2.63906	165
	6/11/2009	2.56495	152
	11/16/2009	2.56495	153
	6/30/2010	2.70805	171
	11/17/2010	2.63906	166

Rank Sum = 2379.5
Rank Mean = 125.237

Background Rank Sum = 2379.5
Background Rank Mean = 125.237

Compliance Wells

Well ID	Date	Result	Rank
LMW-9	1/16/1998	ND<1.60944	44.5
	3/16/1999	2.30259	129
	9/23/1999	3.09104	183
	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	130
	11/18/2006	1.09861 J	96
	6/2/2007	1.79176	112
	11/15/2007	1.09861 J	97
	5/20/2008	0.693147 J	89
	11/20/2008	1.38629 J	101
	6/11/2009	1.1314	99
	11/16/2009	1.06471	94
	6/30/2010	1.02962	92
	11/17/2010	1.38629	102

Rank Sum = 1635.5
Rank Mean = 86.0789

LMW-7	1/16/1998	ND<1.60944		44.5
	3/16/1999	2.99573		177
	9/23/1999	3.09104		184
	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		197
	10/26/2005	3.4012		194
	6/19/2006	2.99573		178
	11/18/2006	2.3979		136
	6/2/2007	3.29584		190
	11/15/2007	1.79176	J	113
	5/20/2008	1.60944	J	103
	11/20/2008	1.94591	J	115
	6/11/2009	2.48491		139
	11/17/2010	1.64866		111

Rank Sum = 2059.5
Rank Mean = 121.147

LMW-15R	11/18/2006	3.61092		204
	6/2/2007	3.63759		205
	11/15/2007	3.29584		191
	11/15/2007	ND<1.60944		44.5
	5/20/2008	ND<1.60944		44.5
	5/20/2008	3.17805		189
	11/20/2008	ND<1.60944		44.5
	11/20/2008	3.63759		206
	6/11/2009	3.73767		214
	6/30/2010	3.58352		203
	11/17/2010	3.4012		195

Rank Sum = 1740.5
Rank Mean = 158.227

LMW-3S	11/18/2006	1.60944	J	104
	6/2/2007	2.89037		174
	11/15/2007	2.56495		154
	5/20/2008	2.07944	J	121
	11/20/2008	2.56495		155
	6/11/2009	2.48491		140
	11/16/2009	2.30259		131
	6/30/2010	2.48491		141
	11/17/2010	2.77259		172

Rank Sum = 1292
Rank Mean = 143.556

LMW-14R	6/2/2007	2.63906		167
	11/15/2007	2.48491		142
	5/20/2008	2.19722	J	125
	11/20/2008	2.56495		156
	6/11/2009	2.56495		157
	11/16/2009	3.8712		217
	11/16/2009	2.63906		168
	11/16/2009	2.48491		143
	6/30/2010	2.56495		158
	11/17/2010	2.48491		144

Rank Sum = 1577
Rank Mean = 157.7

LMW-6	1/16/1998	ND<1.60944		44.5
	3/16/1999	2.07944	J	122
	9/23/1999	2.89037		175
	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	126
	10/26/2005	2.48491		145
	6/19/2006	2.99573		179
	11/18/2006	3.49651		199
	6/2/2007	3.95124		220
	11/15/2007	3.73767		215
	5/20/2008	3.89182		219
	11/20/2008	4.29046		223
	6/11/2009	4.52179		230
	11/16/2009	4.30407		224
	6/30/2010	4.34381		226
	11/17/2010	4.36945		228

Rank Sum = 2953.5
Rank Mean = 155.447

LMW-8	1/16/1998	ND<1.60944		44.5
	3/16/1999	2.30259		132
	9/23/1999	4.69135		231
	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		218
	10/26/2005	3.63759		207
	6/19/2006	3.68888		209
	11/18/2006	3.46574		198
	6/2/2007	3.52636		200
	11/15/2007	3.71357		212
	5/20/2008	3.52636		201
	11/20/2008	3.3673		193
	6/11/2009	3.68888		210
	11/16/2009	3.68888		211
	6/30/2010	3.4012		196
	11/17/2010	3.78419		216

Rank Sum = 3056.5
Rank Mean = 160.868

LMW-16	11/18/2006	3.13549		186
	6/2/2007	3.71357		213
	11/15/2007	3.55535		202
	5/20/2008	3.09104		185
	11/20/2008	3.13549		187
	6/11/2009	2.63906		169
	11/16/2009	2.56495		159
	6/30/2010	2.17475		124
	11/17/2010	2.30259		133

Rank Sum = 1558
Rank Mean = 173.111

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	123
	9/23/1999	1.94591	J	116
	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	117
	6/19/2006	1.60944	J	105
	11/18/2006	1.94591	J	118
	6/2/2007	1.60944		106
	11/15/2007	ND<1.60944		44.5
	5/20/2008	1.60944	J	107
	11/20/2008	1.60944	J	108
	6/11/2009	1.97408		119
	11/16/2009	1.8563		114
	6/30/2010	1.60944		109
	11/17/2010	2.56495		160

Rank Sum = 1802.5
Rank Mean = 85.8333

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		161
	10/26/2005	ND<1.60944		44.5
	6/19/2006	2.99573		180
	11/18/2006	2.3979		137
	6/2/2007	3.04452		182
	11/15/2007	ND<1.60944		44.5
	5/20/2008	2.48491		146
	11/20/2008	2.48491		147
	6/11/2009	2.56495		162
	11/16/2009	2.48491		148
	6/30/2010	2.48491		149
	11/17/2010	2.63906		170

Rank Sum = 1849
Rank Mean = 115.563

LMW-9S	11/18/2006	4.34381		227
	6/2/2007	4.38203		229
	11/15/2007	0.693147	J	90
	5/20/2008	4.31749		225
	11/20/2008	4.11087		222
	6/11/2009	3.3322		192
	6/30/2010	3.63759		208
	11/17/2010	3.97029		221

Rank Sum = 1614
Rank Mean = 201.75

LMW-9D	11/18/2006	2.56495		163
	6/2/2007	1.60944		110
	11/15/2007	4.78749		232
	5/20/2008	2.30259		134
	11/20/2008	1.09861	J	98
	6/11/2009	1.1314		100
	11/16/2009	1.06471		95
	6/30/2010	0.741937		91
	11/17/2010	1.02962		93

Rank Sum = 1116
Rank Mean = 124

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

MW-5	1/16/1998	ND<1.60944	44.5
	3/16/1999	2.99573	181
	9/23/1999	2.19722 J	127
	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	173
	5/20/2008	ND<1.60944	44.5
	11/20/2008	ND<1.60944	44.5

Rank Sum = 926
Rank Mean = 71.2308

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-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 = 96.1905
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 101.742
95% Confidence comparison value is 26.2962 at 16 degrees of freedom

96.1905 > 26.2962 indicating a significant group difference at 5% significance level
101.742 > 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 125.237

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9	86.0789	-39.1579	50.6574
LMW-7	121.147	-4.08978	52.1261
LMW-15R	158.227	32.9904	59.1551
LMW-3S	143.556	18.3187	63.1809
LMW-14R	157.7	32.4632	60.9996
LMW-6	155.447	30.2105	50.6574
LMW-8	160.868	35.6316	50.6574
LMW-16	173.111	47.8743	63.1809
LMW-3	85.8333	-39.4035	49.4366
LMW-10	115.563	-9.67434	52.9788
LMW-9S	201.75	76.5132	65.8059
LMW-9D	124	-1.23684	63.1809
LMW-12	44.5	-80.7368	59.1551
MW-5	71.2308	-54.0061	56.1994
LMW-13	44.5	-80.7368	59.1551
LMW-11	44.5	-80.7368	59.1551

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 125.237

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9	86.0789	-39.1579	59.8342
LMW-7	121.147	-4.08978	61.5688
LMW-15R	158.227	32.9904	69.8712
LMW-3S	143.556	18.3187	74.6263
LMW-14R	157.7	32.4632	72.0499
LMW-6	155.447	30.2105	59.8342
LMW-8	160.868	35.6316	59.8342
LMW-16	173.111	47.8743	74.6263
LMW-3	85.8333	-39.4035	58.3922
LMW-10	115.563	-9.67434	62.5761
LMW-9S	201.75	76.5132	77.7268
LMW-9D	124	-1.23684	74.6263
LMW-12	44.5	-80.7368	69.8712
MW-5	71.2308	-54.0061	66.38
LMW-13	44.5	-80.7368	69.8712
LMW-11	44.5	-80.7368	69.8712

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
3.97029		4.34381	-0.373514	1	6
0.693147 J		4.38203	-3.688881	7	
4.31749		4.38203	-0.0645385	1	8
4.11087		4.38203	-0.271153	1	9
3.3322	4.38203	-1.049821	10		
3.63759		4.38203	-0.744441	11	
3.97029		4.38203	-0.411735	1	12
4.31749		0.693147 J	3.62434 2	12	
4.11087		0.693147 J	3.41773 3	12	
3.3322	0.693147 J	2.63906 4	12		
3.63759		0.693147 J	2.94444 5	12	
3.97029		0.693147 J	3.27714 6	12	
4.11087		4.31749	-0.206614	6	13
3.3322	4.31749	-0.985284	6	14	
3.63759		4.31749	-0.679902	6	15
3.97029		4.31749	-0.347196	6	16
3.3322	4.11087	-0.778669	6	17	
3.63759		4.11087	-0.473288	6	18
3.97029		4.11087	-0.140582	6	19
3.63759		3.3322	0.305382	7	19
3.97029		3.3322	0.638087	8	19
3.97029		3.63759	0.332706	9	19

S Statistic = 9 - 19 = -10
Comparing at 1.0 - (0.05 / 2) = 97.5% confidence level (two-tailed)
Probability of obtaining S >= |-10| is 0.276
0.276 >= 0.025 indicating no evidence of a trend

Concentrations (ug/L)

Parameter: Beryllium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 232
Total Non-Detect: 218
Percent Non-Detects: 93.9655%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	19	18 (94.7368%)	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
			11/17/2010	ND<0.07 U	ND<0.07 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9D	9	9 (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
			11/17/2010	ND<0.07 U	ND<0.07 U
LMW-9S	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	ND<0.07 U	ND<0.07 U
			6/30/2010	ND<0.07 U	ND<0.07 U
			11/17/2010	0.07 J	0.07 J
LMW-14R	9	9 (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
			11/17/2010	ND<0.07 U		ND<0.07 U
LMW-15R	12	9 (75%)	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	
			11/17/2010	0.13 J	0.13 J	
LMW-3	21	21 (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
			11/17/2010	ND<0.07 U		ND<0.07 U
LMW-3S	9	7 (77.7778%)	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
			11/17/2010	0.12 J	0.12 J	
LMW-6	19	15 (78.9474%)	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	
			11/17/2010	0.16 J	0.16 J	
LMW-10	16	16 (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	
			11/17/2010	ND<0.07 U	ND<0.07 U	
LMW-8	19	19 (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	
			11/17/2010	ND<0.07 U	ND<0.07 U	
LMW-9	19	17 (89.4737%)	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
			11/17/2010	0.12 J	0.12 J	
LMW-7	17	16 (94.1176%)	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	
			11/17/2010	ND<0.07 U		ND<0.07 U
LMW-16	9	9 (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
			11/17/2010	ND<0.07 U		ND<0.07 U
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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.035	-2.65209	7.03356	-0.092823
2	0.035	-2.40892	12.8365	-0.177135
3	0.035	-2.25713	17.9311	-0.256135
4	0.035	-2.12007	22.4258	-0.330337
5	0.035	-2.03352	26.561	-0.401511
6	0.035	-1.95996	30.4025	-0.470109
7	0.035	-1.88079	33.9398	-0.535937
8	0.035	-1.82501	37.2705	-0.599812
9	0.035	-1.77438	40.4189	-0.661915
10	0.035	-1.72793	43.4046	-0.722393
11	0.035	-1.67466	46.2091	-0.781006
12	0.035	-1.63524	48.8831	-0.838239
13	0.035	-1.59819	51.4373	-0.894176
14	0.035	-1.55477	53.8547	-0.948593
15	0.035	-1.52203	56.1712	-1.00186
16	0.035	-1.49085	58.3939	-1.05404
17	0.035	-1.46106	60.5286	-1.10518
18	0.035	-1.42554	62.5608	-1.15508
19	0.035	-1.39838	64.5162	-1.20402
20	0.035	-1.3722	66.3992	-1.25205
21	0.035	-1.34075	68.1968	-1.29897
22	0.035	-1.31652	69.93	-1.34505
23	0.035	-1.29303	71.6019	-1.39031
24	0.035	-1.26464	73.2013	-1.43457
25	0.035	-1.24264	74.7454	-1.47806
26	0.035	-1.22123	76.2368	-1.5208
27	0.035	-1.20036	77.6777	-1.56282
28	0.035	-1.17499	79.0583	-1.60394
29	0.035	-1.15522	80.3928	-1.64437
30	0.035	-1.1359	81.6831	-1.68413
31	0.035	-1.11232	82.9203	-1.72306
32	0.035	-1.0939	84.1169	-1.76135
33	0.035	-1.07584	85.2744	-1.799
34	0.035	-1.05812	86.394	-1.83604
35	0.035	-1.03643	87.4682	-1.87231
36	0.035	-1.01943	88.5074	-1.90799
37	0.07	-1.00271	89.5128	-1.97818
38	0.07	-0.982202	90.4776	-2.04694
39	0.07	-0.966088	91.4109	-2.11456
40	0.08	-0.950222	92.3138	-2.19058
41	0.12	-0.93459	93.1873	-2.30273
42	0.12	-0.915365	94.0252	-2.41257
43	0.13	-0.900227	94.8356	-2.5296
44	0.13	-0.885291	95.6193	-2.64469
45	0.15	-0.866894	96.3708	-2.77473
46	0.15	-0.852385	97.0974	-2.90258
47	0.16	-0.838054	97.7997	-3.03667
48	0.17	-0.820379	98.4727	-3.17614
49	0.19	-0.806422	99.123	-3.32936

50	0.29	-0.792618	99.7513	-3.55922
51	5	-0.778966	100.358	-7.45405
52	5	-0.7621	100.939	-11.2645
53	5	-0.748762	101.5	-15.0084
54	5	-0.735557	102.041	-18.6861
55	5	-0.719228	102.558	-22.2823
56	5	-0.706302	103.057	-25.8138
57	5	-0.693493	103.538	-29.2813
58	5	-0.680797	104.001	-32.6852
59	5	-0.665079	104.443	-36.0106
60	5	-0.652622	104.869	-39.2737
61	5	-0.640266	105.279	-42.4751
62	5	-0.624956	105.67	-45.5999
63	5	-0.612813	106.045	-48.6639
64	5	-0.60076	106.406	-51.6677
65	5	-0.588793	106.753	-54.6117
66	5	-0.573953	107.082	-57.4815
67	5	-0.56217	107.398	-60.2923
68	5	-0.550465	107.701	-63.0446
69	5	-0.53594	107.989	-65.7243
70	5	-0.524401	108.264	-68.3463
71	5	-0.51293	108.527	-70.911
72	5	-0.498687	108.776	-73.4044
73	5	-0.487364	109.013	-75.8412
74	5	-0.476105	109.24	-78.2218
75	5	-0.464904	109.456	-80.5463
76	5	-0.450985	109.659	-82.8012
77	5	-0.439913	109.853	-85.0008
78	5	-0.428895	110.037	-87.1453
79	5	-0.415193	110.209	-89.2212
80	5	-0.40429	110.373	-91.2427
81	5	-0.393433	110.527	-93.2098
82	5	-0.382622	110.674	-95.1229
83	5	-0.369171	110.81	-96.9688
84	5	-0.358459	110.939	-98.7611
85	5	-0.347787	111.059	-100.5
86	5	-0.334503	111.171	-102.173
87	5	-0.323919	111.276	-103.792
88	5	-0.31337	111.374	-105.359
89	5	-0.302855	111.466	-106.873
90	5	-0.28976	111.55	-108.322
91	5	-0.279319	111.628	-109.719
92	5	-0.268908	111.7	-111.063
93	5	-0.255936	111.766	-112.343
94	5	-0.24559	111.826	-113.571
95	5	-0.235269	111.882	-114.747
96	5	-0.222403	111.931	-115.859
97	5	-0.212137	111.976	-116.92
98	5	-0.201894	112.017	-117.929
99	5	-0.191671	112.054	-118.888
100	5	-0.17892	112.086	-119.782
101	5	-0.168741	112.114	-120.626
102	5	-0.158579	112.139	-121.419
103	5	-0.1459	112.161	-122.148
104	5	-0.135774	112.179	-122.827
105	5	-0.125661	112.195	-123.456
106	5	-0.115562	112.208	-124.033
107	5	-0.102953	112.219	-124.548
108	5	-0.0928787	112.227	-125.013
109	5	-0.0828129	112.234	-125.427
110	5	-0.0702426	112.239	-125.778
111	5	-0.0601949	112.243	-126.079

112	5	-0.0501541	112.245	-126.33
113	5	-0.0401167	112.247	-126.53
114	5	-0.0275759	112.248	-126.668
115	5	-0.0175476	112.248	-126.756
116	5	-0.00751925	112.248	-126.793
117	5	0.00751925	112.248	-126.756
118	5	0.0175476	112.248	-126.668
119	5	0.0275759	112.249	-126.53
120	5	0.0401167	112.251	-126.33
121	5	0.0501541	112.253	-126.079
122	5	0.0601949	112.257	-125.778
123	5	0.0702426	112.262	-125.427
124	5	0.0828129	112.269	-125.013
125	5	0.0928787	112.277	-124.548
126	5	0.102953	112.288	-124.033
127	5	0.115562	112.301	-123.456
128	5	0.125661	112.317	-122.827
129	5	0.135774	112.335	-122.148
130	5	0.1459	112.357	-121.419
131	5	0.158579	112.382	-120.626
132	5	0.168741	112.41	-119.782
133	5	0.17892	112.442	-118.888
134	5	0.191671	112.479	-117.929
135	5	0.201894	112.52	-116.92
136	5	0.212137	112.565	-115.859
137	5	0.222403	112.614	-114.747
138	5	0.235269	112.67	-113.571
139	5	0.24559	112.73	-112.343
140	5	0.255936	112.796	-111.063
141	5	0.268908	112.868	-109.719
142	5	0.279319	112.946	-108.322
143	5	0.28976	113.03	-106.873
144	5	0.302855	113.122	-105.359
145	5	0.31337	113.22	-103.792
146	5	0.323919	113.325	-102.173
147	5	0.334503	113.437	-100.5
148	5	0.347787	113.558	-98.7611
149	5	0.358459	113.686	-96.9688
150	5	0.369171	113.822	-95.1229
151	5	0.382622	113.969	-93.2098
152	5	0.393433	114.123	-91.2427
153	5	0.40429	114.287	-89.2212
154	5	0.415193	114.459	-87.1453
155	5	0.428895	114.643	-85.0008
156	5	0.439913	114.837	-82.8012
157	5	0.450985	115.04	-80.5463
158	5	0.464904	115.256	-78.2218
159	5	0.476105	115.483	-75.8412
160	5	0.487364	115.721	-73.4044
161	5	0.498687	115.969	-70.911
162	5	0.51293	116.232	-68.3463
163	5	0.524401	116.507	-65.7243
164	5	0.53594	116.795	-63.0446
165	5	0.550465	117.098	-60.2923
166	5	0.56217	117.414	-57.4815
167	5	0.573953	117.743	-54.6117
168	5	0.588793	118.09	-51.6677
169	5	0.60076	118.451	-48.6639
170	5	0.612813	118.826	-45.5999
171	5	0.624956	119.217	-42.4751
172	5	0.640266	119.627	-39.2737
173	5	0.652622	120.053	-36.0106

174	5	0.665079		120.495	-32.6852
175	5	0.680797		120.958	-29.2813
176	5	0.693493		121.439	-25.8138
177	5	0.706302		121.938	-22.2823
178	5	0.719228		122.455	-18.6861
179	5	0.735557		122.997	-15.0084
180	5	0.748762		123.557	-11.2645
181	5	0.7621	124.138	-7.45405	
182	5	0.778966		124.745	-3.55922
183	5	0.792618		125.373	0.403873
184	5	0.806422		126.023	4.43598
185	5	0.820379		126.696	8.53788
186	5	0.838054		127.399	12.7281
187	5	0.852385		128.125	16.9901
188	5	0.866894		128.877	21.3245
189	5	0.885291		129.66	25.751
190	5	0.900227		130.471	30.2521
191	5	0.915365		131.309	34.829
192	5	0.93459	132.182	39.5019	
193	5	0.950222		133.085	44.253
194	5	0.966088		134.018	49.0835
195	5	0.982202		134.983	53.9945
196	5	1.00271	135.989	59.008	
197	5	1.01943	137.028	64.1052	
198	5	1.03643	138.102	69.2873	
199	5	1.05812	139.222	74.5779	
200	5	1.07584	140.379	79.9571	
201	5	1.0939	141.576	85.4266	
202	5	1.11232	142.813	90.9882	
203	5	1.1359	144.103	96.6677	
204	5	1.15522	145.438	102.444	
205	5	1.17499	146.818	108.319	
206	5	1.20036	148.259	114.321	
207	5	1.22123	149.751	120.427	
208	5	1.24264	151.295	126.64	
209	5	1.26464	152.894	132.963	
210	5	1.29303	154.566	139.428	
211	5	1.31652	156.299	146.011	
212	5	1.34075	158.097	152.715	
213	5	1.3722	159.98	159.576	
214	5	1.39838	161.935	166.568	
215	5	1.42554	163.967	173.695	
216	5	1.46106	166.102	181.001	
217	5	1.49085	168.325	188.455	
218	5	1.52203	170.641	196.065	
219	5	1.55477	173.059	203.839	
220	5	1.59819	175.613	211.83	
221	5	1.63524	178.287	220.006	
222	5	1.67466	181.091	228.379	
223	5	1.72793	184.077	237.019	
224	5	1.77438	187.226	245.891	
225	5	1.82501	190.556	255.016	
226	5	1.88079	194.094	264.42	
227	5	1.95996	197.935	274.22	
228	5	2.03352	202.07	284.387	
229	5	2.12007	206.565	294.988	
230	5	2.25713	211.66	306.273	
231	5	2.40892	217.462	318.318	
232	5	2.65209	224.496	331.578	

Data Set Standard Deviation = 2.03446

Numerator = 109944
Denominator = 214645
W Statistic = 0.512214 = 109944 / 214645

5% Critical value of 0.976 exceeds 0.512214
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.512214
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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-3.35241	-2.65209	7.03356	8.89087
2	-3.35241	-2.40892	12.8365	16.9666
3	-3.35241	-2.25713	17.9311	24.5334
4	-3.35241	-2.12007	22.4258	31.6407
5	-3.35241	-2.03352	26.561	38.4579
6	-3.35241	-1.95996	30.4025	45.0285
7	-3.35241	-1.88079	33.9398	51.3337
8	-3.35241	-1.82501	37.2705	57.4518
9	-3.35241	-1.77438	40.4189	63.4003
10	-3.35241	-1.72793	43.4046	69.193
11	-3.35241	-1.67466	46.2091	74.8071
12	-3.35241	-1.63524	48.8831	80.2891
13	-3.35241	-1.59819	51.4373	85.6469
14	-3.35241	-1.55477	53.8547	90.8591
15	-3.35241	-1.52203	56.1712	95.9616
16	-3.35241	-1.49085	58.3939	100.96
17	-3.35241	-1.46106	60.5286	105.858
18	-3.35241	-1.42554	62.5608	110.637
19	-3.35241	-1.39838	64.5162	115.325
20	-3.35241	-1.3722	66.3992	119.925
21	-3.35241	-1.34075	68.1968	124.419
22	-3.35241	-1.31652	69.93	128.833
23	-3.35241	-1.29303	71.6019	133.168
24	-3.35241	-1.26464	73.2013	137.407
25	-3.35241	-1.24264	74.7454	141.573
26	-3.35241	-1.22123	76.2368	145.667
27	-3.35241	-1.20036	77.6777	149.691
28	-3.35241	-1.17499	79.0583	153.63
29	-3.35241	-1.15522	80.3928	157.503
30	-3.35241	-1.1359	81.6831	161.311
31	-3.35241	-1.11232	82.9203	165.04
32	-3.35241	-1.0939	84.1169	168.707
33	-3.35241	-1.07584	85.2744	172.314
34	-3.35241	-1.05812	86.394	175.861
35	-3.35241	-1.03643	87.4682	179.336
36	-3.35241	-1.01943	88.5074	182.753
37	-2.65926	-1.00271	89.5128	185.42
38	-2.65926	-0.982202	90.4776	188.032
39	-2.65926	-0.966088	91.4109	190.601
40	-2.52573	-0.950222	92.3138	193.001
41	-2.12026	-0.93459	93.1873	194.982
42	-2.12026	-0.915365	94.0252	196.923
43	-2.04022	-0.900227	94.8356	198.76
44	-2.04022	-0.885291	95.6193	200.566
45	-1.89712	-0.866894	96.3708	202.211
46	-1.89712	-0.852385	97.0974	203.828
47	-1.83258	-0.838054	97.7997	205.363
48	-1.77196	-0.820379	98.4727	206.817
49	-1.66073	-0.806422	99.123	208.156

50	-1.23787	-0.792618	99.7513	209.138
51	1.60944	-0.778966	100.358	207.884
52	1.60944	-0.7621	100.939	206.657
53	1.60944	-0.748762	101.5	205.452
54	1.60944	-0.735557	102.041	204.268
55	1.60944	-0.719228	102.558	203.111
56	1.60944	-0.706302	103.057	201.974
57	1.60944	-0.693493	103.538	200.858
58	1.60944	-0.680797	104.001	199.762
59	1.60944	-0.665079	104.443	198.692
60	1.60944	-0.652622	104.869	197.642
61	1.60944	-0.640266	105.279	196.611
62	1.60944	-0.624956	105.67	195.605
63	1.60944	-0.612813	106.045	194.619
64	1.60944	-0.60076	106.406	193.652
65	1.60944	-0.588793	106.753	192.704
66	1.60944	-0.573953	107.082	191.781
67	1.60944	-0.56217	107.398	190.876
68	1.60944	-0.550465	107.701	189.99
69	1.60944	-0.53594	107.989	189.127
70	1.60944	-0.524401	108.264	188.283
71	1.60944	-0.51293	108.527	187.458
72	1.60944	-0.498687	108.776	186.655
73	1.60944	-0.487364	109.013	185.871
74	1.60944	-0.476105	109.24	185.105
75	1.60944	-0.464904	109.456	184.356
76	1.60944	-0.450985	109.659	183.631
77	1.60944	-0.439913	109.853	182.923
78	1.60944	-0.428895	110.037	182.232
79	1.60944	-0.415193	110.209	181.564
80	1.60944	-0.40429	110.373	180.913
81	1.60944	-0.393433	110.527	180.28
82	1.60944	-0.382622	110.674	179.664
83	1.60944	-0.369171	110.81	179.07
84	1.60944	-0.358459	110.939	178.493
85	1.60944	-0.347787	111.059	177.934
86	1.60944	-0.334503	111.171	177.395
87	1.60944	-0.323919	111.276	176.874
88	1.60944	-0.31337	111.374	176.37
89	1.60944	-0.302855	111.466	175.882
90	1.60944	-0.28976	111.55	175.416
91	1.60944	-0.279319	111.628	174.966
92	1.60944	-0.268908	111.7	174.533
93	1.60944	-0.255936	111.766	174.121
94	1.60944	-0.24559	111.826	173.726
95	1.60944	-0.235269	111.882	173.348
96	1.60944	-0.222403	111.931	172.99
97	1.60944	-0.212137	111.976	172.648
98	1.60944	-0.201894	112.017	172.323
99	1.60944	-0.191671	112.054	172.015
100	1.60944	-0.17892	112.086	171.727
101	1.60944	-0.168741	112.114	171.455
102	1.60944	-0.158579	112.139	171.2
103	1.60944	-0.1459	112.161	170.965
104	1.60944	-0.135774	112.179	170.747
105	1.60944	-0.125661	112.195	170.544
106	1.60944	-0.115562	112.208	170.358
107	1.60944	-0.102953	112.219	170.193
108	1.60944	-0.0928787	112.227	170.043
109	1.60944	-0.0828129	112.234	169.91
110	1.60944	-0.0702426	112.239	169.797
111	1.60944	-0.0601949	112.243	169.7

112	1.60944	-0.0501541	112.245	169.619
113	1.60944	-0.0401167	112.247	169.555
114	1.60944	-0.0275759	112.248	169.51
115	1.60944	-0.0175476	112.248	169.482
116	1.60944	-0.00751925	112.248	169.47
117	1.60944	0.00751925	112.248	169.482
118	1.60944	0.0175476	112.248	169.51
119	1.60944	0.0275759	112.249	169.555
120	1.60944	0.0401167	112.251	169.619
121	1.60944	0.0501541	112.253	169.7
122	1.60944	0.0601949	112.257	169.797
123	1.60944	0.0702426	112.262	169.91
124	1.60944	0.0828129	112.269	170.043
125	1.60944	0.0928787	112.277	170.193
126	1.60944	0.102953	112.288	170.358
127	1.60944	0.115562	112.301	170.544
128	1.60944	0.125661	112.317	170.747
129	1.60944	0.135774	112.335	170.965
130	1.60944	0.1459	112.357	171.2
131	1.60944	0.158579	112.382	171.455
132	1.60944	0.168741	112.41	171.727
133	1.60944	0.17892	112.442	172.015
134	1.60944	0.191671	112.479	172.323
135	1.60944	0.201894	112.52	172.648
136	1.60944	0.212137	112.565	172.99
137	1.60944	0.222403	112.614	173.348
138	1.60944	0.235269	112.67	173.726
139	1.60944	0.24559	112.73	174.121
140	1.60944	0.255936	112.796	174.533
141	1.60944	0.268908	112.868	174.966
142	1.60944	0.279319	112.946	175.416
143	1.60944	0.28976	113.03	175.882
144	1.60944	0.302855	113.122	176.37
145	1.60944	0.31337	113.22	176.874
146	1.60944	0.323919	113.325	177.395
147	1.60944	0.334503	113.437	177.934
148	1.60944	0.347787	113.558	178.493
149	1.60944	0.358459	113.686	179.07
150	1.60944	0.369171	113.822	179.664
151	1.60944	0.382622	113.969	180.28
152	1.60944	0.393433	114.123	180.913
153	1.60944	0.40429	114.287	181.564
154	1.60944	0.415193	114.459	182.232
155	1.60944	0.428895	114.643	182.923
156	1.60944	0.439913	114.837	183.631
157	1.60944	0.450985	115.04	184.356
158	1.60944	0.464904	115.256	185.105
159	1.60944	0.476105	115.483	185.871
160	1.60944	0.487364	115.721	186.655
161	1.60944	0.498687	115.969	187.458
162	1.60944	0.51293	116.232	188.283
163	1.60944	0.524401	116.507	189.127
164	1.60944	0.53594	116.795	189.99
165	1.60944	0.550465	117.098	190.876
166	1.60944	0.56217	117.414	191.781
167	1.60944	0.573953	117.743	192.704
168	1.60944	0.588793	118.09	193.652
169	1.60944	0.60076	118.451	194.619
170	1.60944	0.612813	118.826	195.605
171	1.60944	0.624956	119.217	196.611
172	1.60944	0.640266	119.627	197.642
173	1.60944	0.652622	120.053	198.692

174	1.60944	0.665079		120.495	199.762
175	1.60944	0.680797		120.958	200.858
176	1.60944	0.693493		121.439	201.974
177	1.60944	0.706302		121.938	203.111
178	1.60944	0.719228		122.455	204.268
179	1.60944	0.735557		122.997	205.452
180	1.60944	0.748762		123.557	206.657
181	1.60944	0.7621	124.138	207.884	
182	1.60944	0.778966		124.745	209.138
183	1.60944	0.792618		125.373	210.413
184	1.60944	0.806422		126.023	211.711
185	1.60944	0.820379		126.696	213.031
186	1.60944	0.838054		127.399	214.38
187	1.60944	0.852385		128.125	215.752
188	1.60944	0.866894		128.877	217.147
189	1.60944	0.885291		129.66	218.572
190	1.60944	0.900227		130.471	220.021
191	1.60944	0.915365		131.309	221.494
192	1.60944	0.93459	132.182	222.998	
193	1.60944	0.950222		133.085	224.528
194	1.60944	0.966088		134.018	226.083
195	1.60944	0.982202		134.983	227.663
196	1.60944	1.00271	135.989	229.277	
197	1.60944	1.01943	137.028	230.918	
198	1.60944	1.03643	138.102	232.586	
199	1.60944	1.05812	139.222	234.289	
200	1.60944	1.07584	140.379	236.02	
201	1.60944	1.0939	141.576	237.781	
202	1.60944	1.11232	142.813	239.571	
203	1.60944	1.1359	144.103	241.399	
204	1.60944	1.15522	145.438	243.259	
205	1.60944	1.17499	146.818	245.15	
206	1.60944	1.20036	148.259	247.082	
207	1.60944	1.22123	149.751	249.047	
208	1.60944	1.24264	151.295	251.047	
209	1.60944	1.26464	152.894	253.082	
210	1.60944	1.29303	154.566	255.163	
211	1.60944	1.31652	156.299	257.282	
212	1.60944	1.34075	158.097	259.44	
213	1.60944	1.3722	159.98	261.649	
214	1.60944	1.39838	161.935	263.899	
215	1.60944	1.42554	163.967	266.194	
216	1.60944	1.46106	166.102	268.545	
217	1.60944	1.49085	168.325	270.945	
218	1.60944	1.52203	170.641	273.394	
219	1.60944	1.55477	173.059	275.896	
220	1.60944	1.59819	175.613	278.469	
221	1.60944	1.63524	178.287	281.1	
222	1.60944	1.67466	181.091	283.796	
223	1.60944	1.72793	184.077	286.577	
224	1.60944	1.77438	187.226	289.432	
225	1.60944	1.82501	190.556	292.37	
226	1.60944	1.88079	194.094	295.397	
227	1.60944	1.95996	197.935	298.551	
228	1.60944	2.03352	202.07	301.824	
229	1.60944	2.12007	206.565	305.236	
230	1.60944	2.25713	211.66	308.869	
231	1.60944	2.40892	217.462	312.746	
232	1.60944	2.65209	224.496	317.014	

Data Set Standard Deviation = 1.91897

Numerator = 100498
Denominator = 190966
W Statistic = 0.526261 = 100498 / 190966

5% Critical value of 0.976 exceeds 0.526261
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.526261
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 = 93.9655%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 19
Maximum Background Concentration = 1.60944
Confidence Level = 70.4%
False Positive Rate = 29.6%

Location	Date	Samples	Mean	Significant
LMW-9D	11/17/2010	1	-3.35241	FALSE
LMW-9S	11/17/2010	1	-2.65926	FALSE
LMW-14R	11/17/2010	1	-3.35241	FALSE
LMW-15R	11/17/2010	1	-2.04022	FALSE
LMW-3	11/17/2010	1	-3.35241	FALSE
LMW-3S	11/17/2010	1	-2.12026	FALSE
LMW-6	11/17/2010	1	-1.83258	FALSE
LMW-10	11/17/2010	1	-3.35241	FALSE
LMW-8	11/17/2010	1	-3.35241	FALSE
LMW-9	11/17/2010	1	-2.12026	FALSE
LMW-7	11/17/2010	1	-3.35241	FALSE
LMW-16	11/17/2010	1	-3.35241	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 (ug/L)

Parameter: Cadmium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 232
Total Non-Detect: 215
Percent Non-Detects: 92.6724%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	19	17 (89.4737%)	1/16/1998	4	4
			3/16/1999	ND<20	ND<20
			9/23/1999	ND<20	ND<20
			3/14/2000	3 J	3 J
			9/23/2003	ND<20	ND<20
			3/10/2004	ND<20	ND<20
			10/12/2004	ND<20	ND<20
			4/1/2005	ND<20	ND<20
			10/26/2005	ND<20	ND<20
			6/19/2006	ND<20	ND<20
			11/18/2006	ND<20	ND<20
			6/2/2007	ND<20	ND<20
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
			6/11/2009	ND<0.2 U	ND<0.2 U
			11/16/2009	ND<0.2 U	ND<0.2 U
			6/30/2010	ND<0.2 U	ND<0.2 U
			11/17/2010	ND<0.2 U	ND<0.2 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-3	21	20 (95.2381%)	11/19/1996	ND<20	ND<20
			3/24/1997	ND<20	ND<20
			1/16/1998	ND<20	ND<20
			3/16/1999	ND<20	ND<20
			9/23/1999	ND<20	ND<20
			3/14/2000	2 J	2 J
			9/23/2003	ND<20	ND<20
			3/10/2004	ND<20	ND<20
			10/12/2004	ND<20	ND<20
			4/1/2005	ND<20	ND<20
			10/26/2005	ND<20	ND<20
			6/19/2006	ND<20	ND<20
			11/18/2006	ND<20	ND<20
			6/2/2007	ND<20	ND<20
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
			6/11/2009	ND<0.2 U	ND<0.2 U
			11/16/2009	ND<0.2 U	ND<0.2 U
			6/30/2010	ND<0.2 U	ND<0.2 U
			11/17/2010	ND<0.2 U	ND<0.2 U

LMW-7	17	12 (70.5882%)	1/16/1998		38	38
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	3 J	3 J	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	1 J	1 J	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<0 J	ND<0 J	
			6/19/2006	ND<0 J	ND<0 J	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	1.2	1.2	
			11/17/2010	0.6	0.6	
LMW-9	19	19 (100%)	1/16/1998		ND<20	ND<20
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<0.2 U		ND<0.2 U
			11/16/2009	ND<0.2 U		ND<0.2 U
			6/30/2010	ND<0.2 U		ND<0.2 U
			11/17/2010	ND<0.2 U		ND<0.2 U
LMW-8	19	18 (94.7368%)	1/16/1998		2 J	2 J
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<0.2 U		ND<0.2 U
			11/16/2009	ND<0.2 U		ND<0.2 U
			6/30/2010	ND<0.2 U		ND<0.2 U
			11/17/2010	ND<0.2 U		ND<0.2 U
LMW-16	9	8 (88.8889%)	11/18/2006		ND<20	ND<20
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	

			11/20/2008	2 J	2 J
			6/11/2009	ND<0.2 U	ND<0.2 U
			11/16/2009	ND<0.2 U	ND<0.2 U
			6/30/2010	ND<0.2 U	ND<0.2 U
			11/17/2010	ND<0.2 U	ND<0.2 U
LMW-10	16	15 (93.75%)	3/14/2000	1 J	1 J
			9/23/2003	ND<20	ND<20
			3/10/2004	ND<20	ND<20
			10/12/2004	ND<20	ND<20
			4/1/2005	ND<20	ND<20
			10/26/2005	ND<20	ND<20
			6/19/2006	ND<0 J	ND<0 J
			11/18/2006	ND<20	ND<20
			6/2/2007	ND<20	ND<20
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
			6/11/2009	ND<0.2 U	ND<0.2 U
			11/16/2009	ND<0.2 U	ND<0.2 U
			6/30/2010	ND<0.2 U	ND<0.2 U
			11/17/2010	ND<0.2 U	ND<0.2 U
LMW-9S	8	8 (100%)	11/18/2006	ND<20	ND<20
			6/2/2007	ND<20	ND<20
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
			6/11/2009	ND<0.2 U	ND<0.2 U
			6/30/2010	ND<0.2 U	ND<0.2 U
			11/17/2010	ND<0.2 U	ND<0.2 U
LMW-9D	9	9 (100%)	11/18/2006	ND<20	ND<20
			6/2/2007	ND<20	ND<20
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
			6/11/2009	ND<0.2 U	ND<0.2 U
			11/16/2009	ND<0.2 U	ND<0.2 U
			6/30/2010	ND<0.2 U	ND<0.2 U
			11/17/2010	ND<0.2 U	ND<0.2 U
LMW-6	19	17 (89.4737%)	1/16/1998	ND<20	ND<20
			3/16/1999	ND<20	ND<20
			9/23/1999	ND<20	ND<20
			3/14/2000	1 J	1 J
			9/23/2003	31	31
			3/10/2004	ND<20	ND<20
			10/12/2004	ND<20	ND<20
			4/1/2005	ND<20	ND<20
			10/26/2005	ND<20	ND<20
			6/19/2006	ND<20	ND<20
			11/18/2006	ND<20	ND<20
			6/2/2007	ND<20	ND<20
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
			6/11/2009	ND<0.2 U	ND<0.2 U
			11/16/2009	ND<0.2 U	ND<0.2 U
			6/30/2010	ND<0.2 U	ND<0.2 U
			11/17/2010	ND<0.2 U	ND<0.2 U

LMW-3S	9	9 (100%)	11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<0.2 U	ND<0.2 U	
			11/16/2009	ND<0.2 U	ND<0.2 U	
			6/30/2010	ND<0.2 U	ND<0.2 U	
			11/17/2010	ND<0.2 U	ND<0.2 U	
LMW-15R	14	14 (100%)	11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<0.2 U	ND<0.2 U	
			11/16/2009	ND<0.2 U	ND<0.2 U	
			11/16/2009	ND<0.2 U	ND<0.2 U	
			11/16/2009	ND<0.2 U	ND<0.2 U	
			6/30/2010	ND<0.2 U	ND<0.2 U	
			11/17/2010	ND<0.2 U	ND<0.2 U	
LMW-14R	7	7 (100%)	6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<0.2 U	ND<0.2 U	
			6/30/2010	ND<0.2 U	ND<0.2 U	
			11/17/2010	ND<0.2 U	ND<0.2 U	
LMW-12	11	10 (90.9091%)	3/14/2000	4 J	4 J	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
LMW-11	11	10 (90.9091%)	3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	2 J	2 J	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
LMW-13	11	10 (90.9091%)	3/14/2000	1 J	1 J	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	

			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
MW-5	13	12 (92.3077%)	1/16/1998	ND<20	ND<20	
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	3 J	3 J	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Cadmium

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 232

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	0.1	-2.12007	22.4258	-0.212007
5	0.1	-2.03352	26.561	-0.415359
6	0.1	-1.95996	30.4025	-0.611355
7	0.1	-1.88079	33.9398	-0.799434
8	0.1	-1.82501	37.2705	-0.981935
9	0.1	-1.77438	40.4189	-1.15937
10	0.1	-1.72793	43.4046	-1.33217
11	0.1	-1.67466	46.2091	-1.49963
12	0.1	-1.63524	48.8831	-1.66316
13	0.1	-1.59819	51.4373	-1.82297
14	0.1	-1.55477	53.8547	-1.97845
15	0.1	-1.52203	56.1712	-2.13066
16	0.1	-1.49085	58.3939	-2.27974
17	0.1	-1.46106	60.5286	-2.42585
18	0.1	-1.42554	62.5608	-2.5684
19	0.1	-1.39838	64.5162	-2.70824
20	0.1	-1.3722	66.3992	-2.84546
21	0.1	-1.34075	68.1968	-2.97953
22	0.1	-1.31652	69.93	-3.11119
23	0.1	-1.29303	71.6019	-3.24049
24	0.1	-1.26464	73.2013	-3.36695
25	0.1	-1.24264	74.7454	-3.49122
26	0.1	-1.22123	76.2368	-3.61334
27	0.1	-1.20036	77.6777	-3.73338
28	0.1	-1.17499	79.0583	-3.85088
29	0.1	-1.15522	80.3928	-3.9664
30	0.1	-1.1359	81.6831	-4.07999
31	0.1	-1.11232	82.9203	-4.19122
32	0.1	-1.0939	84.1169	-4.30061
33	0.1	-1.07584	85.2744	-4.40819
34	0.1	-1.05812	86.394	-4.514
35	0.1	-1.03643	87.4682	-4.61765
36	0.1	-1.01943	88.5074	-4.71959
37	0.1	-1.00271	89.5128	-4.81986
38	0.1	-0.982202	90.4776	-4.91808
39	0.1	-0.966088	91.4109	-5.01469
40	0.1	-0.950222	92.3138	-5.10971
41	0.1	-0.93459	93.1873	-5.20317
42	0.1	-0.915365	94.0252	-5.29471
43	0.1	-0.900227	94.8356	-5.38473
44	0.1	-0.885291	95.6193	-5.47326
45	0.1	-0.866894	96.3708	-5.55995
46	0.1	-0.852385	97.0974	-5.64519
47	0.1	-0.838054	97.7997	-5.72899
48	0.1	-0.820379	98.4727	-5.81103
49	0.1	-0.806422	99.123	-5.89167

50	0.1	-0.792618	99.7513	-5.97094
51	0.1	-0.778966	100.358	-6.04883
52	0.6	-0.7621	100.939	-6.50609
53	1	-0.748762	101.5	-7.25485
54	1	-0.735557	102.041	-7.99041
55	1	-0.719228	102.558	-8.70964
56	1	-0.706302	103.057	-9.41594
57	1.2	-0.693493	103.538	-10.2481
58	2	-0.680797	104.001	-11.6097
59	2	-0.665079	104.443	-12.9399
60	2	-0.652622	104.869	-14.2451
61	2	-0.640266	105.279	-15.5257
62	3	-0.624956	105.67	-17.4005
63	3	-0.612813	106.045	-19.239
64	3	-0.60076	106.406	-21.0412
65	4	-0.588793	106.753	-23.3964
66	4	-0.573953	107.082	-25.6922
67	10	-0.56217	107.398	-31.3139
68	10	-0.550465	107.701	-36.8186
69	10	-0.53594	107.989	-42.178
70	10	-0.524401	108.264	-47.422
71	10	-0.51293	108.527	-52.5513
72	10	-0.498687	108.776	-57.5382
73	10	-0.487364	109.013	-62.4118
74	10	-0.476105	109.24	-67.1729
75	10	-0.464904	109.456	-71.8219
76	10	-0.450985	109.659	-76.3317
77	10	-0.439913	109.853	-80.7309
78	10	-0.428895	110.037	-85.0198
79	10	-0.415193	110.209	-89.1718
80	10	-0.40429	110.373	-93.2147
81	10	-0.393433	110.527	-97.149
82	10	-0.382622	110.674	-100.975
83	10	-0.369171	110.81	-104.667
84	10	-0.358459	110.939	-108.252
85	10	-0.347787	111.059	-111.729
86	10	-0.334503	111.171	-115.074
87	10	-0.323919	111.276	-118.314
88	10	-0.31337	111.374	-121.447
89	10	-0.302855	111.466	-124.476
90	10	-0.28976	111.55	-127.373
91	10	-0.279319	111.628	-130.167
92	10	-0.268908	111.7	-132.856
93	10	-0.255936	111.766	-135.415
94	10	-0.24559	111.826	-137.871
95	10	-0.235269	111.882	-140.224
96	10	-0.222403	111.931	-142.448
97	10	-0.212137	111.976	-144.569
98	10	-0.201894	112.017	-146.588
99	10	-0.191671	112.054	-148.505
100	10	-0.17892	112.086	-150.294
101	10	-0.168741	112.114	-151.981
102	10	-0.158579	112.139	-153.567
103	10	-0.1459	112.161	-155.026
104	10	-0.135774	112.179	-156.384
105	10	-0.125661	112.195	-157.641
106	10	-0.115562	112.208	-158.796
107	10	-0.102953	112.219	-159.826
108	10	-0.0928787	112.227	-160.754
109	10	-0.0828129	112.234	-161.583
110	10	-0.0702426	112.239	-162.285
111	10	-0.0601949	112.243	-162.887

112	10	-0.0501541	112.245	-163.388
113	10	-0.0401167	112.247	-163.79
114	10	-0.0275759	112.248	-164.065
115	10	-0.0175476	112.248	-164.241
116	10	-0.00751925	112.248	-164.316
117	10	0.00751925	112.248	-164.241
118	10	0.0175476	112.248	-164.065
119	10	0.0275759	112.249	-163.79
120	10	0.0401167	112.251	-163.388
121	10	0.0501541	112.253	-162.887
122	10	0.0601949	112.257	-162.285
123	10	0.0702426	112.262	-161.583
124	10	0.0828129	112.269	-160.754
125	10	0.0928787	112.277	-159.826
126	10	0.102953	112.288	-158.796
127	10	0.115562	112.301	-157.641
128	10	0.125661	112.317	-156.384
129	10	0.135774	112.335	-155.026
130	10	0.1459	112.357	-153.567
131	10	0.158579	112.382	-151.981
132	10	0.168741	112.41	-150.294
133	10	0.17892	112.442	-148.505
134	10	0.191671	112.479	-146.588
135	10	0.201894	112.52	-144.569
136	10	0.212137	112.565	-142.448
137	10	0.222403	112.614	-140.224
138	10	0.235269	112.67	-137.871
139	10	0.24559	112.73	-135.415
140	10	0.255936	112.796	-132.856
141	10	0.268908	112.868	-130.167
142	10	0.279319	112.946	-127.373
143	10	0.28976	113.03	-124.476
144	10	0.302855	113.122	-121.447
145	10	0.31337	113.22	-118.314
146	10	0.323919	113.325	-115.074
147	10	0.334503	113.437	-111.729
148	10	0.347787	113.558	-108.252
149	10	0.358459	113.686	-104.667
150	10	0.369171	113.822	-100.975
151	10	0.382622	113.969	-97.149
152	10	0.393433	114.123	-93.2147
153	10	0.40429	114.287	-89.1718
154	10	0.415193	114.459	-85.0198
155	10	0.428895	114.643	-80.7309
156	10	0.439913	114.837	-76.3317
157	10	0.450985	115.04	-71.8219
158	10	0.464904	115.256	-67.1729
159	10	0.476105	115.483	-62.4118
160	10	0.487364	115.721	-57.5382
161	10	0.498687	115.969	-52.5513
162	10	0.51293	116.232	-47.422
163	10	0.524401	116.507	-42.178
164	10	0.53594	116.795	-36.8186
165	10	0.550465	117.098	-31.3139
166	10	0.56217	117.414	-25.6922
167	10	0.573953	117.743	-19.9527
168	10	0.588793	118.09	-14.0648
169	10	0.60076	118.451	-8.05717
170	10	0.612813	118.826	-1.92904
171	10	0.624956	119.217	4.32052
172	10	0.640266	119.627	10.7232
173	10	0.652622	120.053	17.2494

174	10	0.665079		120.495	23.9002
175	10	0.680797		120.958	30.7082
176	10	0.693493		121.439	37.6431
177	10	0.706302		121.938	44.7061
178	10	0.719228		122.455	51.8984
179	10	0.735557		122.997	59.254
180	10	0.748762		123.557	66.7416
181	10	0.7621	124.138	74.3626	
182	10	0.778966		124.745	82.1522
183	10	0.792618		125.373	90.0784
184	10	0.806422		126.023	98.1426
185	10	0.820379		126.696	106.346
186	10	0.838054		127.399	114.727
187	10	0.852385		128.125	123.251
188	10	0.866894		128.877	131.92
189	10	0.885291		129.66	140.773
190	10	0.900227		130.471	149.775
191	10	0.915365		131.309	158.929
192	10	0.93459	132.182	168.274	
193	10	0.950222		133.085	177.777
194	10	0.966088		134.018	187.438
195	10	0.982202		134.983	197.26
196	10	1.00271	135.989	207.287	
197	10	1.01943	137.028	217.481	
198	10	1.03643	138.102	227.845	
199	10	1.05812	139.222	238.427	
200	10	1.07584	140.379	249.185	
201	10	1.0939	141.576	260.124	
202	10	1.11232	142.813	271.247	
203	10	1.1359	144.103	282.606	
204	10	1.15522	145.438	294.158	
205	10	1.17499	146.818	305.908	
206	10	1.20036	148.259	317.912	
207	10	1.22123	149.751	330.124	
208	10	1.24264	151.295	342.55	
209	10	1.26464	152.894	355.197	
210	10	1.29303	154.566	368.127	
211	10	1.31652	156.299	381.292	
212	10	1.34075	158.097	394.7	
213	10	1.3722	159.98	408.422	
214	10	1.39838	161.935	422.406	
215	10	1.42554	163.967	436.661	
216	10	1.46106	166.102	451.272	
217	10	1.49085	168.325	466.18	
218	10	1.52203	170.641	481.401	
219	10	1.55477	173.059	496.948	
220	10	1.59819	175.613	512.93	
221	10	1.63524	178.287	529.283	
222	10	1.67466	181.091	546.029	
223	10	1.72793	184.077	563.309	
224	10	1.77438	187.226	581.052	
225	10	1.82501	190.556	599.302	
226	10	1.88079	194.094	618.11	
227	10	1.95996	197.935	637.71	
228	10	2.03352	202.07	658.045	
229	10	2.12007	206.565	679.246	
230	10	2.25713	211.66	701.817	
231	31	2.40892	217.462	776.494	
232	38	2.65209	224.496	877.273	

Data Set Standard Deviation = 4.99662

Numerator = 769608
Denominator = 1.29471e+006
W Statistic = 0.594425 = 769608 / 1.29471e+006

5% Critical value of 0.976 exceeds 0.594425
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.594425
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Cadmium

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-2.30259	-2.65209	7.03356	6.10665
2	-2.30259	-2.40892	12.8365	11.6534
3	-2.30259	-2.25713	17.9311	16.8506
4	-2.30259	-2.12007	22.4258	21.7323
5	-2.30259	-2.03352	26.561	26.4146
6	-2.30259	-1.95996	30.4025	30.9276
7	-2.30259	-1.88079	33.9398	35.2583
8	-2.30259	-1.82501	37.2705	39.4605
9	-2.30259	-1.77438	40.4189	43.5462
10	-2.30259	-1.72793	43.4046	47.5249
11	-2.30259	-1.67466	46.2091	51.3809
12	-2.30259	-1.63524	48.8831	55.1462
13	-2.30259	-1.59819	51.4373	58.8262
14	-2.30259	-1.55477	53.8547	62.4062
15	-2.30259	-1.52203	56.1712	65.9108
16	-2.30259	-1.49085	58.3939	69.3436
17	-2.30259	-1.46106	60.5286	72.7078
18	-2.30259	-1.42554	62.5608	75.9902
19	-2.30259	-1.39838	64.5162	79.2101
20	-2.30259	-1.3722	66.3992	82.3697
21	-2.30259	-1.34075	68.1968	85.4569
22	-2.30259	-1.31652	69.93	88.4883
23	-2.30259	-1.29303	71.6019	91.4657
24	-2.30259	-1.26464	73.2013	94.3776
25	-2.30259	-1.24264	74.7454	97.2389
26	-2.30259	-1.22123	76.2368	100.051
27	-2.30259	-1.20036	77.6777	102.815
28	-2.30259	-1.17499	79.0583	105.52
29	-2.30259	-1.15522	80.3928	108.18
30	-2.30259	-1.1359	81.6831	110.796
31	-2.30259	-1.11232	82.9203	113.357
32	-2.30259	-1.0939	84.1169	115.876
33	-2.30259	-1.07584	85.2744	118.353
34	-2.30259	-1.05812	86.394	120.789
35	-2.30259	-1.03643	87.4682	123.176
36	-2.30259	-1.01943	88.5074	125.523
37	-2.30259	-1.00271	89.5128	127.832
38	-2.30259	-0.982202		90.4776	130.094
39	-2.30259	-0.966088		91.4109	132.318
40	-2.30259	-0.950222		92.3138	134.506
41	-2.30259	-0.93459	93.1873	136.658
42	-2.30259	-0.915365		94.0252	138.766
43	-2.30259	-0.900227		94.8356	140.839
44	-2.30259	-0.885291		95.6193	142.877
45	-2.30259	-0.866894		96.3708	144.873
46	-2.30259	-0.852385		97.0974	146.836
47	-2.30259	-0.838054		97.7997	148.766
48	-2.30259	-0.820379		98.4727	150.655
49	-0.510826	-0.806422		99.123	151.067

50	0	-0.792618	99.7513	151.067
51	0	-0.778966	100.358	151.067
52	0	-0.7621	100.939	151.067
53	0	-0.748762	101.5	151.067
54	0	-0.735557	102.041	151.067
55	0	-0.719228	102.558	151.067
56	0	-0.706302	103.057	151.067
57	0.182322	-0.693493	103.538	150.94
58	0.693147	-0.680797	104.001	150.468
59	0.693147	-0.665079	104.443	150.007
60	0.693147	-0.652622	104.869	149.555
61	0.693147	-0.640266	105.279	149.111
62	1.09861	-0.624956	105.67	148.424
63	1.09861	-0.612813	106.045	147.751
64	1.09861	-0.60076	106.406	147.091
65	1.38629	-0.588793	106.753	146.275
66	1.38629	-0.573953	107.082	145.479
67	2.30259	-0.56217	107.398	144.185
68	2.30259	-0.550465	107.701	142.917
69	2.30259	-0.53594	107.989	141.683
70	2.30259	-0.524401	108.264	140.476
71	2.30259	-0.51293	108.527	139.295
72	2.30259	-0.498687	108.776	138.147
73	2.30259	-0.487364	109.013	137.024
74	2.30259	-0.476105	109.24	135.928
75	2.30259	-0.464904	109.456	134.858
76	2.30259	-0.450985	109.659	133.819
77	2.30259	-0.439913	109.853	132.806
78	2.30259	-0.428895	110.037	131.819
79	2.30259	-0.415193	110.209	130.863
80	2.30259	-0.40429	110.373	129.932
81	2.30259	-0.393433	110.527	129.026
82	2.30259	-0.382622	110.674	128.145
83	2.30259	-0.369171	110.81	127.295
84	2.30259	-0.358459	110.939	126.469
85	2.30259	-0.347787	111.059	125.669
86	2.30259	-0.334503	111.171	124.898
87	2.30259	-0.323919	111.276	124.152
88	2.30259	-0.31337	111.374	123.431
89	2.30259	-0.302855	111.466	122.734
90	2.30259	-0.28976	111.55	122.066
91	2.30259	-0.279319	111.628	121.423
92	2.30259	-0.268908	111.7	120.804
93	2.30259	-0.255936	111.766	120.215
94	2.30259	-0.24559	111.826	119.649
95	2.30259	-0.235269	111.882	119.107
96	2.30259	-0.222403	111.931	118.595
97	2.30259	-0.212137	111.976	118.107
98	2.30259	-0.201894	112.017	117.642
99	2.30259	-0.191671	112.054	117.201
100	2.30259	-0.17892	112.086	116.789
101	2.30259	-0.168741	112.114	116.4
102	2.30259	-0.158579	112.139	116.035
103	2.30259	-0.1459	112.161	115.699
104	2.30259	-0.135774	112.179	115.386
105	2.30259	-0.125661	112.195	115.097
106	2.30259	-0.115562	112.208	114.831
107	2.30259	-0.102953	112.219	114.594
108	2.30259	-0.0928787	112.227	114.38
109	2.30259	-0.0828129	112.234	114.189
110	2.30259	-0.0702426	112.239	114.028
111	2.30259	-0.0601949	112.243	113.889

112	2.30259	-0.0501541	112.245	113.774
113	2.30259	-0.0401167	112.247	113.681
114	2.30259	-0.0275759	112.248	113.618
115	2.30259	-0.0175476	112.248	113.577
116	2.30259	-0.00751925	112.248	113.56
117	2.30259	0.00751925	112.248	113.577
118	2.30259	0.0175476	112.248	113.618
119	2.30259	0.0275759	112.249	113.681
120	2.30259	0.0401167	112.251	113.774
121	2.30259	0.0501541	112.253	113.889
122	2.30259	0.0601949	112.257	114.028
123	2.30259	0.0702426	112.262	114.189
124	2.30259	0.0828129	112.269	114.38
125	2.30259	0.0928787	112.277	114.594
126	2.30259	0.102953	112.288	114.831
127	2.30259	0.115562	112.301	115.097
128	2.30259	0.125661	112.317	115.386
129	2.30259	0.135774	112.335	115.699
130	2.30259	0.1459	112.357	116.035
131	2.30259	0.158579	112.382	116.4
132	2.30259	0.168741	112.41	116.789
133	2.30259	0.17892	112.442	117.201
134	2.30259	0.191671	112.479	117.642
135	2.30259	0.201894	112.52	118.107
136	2.30259	0.212137	112.565	118.595
137	2.30259	0.222403	112.614	119.107
138	2.30259	0.235269	112.67	119.649
139	2.30259	0.24559	112.73	120.215
140	2.30259	0.255936	112.796	120.804
141	2.30259	0.268908	112.868	121.423
142	2.30259	0.279319	112.946	122.066
143	2.30259	0.28976	113.03	122.734
144	2.30259	0.302855	113.122	123.431
145	2.30259	0.31337	113.22	124.152
146	2.30259	0.323919	113.325	124.898
147	2.30259	0.334503	113.437	125.669
148	2.30259	0.347787	113.558	126.469
149	2.30259	0.358459	113.686	127.295
150	2.30259	0.369171	113.822	128.145
151	2.30259	0.382622	113.969	129.026
152	2.30259	0.393433	114.123	129.932
153	2.30259	0.40429	114.287	130.863
154	2.30259	0.415193	114.459	131.819
155	2.30259	0.428895	114.643	132.806
156	2.30259	0.439913	114.837	133.819
157	2.30259	0.450985	115.04	134.858
158	2.30259	0.464904	115.256	135.928
159	2.30259	0.476105	115.483	137.024
160	2.30259	0.487364	115.721	138.147
161	2.30259	0.498687	115.969	139.295
162	2.30259	0.51293	116.232	140.476
163	2.30259	0.524401	116.507	141.683
164	2.30259	0.53594	116.795	142.917
165	2.30259	0.550465	117.098	144.185
166	2.30259	0.56217	117.414	145.479
167	2.30259	0.573953	117.743	146.801
168	2.30259	0.588793	118.09	148.157
169	2.30259	0.60076	118.451	149.54
170	2.30259	0.612813	118.826	150.951
171	2.30259	0.624956	119.217	152.39
172	2.30259	0.640266	119.627	153.864
173	2.30259	0.652622	120.053	155.367

174	2.30259	0.665079		120.495	156.898
175	2.30259	0.680797		120.958	158.466
176	2.30259	0.693493		121.439	160.063
177	2.30259	0.706302		121.938	161.689
178	2.30259	0.719228		122.455	163.345
179	2.30259	0.735557		122.997	165.039
180	2.30259	0.748762		123.557	166.763
181	2.30259	0.7621	124.138	168.518	
182	2.30259	0.778966		124.745	170.311
183	2.30259	0.792618		125.373	172.136
184	2.30259	0.806422		126.023	173.993
185	2.30259	0.820379		126.696	175.882
186	2.30259	0.838054		127.399	177.812
187	2.30259	0.852385		128.125	179.775
188	2.30259	0.866894		128.877	181.771
189	2.30259	0.885291		129.66	183.809
190	2.30259	0.900227		130.471	185.882
191	2.30259	0.915365		131.309	187.99
192	2.30259	0.93459	132.182	190.142	
193	2.30259	0.950222		133.085	192.33
194	2.30259	0.966088		134.018	194.554
195	2.30259	0.982202		134.983	196.816
196	2.30259	1.00271	135.989	199.125	
197	2.30259	1.01943	137.028	201.472	
198	2.30259	1.03643	138.102	203.858	
199	2.30259	1.05812	139.222	206.295	
200	2.30259	1.07584	140.379	208.772	
201	2.30259	1.0939	141.576	211.291	
202	2.30259	1.11232	142.813	213.852	
203	2.30259	1.1359	144.103	216.468	
204	2.30259	1.15522	145.438	219.128	
205	2.30259	1.17499	146.818	221.833	
206	2.30259	1.20036	148.259	224.597	
207	2.30259	1.22123	149.751	227.409	
208	2.30259	1.24264	151.295	230.27	
209	2.30259	1.26464	152.894	233.182	
210	2.30259	1.29303	154.566	236.16	
211	2.30259	1.31652	156.299	239.191	
212	2.30259	1.34075	158.097	242.278	
213	2.30259	1.3722	159.98	245.438	
214	2.30259	1.39838	161.935	248.658	
215	2.30259	1.42554	163.967	251.94	
216	2.30259	1.46106	166.102	255.304	
217	2.30259	1.49085	168.325	258.737	
218	2.30259	1.52203	170.641	262.242	
219	2.30259	1.55477	173.059	265.822	
220	2.30259	1.59819	175.613	269.502	
221	2.30259	1.63524	178.287	273.267	
222	2.30259	1.67466	181.091	277.123	
223	2.30259	1.72793	184.077	281.102	
224	2.30259	1.77438	187.226	285.187	
225	2.30259	1.82501	190.556	289.39	
226	2.30259	1.88079	194.094	293.72	
227	2.30259	1.95996	197.935	298.233	
228	2.30259	2.03352	202.07	302.916	
229	2.30259	2.12007	206.565	307.797	
230	2.30259	2.25713	211.66	312.995	
231	3.43399	2.40892	217.462	321.267	
232	3.63759	2.65209	224.496	330.914	

Data Set Standard Deviation = 1.87749

Numerator = 109504
Denominator = 182800
W Statistic = 0.599039 = 109504 / 182800

5% Critical value of 0.976 exceeds 0.599039
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.599039
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Cadmium

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

Total Percent Non-Detects = 92.6724%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 19
Maximum Background Concentration = 2.30259
Confidence Level = 70.4%
False Positive Rate = 29.6%

Location	Date	Samples	Mean	Significant
LMW-3	11/17/2010	1	-2.30259	FALSE
LMW-7	11/17/2010	1	-0.510826	FALSE
LMW-9	11/17/2010	1	-2.30259	FALSE
LMW-8	11/17/2010	1	-2.30259	FALSE
LMW-16	11/17/2010	1	-2.30259	FALSE
LMW-10	11/17/2010	1	-2.30259	FALSE
LMW-9S	11/17/2010	1	-2.30259	FALSE
LMW-9D	11/17/2010	1	-2.30259	FALSE
LMW-6	11/17/2010	1	-2.30259	FALSE
LMW-3S	11/17/2010	1	-2.30259	FALSE
LMW-15R	11/17/2010	1	-2.30259	FALSE
LMW-14R	11/17/2010	1	-2.30259	FALSE
LMW-12	11/20/2008	1	2.30259	FALSE
LMW-11	11/20/2008	1	2.30259	FALSE
LMW-13	11/20/2008	1	2.30259	FALSE
MW-5	11/20/2008	1	2.30259	FALSE

Concentrations (ug/L)

Parameter: Chloroform

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 232
Total Non-Detect: 223
Percent Non-Detects: 96.1207%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	19	18 (94.7368%)	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
			11/17/2010	ND<0.14 U	ND<0.14 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9	19	18 (94.7368%)	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
			11/17/2010	ND<0.14 U	ND<0.14 U
LMW-14R	7	7 (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
			11/17/2010	ND<0.14 U		ND<0.14 U
LMW-8	19	19 (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
			11/17/2010	ND<0.14 U		ND<0.14 U
LMW-16	9	9 (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
			11/17/2010	ND<0.14 U		ND<0.14 U
LMW-10	16	15 (93.75%)	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<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
			11/17/2010	0.2 J	0.2 J	
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<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
			11/17/2010	0.42 J	0.42 J
LMW-3S	9	9 (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
			11/17/2010	ND<0.14 U	ND<0.14 U
LMW-6	19	18 (94.7368%)	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
			11/17/2010	ND<0.14 U	ND<0.14 U
LMW-9D	9	9 (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
			11/17/2010	ND<0.14 U	ND<0.14 U
LMW-9S	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
			6/30/2010	ND<0.14 U	ND<0.14 U
			11/17/2010	ND<0.14 U	ND<0.14 U

LMW-15R	14	14 (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	
		11/17/2010	ND<0.14 U		ND<0.14 U	
LMW-7	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<0.14 U		ND<0.14 U	
		11/17/2010	ND<0.14 U		ND<0.14 U	
MW-5	13	12 (92.3077%)	1/16/1998		8	8
		3/16/1999	ND<1	ND<1		
		9/23/1999	ND<1	ND<1		
		3/14/2000	ND<1	ND<1		
		9/23/2003	ND<1	ND<1		
		3/10/2004	ND<1	ND<1		
		10/12/2004	ND<1	ND<1		
		4/1/2005	ND<1	ND<1		
		10/26/2005	ND<1	ND<1		
		6/19/2006	ND<1	ND<1		
		11/15/2007	ND<1	ND<1		
		5/20/2008	ND<1	ND<1		
		11/20/2008	ND<1	ND<1		
LMW-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: Chloroform

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 232

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	0.07	-2.25713	17.9311	-0.157999
4	0.07	-2.12007	22.4258	-0.306404
5	0.07	-2.03352	26.561	-0.44875
6	0.07	-1.95996	30.4025	-0.585948
7	0.07	-1.88079	33.9398	-0.717603
8	0.07	-1.82501	37.2705	-0.845353
9	0.07	-1.77438	40.4189	-0.96956
10	0.07	-1.72793	43.4046	-1.09051
11	0.07	-1.67466	46.2091	-1.20774
12	0.07	-1.63524	48.8831	-1.32221
13	0.07	-1.59819	51.4373	-1.43408
14	0.07	-1.55477	53.8547	-1.54292
15	0.07	-1.52203	56.1712	-1.64946
16	0.07	-1.49085	58.3939	-1.75382
17	0.07	-1.46106	60.5286	-1.85609
18	0.07	-1.42554	62.5608	-1.95588
19	0.07	-1.39838	64.5162	-2.05377
20	0.07	-1.3722	66.3992	-2.14982
21	0.07	-1.34075	68.1968	-2.24367
22	0.07	-1.31652	69.93	-2.33583
23	0.07	-1.29303	71.6019	-2.42634
24	0.07	-1.26464	73.2013	-2.51487
25	0.07	-1.24264	74.7454	-2.60185
26	0.07	-1.22123	76.2368	-2.68734
27	0.07	-1.20036	77.6777	-2.77136
28	0.07	-1.17499	79.0583	-2.85361
29	0.07	-1.15522	80.3928	-2.93448
30	0.07	-1.1359	81.6831	-3.01399
31	0.07	-1.11232	82.9203	-3.09185
32	0.07	-1.0939	84.1169	-3.16843
33	0.07	-1.07584	85.2744	-3.24373
34	0.07	-1.05812	86.394	-3.3178
35	0.07	-1.03643	87.4682	-3.39035
36	0.07	-1.01943	88.5074	-3.46171
37	0.07	-1.00271	89.5128	-3.5319
38	0.07	-0.982202	90.4776	-3.60066
39	0.07	-0.966088	91.4109	-3.66828
40	0.07	-0.950222	92.3138	-3.7348
41	0.07	-0.93459	93.1873	-3.80022
42	0.07	-0.915365	94.0252	-3.8643
43	0.07	-0.900227	94.8356	-3.92731
44	0.07	-0.885291	95.6193	-3.98928
45	0.07	-0.866894	96.3708	-4.04996
46	0.07	-0.852385	97.0974	-4.10963
47	0.07	-0.838054	97.7997	-4.16829
48	0.2	-0.820379	98.4727	-4.33237
49	0.31	-0.806422	99.123	-4.58236

50	0.33	-0.792618	99.7513	-4.84393
51	0.42	-0.778966	100.358	-5.17109
52	0.5	-0.7621	100.939	-5.55214
53	0.5	-0.748762	101.5	-5.92652
54	0.5	-0.735557	102.041	-6.2943
55	0.5	-0.719228	102.558	-6.65391
56	0.5	-0.706302	103.057	-7.00707
57	0.5	-0.693493	103.538	-7.35381
58	0.5	-0.680797	104.001	-7.69421
59	0.5	-0.665079	104.443	-8.02675
60	0.5	-0.652622	104.869	-8.35306
61	0.5	-0.640266	105.279	-8.67319
62	0.5	-0.624956	105.67	-8.98567
63	0.5	-0.612813	106.045	-9.29208
64	0.5	-0.60076	106.406	-9.59246
65	0.5	-0.588793	106.753	-9.88686
66	0.5	-0.573953	107.082	-10.1738
67	0.5	-0.56217	107.398	-10.4549
68	0.5	-0.550465	107.701	-10.7301
69	0.5	-0.53594	107.989	-10.9981
70	0.5	-0.524401	108.264	-11.2603
71	0.5	-0.51293	108.527	-11.5168
72	0.5	-0.498687	108.776	-11.7661
73	0.5	-0.487364	109.013	-12.0098
74	0.5	-0.476105	109.24	-12.2479
75	0.5	-0.464904	109.456	-12.4803
76	0.5	-0.450985	109.659	-12.7058
77	0.5	-0.439913	109.853	-12.9258
78	0.5	-0.428895	110.037	-13.1402
79	0.5	-0.415193	110.209	-13.3478
80	0.5	-0.40429	110.373	-13.55
81	0.5	-0.393433	110.527	-13.7467
82	0.5	-0.382622	110.674	-13.938
83	0.5	-0.369171	110.81	-14.1226
84	0.5	-0.358459	110.939	-14.3018
85	0.5	-0.347787	111.059	-14.4757
86	0.5	-0.334503	111.171	-14.6429
87	0.5	-0.323919	111.276	-14.8049
88	0.5	-0.31337	111.374	-14.9616
89	0.5	-0.302855	111.466	-15.113
90	0.5	-0.28976	111.55	-15.2579
91	0.5	-0.279319	111.628	-15.3976
92	0.5	-0.268908	111.7	-15.532
93	0.5	-0.255936	111.766	-15.66
94	0.5	-0.24559	111.826	-15.7828
95	0.5	-0.235269	111.882	-15.9004
96	0.5	-0.222403	111.931	-16.0116
97	0.5	-0.212137	111.976	-16.1177
98	0.5	-0.201894	112.017	-16.2186
99	0.5	-0.191671	112.054	-16.3145
100	0.5	-0.17892	112.086	-16.4039
101	0.5	-0.168741	112.114	-16.4883
102	0.5	-0.158579	112.139	-16.5676
103	0.5	-0.1459	112.161	-16.6405
104	0.5	-0.135774	112.179	-16.7084
105	0.5	-0.125661	112.195	-16.7712
106	0.5	-0.115562	112.208	-16.829
107	0.5	-0.102953	112.219	-16.8805
108	0.5	-0.0928787	112.227	-16.9269
109	0.5	-0.0828129	112.234	-16.9683
110	0.5	-0.0702426	112.239	-17.0035
111	0.5	-0.0601949	112.243	-17.0336

112	0.5	-0.0501541	112.245	-17.0586
113	0.5	-0.0401167	112.247	-17.0787
114	0.5	-0.0275759	112.248	-17.0925
115	0.5	-0.0175476	112.248	-17.1013
116	0.5	-0.00751925	112.248	-17.105
117	0.5	0.00751925	112.248	-17.1013
118	0.5	0.0175476	112.248	-17.0925
119	0.5	0.0275759	112.249	-17.0787
120	0.5	0.0401167	112.251	-17.0586
121	0.5	0.0501541	112.253	-17.0336
122	0.5	0.0601949	112.257	-17.0035
123	0.5	0.0702426	112.262	-16.9683
124	0.5	0.0828129	112.269	-16.9269
125	0.5	0.0928787	112.277	-16.8805
126	0.5	0.102953	112.288	-16.829
127	0.5	0.115562	112.301	-16.7712
128	0.5	0.125661	112.317	-16.7084
129	0.5	0.135774	112.335	-16.6405
130	0.5	0.1459	112.357	-16.5676
131	0.5	0.158579	112.382	-16.4883
132	0.5	0.168741	112.41	-16.4039
133	0.5	0.17892	112.442	-16.3145
134	0.5	0.191671	112.479	-16.2186
135	0.5	0.201894	112.52	-16.1177
136	0.5	0.212137	112.565	-16.0116
137	0.5	0.222403	112.614	-15.9004
138	0.5	0.235269	112.67	-15.7828
139	0.5	0.24559	112.73	-15.66
140	0.5	0.255936	112.796	-15.532
141	0.5	0.268908	112.868	-15.3976
142	0.5	0.279319	112.946	-15.2579
143	0.5	0.28976	113.03	-15.113
144	0.5	0.302855	113.122	-14.9616
145	0.5	0.31337	113.22	-14.8049
146	0.5	0.323919	113.325	-14.6429
147	0.5	0.334503	113.437	-14.4757
148	0.5	0.347787	113.558	-14.3018
149	0.5	0.358459	113.686	-14.1226
150	0.5	0.369171	113.822	-13.938
151	0.5	0.382622	113.969	-13.7467
152	0.5	0.393433	114.123	-13.55
153	0.5	0.40429	114.287	-13.3478
154	0.5	0.415193	114.459	-13.1402
155	0.5	0.428895	114.643	-12.9258
156	0.5	0.439913	114.837	-12.7058
157	0.5	0.450985	115.04	-12.4803
158	0.5	0.464904	115.256	-12.2479
159	0.5	0.476105	115.483	-12.0098
160	0.5	0.487364	115.721	-11.7661
161	0.5	0.498687	115.969	-11.5168
162	0.5	0.51293	116.232	-11.2603
163	0.5	0.524401	116.507	-10.9981
164	0.5	0.53594	116.795	-10.7301
165	0.5	0.550465	117.098	-10.4549
166	0.5	0.56217	117.414	-10.1738
167	0.5	0.573953	117.743	-9.88686
168	0.5	0.588793	118.09	-9.59246
169	0.5	0.60076	118.451	-9.29208
170	0.5	0.612813	118.826	-8.98567
171	0.5	0.624956	119.217	-8.67319
172	0.5	0.640266	119.627	-8.35306
173	0.5	0.652622	120.053	-8.02675

174	0.5	0.665079	120.495	-7.69421
175	0.5	0.680797	120.958	-7.35381
176	0.5	0.693493	121.439	-7.00707
177	0.5	0.706302	121.938	-6.65391
178	0.5	0.719228	122.455	-6.2943
179	0.5	0.735557	122.997	-5.92652
180	0.5	0.748762	123.557	-5.55214
181	0.5	0.7621	124.138	-5.17109
182	0.5	0.778966	124.745	-4.78161
183	0.5	0.792618	125.373	-4.3853
184	0.5	0.806422	126.023	-3.98209
185	0.5	0.820379	126.696	-3.5719
186	0.5	0.838054	127.399	-3.15287
187	0.5	0.852385	128.125	-2.72668
188	0.5	0.866894	128.877	-2.29323
189	0.5	0.885291	129.66	-1.85059
190	0.5	0.900227	130.471	-1.40047
191	0.5	0.915365	131.309	-0.94279
192	0.5	0.93459	132.182	-0.475495
193	0.5	0.950222	133.085	-0.000384466
194	0.5	0.966088	134.018	0.48266
195	0.5	0.982202	134.983	0.973761
196	0.5	1.00271	135.989	1.47512
197	0.5	1.01943	137.028	1.98483
198	0.5	1.03643	138.102	2.50305
199	0.5	1.05812	139.222	3.03211
200	0.5	1.07584	140.379	3.57003
201	0.5	1.0939	141.576	4.11697
202	0.5	1.11232	142.813	4.67313
203	0.5	1.1359	144.103	5.24108
204	0.5	1.15522	145.438	5.81869
205	0.5	1.17499	146.818	6.40619
206	0.5	1.20036	148.259	7.00637
207	0.5	1.22123	149.751	7.61698
208	0.5	1.24264	151.295	8.2383
209	0.5	1.26464	152.894	8.87062
210	0.5	1.29303	154.566	9.51714
211	0.5	1.31652	156.299	10.1754
212	0.5	1.34075	158.097	10.8458
213	0.5	1.3722	159.98	11.5319
214	0.5	1.39838	161.935	12.2311
215	0.5	1.42554	163.967	12.9438
216	0.5	1.46106	166.102	13.6744
217	0.5	1.49085	168.325	14.4198
218	0.5	1.52203	170.641	15.1808
219	0.5	1.55477	173.059	15.9582
220	0.5	1.59819	175.613	16.7573
221	0.5	1.63524	178.287	17.5749
222	0.5	1.67466	181.091	18.4122
223	0.5	1.72793	184.077	19.2762
224	0.5	1.77438	187.226	20.1634
225	0.5	1.82501	190.556	21.0759
226	0.5	1.88079	194.094	22.0163
227	0.5	1.95996	197.935	22.9963
228	0.5	2.03352	202.07	24.013
229	3	2.12007	206.565	30.3732
230	6	2.25713	211.66	43.916
231	8	2.40892	217.462	63.1874
232	78	2.65209	224.496	270.05

Data Set Standard Deviation = 5.13274

Numerator = 72927.1
Denominator = 1.36621e+006
W Statistic = 0.053379 = 72927.1 / 1.36621e+006

5% Critical value of 0.976 exceeds 0.053379
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.053379
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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-2.65926	-2.65209	7.03356	7.05259
2	-2.65926	-2.40892	12.8365	13.4585
3	-2.65926	-2.25713	17.9311	19.4608
4	-2.65926	-2.12007	22.4258	25.0987
5	-2.65926	-2.03352	26.561	30.5063
6	-2.65926	-1.95996	30.4025	35.7184
7	-2.65926	-1.88079	33.9398	40.7199
8	-2.65926	-1.82501	37.2705	45.573
9	-2.65926	-1.77438	40.4189	50.2916
10	-2.65926	-1.72793	43.4046	54.8866
11	-2.65926	-1.67466	46.2091	59.3399
12	-2.65926	-1.63524	48.8831	63.6885
13	-2.65926	-1.59819	51.4373	67.9385
14	-2.65926	-1.55477	53.8547	72.073
15	-2.65926	-1.52203	56.1712	76.1205
16	-2.65926	-1.49085	58.3939	80.0851
17	-2.65926	-1.46106	60.5286	83.9704
18	-2.65926	-1.42554	62.5608	87.7613
19	-2.65926	-1.39838	64.5162	91.4799
20	-2.65926	-1.3722	66.3992	95.129
21	-2.65926	-1.34075	68.1968	98.6944
22	-2.65926	-1.31652	69.93	102.195
23	-2.65926	-1.29303	71.6019	105.634
24	-2.65926	-1.26464	73.2013	108.997
25	-2.65926	-1.24264	74.7454	112.301
26	-2.65926	-1.22123	76.2368	115.549
27	-2.65926	-1.20036	77.6777	118.741
28	-2.65926	-1.17499	79.0583	121.866
29	-2.65926	-1.15522	80.3928	124.938
30	-2.65926	-1.1359	81.6831	127.958
31	-2.65926	-1.11232	82.9203	130.916
32	-2.65926	-1.0939	84.1169	133.825
33	-2.65926	-1.07584	85.2744	136.686
34	-2.65926	-1.05812	86.394	139.5
35	-2.65926	-1.03643	87.4682	142.256
36	-2.65926	-1.01943	88.5074	144.967
37	-2.65926	-1.00271	89.5128	147.633
38	-2.65926	-0.982202	90.4776	150.245
39	-2.65926	-0.966088	91.4109	152.815
40	-2.65926	-0.950222	92.3138	155.341
41	-2.65926	-0.93459	93.1873	157.827
42	-2.65926	-0.915365	94.0252	160.261
43	-2.65926	-0.900227	94.8356	162.655
44	-2.65926	-0.885291	95.6193	165.009
45	-2.65926	-0.866894	96.3708	167.314
46	-1.60944	-0.852385	97.0974	168.686
47	-1.17118	-0.838054	97.7997	169.668
48	-1.10866	-0.820379	98.4727	170.577
49	-0.867501	-0.806422	99.123	171.277

50	-0.693147	-0.792618	99.7513	171.826
51	-0.693147	-0.778966	100.358	172.366
52	-0.693147	-0.7621	100.939	172.894
53	-0.693147	-0.748762	101.5	173.413
54	-0.693147	-0.735557	102.041	173.923
55	-0.693147	-0.719228	102.558	174.422
56	-0.693147	-0.706302	103.057	174.911
57	-0.693147	-0.693493	103.538	175.392
58	-0.693147	-0.680797	104.001	175.864
59	-0.693147	-0.665079	104.443	176.325
60	-0.693147	-0.652622	104.869	176.777
61	-0.693147	-0.640266	105.279	177.221
62	-0.693147	-0.624956	105.67	177.654
63	-0.693147	-0.612813	106.045	178.079
64	-0.693147	-0.60076	106.406	178.495
65	-0.693147	-0.588793	106.753	178.904
66	-0.693147	-0.573953	107.082	179.301
67	-0.693147	-0.56217	107.398	179.691
68	-0.693147	-0.550465	107.701	180.073
69	-0.693147	-0.53594	107.989	180.444
70	-0.693147	-0.524401	108.264	180.808
71	-0.693147	-0.51293	108.527	181.163
72	-0.693147	-0.498687	108.776	181.509
73	-0.693147	-0.487364	109.013	181.847
74	-0.693147	-0.476105	109.24	182.177
75	-0.693147	-0.464904	109.456	182.499
76	-0.693147	-0.450985	109.659	182.812
77	-0.693147	-0.439913	109.853	183.116
78	-0.693147	-0.428895	110.037	183.414
79	-0.693147	-0.415193	110.209	183.702
80	-0.693147	-0.40429	110.373	183.982
81	-0.693147	-0.393433	110.527	184.254
82	-0.693147	-0.382622	110.674	184.52
83	-0.693147	-0.369171	110.81	184.776
84	-0.693147	-0.358459	110.939	185.024
85	-0.693147	-0.347787	111.059	185.265
86	-0.693147	-0.334503	111.171	185.497
87	-0.693147	-0.323919	111.276	185.721
88	-0.693147	-0.31337	111.374	185.939
89	-0.693147	-0.302855	111.466	186.149
90	-0.693147	-0.28976	111.55	186.349
91	-0.693147	-0.279319	111.628	186.543
92	-0.693147	-0.268908	111.7	186.729
93	-0.693147	-0.255936	111.766	186.907
94	-0.693147	-0.24559	111.826	187.077
95	-0.693147	-0.235269	111.882	187.24
96	-0.693147	-0.222403	111.931	187.394
97	-0.693147	-0.212137	111.976	187.541
98	-0.693147	-0.201894	112.017	187.681
99	-0.693147	-0.191671	112.054	187.814
100	-0.693147	-0.17892	112.086	187.938
101	-0.693147	-0.168741	112.114	188.055
102	-0.693147	-0.158579	112.139	188.165
103	-0.693147	-0.1459	112.161	188.266
104	-0.693147	-0.135774	112.179	188.36
105	-0.693147	-0.125661	112.195	188.447
106	-0.693147	-0.115562	112.208	188.528
107	-0.693147	-0.102953	112.219	188.599
108	-0.693147	-0.0928787	112.227	188.663
109	-0.693147	-0.0828129	112.234	188.721
110	-0.693147	-0.0702426	112.239	188.769
111	-0.693147	-0.0601949	112.243	188.811

112	-0.693147	-0.0501541	112.245	188.846
113	-0.693147	-0.0401167	112.247	188.874
114	-0.693147	-0.0275759	112.248	188.893
115	-0.693147	-0.0175476	112.248	188.905
116	-0.693147	-0.00751925	112.248	188.91
117	-0.693147	0.00751925	112.248	188.905
118	-0.693147	0.0175476	112.248	188.893
119	-0.693147	0.0275759	112.249	188.874
120	-0.693147	0.0401167	112.251	188.846
121	-0.693147	0.0501541	112.253	188.811
122	-0.693147	0.0601949	112.257	188.769
123	-0.693147	0.0702426	112.262	188.721
124	-0.693147	0.0828129	112.269	188.663
125	-0.693147	0.0928787	112.277	188.599
126	-0.693147	0.102953	112.288	188.528
127	-0.693147	0.115562	112.301	188.447
128	-0.693147	0.125661	112.317	188.36
129	-0.693147	0.135774	112.335	188.266
130	-0.693147	0.1459	112.357	188.165
131	-0.693147	0.158579	112.382	188.055
132	-0.693147	0.168741	112.41	187.938
133	-0.693147	0.17892	112.442	187.814
134	-0.693147	0.191671	112.479	187.681
135	-0.693147	0.201894	112.52	187.541
136	-0.693147	0.212137	112.565	187.394
137	-0.693147	0.222403	112.614	187.24
138	-0.693147	0.235269	112.67	187.077
139	-0.693147	0.24559	112.73	186.907
140	-0.693147	0.255936	112.796	186.729
141	-0.693147	0.268908	112.868	186.543
142	-0.693147	0.279319	112.946	186.349
143	-0.693147	0.28976	113.03	186.149
144	-0.693147	0.302855	113.122	185.939
145	-0.693147	0.31337	113.22	185.721
146	-0.693147	0.323919	113.325	185.497
147	-0.693147	0.334503	113.437	185.265
148	-0.693147	0.347787	113.558	185.024
149	-0.693147	0.358459	113.686	184.776
150	-0.693147	0.369171	113.822	184.52
151	-0.693147	0.382622	113.969	184.254
152	-0.693147	0.393433	114.123	183.982
153	-0.693147	0.40429	114.287	183.702
154	-0.693147	0.415193	114.459	183.414
155	-0.693147	0.428895	114.643	183.116
156	-0.693147	0.439913	114.837	182.812
157	-0.693147	0.450985	115.04	182.499
158	-0.693147	0.464904	115.256	182.177
159	-0.693147	0.476105	115.483	181.847
160	-0.693147	0.487364	115.721	181.509
161	-0.693147	0.498687	115.969	181.163
162	-0.693147	0.51293	116.232	180.808
163	-0.693147	0.524401	116.507	180.444
164	-0.693147	0.53594	116.795	180.073
165	-0.693147	0.550465	117.098	179.691
166	-0.693147	0.56217	117.414	179.301
167	-0.693147	0.573953	117.743	178.904
168	-0.693147	0.588793	118.09	178.495
169	-0.693147	0.60076	118.451	178.079
170	-0.693147	0.612813	118.826	177.654
171	-0.693147	0.624956	119.217	177.221
172	-0.693147	0.640266	119.627	176.777
173	-0.693147	0.652622	120.053	176.325

174	-0.693147		0.665079	120.495	175.864
175	-0.693147		0.680797	120.958	175.392
176	-0.693147		0.693493	121.439	174.911
177	-0.693147		0.706302	121.938	174.422
178	-0.693147		0.719228	122.455	173.923
179	-0.693147		0.735557	122.997	173.413
180	-0.693147		0.748762	123.557	172.894
181	-0.693147		0.7621	124.138	172.366
182	-0.693147		0.778966	124.745	171.826
183	-0.693147		0.792618	125.373	171.277
184	-0.693147		0.806422	126.023	170.718
185	-0.693147		0.820379	126.696	170.149
186	-0.693147		0.838054	127.399	169.568
187	-0.693147		0.852385	128.125	168.977
188	-0.693147		0.866894	128.877	168.377
189	-0.693147		0.885291	129.66	167.763
190	-0.693147		0.900227	130.471	167.139
191	-0.693147		0.915365	131.309	166.505
192	-0.693147		0.93459	132.182	165.857
193	-0.693147		0.950222	133.085	165.198
194	-0.693147		0.966088	134.018	164.528
195	-0.693147		0.982202	134.983	163.848
196	-0.693147		1.00271	135.989	163.153
197	-0.693147		1.01943	137.028	162.446
198	-0.693147		1.03643	138.102	161.728
199	-0.693147		1.05812	139.222	160.994
200	-0.693147		1.07584	140.379	160.248
201	-0.693147		1.0939	141.576	159.49
202	-0.693147		1.11232	142.813	158.719
203	-0.693147		1.1359	144.103	157.932
204	-0.693147		1.15522	145.438	157.131
205	-0.693147		1.17499	146.818	156.317
206	-0.693147		1.20036	148.259	155.485
207	-0.693147		1.22123	149.751	154.638
208	-0.693147		1.24264	151.295	153.777
209	-0.693147		1.26464	152.894	152.9
210	-0.693147		1.29303	154.566	152.004
211	-0.693147		1.31652	156.299	151.091
212	-0.693147		1.34075	158.097	150.162
213	-0.693147		1.3722	159.98	149.211
214	-0.693147		1.39838	161.935	148.242
215	-0.693147		1.42554	163.967	147.254
216	-0.693147		1.46106	166.102	146.241
217	-0.693147		1.49085	168.325	145.207
218	-0.693147		1.52203	170.641	144.152
219	-0.693147		1.55477	173.059	143.075
220	-0.693147		1.59819	175.613	141.967
221	-0.693147		1.63524	178.287	140.834
222	-0.693147		1.67466	181.091	139.673
223	-0.693147		1.72793	184.077	138.475
224	-0.693147		1.77438	187.226	137.245
225	-0.693147		1.82501	190.556	135.98
226	-0.693147		1.88079	194.094	134.676
227	0	1.95996	197.935	134.676	
228	0	2.03352	202.07	134.676	
229	1.09861	2.12007	206.565	137.006	
230	1.79176	2.25713	211.66	141.05	
231	2.07944	2.40892	217.462	146.059	
232	4.35671	2.65209	224.496	157.613	

Data Set Standard Deviation = 0.914574

Numerator = 24842
Denominator = 43376.9
W Statistic = 0.572701 = 24842 / 43376.9

5% Critical value of 0.976 exceeds 0.572701
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.572701
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 = 96.1207%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 19
Maximum Background Concentration = 4.35671
Confidence Level = 70.4%
False Positive Rate = 29.6%

Location	Date	Samples	Mean	Significant
LMW-9	11/17/2010	1	-2.65926	FALSE
LMW-14R	11/17/2010	1	-2.65926	FALSE
LMW-8	11/17/2010	1	-2.65926	FALSE
LMW-16	11/17/2010	1	-2.65926	FALSE
LMW-10	11/17/2010	1	-1.60944	FALSE
LMW-3	11/17/2010	1	-0.867501	FALSE
LMW-3S	11/17/2010	1	-2.65926	FALSE
LMW-6	11/17/2010	1	-2.65926	FALSE
LMW-9D	11/17/2010	1	-2.65926	FALSE
LMW-9S	11/17/2010	1	-2.65926	FALSE
LMW-15R	11/17/2010	1	-2.65926	FALSE
LMW-7	11/17/2010	1	-2.65926	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 (ug/L)

Parameter: Chromium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 232
Total Non-Detect: 143
Percent Non-Detects: 61.6379%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	19	10 (52.6316%)	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
			11/17/2010	1	1

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-3S	9	4 (44.4444%)	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
			11/17/2010	4.1	4.1
LMW-14R	7	4 (57.1429%)	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
			11/17/2010	0.6 J	0.6 J
LMW-7	17	7 (41.1765%)	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		
		11/17/2010	0.25 J	0.25 J		
LMW-9S	8	4 (50%)	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		
		11/17/2010	4.4	4.4		
LMW-15R	14	8 (57.1429%)	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	0.44 J B	0.44 J B		
		11/16/2009	0.16 J B	0.16 J B		
		11/16/2009	0.53 J B	0.53 J B		
		6/30/2010	0.51 J	0.51 J		
		11/17/2010	0.24 J	0.24 J		
LMW-9D	9	3 (33.3333%)	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		
		11/17/2010	0.58 J	0.58 J		
LMW-3	21	17 (80.9524%)	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	
			11/17/2010	0.94 J	0.94 J	
LMW-10	16	9 (56.25%)	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	
			11/17/2010	0.3 J	0.3 J	
LMW-6	19	11 (57.8947%)	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	
			11/17/2010	0.24 J	0.24 J	
LMW-8	19	12 (63.1579%)	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	
			11/17/2010	0.16 J	0.16 J	
LMW-9	19	9 (47.3684%)	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	
			11/17/2010	2.1	2.1	
LMW-16	9	5 (55.5556%)	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	
			11/17/2010	ND<0.16 U	ND<0.16 U	
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	
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	

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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.08	-2.65209	7.03356	-0.212167
2	0.08	-2.40892	12.8365	-0.404881
3	0.16	-2.25713	17.9311	-0.766022
4	0.16	-2.12007	22.4258	-1.10523
5	0.24	-2.03352	26.561	-1.59328
6	0.24	-1.95996	30.4025	-2.06367
7	0.25	-1.88079	33.9398	-2.53387
8	0.26	-1.82501	37.2705	-3.00837
9	0.28	-1.77438	40.4189	-3.50519
10	0.3	-1.72793	43.4046	-4.02357
11	0.32	-1.67466	46.2091	-4.55946
12	0.35	-1.63524	48.8831	-5.1318
13	0.36	-1.59819	51.4373	-5.70715
14	0.36	-1.55477	53.8547	-6.26686
15	0.37	-1.52203	56.1712	-6.83002
16	0.44	-1.49085	58.3939	-7.48599
17	0.44	-1.46106	60.5286	-8.12886
18	0.48	-1.42554	62.5608	-8.81312
19	0.49	-1.39838	64.5162	-9.49832
20	0.5	-1.3722	66.3992	-10.1844
21	0.51	-1.34075	68.1968	-10.8682
22	0.53	-1.31652	69.93	-11.566
23	0.53	-1.29303	71.6019	-12.2513
24	0.54	-1.26464	73.2013	-12.9342
25	0.56	-1.24264	74.7454	-13.6301
26	0.57	-1.22123	76.2368	-14.3262
27	0.58	-1.20036	77.6777	-15.0224
28	0.58	-1.17499	79.0583	-15.7039
29	0.6	-1.15522	80.3928	-16.397
30	0.62	-1.1359	81.6831	-17.1012
31	0.69	-1.11232	82.9203	-17.8688
32	0.72	-1.0939	84.1169	-18.6564
33	0.76	-1.07584	85.2744	-19.474
34	0.83	-1.05812	86.394	-20.3522
35	0.84	-1.03643	87.4682	-21.2228
36	0.94	-1.01943	88.5074	-22.1811
37	1	-1.00271	89.5128	-23.1838
38	1	-0.982202	90.4776	-24.166
39	1	-0.966088	91.4109	-25.1321
40	1	-0.950222	92.3138	-26.0823
41	1.1	-0.93459	93.1873	-27.1104
42	1.1	-0.915365	94.0252	-28.1173
43	1.2	-0.900227	94.8356	-29.1975
44	1.6	-0.885291	95.6193	-30.614
45	1.7	-0.866894	96.3708	-32.0877
46	2	-0.852385	97.0974	-33.7925
47	2.1	-0.838054	97.7997	-35.5524
48	3	-0.820379	98.4727	-38.0136
49	4	-0.806422	99.123	-41.2392

50	4.1	-0.792618	99.7513	-44.489
51	4.4	-0.778966	100.358	-47.9164
52	5	-0.7621	100.939	-51.7269
53	5	-0.748762	101.5	-55.4707
54	5	-0.735557	102.041	-59.1485
55	5.5	-0.719228	102.558	-63.1043
56	5.8	-0.706302	103.057	-67.2008
57	6	-0.693493	103.538	-71.3618
58	6	-0.680797	104.001	-75.4466
59	6	-0.665079	104.443	-79.437
60	7	-0.652622	104.869	-84.0054
61	7	-0.640266	105.279	-88.4873
62	7	-0.624956	105.67	-92.8619
63	10	-0.612813	106.045	-98.9901
64	10	-0.60076	106.406	-104.998
65	10	-0.588793	106.753	-110.886
66	10	-0.573953	107.082	-116.625
67	10	-0.56217	107.398	-122.247
68	10	-0.550465	107.701	-127.751
69	10	-0.53594	107.989	-133.111
70	10	-0.524401	108.264	-138.355
71	10	-0.51293	108.527	-143.484
72	10	-0.498687	108.776	-148.471
73	10	-0.487364	109.013	-153.345
74	10	-0.476105	109.24	-158.106
75	10	-0.464904	109.456	-162.755
76	10	-0.450985	109.659	-167.265
77	10	-0.439913	109.853	-171.664
78	10	-0.428895	110.037	-175.953
79	10	-0.415193	110.209	-180.105
80	10	-0.40429	110.373	-184.148
81	10	-0.393433	110.527	-188.082
82	10	-0.382622	110.674	-191.908
83	10	-0.369171	110.81	-195.6
84	10	-0.358459	110.939	-199.184
85	10	-0.347787	111.059	-202.662
86	10	-0.334503	111.171	-206.007
87	10	-0.323919	111.276	-209.247
88	10	-0.31337	111.374	-212.38
89	10	-0.302855	111.466	-215.409
90	10	-0.28976	111.55	-218.306
91	10	-0.279319	111.628	-221.1
92	10	-0.268908	111.7	-223.789
93	10	-0.255936	111.766	-226.348
94	10	-0.24559	111.826	-228.804
95	10	-0.235269	111.882	-231.157
96	10	-0.222403	111.931	-233.381
97	10	-0.212137	111.976	-235.502
98	10	-0.201894	112.017	-237.521
99	10	-0.191671	112.054	-239.438
100	10	-0.17892	112.086	-241.227
101	10	-0.168741	112.114	-242.914
102	10	-0.158579	112.139	-244.5
103	10	-0.1459	112.161	-245.959
104	10	-0.135774	112.179	-247.317
105	10	-0.125661	112.195	-248.573
106	10	-0.115562	112.208	-249.729
107	10	-0.102953	112.219	-250.759
108	10	-0.0928787	112.227	-251.687
109	10	-0.0828129	112.234	-252.515
110	10	-0.0702426	112.239	-253.218
111	10	-0.0601949	112.243	-253.82

112	10	-0.0501541	112.245	-254.321
113	10	-0.0401167	112.247	-254.723
114	10	-0.0275759	112.248	-254.998
115	10	-0.0175476	112.248	-255.174
116	10	-0.00751925	112.248	-255.249
117	10	0.00751925	112.248	-255.174
118	10	0.0175476	112.248	-254.998
119	10	0.0275759	112.249	-254.723
120	10	0.0401167	112.251	-254.321
121	10	0.0501541	112.253	-253.82
122	10	0.0601949	112.257	-253.218
123	10	0.0702426	112.262	-252.515
124	10	0.0828129	112.269	-251.687
125	10	0.0928787	112.277	-250.759
126	10	0.102953	112.288	-249.729
127	10	0.115562	112.301	-248.573
128	10	0.125661	112.317	-247.317
129	10	0.135774	112.335	-245.959
130	10	0.1459	112.357	-244.5
131	10	0.158579	112.382	-242.914
132	10	0.168741	112.41	-241.227
133	10	0.17892	112.442	-239.438
134	10	0.191671	112.479	-237.521
135	10	0.201894	112.52	-235.502
136	10	0.212137	112.565	-233.381
137	10	0.222403	112.614	-231.157
138	10	0.235269	112.67	-228.804
139	10	0.24559	112.73	-226.348
140	10	0.255936	112.796	-223.789
141	10	0.268908	112.868	-221.1
142	10	0.279319	112.946	-218.306
143	10	0.28976	113.03	-215.409
144	10	0.302855	113.122	-212.38
145	10	0.31337	113.22	-209.247
146	10	0.323919	113.325	-206.007
147	10	0.334503	113.437	-202.662
148	10	0.347787	113.558	-199.184
149	10	0.358459	113.686	-195.6
150	10	0.369171	113.822	-191.908
151	10	0.382622	113.969	-188.082
152	10	0.393433	114.123	-184.148
153	10	0.40429	114.287	-180.105
154	10	0.415193	114.459	-175.953
155	10	0.428895	114.643	-171.664
156	10	0.439913	114.837	-167.265
157	10	0.450985	115.04	-162.755
158	10	0.464904	115.256	-158.106
159	10	0.476105	115.483	-153.345
160	10	0.487364	115.721	-148.471
161	10	0.498687	115.969	-143.484
162	10	0.51293	116.232	-138.355
163	10	0.524401	116.507	-133.111
164	10	0.53594	116.795	-127.751
165	10	0.550465	117.098	-122.247
166	10	0.56217	117.414	-116.625
167	10	0.573953	117.743	-110.886
168	10	0.588793	118.09	-104.998
169	10	0.60076	118.451	-98.9901
170	10	0.612813	118.826	-92.8619
171	10	0.624956	119.217	-86.6124
172	10	0.640266	119.627	-80.2097
173	10	0.652622	120.053	-73.6835

174	10	0.665079		120.495	-67.0327
175	10	0.680797		120.958	-60.2248
176	10	0.693493		121.439	-53.2898
177	10	0.706302		121.938	-46.2268
178	10	0.719228		122.455	-39.0345
179	10	0.735557		122.997	-31.6789
180	10	0.748762		123.557	-24.1913
181	10	0.7621	124.138	-16.5703	
182	10	0.778966		124.745	-8.78066
183	10	0.792618		125.373	-0.854483
184	10	0.806422		126.023	7.20973
185	10	0.820379		126.696	15.4135
186	10	0.838054		127.399	23.7941
187	10	0.852385		128.125	32.3179
188	10	0.866894		128.877	40.9869
189	10	0.885291		129.66	49.8398
190	10	0.900227		130.471	58.842
191	10	0.915365		131.309	67.9957
192	10	0.93459	132.182	77.3416	
193	10	0.950222		133.085	86.8438
194	10	0.966088		134.018	96.5047
195	10	0.982202		134.983	106.327
196	10	1.00271	135.989	116.354	
197	10	1.01943	137.028	126.548	
198	10	1.03643	138.102	136.912	
199	10	1.05812	139.222	147.494	
200	10	1.07584	140.379	158.252	
201	10	1.0939	141.576	169.191	
202	10	1.11232	142.813	180.314	
203	10	1.1359	144.103	191.673	
204	10	1.15522	145.438	203.225	
205	10	1.17499	146.818	214.975	
206	10	1.20036	148.259	226.979	
207	11	1.22123	149.751	240.412	
208	13	1.24264	151.295	256.567	
209	13	1.26464	152.894	273.007	
210	17	1.29303	154.566	294.989	
211	19	1.31652	156.299	320.003	
212	19	1.34075	158.097	345.477	
213	20	1.3722	159.98	372.921	
214	20	1.39838	161.935	400.888	
215	21	1.42554	163.967	430.825	
216	21	1.46106	166.102	461.507	
217	22	1.49085	168.325	494.306	
218	23	1.52203	170.641	529.313	
219	23	1.55477	173.059	565.072	
220	24	1.59819	175.613	603.429	
221	27	1.63524	178.287	647.58	
222	28	1.67466	181.091	694.471	
223	34	1.72793	184.077	753.221	
224	34	1.77438	187.226	813.549	
225	36	1.82501	190.556	879.25	
226	40	1.88079	194.094	954.481	
227	79	1.95996	197.935	1109.32	
228	84	2.03352	202.07	1280.13	
229	87	2.12007	206.565	1464.58	
230	93	2.25713	211.66	1674.49	
231	120	2.40892	217.462	1963.56	
232	345	2.65209	224.496	2878.53	

Data Set Standard Deviation = 25.9381

Numerator = 8.28596e+006
Denominator = 3.48898e+007
W Statistic = 0.237489 = 8.28596e+006 / 3.48898e+007

5% Critical value of 0.976 exceeds 0.237489
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.237489
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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-2.52573	-2.65209	7.03356	6.69845
2	-2.52573	-2.40892	12.8365	12.7827
3	-1.83258	-2.25713	17.9311	16.9191
4	-1.83258	-2.12007	22.4258	20.8043
5	-1.42712	-2.03352	26.561	23.7064
6	-1.42712	-1.95996	30.4025	26.5035
7	-1.38629	-1.88079	33.9398	29.1108
8	-1.34707	-1.82501	37.2705	31.5692
9	-1.27297	-1.77438	40.4189	33.8279
10	-1.20397	-1.72793	43.4046	35.9083
11	-1.13943	-1.67466	46.2091	37.8165
12	-1.04982	-1.63524	48.8831	39.5332
13	-1.02165	-1.59819	51.4373	41.166
14	-1.02165	-1.55477	53.8547	42.7544
15	-0.994252	-1.52203	56.1712	44.2677
16	-0.820981	-1.49085	58.3939	45.4917
17	-0.820981	-1.46106	60.5286	46.6912
18	-0.733969	-1.42554	62.5608	47.7375
19	-0.71335	-1.39838	64.5162	48.735
20	-0.693147	-1.3722	66.3992	49.6862
21	-0.673345	-1.34075	68.1968	50.5889
22	-0.634878	-1.31652	69.93	51.4248
23	-0.634878	-1.29303	71.6019	52.2457
24	-0.616186	-1.26464	73.2013	53.0249
25	-0.579818	-1.24264	74.7454	53.7455
26	-0.562119	-1.22123	76.2368	54.4319
27	-0.544727	-1.20036	77.6777	55.0858
28	-0.544727	-1.17499	79.0583	55.7258
29	-0.510826	-1.15522	80.3928	56.316
30	-0.478036	-1.1359	81.6831	56.859
31	-0.371064	-1.11232	82.9203	57.2717
32	-0.328504	-1.0939	84.1169	57.6311
33	-0.274437	-1.07584	85.2744	57.9263
34	-0.18633	-1.05812	86.394	58.1235
35	-0.174353	-1.03643	87.4682	58.3042
36	-0.0618754	-1.01943	88.5074	58.3672
37	0	-1.00271	89.5128	58.3672
38	0	-0.982202	90.4776	58.3672
39	0	-0.966088	91.4109	58.3672
40	0	-0.950222	92.3138	58.3672
41	0.0953102	-0.93459	93.1873	58.2782
42	0.0953102	-0.915365	94.0252	58.1909
43	0.182322	-0.900227	94.8356	58.0268
44	0.470004	-0.885291	95.6193	57.6107
45	0.530628	-0.866894	96.3708	57.1507
46	0.693147	-0.852385	97.0974	56.5599
47	0.741937	-0.838054	97.7997	55.9381
48	1.09861	-0.820379	98.4727	55.0368
49	1.38629	-0.806422	99.123	53.9189

50	1.41099	-0.792618	99.7513	52.8005
51	1.4816	-0.778966	100.358	51.6464
52	1.60944	-0.7621	100.939	50.4198
53	1.60944	-0.748762	101.5	49.2147
54	1.60944	-0.735557	102.041	48.0309
55	1.70475	-0.719228	102.558	46.8048
56	1.75786	-0.706302	103.057	45.5632
57	1.79176	-0.693493	103.538	44.3207
58	1.79176	-0.680797	104.001	43.1008
59	1.79176	-0.665079	104.443	41.9092
60	1.94591	-0.652622	104.869	40.6392
61	1.94591	-0.640266	105.279	39.3933
62	1.94591	-0.624956	105.67	38.1772
63	2.30259	-0.612813	106.045	36.7662
64	2.30259	-0.60076	106.406	35.3829
65	2.30259	-0.588793	106.753	34.0271
66	2.30259	-0.573953	107.082	32.7055
67	2.30259	-0.56217	107.398	31.4111
68	2.30259	-0.550465	107.701	30.1436
69	2.30259	-0.53594	107.989	28.9096
70	2.30259	-0.524401	108.264	27.7021
71	2.30259	-0.51293	108.527	26.521
72	2.30259	-0.498687	108.776	25.3727
73	2.30259	-0.487364	109.013	24.2505
74	2.30259	-0.476105	109.24	23.1543
75	2.30259	-0.464904	109.456	22.0838
76	2.30259	-0.450985	109.659	21.0454
77	2.30259	-0.439913	109.853	20.0324
78	2.30259	-0.428895	110.037	19.0449
79	2.30259	-0.415193	110.209	18.0888
80	2.30259	-0.40429	110.373	17.1579
81	2.30259	-0.393433	110.527	16.252
82	2.30259	-0.382622	110.674	15.371
83	2.30259	-0.369171	110.81	14.5209
84	2.30259	-0.358459	110.939	13.6956
85	2.30259	-0.347787	111.059	12.8948
86	2.30259	-0.334503	111.171	12.1245
87	2.30259	-0.323919	111.276	11.3787
88	2.30259	-0.31337	111.374	10.6571
89	2.30259	-0.302855	111.466	9.95977
90	2.30259	-0.28976	111.55	9.29257
91	2.30259	-0.279319	111.628	8.64942
92	2.30259	-0.268908	111.7	8.03023
93	2.30259	-0.255936	111.766	7.44092
94	2.30259	-0.24559	111.826	6.87543
95	2.30259	-0.235269	111.882	6.3337
96	2.30259	-0.222403	111.931	5.8216
97	2.30259	-0.212137	111.976	5.33313
98	2.30259	-0.201894	112.017	4.86826
99	2.30259	-0.191671	112.054	4.42692
100	2.30259	-0.17892	112.086	4.01494
101	2.30259	-0.168741	112.114	3.6264
102	2.30259	-0.158579	112.139	3.26125
103	2.30259	-0.1459	112.161	2.92531
104	2.30259	-0.135774	112.179	2.61268
105	2.30259	-0.125661	112.195	2.32333
106	2.30259	-0.115562	112.208	2.05724
107	2.30259	-0.102953	112.219	1.82018
108	2.30259	-0.0928787	112.227	1.60632
109	2.30259	-0.0828129	112.234	1.41564
110	2.30259	-0.0702426	112.239	1.2539
111	2.30259	-0.0601949	112.243	1.11529

112	2.30259	-0.0501541	112.245	0.999809
113	2.30259	-0.0401167	112.247	0.907437
114	2.30259	-0.0275759	112.248	0.843941
115	2.30259	-0.0175476	112.248	0.803537
116	2.30259	-0.00751925	112.248	0.786223
117	2.30259	0.00751925	112.248	0.803537
118	2.30259	0.0175476	112.248	0.843941
119	2.30259	0.0275759	112.249	0.907437
120	2.30259	0.0401167	112.251	0.999809
121	2.30259	0.0501541	112.253	1.11529
122	2.30259	0.0601949	112.257	1.2539
123	2.30259	0.0702426	112.262	1.41564
124	2.30259	0.0828129	112.269	1.60632
125	2.30259	0.0928787	112.277	1.82018
126	2.30259	0.102953	112.288	2.05724
127	2.30259	0.115562	112.301	2.32333
128	2.30259	0.125661	112.317	2.61268
129	2.30259	0.135774	112.335	2.92531
130	2.30259	0.1459	112.357	3.26125
131	2.30259	0.158579	112.382	3.6264
132	2.30259	0.168741	112.41	4.01494
133	2.30259	0.17892	112.442	4.42692
134	2.30259	0.191671	112.479	4.86826
135	2.30259	0.201894	112.52	5.33313
136	2.30259	0.212137	112.565	5.8216
137	2.30259	0.222403	112.614	6.3337
138	2.30259	0.235269	112.67	6.87543
139	2.30259	0.24559	112.73	7.44092
140	2.30259	0.255936	112.796	8.03023
141	2.30259	0.268908	112.868	8.64942
142	2.30259	0.279319	112.946	9.29257
143	2.30259	0.28976	113.03	9.95977
144	2.30259	0.302855	113.122	10.6571
145	2.30259	0.31337	113.22	11.3787
146	2.30259	0.323919	113.325	12.1245
147	2.30259	0.334503	113.437	12.8948
148	2.30259	0.347787	113.558	13.6956
149	2.30259	0.358459	113.686	14.5209
150	2.30259	0.369171	113.822	15.371
151	2.30259	0.382622	113.969	16.252
152	2.30259	0.393433	114.123	17.1579
153	2.30259	0.40429	114.287	18.0888
154	2.30259	0.415193	114.459	19.0449
155	2.30259	0.428895	114.643	20.0324
156	2.30259	0.439913	114.837	21.0454
157	2.30259	0.450985	115.04	22.0838
158	2.30259	0.464904	115.256	23.1543
159	2.30259	0.476105	115.483	24.2505
160	2.30259	0.487364	115.721	25.3727
161	2.30259	0.498687	115.969	26.521
162	2.30259	0.51293	116.232	27.7021
163	2.30259	0.524401	116.507	28.9096
164	2.30259	0.53594	116.795	30.1436
165	2.30259	0.550465	117.098	31.4111
166	2.30259	0.56217	117.414	32.7055
167	2.30259	0.573953	117.743	34.0271
168	2.30259	0.588793	118.09	35.3829
169	2.30259	0.60076	118.451	36.7662
170	2.30259	0.612813	118.826	38.1772
171	2.30259	0.624956	119.217	39.6162
172	2.30259	0.640266	119.627	41.0905
173	2.30259	0.652622	120.053	42.5932

174	2.30259	0.665079		120.495	44.1246
175	2.30259	0.680797		120.958	45.6922
176	2.30259	0.693493		121.439	47.289
177	2.30259	0.706302		121.938	48.9154
178	2.30259	0.719228		122.455	50.5714
179	2.30259	0.735557		122.997	52.2651
180	2.30259	0.748762		123.557	53.9892
181	2.30259	0.7621	124.138	55.744	
182	2.30259	0.778966		124.745	57.5376
183	2.30259	0.792618		125.373	59.3627
184	2.30259	0.806422		126.023	61.2196
185	2.30259	0.820379		126.696	63.1086
186	2.30259	0.838054		127.399	65.0383
187	2.30259	0.852385		128.125	67.0009
188	2.30259	0.866894		128.877	68.997
189	2.30259	0.885291		129.66	71.0355
190	2.30259	0.900227		130.471	73.1083
191	2.30259	0.915365		131.309	75.2161
192	2.30259	0.93459	132.182	77.368	
193	2.30259	0.950222		133.085	79.556
194	2.30259	0.966088		134.018	81.7805
195	2.30259	0.982202		134.983	84.0421
196	2.30259	1.00271	135.989	86.3509	
197	2.30259	1.01943	137.028	88.6982	
198	2.30259	1.03643	138.102	91.0847	
199	2.30259	1.05812	139.222	93.5211	
200	2.30259	1.07584	140.379	95.9983	
201	2.30259	1.0939	141.576	98.5171	
202	2.30259	1.11232	142.813	101.078	
203	2.30259	1.1359	144.103	103.694	
204	2.30259	1.15522	145.438	106.354	
205	2.30259	1.17499	146.818	109.059	
206	2.30259	1.20036	148.259	111.823	
207	2.3979	1.22123	149.751	114.752	
208	2.56495	1.24264	151.295	117.939	
209	2.56495	1.26464	152.894	121.183	
210	2.83321	1.29303	154.566	124.846	
211	2.94444	1.31652	156.299	128.723	
212	2.94444	1.34075	158.097	132.67	
213	2.99573	1.3722	159.98	136.781	
214	2.99573	1.39838	161.935	140.97	
215	3.04452	1.42554	163.967	145.31	
216	3.04452	1.46106	166.102	149.759	
217	3.09104	1.49085	168.325	154.367	
218	3.13549	1.52203	170.641	159.139	
219	3.13549	1.55477	173.059	164.014	
220	3.17805	1.59819	175.613	169.093	
221	3.29584	1.63524	178.287	174.483	
222	3.3322	1.67466	181.091	180.063	
223	3.52636	1.72793	184.077	186.156	
224	3.52636	1.77438	187.226	192.414	
225	3.58352	1.82501	190.556	198.953	
226	3.68888	1.88079	194.094	205.891	
227	4.36945	1.95996	197.935	214.455	
228	4.43082	2.03352	202.07	223.466	
229	4.46591	2.12007	206.565	232.934	
230	4.5326	2.25713	211.66	243.164	
231	4.78749	2.40892	217.462	254.697	
232	5.84354	2.65209	224.496	270.195	

Data Set Standard Deviation = 1.36649

Numerator = 73005.1
Denominator = 96835.3
W Statistic = 0.75391 = 73005.1 / 96835.3

5% Critical value of 0.976 exceeds 0.75391
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.75391
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	232
	3/16/1999	ND<2.30259	72
	9/23/1999	ND<2.30259	72
	3/14/2000	4.46591	229
	9/23/2003	ND<2.30259	72
	3/10/2004	4.78749	231
	10/12/2004	ND<2.30259	72
	4/1/2005	2.30259 J	204
	10/26/2005	ND<2.30259	72
	6/19/2006	ND<2.30259	72
	11/18/2006	ND<2.30259	72
	6/2/2007	3.04452	215
	11/15/2007	ND<2.30259	72
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.174353 J	176
	11/16/2009	0 B	178
	6/30/2010	-0.328504 J	173
	11/17/2010	0	179

Rank Sum = 2537
Rank Mean = 133.526

Background Rank Sum = 2537
Background Rank Mean = 133.526

Compliance Wells

Well ID	Date	Result	Rank
LMW-3S	11/18/2006	ND<2.30259	72
	6/2/2007	2.3979	207
	11/15/2007	ND<2.30259	72
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	0.530628	186
	11/16/2009	-0.616186 J	165
	6/30/2010	-0.994252 J	156
	11/17/2010	1.41099	191

Rank Sum = 1193
Rank Mean = 132.556

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	0.470004	185
	6/30/2010	-0.71335 J	160

	11/17/2010	-0.510826 J	170

Rank Sum = 803
Rank Mean = 114.714

LMW-7	1/16/1998	2.30259 J	205
	3/16/1999	ND<2.30259	72
	9/23/1999	1.60944 J	193
	3/14/2000	3.52636	223
	9/23/2003	ND<2.30259	72
	3/10/2004	ND<2.30259	72
	10/12/2004	ND<2.30259	72
	4/1/2005	2.94444 J	211
	10/26/2005	3.13549	218
	6/19/2006	ND<2.30259	72
	11/18/2006	1.60944 J	194
	6/2/2007	3.17805	220
	11/15/2007	ND<2.30259	72
	5/20/2008	1.94591 J	201
	11/20/2008	ND<2.30259	72
	6/11/2009	1.75786	197
	11/17/2010	-1.38629 J	148

Rank Sum = 2514
Rank Mean = 147.882

LMW-9S	11/18/2006	ND<2.30259	72
	6/2/2007	1.60944	195
	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	180
	6/30/2010	-0.544727 J	168
	11/17/2010	1.4816	192

Rank Sum = 1023
Rank Mean = 127.875

LMW-15R	11/18/2006	ND<2.30259	72
	6/2/2007	ND<2.30259	72
	11/15/2007	ND<2.30259	72
	11/15/2007	ND<2.30259	72
	5/20/2008	ND<2.30259	72
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	1.70475	196
	11/16/2009	-0.820981 J B	157
	11/16/2009	-1.83258 J B	144
	11/16/2009	-0.634878 J B	163
	6/30/2010	-0.673345 J	162
	11/17/2010	-1.42712 J	146

Rank Sum = 1544
Rank Mean = 110.286

LMW-9D	11/18/2006	1.79176 J	198
	6/2/2007	ND<2.30259	72
	11/15/2007	ND<2.30259	72
	5/20/2008	1.09861 J	189
	11/20/2008	ND<2.30259	72
	6/11/2009	0	181
	11/16/2009	0.0953102	182
	6/30/2010	-0.693147 J	161
	11/17/2010	-0.544727 J	169

Rank Sum = 1296

Rank Mean = 144

LMW-3	11/19/1996	ND<2.30259	72
	3/24/1997	ND<2.30259	72
	1/16/1998	ND<2.30259	72
	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	ND<2.30259	72
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	-1.13943 J	152
	11/16/2009	0.0953102 B	183
	6/30/2010	-0.274437 J	174
	11/17/2010	-0.0618754 J	177

Rank Sum = 1910
Rank Mean = 90.9524

LMW-10	3/14/2000	3.3322	222
	9/23/2003	ND<2.30259	72
	3/10/2004	3.58352	225
	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	0.693147	187
	11/15/2007	ND<2.30259	72
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	-1.02165 J	154
	11/16/2009	-1.34707 J	149
	6/30/2010	-1.02165 J	155
	11/17/2010	-1.20397 J	151

Rank Sum = 1891
Rank Mean = 118.188

LMW-6	1/16/1998	2.56495 J	208
	3/16/1999	ND<2.30259	72
	9/23/1999	1.79176 J	199
	3/14/2000	3.52636	224
	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	1.38629 J	190
	11/15/2007	ND<2.30259	72
	5/20/2008	1.94591 J	202
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.733969 J	159
	11/16/2009	ND<-2.52573 U	72

	6/30/2010	-0.562119 J	167
	11/17/2010	-1.42712 J	147

Rank Sum = 2288
Rank Mean = 120.421

LMW-8	1/16/1998	ND<2.30259	72
	3/16/1999	1.79176 J	200
	9/23/1999	2.56495 J	209
	3/14/2000	3.04452	216
	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	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	-1.27297 J	150
	11/16/2009	-0.371064 J	172
	6/30/2010	-1.04982 J	153
	11/17/2010	-1.83258 J	145

Rank Sum = 2109
Rank Mean = 111

LMW-9	1/16/1998	3.13549	219
	3/16/1999	ND<2.30259	72
	9/23/1999	3.09104	217
	3/14/2000	2.83321 J	210
	9/23/2003	ND<2.30259	72
	3/10/2004	2.94444 J	212
	10/12/2004	ND<2.30259	72
	4/1/2005	ND<2.30259	72
	10/26/2005	ND<2.30259	72
	6/19/2006	2.30259 J	206
	11/18/2006	ND<2.30259	72
	6/2/2007	1.94591	203
	11/15/2007	ND<2.30259	72
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	0.182322	184
	11/16/2009	-0.478036 J	171
	6/30/2010	-0.820981 J	158
	11/17/2010	0.741937	188

Rank Sum = 2616
Rank Mean = 137.684

LMW-16	11/18/2006	ND<2.30259	72
	6/2/2007	2.99573	213
	11/15/2007	ND<2.30259	72
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.18633 J	175
	11/16/2009	-0.634878 J B	164
	6/30/2010	-0.579818 J	166
	11/17/2010	ND<-2.52573 U	72

Rank Sum = 1078
Rank Mean = 119.778

LMW-13	3/14/2000	3.29584	221

	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 = 941
Rank Mean = 85.5455

MW-5	1/16/1998	ND<2.30259	72
	3/16/1999	ND<2.30259	72
	9/23/1999	ND<2.30259	72
	3/14/2000	4.36945	227
	9/23/2003	ND<2.30259	72
	3/10/2004	4.43082	228
	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	ND<2.30259	72
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72

Rank Sum = 1247
Rank Mean = 95.9231

LMW-11	3/14/2000	2.99573	214
	9/23/2003	ND<2.30259	72
	3/10/2004	3.68888	226
	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 = 1088
Rank Mean = 98.9091

LMW-12	3/14/2000	4.5326	230
	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 = 950
Rank Mean = 86.3636

Calculation Results:

Kruskal-Wallis H Statistic = 19.0148
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 24.829

95% Confidence comparison value is 26.2962 at 16 degrees of freedom
19.0148 < 26.2962 indicating no significant group difference at 5% significance level
24.829 < 26.2962 indicating no significant group difference at 5% significance level when adjusted for ties

Concentrations (ug/L)

Parameter: Cobalt

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 232
Total Non-Detect: 179
Percent Non-Detects: 77.1552%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	19	15 (78.9474%)	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
			11/17/2010	0.29	0.29

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-3S	9	5 (55.5556%)	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
			11/17/2010	0.53	0.53
LMW-14R	7	4 (57.1429%)	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
			11/17/2010	0.21	0.21
LMW-7	17	14 (82.3529%)	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	
			11/17/2010	0.19 J	0.19 J	
LMW-3	21	17 (80.9524%)	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	
			11/17/2010	0.51	0.51	
LMW-6	19	14 (73.6842%)	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	
			11/17/2010	1.1	1.1	
LMW-9D9		7 (77.7778%)	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
			11/17/2010	0.08 J	0.08 J	
LMW-10	16	12 (75%)	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	
			11/17/2010	0.16 J	0.16 J	
LMW-16	9	6 (66.6667%)	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	
			11/17/2010	0.07 J	0.07 J	
LMW-8	19	15 (78.9474%)	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	
			11/17/2010	0.71	0.71	
LMW-9	19	14 (73.6842%)	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	
		11/17/2010		0.16 J	0.16 J	
LMW-9S	8	2 (25%)	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	
		11/17/2010		0.26	0.26	
LMW-15R	14	8 (57.1429%)	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<0 J	ND<0 J	
		5/20/2008		ND<20	ND<20	
		11/20/2008		ND<20	ND<20	
		11/20/2008		ND<20	ND<20	
		6/11/2009		0.83	0.83	
		11/16/2009		0.25	0.25	
		11/16/2009		0.26	0.26	
		11/16/2009		0.3	0.3	
		6/30/2010		0.7	0.7	
		11/17/2010		0.58	0.58	
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	
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 = 232

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	0.035	-1.88079	33.9398	-0.0658276
8	0.035	-1.82501	37.2705	-0.129703
9	0.035	-1.77438	40.4189	-0.191806
10	0.035	-1.72793	43.4046	-0.252284
11	0.07	-1.67466	46.2091	-0.36951
12	0.08	-1.63524	48.8831	-0.500329
13	0.08	-1.59819	51.4373	-0.628184
14	0.09	-1.55477	53.8547	-0.768114
15	0.13	-1.52203	56.1712	-0.965978
16	0.13	-1.49085	58.3939	-1.15979
17	0.13	-1.46106	60.5286	-1.34973
18	0.13	-1.42554	62.5608	-1.53505
19	0.15	-1.39838	64.5162	-1.7448
20	0.15	-1.3722	66.3992	-1.95063
21	0.16	-1.34075	68.1968	-2.16515
22	0.16	-1.31652	69.93	-2.3758
23	0.16	-1.29303	71.6019	-2.58268
24	0.16	-1.26464	73.2013	-2.78503
25	0.16	-1.24264	74.7454	-2.98385
26	0.17	-1.22123	76.2368	-3.19146
27	0.17	-1.20036	77.6777	-3.39552
28	0.19	-1.17499	79.0583	-3.61877
29	0.2	-1.15522	80.3928	-3.84981
30	0.21	-1.1359	81.6831	-4.08835
31	0.24	-1.11232	82.9203	-4.35531
32	0.24	-1.0939	84.1169	-4.61784
33	0.24	-1.07584	85.2744	-4.87604
34	0.25	-1.05812	86.394	-5.14057
35	0.26	-1.03643	87.4682	-5.41005
36	0.26	-1.01943	88.5074	-5.6751
37	0.27	-1.00271	89.5128	-5.94583
38	0.29	-0.982202	90.4776	-6.23067
39	0.3	-0.966088	91.4109	-6.52049
40	0.42	-0.950222	92.3138	-6.91959
41	0.42	-0.93459	93.1873	-7.31211
42	0.47	-0.915365	94.0252	-7.74234
43	0.51	-0.900227	94.8356	-8.20145
44	0.53	-0.885291	95.6193	-8.67066
45	0.57	-0.866894	96.3708	-9.16479
46	0.58	-0.852385	97.0974	-9.65917
47	0.63	-0.838054	97.7997	-10.1871
48	0.7	-0.820379	98.4727	-10.7614
49	0.71	-0.806422	99.123	-11.334

50	0.71	-0.792618	99.7513	-11.8967
51	0.78	-0.778966	100.358	-12.5043
52	0.83	-0.7621	100.939	-13.1369
53	1	-0.748762	101.5	-13.8856
54	1	-0.735557	102.041	-14.6212
55	1	-0.719228	102.558	-15.3404
56	1	-0.706302	103.057	-16.0467
57	1.1	-0.693493	103.538	-16.8096
58	1.2	-0.680797	104.001	-17.6265
59	1.2	-0.665079	104.443	-18.4246
60	1.4	-0.652622	104.869	-19.3383
61	3	-0.640266	105.279	-21.2591
62	10	-0.624956	105.67	-27.5086
63	10	-0.612813	106.045	-33.6368
64	10	-0.60076	106.406	-39.6444
65	10	-0.588793	106.753	-45.5323
66	10	-0.573953	107.082	-51.2718
67	10	-0.56217	107.398	-56.8935
68	10	-0.550465	107.701	-62.3982
69	10	-0.53594	107.989	-67.7576
70	10	-0.524401	108.264	-73.0016
71	10	-0.51293	108.527	-78.1309
72	10	-0.498687	108.776	-83.1178
73	10	-0.487364	109.013	-87.9914
74	10	-0.476105	109.24	-92.7524
75	10	-0.464904	109.456	-97.4015
76	10	-0.450985	109.659	-101.911
77	10	-0.439913	109.853	-106.31
78	10	-0.428895	110.037	-110.599
79	10	-0.415193	110.209	-114.751
80	10	-0.40429	110.373	-118.794
81	10	-0.393433	110.527	-122.729
82	10	-0.382622	110.674	-126.555
83	10	-0.369171	110.81	-130.247
84	10	-0.358459	110.939	-133.831
85	10	-0.347787	111.059	-137.309
86	10	-0.334503	111.171	-140.654
87	10	-0.323919	111.276	-143.893
88	10	-0.31337	111.374	-147.027
89	10	-0.302855	111.466	-150.055
90	10	-0.28976	111.55	-152.953
91	10	-0.279319	111.628	-155.746
92	10	-0.268908	111.7	-158.435
93	10	-0.255936	111.766	-160.995
94	10	-0.24559	111.826	-163.451
95	10	-0.235269	111.882	-165.803
96	10	-0.222403	111.931	-168.027
97	10	-0.212137	111.976	-170.149
98	10	-0.201894	112.017	-172.168
99	10	-0.191671	112.054	-174.084
100	10	-0.17892	112.086	-175.874
101	10	-0.168741	112.114	-177.561
102	10	-0.158579	112.139	-179.147
103	10	-0.1459	112.161	-180.606
104	10	-0.135774	112.179	-181.963
105	10	-0.125661	112.195	-183.22
106	10	-0.115562	112.208	-184.376
107	10	-0.102953	112.219	-185.405
108	10	-0.0928787	112.227	-186.334
109	10	-0.0828129	112.234	-187.162
110	10	-0.0702426	112.239	-187.865
111	10	-0.0601949	112.243	-188.467

112	10	-0.0501541	112.245	-188.968
113	10	-0.0401167	112.247	-189.369
114	10	-0.0275759	112.248	-189.645
115	10	-0.0175476	112.248	-189.82
116	10	-0.00751925	112.248	-189.896
117	10	0.00751925	112.248	-189.82
118	10	0.0175476	112.248	-189.645
119	10	0.0275759	112.249	-189.369
120	10	0.0401167	112.251	-188.968
121	10	0.0501541	112.253	-188.467
122	10	0.0601949	112.257	-187.865
123	10	0.0702426	112.262	-187.162
124	10	0.0828129	112.269	-186.334
125	10	0.0928787	112.277	-185.405
126	10	0.102953	112.288	-184.376
127	10	0.115562	112.301	-183.22
128	10	0.125661	112.317	-181.963
129	10	0.135774	112.335	-180.606
130	10	0.1459	112.357	-179.147
131	10	0.158579	112.382	-177.561
132	10	0.168741	112.41	-175.874
133	10	0.17892	112.442	-174.084
134	10	0.191671	112.479	-172.168
135	10	0.201894	112.52	-170.149
136	10	0.212137	112.565	-168.027
137	10	0.222403	112.614	-165.803
138	10	0.235269	112.67	-163.451
139	10	0.24559	112.73	-160.995
140	10	0.255936	112.796	-158.435
141	10	0.268908	112.868	-155.746
142	10	0.279319	112.946	-152.953
143	10	0.28976	113.03	-150.055
144	10	0.302855	113.122	-147.027
145	10	0.31337	113.22	-143.893
146	10	0.323919	113.325	-140.654
147	10	0.334503	113.437	-137.309
148	10	0.347787	113.558	-133.831
149	10	0.358459	113.686	-130.247
150	10	0.369171	113.822	-126.555
151	10	0.382622	113.969	-122.729
152	10	0.393433	114.123	-118.794
153	10	0.40429	114.287	-114.751
154	10	0.415193	114.459	-110.599
155	10	0.428895	114.643	-106.31
156	10	0.439913	114.837	-101.911
157	10	0.450985	115.04	-97.4015
158	10	0.464904	115.256	-92.7524
159	10	0.476105	115.483	-87.9914
160	10	0.487364	115.721	-83.1178
161	10	0.498687	115.969	-78.1309
162	10	0.51293	116.232	-73.0016
163	10	0.524401	116.507	-67.7576
164	10	0.53594	116.795	-62.3982
165	10	0.550465	117.098	-56.8935
166	10	0.56217	117.414	-51.2718
167	10	0.573953	117.743	-45.5323
168	10	0.588793	118.09	-39.6444
169	10	0.60076	118.451	-33.6368
170	10	0.612813	118.826	-27.5086
171	10	0.624956	119.217	-21.2591
172	10	0.640266	119.627	-14.8564
173	10	0.652622	120.053	-8.3302

174	10	0.665079		120.495	-1.6794
175	10	0.680797		120.958	5.12856
176	10	0.693493		121.439	12.0635
177	10	0.706302		121.938	19.1265
178	10	0.719228		122.455	26.3188
179	10	0.735557		122.997	33.6744
180	10	0.748762		123.557	41.162
181	10	0.7621	124.138	48.783	
182	10	0.778966		124.745	56.5727
183	10	0.792618		125.373	64.4988
184	10	0.806422		126.023	72.563
185	10	0.820379		126.696	80.7668
186	10	0.838054		127.399	89.1474
187	10	0.852385		128.125	97.6712
188	10	0.866894		128.877	106.34
189	10	0.885291		129.66	115.193
190	10	0.900227		130.471	124.195
191	10	0.915365		131.309	133.349
192	10	0.93459	132.182	142.695	
193	10	0.950222		133.085	152.197
194	10	0.966088		134.018	161.858
195	10	0.982202		134.983	171.68
196	10	1.00271	135.989	181.707	
197	10	1.01943	137.028	191.901	
198	10	1.03643	138.102	202.266	
199	10	1.05812	139.222	212.847	
200	10	1.07584	140.379	223.605	
201	10	1.0939	141.576	234.544	
202	10	1.11232	142.813	245.668	
203	10	1.1359	144.103	257.026	
204	10	1.15522	145.438	268.579	
205	10	1.17499	146.818	280.329	
206	10	1.20036	148.259	292.332	
207	10	1.22123	149.751	304.544	
208	10	1.24264	151.295	316.971	
209	10	1.26464	152.894	329.617	
210	10	1.29303	154.566	342.548	
211	10	1.31652	156.299	355.713	
212	10	1.34075	158.097	369.12	
213	10	1.3722	159.98	382.842	
214	10	1.39838	161.935	396.826	
215	10	1.42554	163.967	411.082	
216	10	1.46106	166.102	425.692	
217	10	1.49085	168.325	440.601	
218	10	1.52203	170.641	455.821	
219	10	1.55477	173.059	471.369	
220	10	1.59819	175.613	487.351	
221	10	1.63524	178.287	503.703	
222	10	1.67466	181.091	520.45	
223	10	1.72793	184.077	537.729	
224	10	1.77438	187.226	555.473	
225	10	1.82501	190.556	573.723	
226	10	1.88079	194.094	592.531	
227	10	1.95996	197.935	612.13	
228	10	2.03352	202.07	632.466	
229	10	2.12007	206.565	653.666	
230	10	2.25713	211.66	676.238	
231	10	2.40892	217.462	700.327	
232	11	2.65209	224.496	729.5	

Data Set Standard Deviation = 4.24064

Numerator = 532170
Denominator = 932572
W Statistic = 0.570647 = 532170 / 932572

5% Critical value of 0.976 exceeds 0.570647
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.570647
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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)	
1	-3.35241	-2.65209	7.03356	8.89087	
2	-3.35241	-2.40892	12.8365	16.9666	
3	-3.35241	-2.25713	17.9311	24.5334	
4	-3.35241	-2.12007	22.4258	31.6407	
5	-2.65926	-2.03352	26.561	37.0484	
6	-2.52573	-1.95996	30.4025	41.9987	
7	-2.52573	-1.88079	33.9398	46.7491	
8	-2.40795	-1.82501	37.2705	51.1436	
9	-2.04022	-1.77438	40.4189	54.7637	
10	-2.04022	-1.72793	43.4046	58.2891	
11	-2.04022	-1.67466	46.2091	61.7058	
12	-2.04022	-1.63524	48.8831	65.042	
13	-1.89712	-1.59819	51.4373	68.074	
14	-1.89712	-1.55477	53.8547	71.0235	
15	-1.83258	-1.52203	56.1712	73.8128	
16	-1.83258	-1.49085	58.3939	76.5449	
17	-1.83258	-1.46106	60.5286	79.2224	
18	-1.83258	-1.42554	62.5608	81.8348	
19	-1.83258	-1.39838	64.5162	84.3975	
20	-1.77196	-1.3722	66.3992	86.829	
21	-1.77196	-1.34075	68.1968	89.2047	
22	-1.66073	-1.31652	69.93	91.3911	
23	-1.60944	-1.29303	71.6019	93.4722	
24	-1.56065	-1.26464	73.2013	95.4458	
25	-1.42712	-1.24264	74.7454	97.2192	
26	-1.42712	-1.22123	76.2368	98.9621	
27	-1.42712	-1.20036	77.6777	100.675	
28	-1.38629	-1.17499	79.0583	102.304	
29	-1.34707	-1.15522	80.3928	103.86	
30	-1.34707	-1.1359	81.6831	105.39	
31	-1.30933	-1.11232	82.9203	106.847	
32	-1.23787	-1.0939	84.1169	108.201	
33	-1.20397	-1.07584	85.2744	109.496	
34	-0.867501	-1.05812	86.394	110.414	
35	-0.867501	-1.03643	87.4682	111.313	
36	-0.755023	-1.01943	88.5074	112.083	
37	-0.673345	-1.00271	89.5128	112.758	
38	-0.634878	-0.982202	90.4776	113.382	
39	-0.562119	-0.966088	91.4109	113.925	
40	-0.544727	-0.950222	92.3138	114.442	
41	-0.462035	-0.93459	93.1873	114.874	
42	-0.356675	-0.915365	94.0252	115.201	
43	-0.34249	-0.900227	94.8356	115.509	
44	-0.34249	-0.885291	95.6193	115.812	
45	-0.248461	-0.866894	96.3708	116.027	
46	-0.18633	-0.852385	97.0974	116.186	
47	0	-0.838054	97.7997	116.186	
48	0	-0.820379	98.4727	116.186	
49	0	-0.806422	99.123	116.186	

50	0	-0.792618	99.7513	116.186
51	0	-0.778966	100.358	116.186
52	0	-0.7621	100.939	116.186
53	0	-0.748762	101.5	116.186
54	0	-0.735557	102.041	116.186
55	0	-0.719228	102.558	116.186
56	0	-0.706302	103.057	116.186
57	0.0953102	-0.693493	103.538	116.12
58	0.182322	-0.680797	104.001	115.996
59	0.182322	-0.665079	104.443	115.875
60	0.336472	-0.652622	104.869	115.655
61	1.09861	-0.640266	105.279	114.952
62	2.30259	-0.624956	105.67	113.513
63	2.30259	-0.612813	106.045	112.102
64	2.30259	-0.60076	106.406	110.718
65	2.30259	-0.588793	106.753	109.363
66	2.30259	-0.573953	107.082	108.041
67	2.30259	-0.56217	107.398	106.747
68	2.30259	-0.550465	107.701	105.479
69	2.30259	-0.53594	107.989	104.245
70	2.30259	-0.524401	108.264	103.038
71	2.30259	-0.51293	108.527	101.857
72	2.30259	-0.498687	108.776	100.708
73	2.30259	-0.487364	109.013	99.5861
74	2.30259	-0.476105	109.24	98.4898
75	2.30259	-0.464904	109.456	97.4193
76	2.30259	-0.450985	109.659	96.3809
77	2.30259	-0.439913	109.853	95.368
78	2.30259	-0.428895	110.037	94.3804
79	2.30259	-0.415193	110.209	93.4244
80	2.30259	-0.40429	110.373	92.4935
81	2.30259	-0.393433	110.527	91.5876
82	2.30259	-0.382622	110.674	90.7065
83	2.30259	-0.369171	110.81	89.8565
84	2.30259	-0.358459	110.939	89.0311
85	2.30259	-0.347787	111.059	88.2303
86	2.30259	-0.334503	111.171	87.4601
87	2.30259	-0.323919	111.276	86.7142
88	2.30259	-0.31337	111.374	85.9927
89	2.30259	-0.302855	111.466	85.2953
90	2.30259	-0.28976	111.55	84.6281
91	2.30259	-0.279319	111.628	83.985
92	2.30259	-0.268908	111.7	83.3658
93	2.30259	-0.255936	111.766	82.7765
94	2.30259	-0.24559	111.826	82.211
95	2.30259	-0.235269	111.882	81.6692
96	2.30259	-0.222403	111.931	81.1571
97	2.30259	-0.212137	111.976	80.6687
98	2.30259	-0.201894	112.017	80.2038
99	2.30259	-0.191671	112.054	79.7625
100	2.30259	-0.17892	112.086	79.3505
101	2.30259	-0.168741	112.114	78.9619
102	2.30259	-0.158579	112.139	78.5968
103	2.30259	-0.1459	112.161	78.2609
104	2.30259	-0.135774	112.179	77.9482
105	2.30259	-0.125661	112.195	77.6589
106	2.30259	-0.115562	112.208	77.3928
107	2.30259	-0.102953	112.219	77.1557
108	2.30259	-0.0928787	112.227	76.9419
109	2.30259	-0.0828129	112.234	76.7512
110	2.30259	-0.0702426	112.239	76.5894
111	2.30259	-0.0601949	112.243	76.4508

112	2.30259	-0.0501541	112.245	76.3354
113	2.30259	-0.0401167	112.247	76.243
114	2.30259	-0.0275759	112.248	76.1795
115	2.30259	-0.0175476	112.248	76.1391
116	2.30259	-0.00751925	112.248	76.1218
117	2.30259	0.00751925	112.248	76.1391
118	2.30259	0.0175476	112.248	76.1795
119	2.30259	0.0275759	112.249	76.243
120	2.30259	0.0401167	112.251	76.3354
121	2.30259	0.0501541	112.253	76.4508
122	2.30259	0.0601949	112.257	76.5894
123	2.30259	0.0702426	112.262	76.7512
124	2.30259	0.0828129	112.269	76.9419
125	2.30259	0.0928787	112.277	77.1557
126	2.30259	0.102953	112.288	77.3928
127	2.30259	0.115562	112.301	77.6589
128	2.30259	0.125661	112.317	77.9482
129	2.30259	0.135774	112.335	78.2609
130	2.30259	0.1459	112.357	78.5968
131	2.30259	0.158579	112.382	78.9619
132	2.30259	0.168741	112.41	79.3505
133	2.30259	0.17892	112.442	79.7625
134	2.30259	0.191671	112.479	80.2038
135	2.30259	0.201894	112.52	80.6687
136	2.30259	0.212137	112.565	81.1571
137	2.30259	0.222403	112.614	81.6692
138	2.30259	0.235269	112.67	82.211
139	2.30259	0.24559	112.73	82.7765
140	2.30259	0.255936	112.796	83.3658
141	2.30259	0.268908	112.868	83.985
142	2.30259	0.279319	112.946	84.6281
143	2.30259	0.28976	113.03	85.2953
144	2.30259	0.302855	113.122	85.9927
145	2.30259	0.31337	113.22	86.7142
146	2.30259	0.323919	113.325	87.4601
147	2.30259	0.334503	113.437	88.2303
148	2.30259	0.347787	113.558	89.0311
149	2.30259	0.358459	113.686	89.8565
150	2.30259	0.369171	113.822	90.7065
151	2.30259	0.382622	113.969	91.5876
152	2.30259	0.393433	114.123	92.4935
153	2.30259	0.40429	114.287	93.4244
154	2.30259	0.415193	114.459	94.3804
155	2.30259	0.428895	114.643	95.368
156	2.30259	0.439913	114.837	96.3809
157	2.30259	0.450985	115.04	97.4193
158	2.30259	0.464904	115.256	98.4898
159	2.30259	0.476105	115.483	99.5861
160	2.30259	0.487364	115.721	100.708
161	2.30259	0.498687	115.969	101.857
162	2.30259	0.51293	116.232	103.038
163	2.30259	0.524401	116.507	104.245
164	2.30259	0.53594	116.795	105.479
165	2.30259	0.550465	117.098	106.747
166	2.30259	0.56217	117.414	108.041
167	2.30259	0.573953	117.743	109.363
168	2.30259	0.588793	118.09	110.718
169	2.30259	0.60076	118.451	112.102
170	2.30259	0.612813	118.826	113.513
171	2.30259	0.624956	119.217	114.952
172	2.30259	0.640266	119.627	116.426
173	2.30259	0.652622	120.053	117.929

174	2.30259	0.665079		120.495	119.46
175	2.30259	0.680797		120.958	121.028
176	2.30259	0.693493		121.439	122.625
177	2.30259	0.706302		121.938	124.251
178	2.30259	0.719228		122.455	125.907
179	2.30259	0.735557		122.997	127.601
180	2.30259	0.748762		123.557	129.325
181	2.30259	0.7621	124.138	131.08	
182	2.30259	0.778966		124.745	132.873
183	2.30259	0.792618		125.373	134.698
184	2.30259	0.806422		126.023	136.555
185	2.30259	0.820379		126.696	138.444
186	2.30259	0.838054		127.399	140.374
187	2.30259	0.852385		128.125	142.336
188	2.30259	0.866894		128.877	144.333
189	2.30259	0.885291		129.66	146.371
190	2.30259	0.900227		130.471	148.444
191	2.30259	0.915365		131.309	150.552
192	2.30259	0.93459	132.182	152.704	
193	2.30259	0.950222		133.085	154.892
194	2.30259	0.966088		134.018	157.116
195	2.30259	0.982202		134.983	159.378
196	2.30259	1.00271	135.989	161.686	
197	2.30259	1.01943	137.028	164.034	
198	2.30259	1.03643	138.102	166.42	
199	2.30259	1.05812	139.222	168.857	
200	2.30259	1.07584	140.379	171.334	
201	2.30259	1.0939	141.576	173.853	
202	2.30259	1.11232	142.813	176.414	
203	2.30259	1.1359	144.103	179.029	
204	2.30259	1.15522	145.438	181.689	
205	2.30259	1.17499	146.818	184.395	
206	2.30259	1.20036	148.259	187.159	
207	2.30259	1.22123	149.751	189.971	
208	2.30259	1.24264	151.295	192.832	
209	2.30259	1.26464	152.894	195.744	
210	2.30259	1.29303	154.566	198.721	
211	2.30259	1.31652	156.299	201.753	
212	2.30259	1.34075	158.097	204.84	
213	2.30259	1.3722	159.98	208	
214	2.30259	1.39838	161.935	211.219	
215	2.30259	1.42554	163.967	214.502	
216	2.30259	1.46106	166.102	217.866	
217	2.30259	1.49085	168.325	221.299	
218	2.30259	1.52203	170.641	224.804	
219	2.30259	1.55477	173.059	228.384	
220	2.30259	1.59819	175.613	232.064	
221	2.30259	1.63524	178.287	235.829	
222	2.30259	1.67466	181.091	239.685	
223	2.30259	1.72793	184.077	243.664	
224	2.30259	1.77438	187.226	247.749	
225	2.30259	1.82501	190.556	251.951	
226	2.30259	1.88079	194.094	256.282	
227	2.30259	1.95996	197.935	260.795	
228	2.30259	2.03352	202.07	265.477	
229	2.30259	2.12007	206.565	270.359	
230	2.30259	2.25713	211.66	275.556	
231	2.30259	2.40892	217.462	281.103	
232	2.3979	2.65209	224.496	287.462	

Data Set Standard Deviation = 1.61504

Numerator = 82634.7
Denominator = 135266
W Statistic = 0.610907 = 82634.7 / 135266

5% Critical value of 0.976 exceeds 0.610907
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.610907
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	200
	11/16/2009	-1.42712	201
	6/30/2010	-1.30933	206
	11/17/2010	-1.23787	207

Rank Sum = 2164
Rank Mean = 113.895

Background Rank Sum = 2164
Background Rank Mean = 113.895

Compliance Wells

Well ID	Date	Result	Rank
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	209
	11/16/2009	-0.867501	210
	6/30/2010	-0.562119	214
	11/17/2010	-0.634878	213

Rank Sum = 1296
Rank Mean = 144

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	202
	6/30/2010	-1.77196 J	195

	11/17/2010	-1.56065	199

Rank Sum = 956
Rank Mean = 136.571

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	222
	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	216
	11/17/2010	-1.66073 J	197

Rank Sum = 1895
Rank Mean = 111.471

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	190
	11/16/2009	-1.83258 J	191
	6/30/2010	-1.77196 J	196
	11/17/2010	-0.673345	212

Rank Sum = 2319
Rank Mean = 110.429

LMW-6	1/16/1998	ND<2.30259	90
	3/16/1999	ND<2.30259	90
	9/23/1999	2.3979 J	232
	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	229
	11/16/2009	0.182322	227
	6/30/2010	0.182322	228
	11/17/2010	0.0953102	226

Rank Sum = 2402
Rank Mean = 126.421

LMW-9D	11/18/2006	ND<2.30259	90
	6/2/2007	ND<2.30259	90
	11/15/2007	1.09861 J	230
	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
	11/17/2010	-2.52573 J	181

Rank Sum = 1041
Rank Mean = 115.667

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	184
	11/16/2009	-1.89712 J	188
	6/30/2010	-1.60944	198
	11/17/2010	-1.83258 J	192

Rank Sum = 1842
Rank Mean = 115.125

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	182
	6/30/2010	-2.40795 J	183
	11/17/2010	-2.65926 J	180

Rank Sum = 1085
Rank Mean = 120.556

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	211
	11/16/2009	-0.34249	218
	6/30/2010	-0.248461	220
	11/17/2010	-0.34249	219

Rank Sum = 2218
Rank Mean = 116.737

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	231
	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	189
	11/16/2009	-2.04022 J	185
	6/30/2010	-2.04022 J	186
	11/17/2010	-1.83258 J	193

Rank Sum = 2244
Rank Mean = 118.105

LMW-9S	11/18/2006	0 J	223
	6/2/2007	0 J	224
	11/15/2007	ND<2.30259	90
	5/20/2008	0 J	225
	11/20/2008	ND<2.30259	90
	6/11/2009	-2.04022 J	187
	6/30/2010	-1.83258 J	194
	11/17/2010	-1.34707	204

Rank Sum = 1437
Rank Mean = 179.625

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<0 J	90
	5/20/2008	ND<2.30259	90
	11/20/2008	ND<2.30259	90
	11/20/2008	ND<2.30259	90
	6/11/2009	-0.18633	221
	11/16/2009	-1.38629	203
	11/16/2009	-1.34707	205
	11/16/2009	-1.20397	208
	6/30/2010	-0.356675	217
	11/17/2010	-0.544727	215

Rank Sum = 1989
Rank Mean = 142.071

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-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-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 = 19.1802
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 35.4724

95% Confidence comparison value is 26.2962 at 16 degrees of freedom
19.1802 < 26.2962 indicating no significant group difference at 5% significance level
35.4724 > 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 113.895

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-3S	144	30.1053	63.1809
LMW-14R	136.571	22.6767	69.0344
LMW-7	111.471	-2.42415	52.1261
LMW-3	110.429	-3.46617	49.4366
LMW-6	126.421	12.5263	50.6574
LMW-9D	115.667	1.77193	63.1809
LMW-10	115.125	1.23026	52.9788
LMW-16	120.556	6.66082	63.1809
LMW-8	116.737	2.84211	50.6574
LMW-9	118.105	4.21053	50.6574
LMW-9S	179.625	65.7303	65.8059
LMW-15R	142.071	28.1767	54.9947
LMW-13	90	-23.8947	59.1551
LMW-12	90	-23.8947	59.1551
LMW-11	90	-23.8947	59.1551
MW-5	90	-23.8947	56.1994

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 113.895

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-3S	144	30.1053	74.6263
LMW-14R	136.571	22.6767	81.5402
LMW-7	111.471	-2.42415	61.5688
LMW-3	110.429	-3.46617	58.3922
LMW-6	126.421	12.5263	59.8342
LMW-9D	115.667	1.77193	74.6263
LMW-10	115.125	1.23026	62.5761
LMW-16	120.556	6.66082	74.6263
LMW-8	116.737	2.84211	59.8342
LMW-9	118.105	4.21053	59.8342
LMW-9S	179.625	65.7303	77.7268
LMW-15R	142.071	28.1767	64.9572
LMW-13	90	-23.8947	69.8712
LMW-12	90	-23.8947	69.8712
LMW-11	90	-23.8947	69.8712
MW-5	90	-23.8947	66.38

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Cobalt

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

Total Percent Non-Detects = 77.1552%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 19
Maximum Background Concentration = 2.30259
Confidence Level = 70.4%
False Positive Rate = 29.6%

Location	Date	Samples	Mean	Significant
LMW-3S	11/17/2010	1	-0.634878	FALSE
LMW-14R	11/17/2010	1	-1.56065	FALSE
LMW-7	11/17/2010	1	-1.66073	FALSE
LMW-3	11/17/2010	1	-0.673345	FALSE
LMW-6	11/17/2010	1	0.0953102	FALSE
LMW-9D	11/17/2010	1	-2.52573	FALSE
LMW-10	11/17/2010	1	-1.83258	FALSE
LMW-16	11/17/2010	1	-2.65926	FALSE
LMW-8	11/17/2010	1	-0.34249	FALSE
LMW-9	11/17/2010	1	-1.83258	FALSE
LMW-9S	11/17/2010	1	-1.34707	FALSE
LMW-15R	11/17/2010	1	-0.544727	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
MW-5	11/20/2008	1	2.30259	FALSE

Concentrations (ug/L)

Parameter: Copper

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 227
Total Non-Detect: 143
Percent Non-Detects: 62.9956%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original	
LMW-4	19	11 (57.8947%)	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	
			11/17/2010	0.87 J	0.87 J	

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original	
LMW-7	17	7 (41.1765%)	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	
			11/17/2010	3.8	3.8	
LMW-15R	13	4 (30.7692%)	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	ND<20	ND<20	
			11/20/2008	5 J	5 J	
			6/11/2009	3.7	3.7	
			11/16/2009	0.57 J	0.57 J	
			11/16/2009	0.92 J	0.92 J	
			11/16/2009	1.7	1.7	
			11/17/2010	2.3	2.3	
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	0.81 J	0.81 J	
			11/17/2010	0.96 J	0.96 J	
LMW-3S	8	3 (37.5%)	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	
			11/17/2010	1.7	1.7	
LMW-6	19	12 (63.1579%)	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	
			11/17/2010	2.2	2.2	
LMW-9D	9	2 (22.2222%)	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	
			11/17/2010	0.53 J	0.53 J	
LMW-9S	8	4 (50%)	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	
			11/17/2010	1.6	1.6	
LMW-10	16	12 (75%)	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	
			11/17/2010	0.39 J	0.39 J	
LMW-16	8	2 (25%)	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	
			11/17/2010	0.46 J	0.46 J	
LMW-3	20	15 (75%)	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	
			11/17/2010	1.6	1.6	
LMW-9	19	11 (57.8947%)	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	
			11/17/2010	1.7	1.7	
LMW-8	19	12 (63.1579%)	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	
			11/17/2010	0.75 J	0.75 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-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	
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	

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 = 227

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.105	-2.65209	7.03356	-0.278469
2	0.36	-2.40892	12.8365	-1.14568
3	0.39	-2.22621	17.7925	-2.0139
4	0.46	-2.12007	22.2872	-2.98913
5	0.51	-2.03352	26.4224	-4.02623
6	0.53	-1.94314	30.1981	-5.05609
7	0.57	-1.88079	33.7355	-6.12814
8	0.59	-1.81191	37.0185	-7.19717
9	0.59	-1.76241	40.1246	-8.23699
10	0.65	-1.71688	43.0723	-9.35297
11	0.69	-1.66456	45.8431	-10.5015
12	0.7	-1.62576	48.4862	-11.6395
13	0.74	-1.58047	50.9841	-12.8091
14	0.75	-1.54643	53.3755	-13.9689
15	0.75	-1.5141	55.668	-15.1045
16	0.75	-1.47579	57.846	-16.2113
17	0.78	-1.44663	59.9387	-17.3397
18	0.81	-1.41865	61.9513	-18.4888
19	0.82	-1.38517	63.87	-19.6247
20	0.83	-1.35946	65.7182	-20.753
21	0.87	-1.32854	67.4832	-21.9088
22	0.88	-1.30469	69.1854	-23.057
23	0.9	-1.28155	70.8278	-24.2104
24	0.92	-1.25357	72.3992	-25.3636
25	0.96	-1.23187	73.9167	-26.5462
26	1.1	-1.20553	75.37	-27.8723
27	1.2	-1.18504	76.7743	-29.2944
28	1.3	-1.16505	78.1316	-30.8089
29	1.3	-1.14069	79.4328	-32.2918
30	1.4	-1.12168	80.691	-33.8622
31	1.6	-1.10306	81.9077	-35.6271
32	1.6	-1.08032	83.0748	-37.3556
33	1.7	-1.06252	84.2037	-39.1619
34	1.7	-1.04073	85.2869	-40.9311
35	1.7	-1.02365	86.3347	-42.6713
36	1.7	-1.00687	87.3485	-44.383
37	1.7	-0.986272	88.3212	-46.0597
38	1.9	-0.970094	89.2623	-47.9028
39	2	-0.950222	90.1652	-49.8033
40	2	-0.93459	91.0387	-51.6725
41	2	-0.919183	91.8836	-53.5108
42	2	-0.900227	92.694	-55.3113
43	2.2	-0.885291	93.4778	-57.2589
44	2.3	-0.87055	94.2356	-59.2612
45	2.4	-0.852385	94.9622	-61.3069
46	3	-0.838054	95.6645	-63.8211
47	3	-0.820379	96.3375	-66.2822
48	3	-0.806422	96.9878	-68.7015
49	3.7	-0.792618	97.6161	-71.6342

50	3.8	-0.775574	98.2176	-74.5813
51	4	-0.7621	98.7984	-77.6297
52	4	-0.745449	99.3541	-80.6115
53	5	-0.732275	99.8903	-84.2729
54	5	-0.719228	100.408	-87.8691
55	5	-0.703089	100.902	-91.3845
56	5	-0.690309	101.378	-94.836
57	5	-0.67449	101.833	-98.2085
58	5	-0.661955	102.272	-101.518
59	5	-0.649522	102.693	-104.766
60	5	-0.634124	103.096	-107.937
61	5	-0.621911	103.482	-111.046
62	5	-0.609791	103.854	-114.095
63	6	-0.594766	104.208	-117.664
64	6	-0.582841	104.548	-121.161
65	6	-0.568052	104.87	-124.569
66	6	-0.556308	105.18	-127.907
67	6	-0.544642	105.476	-131.175
68	7	-0.530162	105.758	-134.886
69	7	-0.518658	106.027	-138.516
70	7	-0.504372	106.281	-142.047
71	7	-0.493018	106.524	-145.498
72	7	-0.481728	106.756	-148.87
73	8	-0.467699	106.975	-152.612
74	8	-0.456542	107.183	-156.264
75	8	-0.445443	107.382	-159.828
76	9	-0.431644	107.568	-163.712
77	9	-0.420664	107.745	-167.498
78	9	-0.40701	107.911	-171.162
79	10	-0.396142	108.067	-175.123
80	10	-0.385321	108.216	-178.976
81	10	-0.371856	108.354	-182.695
82	10	-0.361133	108.485	-186.306
83	10	-0.347787	108.606	-189.784
84	10	-0.337155	108.719	-193.156
85	10	-0.326561	108.826	-196.421
86	10	-0.31337	108.924	-199.555
87	10	-0.302855	109.016	-202.583
88	10	-0.292375	109.101	-205.507
89	10	-0.279319	109.179	-208.3
90	10	-0.268908	109.252	-210.989
91	10	-0.255936	109.317	-213.549
92	10	-0.24559	109.377	-216.005
93	10	-0.235269	109.433	-218.357
94	10	-0.222403	109.482	-220.581
95	10	-0.212137	109.527	-222.703
96	10	-0.199336	109.567	-224.696
97	10	-0.189118	109.603	-226.587
98	10	-0.17892	109.635	-228.376
99	10	-0.166199	109.662	-230.038
100	10	-0.156042	109.687	-231.599
101	10	-0.1459	109.708	-233.058
102	10	-0.133244	109.726	-234.39
103	10	-0.123135	109.741	-235.622
104	10	-0.110516	109.753	-236.727
105	10	-0.100433	109.763	-237.731
106	10	-0.0903606	109.771	-238.635
107	10	-0.0777834	109.778	-239.413
108	10	-0.0677301	109.782	-240.09
109	10	-0.0551734	109.785	-240.642
110	10	-0.0451348	109.787	-241.093
111	10	-0.0350997	109.788	-241.444

112	10	-0.0225612	109.789	-241.67
113	10	-0.0125328	109.789	-241.795
114	10	0	109.789	-241.795
115	10	0.0125328	109.789	-241.67
116	10	0.0225612	109.79	-241.444
117	10	0.0350997	109.791	-241.093
118	10	0.0451348	109.793	-240.642
119	10	0.0551734	109.796	-240.09
120	10	0.0677301	109.801	-239.413
121	10	0.0777834	109.807	-238.635
122	10	0.0903606	109.815	-237.731
123	10	0.100433	109.825	-236.727
124	10	0.110516	109.837	-235.622
125	10	0.123135	109.852	-234.39
126	10	0.133244	109.87	-233.058
127	10	0.1459	109.891	-231.599
128	10	0.156042	109.916	-230.038
129	10	0.166199	109.943	-228.376
130	10	0.17892	109.975	-226.587
131	10	0.189118	110.011	-224.696
132	10	0.199336	110.051	-222.703
133	10	0.212137	110.096	-220.581
134	10	0.222403	110.145	-218.357
135	10	0.235269	110.201	-216.005
136	10	0.24559	110.261	-213.549
137	10	0.255936	110.326	-210.989
138	10	0.268908	110.399	-208.3
139	10	0.279319	110.477	-205.507
140	10	0.292375	110.562	-202.583
141	10	0.302855	110.654	-199.555
142	10	0.31337	110.752	-196.421
143	10	0.326561	110.859	-193.156
144	10	0.337155	110.973	-189.784
145	10	0.347787	111.093	-186.306
146	10	0.361133	111.224	-182.695
147	10	0.371856	111.362	-178.976
148	10	0.385321	111.511	-175.123
149	10	0.396142	111.668	-171.162
150	10	0.40701	111.833	-167.091
151	10	0.420664	112.01	-162.885
152	10	0.431644	112.197	-158.568
153	10	0.445443	112.395	-154.114
154	10	0.456542	112.603	-149.549
155	10	0.467699	112.822	-144.872
156	10	0.481728	113.054	-140.054
157	10	0.493018	113.297	-135.124
158	10	0.504372	113.552	-130.08
159	10	0.518658	113.821	-124.894
160	10	0.530162	114.102	-119.592
161	10	0.544642	114.398	-114.146
162	10	0.556308	114.708	-108.583
163	10	0.568052	115.031	-102.902
164	10	0.582841	115.37	-97.0737
165	10	0.594766	115.724	-91.1261
166	10	0.609791	116.096	-85.0282
167	10	0.621911	116.483	-78.8091
168	10	0.634124	116.885	-72.4678
169	10	0.649522	117.307	-65.9726
170	10	0.661955	117.745	-59.353
171	10	0.67449	118.2	-52.6081
172	10	0.690309	118.676	-45.7051
173	10	0.703089	119.171	-38.6742

174	10	0.719228		119.688	-31.4819
175	10	0.732275		120.224	-24.1591
176	10	0.745449		120.78	-16.7046
177	10	0.7621	121.361	-9.08363	
178	10	0.775574		121.962	-1.3279
179	10	0.792618		122.59	6.59828
180	10	0.806422		123.241	14.6625
181	10	0.820379		123.914	22.8663
182	10	0.838054		124.616	31.2468
183	10	0.852385		125.343	39.7707
184	10	0.87055	126.1	48.4762	
185	10	0.885291		126.884	57.3291
186	10	0.900227		127.695	66.3314
187	10	0.919183		128.539	75.5232
188	10	0.93459	129.413	84.8691	
189	10	0.950222		130.316	94.3713
190	10	0.970094		131.257	104.072
191	10	0.986272		132.23	113.935
192	10	1.00687	133.243	124.004	
193	10	1.02365	134.291	134.24	
194	10	1.04073	135.374	144.647	
195	10	1.06252	136.503	155.273	
196	10	1.08032	137.67	166.076	
197	10	1.10306	138.887	177.106	
198	10	1.12168	140.145	188.323	
199	10	1.14069	141.447	199.73	
200	10	1.16505	142.804	211.381	
201	10	1.18504	144.208	223.231	
202	10	1.20553	145.661	235.286	
203	10	1.23187	147.179	247.605	
204	10	1.25357	148.75	260.141	
205	10	1.28155	150.393	272.956	
206	10	1.30469	152.095	286.003	
207	10	1.32854	153.86	299.288	
208	10	1.35946	155.708	312.883	
209	10	1.38517	157.627	326.735	
210	10	1.41865	159.639	340.921	
211	10	1.44663	161.732	355.388	
212	10	1.47579	163.91	370.146	
213	10	1.5141	166.203	385.287	
214	10	1.54643	168.594	400.751	
215	10	1.58047	171.092	416.556	
216	10	1.62576	173.735	432.813	
217	10	1.66456	176.506	449.459	
218	10	1.71688	179.454	466.628	
219	10	1.76241	182.56	484.252	
220	10	1.81191	185.843	502.371	
221	10	1.88079	189.38	521.179	
222	10	1.94314	193.156	540.61	
223	11	2.03352	197.291	562.979	
224	12	2.12007	201.786	588.42	
225	18	2.22621	206.742	628.491	
226	20	2.40892	212.545	676.67	
227	73	2.65209	219.578	870.272	

Data Set Standard Deviation = 5.74508
Numerator = 757374
Denominator = 1.63791e+006
W Statistic = 0.462403 = 757374 / 1.63791e+006

5% Critical value of 0.976 exceeds 0.462403

Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.462403
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 = 227

i	x(i)	m(i)	sum(m^2)	sum(mx)	
1	-2.25379	-2.65209	7.03356	5.97726	
2	-1.02165	-2.40892	12.8365	8.43834	
3	-0.941609	-2.22621	17.7925	10.5346	
4	-0.776529	-2.12007	22.2872	12.1808	
5	-0.673345	-2.03352	26.4224	13.5501	
6	-0.634878	-1.94314	30.1981	14.7838	
7	-0.562119	-1.88079	33.7355	15.841	
8	-0.527633	-1.81191	37.0185	16.797	
9	-0.527633	-1.76241	40.1246	17.7269	
10	-0.430783	-1.71688	43.0723	18.4665	
11	-0.371064	-1.66456	45.8431	19.0842	
12	-0.356675	-1.62576	48.4862	19.6641	
13	-0.301105	-1.58047	50.9841	20.1399	
14	-0.287682	-1.54643	53.3755	20.5848	
15	-0.287682	-1.5141	55.668	21.0204	
16	-0.287682	-1.47579	57.846	21.445	
17	-0.248461	-1.44663	59.9387	21.8044	
18	-0.210721	-1.41865	61.9513	22.1033	
19	-0.198451	-1.38517	63.87	22.3782	
20	-0.18633	-1.35946	65.7182	22.6315	
21	-0.139262	-1.32854	67.4832	22.8165	
22	-0.127833	-1.30469	69.1854	22.9833	
23	-0.105361	-1.28155	70.8278	23.1184	
24	-0.0833816	-1.25357	72.3992	23.2229	
25	-0.040822	-1.23187	73.9167	23.2732	
26	0.0953102	-1.20553	75.37	23.1583	
27	0.182322	-1.18504	76.7743	22.9422	
28	0.262364	-1.16505	78.1316	22.6365	
29	0.262364	-1.14069	79.4328	22.3373	
30	0.336472	-1.12168	80.691	21.9598	
31	0.470004	-1.10306	81.9077	21.4414	
32	0.470004	-1.08032	83.0748	20.9337	
33	0.530628	-1.06252	84.2037	20.3698	
34	0.530628	-1.04073	85.2869	19.8176	
35	0.530628	-1.02365	86.3347	19.2744	
36	0.530628	-1.00687	87.3485	18.7402	
37	0.530628	-0.986272	88.3212	18.2168	
38	0.641854	-0.970094	89.2623	17.5942	
39	0.693147	-0.950222	90.1652	16.9355	
40	0.693147	-0.93459	91.0387	16.2877	
41	0.693147	-0.919183	91.8836	15.6506	
42	0.693147	-0.900227	92.694	15.0266	
43	0.788457	-0.885291	93.4778	14.3286	
44	0.832909	-0.87055	94.2356	13.6035	
45	0.875469	-0.852385	94.9622	12.8572	
46	1.09861	-0.838054	95.6645	11.9365	
47	1.09861	-0.820379	96.3375	11.0353	
48	1.09861	-0.806422	96.9878	10.1493	
49	1.30833	-0.792618	97.6161	9.11231	

50	1.335	-0.775574	98.2176	8.07692
51	1.38629	-0.7621	98.7984	7.02043
52	1.38629	-0.745449	99.3541	5.98702
53	1.60944	-0.732275	99.8903	4.80847
54	1.60944	-0.719228	100.408	3.65091
55	1.60944	-0.703089	100.902	2.51933
56	1.60944	-0.690309	101.378	1.40832
57	1.60944	-0.67449	101.833	0.322774
58	1.60944	-0.661955	102.272	-0.742602
59	1.60944	-0.649522	102.693	-1.78797
60	1.60944	-0.634124	103.096	-2.80855
61	1.60944	-0.621911	103.482	-3.80948
62	1.60944	-0.609791	103.854	-4.7909
63	1.79176	-0.594766	104.208	-5.85658
64	1.79176	-0.582841	104.548	-6.90089
65	1.79176	-0.568052	104.87	-7.9187
66	1.79176	-0.556308	105.18	-8.91547
67	1.79176	-0.544642	105.476	-9.89134
68	1.94591	-0.530162	105.758	-10.923
69	1.94591	-0.518658	106.027	-11.9322
70	1.94591	-0.504372	106.281	-12.9137
71	1.94591	-0.493018	106.524	-13.8731
72	1.94591	-0.481728	106.756	-14.8105
73	2.07944	-0.467699	106.975	-15.783
74	2.07944	-0.456542	107.183	-16.7324
75	2.07944	-0.445443	107.382	-17.6587
76	2.19722	-0.431644	107.568	-18.6071
77	2.19722	-0.420664	107.745	-19.5314
78	2.19722	-0.40701	107.911	-20.4257
79	2.30259	-0.396142	108.067	-21.3378
80	2.30259	-0.385321	108.216	-22.225
81	2.30259	-0.371856	108.354	-23.0813
82	2.30259	-0.361133	108.485	-23.9128
83	2.30259	-0.347787	108.606	-24.7136
84	2.30259	-0.337155	108.719	-25.49
85	2.30259	-0.326561	108.826	-26.2419
86	2.30259	-0.31337	108.924	-26.9634
87	2.30259	-0.302855	109.016	-27.6608
88	2.30259	-0.292375	109.101	-28.334
89	2.30259	-0.279319	109.179	-28.9772
90	2.30259	-0.268908	109.252	-29.5964
91	2.30259	-0.255936	109.317	-30.1857
92	2.30259	-0.24559	109.377	-30.7512
93	2.30259	-0.235269	109.433	-31.2929
94	2.30259	-0.222403	109.482	-31.805
95	2.30259	-0.212137	109.527	-32.2935
96	2.30259	-0.199336	109.567	-32.7524
97	2.30259	-0.189118	109.603	-33.1879
98	2.30259	-0.17892	109.635	-33.5999
99	2.30259	-0.166199	109.662	-33.9826
100	2.30259	-0.156042	109.687	-34.3419
101	2.30259	-0.1459	109.708	-34.6778
102	2.30259	-0.133244	109.726	-34.9846
103	2.30259	-0.123135	109.741	-35.2682
104	2.30259	-0.110516	109.753	-35.5226
105	2.30259	-0.100433	109.763	-35.7539
106	2.30259	-0.0903606	109.771	-35.9619
107	2.30259	-0.0777834	109.778	-36.141
108	2.30259	-0.0677301	109.782	-36.297
109	2.30259	-0.0551734	109.785	-36.424
110	2.30259	-0.0451348	109.787	-36.528
111	2.30259	-0.0350997	109.788	-36.6088

112	2.30259	-0.0225612	109.789	-36.6607
113	2.30259	-0.0125328	109.789	-36.6896
114	2.30259	0	109.789	-36.6896
115	2.30259	0.0125328	109.789	-36.6607
116	2.30259	0.0225612	109.79	-36.6088
117	2.30259	0.0350997	109.791	-36.528
118	2.30259	0.0451348	109.793	-36.424
119	2.30259	0.0551734	109.796	-36.297
120	2.30259	0.0677301	109.801	-36.141
121	2.30259	0.0777834	109.807	-35.9619
122	2.30259	0.0903606	109.815	-35.7539
123	2.30259	0.100433	109.825	-35.5226
124	2.30259	0.110516	109.837	-35.2682
125	2.30259	0.123135	109.852	-34.9846
126	2.30259	0.133244	109.87	-34.6778
127	2.30259	0.1459	109.891	-34.3419
128	2.30259	0.156042	109.916	-33.9826
129	2.30259	0.166199	109.943	-33.5999
130	2.30259	0.17892	109.975	-33.1879
131	2.30259	0.189118	110.011	-32.7524
132	2.30259	0.199336	110.051	-32.2935
133	2.30259	0.212137	110.096	-31.805
134	2.30259	0.222403	110.145	-31.2929
135	2.30259	0.235269	110.201	-30.7512
136	2.30259	0.24559	110.261	-30.1857
137	2.30259	0.255936	110.326	-29.5964
138	2.30259	0.268908	110.399	-28.9772
139	2.30259	0.279319	110.477	-28.334
140	2.30259	0.292375	110.562	-27.6608
141	2.30259	0.302855	110.654	-26.9634
142	2.30259	0.31337	110.752	-26.2419
143	2.30259	0.326561	110.859	-25.49
144	2.30259	0.337155	110.973	-24.7136
145	2.30259	0.347787	111.093	-23.9128
146	2.30259	0.361133	111.224	-23.0813
147	2.30259	0.371856	111.362	-22.225
148	2.30259	0.385321	111.511	-21.3378
149	2.30259	0.396142	111.668	-20.4257
150	2.30259	0.40701	111.833	-19.4885
151	2.30259	0.420664	112.01	-18.5199
152	2.30259	0.431644	112.197	-17.526
153	2.30259	0.445443	112.395	-16.5003
154	2.30259	0.456542	112.603	-15.4491
155	2.30259	0.467699	112.822	-14.3722
156	2.30259	0.481728	113.054	-13.2629
157	2.30259	0.493018	113.297	-12.1277
158	2.30259	0.504372	113.552	-10.9664
159	2.30259	0.518658	113.821	-9.77211
160	2.30259	0.530162	114.102	-8.55137
161	2.30259	0.544642	114.398	-7.29728
162	2.30259	0.556308	114.708	-6.01634
163	2.30259	0.568052	115.031	-4.70835
164	2.30259	0.582841	115.37	-3.36631
165	2.30259	0.594766	115.724	-1.99681
166	2.30259	0.609791	116.096	-0.592713
167	2.30259	0.621911	116.483	0.839291
168	2.30259	0.634124	116.885	2.29941
169	2.30259	0.649522	117.307	3.795
170	2.30259	0.661955	117.745	5.3192
171	2.30259	0.67449	118.2	6.87228
172	2.30259	0.690309	118.676	8.46177
173	2.30259	0.703089	119.171	10.0807

174	2.30259	0.719228		119.688	11.7368
175	2.30259	0.732275		120.224	13.4229
176	2.30259	0.745449		120.78	15.1394
177	2.30259	0.7621	121.361	16.8942	
178	2.30259	0.775574		121.962	18.68
179	2.30259	0.792618		122.59	20.5051
180	2.30259	0.806422		123.241	22.3619
181	2.30259	0.820379		123.914	24.2509
182	2.30259	0.838054		124.616	26.1806
183	2.30259	0.852385		125.343	28.1433
184	2.30259	0.87055	126.1	30.1478	
185	2.30259	0.885291		126.884	32.1863
186	2.30259	0.900227		127.695	34.2591
187	2.30259	0.919183		128.539	36.3756
188	2.30259	0.93459	129.413	38.5276	
189	2.30259	0.950222		130.316	40.7155
190	2.30259	0.970094		131.257	42.9493
191	2.30259	0.986272		132.23	45.2202
192	2.30259	1.00687	133.243	47.5386	
193	2.30259	1.02365	134.291	49.8957	
194	2.30259	1.04073	135.374	52.2921	
195	2.30259	1.06252	136.503	54.7386	
196	2.30259	1.08032	137.67	57.2261	
197	2.30259	1.10306	138.887	59.766	
198	2.30259	1.12168	140.145	62.3488	
199	2.30259	1.14069	141.447	64.9753	
200	2.30259	1.16505	142.804	67.6579	
201	2.30259	1.18504	144.208	70.3866	
202	2.30259	1.20553	145.661	73.1624	
203	2.30259	1.23187	147.179	75.9989	
204	2.30259	1.25357	148.75	78.8853	
205	2.30259	1.28155	150.393	81.8362	
206	2.30259	1.30469	152.095	84.8404	
207	2.30259	1.32854	153.86	87.8994	
208	2.30259	1.35946	155.708	91.0297	
209	2.30259	1.38517	157.627	94.2192	
210	2.30259	1.41865	159.639	97.4858	
211	2.30259	1.44663	161.732	100.817	
212	2.30259	1.47579	163.91	104.215	
213	2.30259	1.5141	166.203	107.701	
214	2.30259	1.54643	168.594	111.262	
215	2.30259	1.58047	171.092	114.901	
216	2.30259	1.62576	173.735	118.645	
217	2.30259	1.66456	176.506	122.477	
218	2.30259	1.71688	179.454	126.431	
219	2.30259	1.76241	182.56	130.489	
220	2.30259	1.81191	185.843	134.661	
221	2.30259	1.88079	189.38	138.992	
222	2.30259	1.94314	193.156	143.466	
223	2.3979	2.03352	197.291	148.342	
224	2.48491	2.12007	201.786	153.61	
225	2.89037	2.22621	206.742	160.045	
226	2.99573	2.40892	212.545	167.261	
227	4.29046	2.65209	219.578	178.64	

Data Set Standard Deviation = 0.976246
Numerator = 31912.2
Denominator = 47295.1
W Statistic = 0.674747 = 31912.2 / 47295.1

5% Critical value of 0.976 exceeds 0.674747

Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.674747
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	227
	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	215
	11/15/2007	1.60944 J	195
	5/20/2008	2.07944 J	216
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.301105 J	155
	11/16/2009	-0.248461 J	159
	6/30/2010	0.262364	170
	11/17/2010	-0.139262 J	163

Rank Sum = 2292
Rank Mean = 120.632

Background Rank Sum = 2292
Background Rank Mean = 120.632

Compliance Wells

Well ID	Date	Result	Rank
LMW-7	1/16/1998	2.99573	226
	3/16/1999	1.60944 J	196
	9/23/1999	1.60944 J	197
	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	221
	10/26/2005	2.3979 J	223
	6/19/2006	2.30259 J	222
	11/18/2006	ND<2.30259	72
	6/2/2007	1.79176 J	205
	11/15/2007	2.07944 J	217
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	1.38629	193
	11/17/2010	1.335	192

Rank Sum = 2596
Rank Mean = 152.706

LMW-15R	11/18/2006	1.09861 J	188	
	6/2/2007	1.60944 J	198	
	11/15/2007	1.60944 J	199	
	11/15/2007	ND<2.30259	72	
	5/20/2008	ND<2.30259	72	
	5/20/2008	ND<2.30259	72	
	11/20/2008	ND<2.30259	72	
	11/20/2008	1.60944 J	200	
	6/11/2009	1.30833	191	
	11/16/2009	-0.562119 J	149	
	11/16/2009	-0.0833816 J	166	
	11/16/2009	0.530628	175	
	11/17/2010	0.832909	186	

Rank Sum = 1940
Rank Mean = 149.231

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	160
	11/17/2010	-0.040822 J	167

Rank Sum = 615
Rank Mean = 102.5

LMW-3S	11/18/2006	0.693147 J	181
	6/2/2007	ND<2.30259	72
	11/15/2007	1.79176 J	206
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	0.336472	172
	11/16/2009	-0.198451 J	161
	11/17/2010	0.530628	176

Rank Sum = 1112
Rank Mean = 139

LMW-6	1/16/1998	2.89037 J	225
	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	210
	11/15/2007	1.94591 J	211
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	0.530628	177
	11/16/2009	0.182322	169
	6/30/2010	1.09861	189
	11/17/2010	0.788457	185

Rank Sum = 2230
Rank Mean = 117.368

LMW-9D	11/18/2006	1.79176 J	207
	6/2/2007	ND<2.30259	72
	11/15/2007	2.19722 J	218

	5/20/2008	0.693147 J	182
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.371064 J	153
	11/16/2009	-0.287682 J	156
	6/30/2010	-0.105361 J	165
	11/17/2010	-0.634878 J	148

Rank Sum = 1373
Rank Mean = 152.556

LMW-9S	11/18/2006	ND<2.30259	72
	6/2/2007	ND<2.30259	72
	11/15/2007	1.94591 J	212
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.18633 J	162
	6/30/2010	0.530628	178
	11/17/2010	0.470004	173

Rank Sum = 1013
Rank Mean = 126.625

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	183
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.673345 J	147
	11/16/2009	ND<-2.25379 U	72
	6/30/2010	0.641854	180
	11/17/2010	-0.941609 J	145

Rank Sum = 1519
Rank Mean = 94.9375

LMW-16	11/18/2006	ND<2.30259	72
	6/2/2007	1.94591 J	213
	11/15/2007	1.79176 J	208
	5/20/2008	ND<2.30259	72
	11/20/2008	1.60944 J	201
	6/11/2009	-1.02165 J	144
	11/16/2009	-0.527633 J	150
	11/17/2010	-0.776529 J	146

Rank Sum = 1206
Rank Mean = 150.75

LMW-3	11/19/1996	ND<2.30259	72
	3/24/1997	ND<2.30259	72
	1/16/1998	1.38629 J	194
	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	219
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.356675 J	154
	11/16/2009	0.0953102	168
	11/17/2010	0.470004	174

Rank Sum = 1989
Rank Mean = 99.45

LMW-9	1/16/1998	2.19722 J	220
	3/16/1999	ND<2.30259	72
	9/23/1999	2.48491 J	224
	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	202
	11/15/2007	1.94591 J	214
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.127833 J	164
	11/16/2009	-0.527633 J	151
	6/30/2010	0.875469	187
	11/17/2010	0.530628	179

Rank Sum = 2333
Rank Mean = 122.789

LMW-8	1/16/1998	0.693147 J	184
	3/16/1999	1.60944 J	203
	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	209
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.287682 J	157
	11/16/2009	-0.430783 J	152
	6/30/2010	0.262364	171
	11/17/2010	-0.287682 J	158

Rank Sum = 2098
Rank Mean = 110.421

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

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-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

MW-5	1/16/1998	1.09861 J	190
	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	204
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72

Rank Sum = 1186
Rank Mean = 91.2308

Calculation Results:

Kruskal-Wallis H Statistic = 34.9219
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 46.5618
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
34.9219 > 26.2962 indicating a significant group difference at 5% significance level
46.5618 > 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 120.632

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-7	152.706	32.0743	51.0051
LMW-15R	149.231	28.5992	54.9908
LMW-14R	102.5	-18.1316	71.5453
LMW-3S	139	18.3684	64.3907
LMW-6	117.368	-3.26316	49.568
LMW-9D	152.556	31.924	61.8222
LMW-9S	126.625	5.99342	64.3907
LMW-10	94.9375	-25.6941	51.8395
LMW-16	150.75	30.1184	64.3907
LMW-3	99.45	-21.1816	48.9445
LMW-9	122.789	2.15789	49.568
LMW-8	110.421	-10.2105	49.568
LMW-11	72	-48.6316	57.883
LMW-12	72	-48.6316	57.883
LMW-13	72	-48.6316	57.883
MW-5	91.2308	-29.4008	54.9908

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 120.632

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-7	152.706	32.0743	60.2448
LMW-15R	149.231	28.5992	64.9525
LMW-14R	102.5	-18.1316	84.5059
LMW-3S	139	18.3684	76.0553
LMW-6	117.368	-3.26316	58.5474
LMW-9D	152.556	31.924	73.0214
LMW-9S	126.625	5.99342	76.0553
LMW-10	94.9375	-25.6941	61.2303
LMW-16	150.75	30.1184	76.0553
LMW-3	99.45	-21.1816	57.8109
LMW-9	122.789	2.15789	58.5474
LMW-8	110.421	-10.2105	58.5474
LMW-11	72	-48.6316	68.3686
LMW-12	72	-48.6316	68.3686
LMW-13	72	-48.6316	68.3686
MW-5	91.2308	-29.4008	64.9525

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Copper

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

Total Percent Non-Detects = 62.9956%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 19
Maximum Background Concentration = 4.29046
Confidence Level = 70.4%
False Positive Rate = 29.6%

Location	Date	Samples	Mean	Significant
LMW-7	11/17/2010	1	1.335	FALSE
LMW-15R	11/17/2010	1	0.832909	FALSE
LMW-14R	11/17/2010	1	-0.040822	FALSE
LMW-3S	11/17/2010	1	0.530628	FALSE
LMW-6	11/17/2010	1	0.788457	FALSE
LMW-9D	11/17/2010	1	-0.634878	FALSE
LMW-9S	11/17/2010	1	0.470004	FALSE
LMW-10	11/17/2010	1	-0.941609	FALSE
LMW-16	11/17/2010	1	-0.776529	FALSE
LMW-3	11/17/2010	1	0.470004	FALSE
LMW-9	11/17/2010	1	0.530628	FALSE
LMW-8	11/17/2010	1	-0.287682	FALSE
LMW-11	11/20/2008	1	2.30259	FALSE
LMW-12	11/20/2008	1	2.30259	FALSE
LMW-13	11/20/2008	1	2.30259	FALSE
MW-5	11/20/2008	1	2.30259	FALSE

Concentrations (ug/L)

Parameter: Dichlorodifluoromethane

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 219
Total Non-Detect: 201
Percent Non-Detects: 91.7808%
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<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
			11/17/2010	0.81 J	0.81 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-3S	8	2 (25%)	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
			11/17/2010	2.3	2.3
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
			11/16/2009	ND<0.25 U	ND<0.25 U
			6/30/2010	ND<0.25 U	ND<0.25 U
			11/17/2010	ND<0.25 U	ND<0.25 U
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	
			11/16/2009	ND<0.25 U		ND<0.25 U
			6/30/2010	ND<0.25 U		ND<0.25 U
			11/17/2010	ND<0.25 U		ND<0.25 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	
			11/16/2009	ND<0.25 U		ND<0.25 U
			6/30/2010	ND<0.25 U		ND<0.25 U
			11/17/2010	ND<0.25 U		ND<0.25 U
LMW-10	15	9 (60%)	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
			11/17/2010	ND<0.25 U		ND<0.25 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	
			6/30/2010	ND<0.25 U		ND<0.25 U
			11/17/2010	ND<0.25 U		ND<0.25 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	

			11/16/2009	ND<0.25 U	ND<0.25 U	
			6/30/2010	ND<0.25 U	ND<0.25 U	
			11/17/2010	ND<0.25 U	ND<0.25 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	
			11/17/2010	ND<0.25 U	ND<0.25 U	
LMW-3	20	19 (95%)	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	
			11/17/2010	ND<0.25 U	ND<0.25 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	
			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	
			11/17/2010	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	
			6/30/2010	ND<0.25 U	ND<0.25 U	
			11/17/2010	ND<0.25 U	ND<0.25 U	

LMW-6	18	17 (94.4444%)	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
			11/17/2010	ND<0.25 U		ND<0.25 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	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-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: Dichlorodifluoromethane

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	0.125	-1.6954	42.4112	-0.211925
11	0.125	-1.64485	45.1168	-0.417531
12	0.125	-1.60725	47.7	-0.618438
13	0.125	-1.56322	50.1437	-0.81384
14	0.125	-1.53007	52.4848	-1.0051
15	0.125	-1.49085	54.7074	-1.19146
16	0.125	-1.46106	56.8421	-1.37409
17	0.125	-1.42554	58.8743	-1.55228
18	0.125	-1.39838	60.8297	-1.72708
19	0.125	-1.36581	62.6952	-1.8978
20	0.125	-1.34075	64.4928	-2.0654
21	0.125	-1.31058	66.2104	-2.22922
22	0.125	-1.28155	67.8528	-2.38941
23	0.125	-1.25908	69.4381	-2.5468
24	0.125	-1.23187	70.9556	-2.70078
25	0.125	-1.21073	72.4214	-2.85212
26	0.125	-1.18504	73.8258	-3.00025
27	0.125	-1.16505	75.1831	-3.14588
28	0.125	-1.14069	76.4843	-3.28847
29	0.125	-1.12168	77.7424	-3.42868
30	0.125	-1.09847	78.9491	-3.56599
31	0.125	-1.08032	80.1162	-3.70103
32	0.125	-1.05812	81.2358	-3.83329
33	0.125	-1.03643	82.31	-3.96285
34	0.125	-1.01943	83.3492	-4.09028
35	0.125	-0.998575	84.3464	-4.2151
36	0.125	-0.982202	85.3111	-4.33787
37	0.125	-0.9621	86.2367	-4.45814
38	0.125	-0.946291	87.1322	-4.57642
39	0.125	-0.926859	87.9912	-4.69228
40	0.41	-0.911562	88.8222	-5.06602
41	0.5	-0.892733	89.6192	-5.51239
42	0.5	-0.877897	90.3899	-5.95134
43	0.5	-0.859618	91.1288	-6.38114
44	0.5	-0.841621	91.8371	-6.80195
45	0.5	-0.827417	92.5218	-7.21566
46	0.5	-0.809896	93.1777	-7.62061
47	0.5	-0.796056	93.8114	-8.01864
48	0.5	-0.778966	94.4182	-8.40812
49	0.5	-0.765456	95.0041	-8.79085

50	0.5	-0.748762	95.5647	-9.16523
51	0.5	-0.735557	96.1058	-9.53301
52	0.5	-0.719228	96.6231	-9.89262
53	0.5	-0.706302	97.1219	-10.2458
54	0.5	-0.690309	97.5985	-10.5909
55	0.5	-0.674499	8.0534	-10.9282
56	0.5	-0.661955	98.4916	-11.2592
57	0.5	-0.646431	98.9095	-11.5824
58	0.5	-0.634124	99.3116	-11.8994
59	0.5	-0.618872	99.6946	-12.2089
60	0.5	-0.606775	100.063	-12.5123
61	0.5	-0.591776	100.413	-12.8081
62	0.5	-0.579873	100.749	-13.0981
63	0.5	-0.565108	101.069	-13.3806
64	0.5	-0.553384	101.375	-13.6573
65	0.5	-0.538836	101.665	-13.9267
66	0.5	-0.524401	101.94	-14.1889
67	0.5	-0.51293	102.203	-14.4454
68	0.5	-0.498687	102.452	-14.6948
69	0.5	-0.487364	102.689	-14.9384
70	0.5	-0.473299	102.913	-15.1751
71	0.5	-0.462114	103.127	-15.4061
72	0.5	-0.448213	103.328	-15.6302
73	0.5	-0.437153	103.519	-15.8488
74	0.5	-0.423405	103.698	-16.0605
75	0.5	-0.412463	103.868	-16.2668
76	0.5	-0.398855	104.027	-16.4662
77	0.5	-0.385321	104.176	-16.6588
78	0.5	-0.374544	104.316	-16.8461
79	0.5	-0.361133	104.447	-17.0267
80	0.5	-0.350451	104.569	-17.2019
81	0.5	-0.337155	104.683	-17.3705
82	0.5	-0.326561	104.79	-17.5338
83	0.5	-0.31337	104.888	-17.6905
84	0.5	-0.302855	104.98	-17.8419
85	0.5	-0.28976	105.064	-17.9868
86	0.5	-0.279319	105.142	-18.1264
87	0.5	-0.266311	105.213	-18.2596
88	0.5	-0.253347	105.277	-18.3862
89	0.5	-0.243007	105.336	-18.5078
90	0.5	-0.230118	105.389	-18.6228
91	0.5	-0.219834	105.437	-18.7327
92	0.5	-0.207012	105.48	-18.8362
93	0.5	-0.196779	105.519	-18.9346
94	0.5	-0.184017	105.553	-19.0266
95	0.5	-0.173829	105.583	-19.1135
96	0.5	-0.161119	105.609	-19.1941
97	0.5	-0.150969	105.632	-19.2696
98	0.5	-0.138305	105.651	-19.3387
99	0.5	-0.125661	105.666	-19.4016
100	0.5	-0.115562	105.68	-19.4594
101	0.5	-0.102953	105.69	-19.5108
102	0.5	-0.0928787	105.699	-19.5573
103	0.5	-0.0802981	105.705	-19.5974
104	0.5	-0.0702426	105.71	-19.6325
105	0.5	-0.0576847	105.714	-19.6614
106	0.5	-0.0476439	105.716	-19.6852
107	0.5	-0.0350997	105.717	-19.7028
108	0.5	-0.0250691	105.718	-19.7153
109	0.5	-0.0125328	105.718	-19.7216
110	0.5	0	105.718	-19.7216
111	0.5	0.0125328	105.718	-19.7153

112	0.5	0.0250691	105.719	-19.7028
113	0.5	0.0350997	105.72	-19.6852
114	0.5	0.0476439	105.722	-19.6614
115	0.5	0.0576847	105.726	-19.6325
116	0.5	0.0702426	105.731	-19.5974
117	0.5	0.0802981	105.737	-19.5573
118	0.5	0.0928787	105.746	-19.5108
119	0.5	0.102953	105.756	-19.4594
120	0.5	0.115562	105.77	-19.4016
121	0.5	0.125661	105.785	-19.3387
122	0.5	0.138305	105.805	-19.2696
123	0.5	0.150969	105.827	-19.1941
124	0.5	0.161119	105.853	-19.1135
125	0.5	0.173829	105.883	-19.0266
126	0.5	0.184017	105.917	-18.9346
127	0.5	0.196779	105.956	-18.8362
128	0.5	0.207012	105.999	-18.7327
129	0.5	0.219834	106.047	-18.6228
130	0.5	0.230118	106.1	-18.5078
131	0.5	0.243007	106.159	-18.3862
132	0.5	0.253347	106.223	-18.2596
133	0.5	0.266311	106.294	-18.1264
134	0.5	0.279319	106.372	-17.9868
135	0.5	0.28976	106.456	-17.8419
136	0.5	0.302855	106.548	-17.6905
137	0.5	0.31337	106.646	-17.5338
138	0.5	0.326561	106.753	-17.3705
139	0.5	0.337155	106.867	-17.2019
140	0.5	0.350451	106.989	-17.0267
141	0.5	0.361133	107.12	-16.8461
142	0.5	0.374544	107.26	-16.6588
143	0.5	0.385321	107.409	-16.4662
144	0.5	0.398855	107.568	-16.2668
145	0.5	0.412463	107.738	-16.0605
146	0.5	0.423405	107.917	-15.8488
147	0.5	0.437153	108.108	-15.6302
148	0.5	0.448213	108.309	-15.4061
149	0.5	0.462114	108.523	-15.1751
150	0.5	0.473299	108.747	-14.9384
151	0.5	0.487364	108.984	-14.6948
152	0.5	0.498687	109.233	-14.4454
153	0.5	0.51293	109.496	-14.1889
154	0.5	0.524401	109.771	-13.9267
155	0.5	0.538836	110.061	-13.6573
156	0.5	0.553384	110.368	-13.3806
157	0.5	0.565108	110.687	-13.0981
158	0.5	0.579873	111.023	-12.8081
159	0.5	0.591776	111.373	-12.5123
160	0.5	0.606775	111.741	-12.2089
161	0.5	0.618872	112.124	-11.8994
162	0.5	0.634124	112.527	-11.5824
163	0.5	0.646431	112.944	-11.2592
164	0.5	0.661955	113.383	-10.9282
165	0.5	0.67449	113.838	-10.5909
166	0.5	0.690309	114.314	-10.2458
167	0.5	0.706302	114.813	-9.89262
168	0.5	0.719228	115.33	-9.53301
169	0.5	0.735557	115.871	-9.16523
170	0.5	0.748762	116.432	-8.79085
171	0.5	0.765456	117.018	-8.40812
172	0.5	0.778966	117.625	-8.01864
173	0.5	0.796056	118.258	-7.62061

174	0.5	0.809896	118.914	-7.21566
175	0.5	0.827417	119.599	-6.80195
176	0.5	0.841621	120.307	-6.38114
177	0.5	0.859618	121.046	-5.95134
178	0.5	0.877897	121.817	-5.51239
179	0.5	0.892733	122.614	-5.06602
180	0.5	0.911562	123.445	-4.61024
181	0.5	0.926859	124.304	-4.14681
182	0.5	0.946291	125.199	-3.67366
183	0.5	0.9621	126.125	-3.19262
184	0.5	0.982202	127.09	-2.70151
185	0.5	0.998575	128.087	-2.20223
186	0.5	1.01943	129.126	-1.69251
187	0.5	1.03643	130.2	-1.1743
188	0.5	1.05812	131.32	-0.645235
189	0.5	1.08032	132.487	-0.105075
190	0.5	1.09847	133.694	0.44416
191	0.5	1.12168	134.952	1.005
192	0.5	1.14069	136.253	1.57534
193	0.5	1.16505	137.61	2.15787
194	0.5	1.18504	139.015	2.75039
195	0.5	1.21073	140.48	3.35575
196	0.5	1.23187	141.998	3.97169
197	0.5	1.25908	143.583	4.60123
198	0.5	1.28155	145.226	5.242
199	0.5	1.31058	146.943	5.89729
200	0.5	1.34075	148.741	6.56767
201	0.5	1.36581	150.606	7.25057
202	0.5	1.39838	152.562	7.94976
203	0.81	1.42554	154.594	9.10445
204	1	1.46106	156.729	10.5655
205	1.1	1.49085	158.951	12.2054
206	2	1.53007	161.292	15.2656
207	2	1.56322	163.736	18.392
208	2	1.60725	166.319	21.6065
209	2	1.64485	169.025	24.8962
210	2	1.6954	171.899	28.287
211	2	1.75069	174.964	31.7884
212	2.2	1.79912	178.201	35.7465
213	2.3	1.86629	181.684	40.0389
214	3	1.92684	185.397	45.8194
215	4	2.01409	189.453	53.8758
216	4	2.09693	193.85	62.2635
217	4.9	2.22621	198.806	73.172
218	9	2.36561	204.403	94.4625
219	12	2.65209	211.436	126.288

Data Set Standard Deviation = 1.12673
Numerator = 15948.5
Denominator = 58516.2
W Statistic = 0.272549 = 15948.5 / 58516.2

5% Critical value of 0.976 exceeds 0.272549
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.272549
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 = 219

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	-2.22621	17.5857	15.0633
4	-2.07944	-2.09693	21.9828	19.4237
5	-2.07944	-2.01409	26.0394	23.6119
6	-2.07944	-1.92684	29.7521	27.6187
7	-2.07944	-1.86629	33.2351	31.4995
8	-2.07944	-1.79912	36.472	35.2407
9	-2.07944	-1.75069	39.5369	38.8811
10	-2.07944	-1.6954	42.4112	42.4066
11	-2.07944	-1.64485	45.1168	45.827
12	-2.07944	-1.60725	47.7	49.1692
13	-2.07944	-1.56322	50.1437	52.4198
14	-2.07944	-1.53007	52.4848	55.6015
15	-2.07944	-1.49085	54.7074	58.7016
16	-2.07944	-1.46106	56.8421	61.7398
17	-2.07944	-1.42554	58.8743	64.7041
18	-2.07944	-1.39838	60.8297	67.612
19	-2.07944	-1.36581	62.6952	70.4521
20	-2.07944	-1.34075	64.4928	73.2401
21	-2.07944	-1.31058	66.2104	75.9654
22	-2.07944	-1.28155	67.8528	78.6303
23	-2.07944	-1.25908	69.4381	81.2485
24	-2.07944	-1.23187	70.9556	83.8101
25	-2.07944	-1.21073	72.4214	86.3277
26	-2.07944	-1.18504	73.8258	88.7919
27	-2.07944	-1.16505	75.1831	91.2146
28	-2.07944	-1.14069	76.4843	93.5866
29	-2.07944	-1.12168	77.7424	95.919
30	-2.07944	-1.09847	78.9491	98.2032
31	-0.891598	-1.08032	80.1162	99.1665
32	-0.693147	-1.05812	81.2358	99.8999
33	-0.693147	-1.03643	82.31	100.618
34	-0.693147	-1.01943	83.3492	101.325
35	-0.693147	-0.998575	84.3464	102.017
36	-0.693147	-0.982202	85.3111	102.698
37	-0.693147	-0.9621	86.2367	103.365
38	-0.693147	-0.946291	87.1322	104.021
39	-0.693147	-0.926859	87.9912	104.663
40	-0.693147	-0.911562	88.8222	105.295
41	-0.693147	-0.892733	89.6192	105.914
42	-0.693147	-0.877897	90.3899	106.522
43	-0.693147	-0.859618	91.1288	107.118
44	-0.693147	-0.841621	91.8371	107.701
45	-0.693147	-0.827417	92.5218	108.275
46	-0.693147	-0.809896	93.1777	108.836
47	-0.693147	-0.796056	93.8114	109.388
48	-0.693147	-0.778966	94.4182	109.928
49	-0.693147	-0.765456	95.0041	110.459

50	-0.693147	-0.748762	95.5647	110.978
51	-0.693147	-0.735557	96.1058	111.488
52	-0.693147	-0.719228	96.6231	111.986
53	-0.693147	-0.706302	97.1219	112.476
54	-0.693147	-0.690309	97.5985	112.954
55	-0.693147	-0.674499	8.0534	113.422
56	-0.693147	-0.661955	98.4916	113.88
57	-0.693147	-0.646431	98.9095	114.329
58	-0.693147	-0.634124	99.3116	114.768
59	-0.693147	-0.618872	99.6946	115.197
60	-0.693147	-0.606775	100.063	115.618
61	-0.693147	-0.591776	100.413	116.028
62	-0.693147	-0.579873	100.749	116.43
63	-0.693147	-0.565108	101.069	116.821
64	-0.693147	-0.553384	101.375	117.205
65	-0.693147	-0.538836	101.665	117.579
66	-0.693147	-0.524401	101.94	117.942
67	-0.693147	-0.51293	102.203	118.298
68	-0.693147	-0.498687	102.452	118.643
69	-0.693147	-0.487364	102.689	118.981
70	-0.693147	-0.473299	102.913	119.309
71	-0.693147	-0.462114	103.127	119.629
72	-0.693147	-0.448213	103.328	119.94
73	-0.693147	-0.437153	103.519	120.243
74	-0.693147	-0.423405	103.698	120.537
75	-0.693147	-0.412463	103.868	120.822
76	-0.693147	-0.398855	104.027	121.099
77	-0.693147	-0.385321	104.176	121.366
78	-0.693147	-0.374544	104.316	121.626
79	-0.693147	-0.361133	104.447	121.876
80	-0.693147	-0.350451	104.569	122.119
81	-0.693147	-0.337155	104.683	122.353
82	-0.693147	-0.326561	104.79	122.579
83	-0.693147	-0.31337	104.888	122.796
84	-0.693147	-0.302855	104.98	123.006
85	-0.693147	-0.28976	105.064	123.207
86	-0.693147	-0.279319	105.142	123.401
87	-0.693147	-0.266311	105.213	123.585
88	-0.693147	-0.253347	105.277	123.761
89	-0.693147	-0.243007	105.336	123.929
90	-0.693147	-0.230118	105.389	124.089
91	-0.693147	-0.219834	105.437	124.241
92	-0.693147	-0.207012	105.48	124.385
93	-0.693147	-0.196779	105.519	124.521
94	-0.693147	-0.184017	105.553	124.648
95	-0.693147	-0.173829	105.583	124.769
96	-0.693147	-0.161119	105.609	124.881
97	-0.693147	-0.150969	105.632	124.985
98	-0.693147	-0.138305	105.651	125.081
99	-0.693147	-0.125661	105.666	125.168
100	-0.693147	-0.115562	105.68	125.248
101	-0.693147	-0.102953	105.69	125.32
102	-0.693147	-0.0928787	105.699	125.384
103	-0.693147	-0.0802981	105.705	125.44
104	-0.693147	-0.0702426	105.71	125.488
105	-0.693147	-0.0576847	105.714	125.528
106	-0.693147	-0.0476439	105.716	125.561
107	-0.693147	-0.0350997	105.717	125.586
108	-0.693147	-0.0250691	105.718	125.603
109	-0.693147	-0.0125328	105.718	125.612
110	-0.693147	0	105.718	125.612
111	-0.693147	0.0125328	105.718	125.603

112	-0.693147	0.0250691	105.719	125.586
113	-0.693147	0.0350997	105.72	125.561
114	-0.693147	0.0476439	105.722	125.528
115	-0.693147	0.0576847	105.726	125.488
116	-0.693147	0.0702426	105.731	125.44
117	-0.693147	0.0802981	105.737	125.384
118	-0.693147	0.0928787	105.746	125.32
119	-0.693147	0.102953	105.756	125.248
120	-0.693147	0.115562	105.77	125.168
121	-0.693147	0.125661	105.785	125.081
122	-0.693147	0.138305	105.805	124.985
123	-0.693147	0.150969	105.827	124.881
124	-0.693147	0.161119	105.853	124.769
125	-0.693147	0.173829	105.883	124.648
126	-0.693147	0.184017	105.917	124.521
127	-0.693147	0.196779	105.956	124.385
128	-0.693147	0.207012	105.999	124.241
129	-0.693147	0.219834	106.047	124.089
130	-0.693147	0.230118	106.1	123.929
131	-0.693147	0.243007	106.159	123.761
132	-0.693147	0.253347	106.223	123.585
133	-0.693147	0.266311	106.294	123.401
134	-0.693147	0.279319	106.372	123.207
135	-0.693147	0.28976	106.456	123.006
136	-0.693147	0.302855	106.548	122.796
137	-0.693147	0.31337	106.646	122.579
138	-0.693147	0.326561	106.753	122.353
139	-0.693147	0.337155	106.867	122.119
140	-0.693147	0.350451	106.989	121.876
141	-0.693147	0.361133	107.12	121.626
142	-0.693147	0.374544	107.26	121.366
143	-0.693147	0.385321	107.409	121.099
144	-0.693147	0.398855	107.568	120.822
145	-0.693147	0.412463	107.738	120.537
146	-0.693147	0.423405	107.917	120.243
147	-0.693147	0.437153	108.108	119.94
148	-0.693147	0.448213	108.309	119.629
149	-0.693147	0.462114	108.523	119.309
150	-0.693147	0.473299	108.747	118.981
151	-0.693147	0.487364	108.984	118.643
152	-0.693147	0.498687	109.233	118.298
153	-0.693147	0.51293	109.496	117.942
154	-0.693147	0.524401	109.771	117.579
155	-0.693147	0.538836	110.061	117.205
156	-0.693147	0.553384	110.368	116.821
157	-0.693147	0.565108	110.687	116.43
158	-0.693147	0.579873	111.023	116.028
159	-0.693147	0.591776	111.373	115.618
160	-0.693147	0.606775	111.741	115.197
161	-0.693147	0.618872	112.124	114.768
162	-0.693147	0.634124	112.527	114.329
163	-0.693147	0.646431	112.944	113.88
164	-0.693147	0.661955	113.383	113.422
165	-0.693147	0.67449	113.838	112.954
166	-0.693147	0.690309	114.314	112.476
167	-0.693147	0.706302	114.813	111.986
168	-0.693147	0.719228	115.33	111.488
169	-0.693147	0.735557	115.871	110.978
170	-0.693147	0.748762	116.432	110.459
171	-0.693147	0.765456	117.018	109.928
172	-0.693147	0.778966	117.625	109.388
173	-0.693147	0.796056	118.258	108.836

174	-0.693147		0.809896		118.914	108.275
175	-0.693147		0.827417		119.599	107.701
176	-0.693147		0.841621		120.307	107.118
177	-0.693147		0.859618		121.046	106.522
178	-0.693147		0.877897		121.817	105.914
179	-0.693147		0.892733		122.614	105.295
180	-0.693147		0.911562		123.445	104.663
181	-0.693147		0.926859		124.304	104.021
182	-0.693147		0.946291		125.199	103.365
183	-0.693147		0.9621	126.125	102.698	
184	-0.693147		0.982202		127.09	102.017
185	-0.693147		0.998575		128.087	101.325
186	-0.693147		1.01943	129.126	100.618	
187	-0.693147		1.03643	130.2	99.8999	
188	-0.693147		1.05812	131.32	99.1665	
189	-0.693147		1.08032	132.487	98.4176	
190	-0.693147		1.09847	133.694	97.6562	
191	-0.693147		1.12168	134.952	96.8787	
192	-0.693147		1.14069	136.253	96.0881	
193	-0.693147		1.16505	137.61	95.2805	
194	-0.210721		1.18504	139.015	95.0308	
195	0	1.21073	140.48	95.0308		
196	0	1.23187	141.998	95.0308		
197	0	1.25908	143.583	95.0308		
198	0	1.28155	145.226	95.0308		
199	0	1.31058	146.943	95.0308		
200	0	1.34075	148.741	95.0308		
201	0	1.36581	150.606	95.0308		
202	0	1.39838	152.562	95.0308		
203	0	1.42554	154.594	95.0308		
204	0	1.46106	156.729	95.0308		
205	0.0953102		1.49085	158.951	95.1729	
206	0.693147		1.53007	161.292	96.2335	
207	0.693147		1.56322	163.736	97.317	
208	0.693147		1.60725	166.319	98.4311	
209	0.693147		1.64485	169.025	99.5712	
210	0.693147		1.6954	171.899	100.746	
211	0.693147		1.75069	174.964	101.96	
212	0.788457		1.79912	178.201	103.378	
213	0.832909		1.86629	181.684	104.933	
214	1.09861	1.92684	185.397	107.05		
215	1.38629	2.01409	189.453	109.842		
216	1.38629	2.09693	193.85	112.749		
217	1.58924	2.22621	198.806	116.287		
218	2.19722	2.36561	204.403	121.485		
219	2.48491	2.65209	211.436	128.075		

Data Set Standard Deviation = 0.725171
Numerator = 16403.1
Denominator = 24239.1
W Statistic = 0.676721 = 16403.1 / 24239.1

5% Critical value of 0.976 exceeds 0.676721
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.676721
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 = 91.7808%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 18
Maximum Background Concentration = 0.0953102
Confidence Level = 69.2%
False Positive Rate = 30.8%

Location	Date	Samples	Mean	Significant
LMW-3S	11/17/2010	1	0.832909	TRUE
LMW-16	11/17/2010	1	-2.07944	FALSE
LMW-9	11/17/2010	1	-2.07944	FALSE
LMW-8	11/17/2010	1	-2.07944	FALSE
LMW-10	11/17/2010	1	-2.07944	FALSE
LMW-9S	11/17/2010	1	-2.07944	FALSE
LMW-9D	11/17/2010	1	-2.07944	FALSE
LMW-7	11/17/2010	1	-2.07944	FALSE
LMW-3	11/17/2010	1	-2.07944	FALSE
LMW-15R	11/17/2010	1	-2.07944	FALSE
LMW-14R	11/17/2010	1	-2.07944	FALSE
LMW-6	11/17/2010	1	-2.07944	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: 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		
0.832909	2.48491	-1.652 0	7		
0.693147	ND<-0.693147	1.38629 1	7		
ND<0 J ND<-0.693147		0.693147	2	7	
0.693147	ND<-0.693147	1.38629 3	7		
0.788457	ND<-0.693147	1.4816 4	7		
1.38629	ND<-0.693147	2.07944 5	7		
0.832909	ND<-0.693147	1.52606 6	7		
ND<0 J 0.693147		-0.693147	6	8	
0.693147	0.693147	0	6	8	
0.788457	0.693147	0.0953102	7	8	
1.38629	0.693147	0.693147	8	8	
0.832909	0.693147	0.139762	9	8	
0.693147	ND<0 J 0.693147		10	8	
0.788457	ND<0 J 0.788457		11	8	
1.38629	ND<0 J 1.38629 12		8		
0.832909	ND<0 J 0.832909		13	8	
0.788457	0.693147	0.0953102	14	8	
1.38629	0.693147	0.693147	15	8	
0.832909	0.693147	0.139762	16	8	
1.38629	0.788457	0.597837	17	8	
0.832909	0.788457	0.0444518	18	8	
0.832909	1.38629	-0.553385	18	9	

S Statistic = 18 - 9 = 9
Comparing at 1.0 - (0.05 / 2) = 97.5% confidence level (two-tailed)
Failed to calculate probability for S = 9
Table out of range

Concentrations (ug/L)

Parameter: Lead

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 232
Total Non-Detect: 154
Percent Non-Detects: 66.3793%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	19	11 (57.8947%)	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
			11/17/2010	0.16 J	0.16 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-10	16	12 (75%)	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
			11/17/2010	ND<0.08 U	ND<0.08 U
LMW-9D	9	2 (22.2222%)	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	
			11/17/2010	0.44	0.44	
LMW-14R	7	3 (42.8571%)	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	
			11/17/2010	0.11 J	0.11 J	
LMW-8	19	18 (94.7368%)	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	
			11/17/2010	ND<0.08 U	ND<0.08 U	
LMW-3S	9	4 (44.4444%)	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	
			11/17/2010	1.7	1.7	
LMW-6	19	15 (78.9474%)	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	
			11/17/2010	0.17 J	0.17 J	

LMW-7	17	8 (47.0588%)	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	
			11/17/2010	0.86	0.86	
LMW-3	21	15 (71.4286%)	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	
			11/17/2010	0.51	0.51	
LMW-9S	8	4 (50%)	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	
			11/17/2010	0.55	0.55	
LMW-15R		14	8 (57.1429%)	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	ND<0.08 U		ND<0.08 U
			11/16/2009	0.21 J	0.21 J	
			11/16/2009	0.14 J	0.14 J	

			6/30/2010	0.08 J	0.08 J	
			11/17/2010	0.16 J	0.16 J	
LMW-16	9	5 (55.5556%)	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	
			11/17/2010	ND<0.08 U		ND<0.08 U
LMW-9	19	12 (63.1579%)	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	
			11/17/2010	0.57	0.57	
MW-5	13	10 (76.9231%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	14	14	
			3/14/2000	22	22	
			9/23/2003	ND<1	ND<1	
			3/10/2004	52	52	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
LMW-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-11	11	9 (81.8182%)	3/14/2000	19	19	
			9/23/2003	ND<1	ND<1	
			3/10/2004	46	46	

			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
LMW-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

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 = 232

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	-1.72793	43.4046	0
11	0	-1.67466	46.2091	0
12	0.04	-1.63524	48.8831	-0.0654094
13	0.04	-1.59819	51.4373	-0.129337
14	0.04	-1.55477	53.8547	-0.191528
15	0.04	-1.52203	56.1712	-0.252409
16	0.04	-1.49085	58.3939	-0.312043
17	0.04	-1.46106	60.5286	-0.370486
18	0.04	-1.42554	62.5608	-0.427508
19	0.04	-1.39838	64.5162	-0.483443
20	0.04	-1.3722	66.3992	-0.538331
21	0.04	-1.34075	68.1968	-0.591961
22	0.04	-1.31652	69.93	-0.644622
23	0.04	-1.29303	71.6019	-0.696343
24	0.04	-1.26464	73.2013	-0.746929
25	0.04	-1.24264	74.7454	-0.796634
26	0.04	-1.22123	76.2368	-0.845484
27	0.08	-1.20036	77.6777	-0.941512
28	0.08	-1.17499	79.0583	-1.03551
29	0.09	-1.15522	80.3928	-1.13948
30	0.09	-1.1359	81.6831	-1.24171
31	0.1	-1.11232	82.9203	-1.35294
32	0.11	-1.0939	84.1169	-1.47327
33	0.11	-1.07584	85.2744	-1.59161
34	0.11	-1.05812	86.394	-1.70801
35	0.13	-1.03643	87.4682	-1.84274
36	0.14	-1.01943	88.5074	-1.98546
37	0.14	-1.00271	89.5128	-2.12584
38	0.16	-0.982202	90.4776	-2.283
39	0.16	-0.966088	91.4109	-2.43757
40	0.16	-0.950222	92.3138	-2.58961
41	0.17	-0.93459	93.1873	-2.74849
42	0.17	-0.915365	94.0252	-2.9041
43	0.17	-0.900227	94.8356	-3.05714
44	0.19	-0.885291	95.6193	-3.22534
45	0.21	-0.866894	96.3708	-3.40739
46	0.22	-0.852385	97.0974	-3.59491
47	0.23	-0.838054	97.7997	-3.78767
48	0.26	-0.820379	98.4727	-4.00097
49	0.3	-0.806422	99.123	-4.24289

50	0.31	-0.792618	99.7513	-4.4886
51	0.37	-0.778966	100.358	-4.77682
52	0.44	-0.7621	100.939	-5.11214
53	0.5	-0.748762	101.5	-5.48653
54	0.5	-0.735557	102.041	-5.8543
55	0.5	-0.719228	102.558	-6.21392
56	0.5	-0.706302	103.057	-6.56707
57	0.5	-0.693493	103.538	-6.91382
58	0.5	-0.680797	104.001	-7.25421
59	0.5	-0.665079	104.443	-7.58675
60	0.5	-0.652622	104.869	-7.91307
61	0.5	-0.640266	105.279	-8.2332
62	0.5	-0.624956	105.67	-8.54568
63	0.5	-0.612813	106.045	-8.85208
64	0.5	-0.60076	106.406	-9.15246
65	0.5	-0.588793	106.753	-9.44686
66	0.5	-0.573953	107.082	-9.73384
67	0.5	-0.56217	107.398	-10.0149
68	0.5	-0.550465	107.701	-10.2902
69	0.5	-0.53594	107.989	-10.5581
70	0.5	-0.524401	108.264	-10.8203
71	0.5	-0.51293	108.527	-11.0768
72	0.5	-0.498687	108.776	-11.3261
73	0.5	-0.487364	109.013	-11.5698
74	0.5	-0.476105	109.24	-11.8079
75	0.5	-0.464904	109.456	-12.0403
76	0.5	-0.450985	109.659	-12.2658
77	0.5	-0.439913	109.853	-12.4858
78	0.5	-0.428895	110.037	-12.7002
79	0.5	-0.415193	110.209	-12.9078
80	0.5	-0.40429	110.373	-13.11
81	0.5	-0.393433	110.527	-13.3067
82	0.5	-0.382622	110.674	-13.498
83	0.5	-0.369171	110.81	-13.6826
84	0.5	-0.358459	110.939	-13.8618
85	0.5	-0.347787	111.059	-14.0357
86	0.5	-0.334503	111.171	-14.2029
87	0.5	-0.323919	111.276	-14.3649
88	0.5	-0.31337	111.374	-14.5216
89	0.5	-0.302855	111.466	-14.673
90	0.5	-0.28976	111.55	-14.8179
91	0.5	-0.279319	111.628	-14.9576
92	0.5	-0.268908	111.7	-15.092
93	0.5	-0.255936	111.766	-15.22
94	0.5	-0.24559	111.826	-15.3428
95	0.5	-0.235269	111.882	-15.4604
96	0.5	-0.222403	111.931	-15.5716
97	0.5	-0.212137	111.976	-15.6777
98	0.5	-0.201894	112.017	-15.7786
99	0.5	-0.191671	112.054	-15.8745
100	0.5	-0.17892	112.086	-15.9639
101	0.5	-0.168741	112.114	-16.0483
102	0.5	-0.158579	112.139	-16.1276
103	0.5	-0.1459	112.161	-16.2005
104	0.5	-0.135774	112.179	-16.2684
105	0.5	-0.125661	112.195	-16.3312
106	0.5	-0.115562	112.208	-16.389
107	0.5	-0.102953	112.219	-16.4405
108	0.5	-0.0928787	112.227	-16.4869
109	0.5	-0.0828129	112.234	-16.5284
110	0.5	-0.0702426	112.239	-16.5635
111	0.5	-0.0601949	112.243	-16.5936

112	0.5	-0.0501541	112.245	-16.6186
113	0.5	-0.0401167	112.247	-16.6387
114	0.5	-0.0275759	112.248	-16.6525
115	0.5	-0.0175476	112.248	-16.6613
116	0.5	-0.00751925	112.248	-16.665
117	0.5	0.00751925	112.248	-16.6613
118	0.5	0.0175476	112.248	-16.6525
119	0.5	0.0275759	112.249	-16.6387
120	0.5	0.0401167	112.251	-16.6186
121	0.5	0.0501541	112.253	-16.5936
122	0.5	0.0601949	112.257	-16.5635
123	0.5	0.0702426	112.262	-16.5284
124	0.5	0.0828129	112.269	-16.4869
125	0.5	0.0928787	112.277	-16.4405
126	0.5	0.102953	112.288	-16.389
127	0.5	0.115562	112.301	-16.3312
128	0.5	0.125661	112.317	-16.2684
129	0.5	0.135774	112.335	-16.2005
130	0.5	0.1459	112.357	-16.1276
131	0.5	0.158579	112.382	-16.0483
132	0.5	0.168741	112.41	-15.9639
133	0.5	0.17892	112.442	-15.8745
134	0.5	0.191671	112.479	-15.7786
135	0.5	0.201894	112.52	-15.6777
136	0.5	0.212137	112.565	-15.5716
137	0.5	0.222403	112.614	-15.4604
138	0.5	0.235269	112.67	-15.3428
139	0.5	0.24559	112.73	-15.22
140	0.5	0.255936	112.796	-15.092
141	0.5	0.268908	112.868	-14.9576
142	0.5	0.279319	112.946	-14.8179
143	0.5	0.28976	113.03	-14.673
144	0.5	0.302855	113.122	-14.5216
145	0.5	0.31337	113.22	-14.3649
146	0.5	0.323919	113.325	-14.2029
147	0.5	0.334503	113.437	-14.0357
148	0.5	0.347787	113.558	-13.8618
149	0.5	0.358459	113.686	-13.6826
150	0.5	0.369171	113.822	-13.498
151	0.5	0.382622	113.969	-13.3067
152	0.5	0.393433	114.123	-13.11
153	0.5	0.40429	114.287	-12.9078
154	0.5	0.415193	114.459	-12.7002
155	0.5	0.428895	114.643	-12.4858
156	0.5	0.439913	114.837	-12.2658
157	0.5	0.450985	115.04	-12.0403
158	0.5	0.464904	115.256	-11.8079
159	0.5	0.476105	115.483	-11.5698
160	0.5	0.487364	115.721	-11.3261
161	0.5	0.498687	115.969	-11.0768
162	0.5	0.51293	116.232	-10.8203
163	0.5	0.524401	116.507	-10.5581
164	0.5	0.53594	116.795	-10.2902
165	0.5	0.550465	117.098	-10.0149
166	0.5	0.56217	117.414	-9.73384
167	0.5	0.573953	117.743	-9.44686
168	0.5	0.588793	118.09	-9.15246
169	0.5	0.60076	118.451	-8.85208
170	0.5	0.612813	118.826	-8.54568
171	0.5	0.624956	119.217	-8.2332
172	0.5	0.640266	119.627	-7.91307
173	0.5	0.652622	120.053	-7.58675

174	0.5	0.665079		120.495	-7.25421
175	0.5	0.680797		120.958	-6.91382
176	0.5	0.693493		121.439	-6.56707
177	0.5	0.706302		121.938	-6.21392
178	0.5	0.719228		122.455	-5.8543
179	0.5	0.735557		122.997	-5.48653
180	0.5	0.748762		123.557	-5.11214
181	0.51	0.7621	124.138	-4.72347	
182	0.55	0.778966		124.745	-4.29504
183	0.57	0.792618		125.373	-3.84325
184	0.58	0.806422		126.023	-3.37553
185	0.71	0.820379		126.696	-2.79306
186	0.86	0.838054		127.399	-2.07233
187	0.88	0.852385		128.125	-1.32223
188	0.89	0.866894		128.877	-0.550696
189	1	0.885291		129.66	0.334595
190	1	0.900227		130.471	1.23482
191	1	0.915365		131.309	2.15019
192	1	0.93459	132.182	3.08478	
193	1	0.950222		133.085	4.035
194	1	0.966088		134.018	5.00109
195	1	0.982202		134.983	5.98329
196	1.7	1.00271	135.989	7.6879	
197	2	1.01943	137.028	9.72675	
198	2	1.03643	138.102	11.7996	
199	3	1.05812	139.222	14.974	
200	3	1.07584	140.379	18.2015	
201	3	1.0939	141.576	21.4832	
202	3	1.11232	142.813	24.8201	
203	3	1.1359	144.103	28.2278	
204	3	1.15522	145.438	31.6935	
205	3	1.17499	146.818	35.2185	
206	3	1.20036	148.259	38.8195	
207	3	1.22123	149.751	42.4832	
208	4	1.24264	151.295	47.4538	
209	4	1.26464	152.894	52.5124	
210	5	1.29303	154.566	58.9775	
211	8	1.31652	156.299	69.5097	
212	9	1.34075	158.097	81.5765	
213	11	1.3722	159.98	96.6707	
214	13	1.39838	161.935	114.85	
215	14	1.42554	163.967	134.807	
216	16	1.46106	166.102	158.184	
217	16	1.49085	168.325	182.038	
218	17	1.52203	170.641	207.912	
219	18	1.55477	173.059	235.898	
220	18	1.59819	175.613	264.666	
221	19	1.63524	178.287	295.735	
222	21	1.67466	181.091	330.903	
223	22	1.72793	184.077	368.918	
224	25	1.77438	187.226	413.277	
225	27	1.82501	190.556	462.552	
226	35	1.88079	194.094	528.38	
227	44	1.95996	197.935	614.618	
228	46	2.03352	202.07	708.16	
229	49	2.12007	206.565	812.043	
230	50	2.25713	211.66	924.9	
231	52	2.40892	217.462	1050.16	
232	130	2.65209	224.496	1394.94	

Data Set Standard Deviation = 11.7738

Numerator = 1.94584e+006
Denominator = 7.18872e+006
W Statistic = 0.27068 = 1.94584e+006 / 7.18872e+006

5% Critical value of 0.976 exceeds 0.27068
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.27068
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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-3.21888	-2.65209	7.03356	8.53674
2	-3.21888	-2.40892	12.8365	16.2908
3	-3.21888	-2.25713	17.9311	23.5562
4	-3.21888	-2.12007	22.4258	30.3804
5	-3.21888	-2.03352	26.561	36.9261
6	-3.21888	-1.95996	30.4025	43.2349
7	-3.21888	-1.88079	33.9398	49.289
8	-3.21888	-1.82501	37.2705	55.1634
9	-3.21888	-1.77438	40.4189	60.8749
10	-3.21888	-1.72793	43.4046	66.4369
11	-3.21888	-1.67466	46.2091	71.8275
12	-3.21888	-1.63524	48.8831	77.0911
13	-3.21888	-1.59819	51.4373	82.2355
14	-3.21888	-1.55477	53.8547	87.2401
15	-3.21888	-1.52203	56.1712	92.1393
16	-2.52573	-1.49085	58.3939	95.9048
17	-2.52573	-1.46106	60.5286	99.595
18	-2.40795	-1.42554	62.5608	103.028
19	-2.40795	-1.39838	64.5162	106.395
20	-2.30259	-1.3722	66.3992	109.555
21	-2.20727	-1.34075	68.1968	112.514
22	-2.20727	-1.31652	69.93	115.42
23	-2.20727	-1.29303	71.6019	118.274
24	-2.04022	-1.26464	73.2013	120.854
25	-1.96611	-1.24264	74.7454	123.297
26	-1.96611	-1.22123	76.2368	125.698
27	-1.83258	-1.20036	77.6777	127.898
28	-1.83258	-1.17499	79.0583	130.051
29	-1.83258	-1.15522	80.3928	132.168
30	-1.77196	-1.1359	81.6831	134.181
31	-1.77196	-1.11232	82.9203	136.152
32	-1.77196	-1.0939	84.1169	138.09
33	-1.66073	-1.07584	85.2744	139.877
34	-1.56065	-1.05812	86.394	141.528
35	-1.51413	-1.03643	87.4682	143.098
36	-1.46968	-1.01943	88.5074	144.596
37	-1.34707	-1.00271	89.5128	145.947
38	-1.20397	-0.982202	90.4776	147.129
39	-1.17118	-0.966088	91.4109	148.261
40	-0.994252	-0.950222	92.3138	149.206
41	-0.820981	-0.93459	93.1873	149.973
42	-0.693147	-0.915365	94.0252	150.607
43	-0.693147	-0.900227	94.8356	151.231
44	-0.693147	-0.885291	95.6193	151.845
45	-0.693147	-0.866894	96.3708	152.446
46	-0.693147	-0.852385	97.0974	153.037
47	-0.693147	-0.838054	97.7997	153.618
48	-0.693147	-0.820379	98.4727	154.186
49	-0.693147	-0.806422	99.123	154.745

50	-0.693147	-0.792618	99.7513	155.295
51	-0.693147	-0.778966	100.358	155.834
52	-0.693147	-0.7621	100.939	156.363
53	-0.693147	-0.748762	101.5	156.882
54	-0.693147	-0.735557	102.041	157.392
55	-0.693147	-0.719228	102.558	157.89
56	-0.693147	-0.706302	103.057	158.38
57	-0.693147	-0.693493	103.538	158.86
58	-0.693147	-0.680797	104.001	159.332
59	-0.693147	-0.665079	104.443	159.793
60	-0.693147	-0.652622	104.869	160.246
61	-0.693147	-0.640266	105.279	160.689
62	-0.693147	-0.624956	105.67	161.123
63	-0.693147	-0.612813	106.045	161.547
64	-0.693147	-0.60076	106.406	161.964
65	-0.693147	-0.588793	106.753	162.372
66	-0.693147	-0.573953	107.082	162.77
67	-0.693147	-0.56217	107.398	163.159
68	-0.693147	-0.550465	107.701	163.541
69	-0.693147	-0.53594	107.989	163.912
70	-0.693147	-0.524401	108.264	164.276
71	-0.693147	-0.51293	108.527	164.631
72	-0.693147	-0.498687	108.776	164.977
73	-0.693147	-0.487364	109.013	165.315
74	-0.693147	-0.476105	109.24	165.645
75	-0.693147	-0.464904	109.456	165.967
76	-0.693147	-0.450985	109.659	166.28
77	-0.693147	-0.439913	109.853	166.585
78	-0.693147	-0.428895	110.037	166.882
79	-0.693147	-0.415193	110.209	167.17
80	-0.693147	-0.40429	110.373	167.45
81	-0.693147	-0.393433	110.527	167.723
82	-0.693147	-0.382622	110.674	167.988
83	-0.693147	-0.369171	110.81	168.244
84	-0.693147	-0.358459	110.939	168.492
85	-0.693147	-0.347787	111.059	168.733
86	-0.693147	-0.334503	111.171	168.965
87	-0.693147	-0.323919	111.276	169.19
88	-0.693147	-0.31337	111.374	169.407
89	-0.693147	-0.302855	111.466	169.617
90	-0.693147	-0.28976	111.55	169.818
91	-0.693147	-0.279319	111.628	170.011
92	-0.693147	-0.268908	111.7	170.198
93	-0.693147	-0.255936	111.766	170.375
94	-0.693147	-0.24559	111.826	170.545
95	-0.693147	-0.235269	111.882	170.708
96	-0.693147	-0.222403	111.931	170.863
97	-0.693147	-0.212137	111.976	171.01
98	-0.693147	-0.201894	112.017	171.15
99	-0.693147	-0.191671	112.054	171.282
100	-0.693147	-0.17892	112.086	171.406
101	-0.693147	-0.168741	112.114	171.523
102	-0.693147	-0.158579	112.139	171.633
103	-0.693147	-0.1459	112.161	171.734
104	-0.693147	-0.135774	112.179	171.829
105	-0.693147	-0.125661	112.195	171.916
106	-0.693147	-0.115562	112.208	171.996
107	-0.693147	-0.102953	112.219	172.067
108	-0.693147	-0.0928787	112.227	172.132
109	-0.693147	-0.0828129	112.234	172.189
110	-0.693147	-0.0702426	112.239	172.238
111	-0.693147	-0.0601949	112.243	172.279

112	-0.693147	-0.0501541	112.245	172.314
113	-0.693147	-0.0401167	112.247	172.342
114	-0.693147	-0.0275759	112.248	172.361
115	-0.693147	-0.0175476	112.248	172.373
116	-0.693147	-0.00751925	112.248	172.378
117	-0.693147	0.00751925	112.248	172.373
118	-0.693147	0.0175476	112.248	172.361
119	-0.693147	0.0275759	112.249	172.342
120	-0.693147	0.0401167	112.251	172.314
121	-0.693147	0.0501541	112.253	172.279
122	-0.693147	0.0601949	112.257	172.238
123	-0.693147	0.0702426	112.262	172.189
124	-0.693147	0.0828129	112.269	172.132
125	-0.693147	0.0928787	112.277	172.067
126	-0.693147	0.102953	112.288	171.996
127	-0.693147	0.115562	112.301	171.916
128	-0.693147	0.125661	112.317	171.829
129	-0.693147	0.135774	112.335	171.734
130	-0.693147	0.1459	112.357	171.633
131	-0.693147	0.158579	112.382	171.523
132	-0.693147	0.168741	112.41	171.406
133	-0.693147	0.17892	112.442	171.282
134	-0.693147	0.191671	112.479	171.15
135	-0.693147	0.201894	112.52	171.01
136	-0.693147	0.212137	112.565	170.863
137	-0.693147	0.222403	112.614	170.708
138	-0.693147	0.235269	112.67	170.545
139	-0.693147	0.24559	112.73	170.375
140	-0.693147	0.255936	112.796	170.198
141	-0.693147	0.268908	112.868	170.011
142	-0.693147	0.279319	112.946	169.818
143	-0.693147	0.28976	113.03	169.617
144	-0.693147	0.302855	113.122	169.407
145	-0.693147	0.31337	113.22	169.19
146	-0.693147	0.323919	113.325	168.965
147	-0.693147	0.334503	113.437	168.733
148	-0.693147	0.347787	113.558	168.492
149	-0.693147	0.358459	113.686	168.244
150	-0.693147	0.369171	113.822	167.988
151	-0.693147	0.382622	113.969	167.723
152	-0.693147	0.393433	114.123	167.45
153	-0.693147	0.40429	114.287	167.17
154	-0.693147	0.415193	114.459	166.882
155	-0.693147	0.428895	114.643	166.585
156	-0.693147	0.439913	114.837	166.28
157	-0.693147	0.450985	115.04	165.967
158	-0.693147	0.464904	115.256	165.645
159	-0.693147	0.476105	115.483	165.315
160	-0.693147	0.487364	115.721	164.977
161	-0.693147	0.498687	115.969	164.631
162	-0.693147	0.51293	116.232	164.276
163	-0.693147	0.524401	116.507	163.912
164	-0.693147	0.53594	116.795	163.541
165	-0.693147	0.550465	117.098	163.159
166	-0.693147	0.56217	117.414	162.77
167	-0.693147	0.573953	117.743	162.372
168	-0.693147	0.588793	118.09	161.964
169	-0.693147	0.60076	118.451	161.547
170	-0.673345	0.612813	118.826	161.135
171	-0.597837	0.624956	119.217	160.761
172	-0.562119	0.640266	119.627	160.401
173	-0.544727	0.652622	120.053	160.046

174	-0.342490	0.665079		120.495	159.818
175	-0.150823		0.680797	120.958	159.715
176	-0.127833		0.693493	121.439	159.627
177	-0.116534		0.706302	121.938	159.544
178	0	0.719228		122.455	159.544
179	0	0.735557		122.997	159.544
180	0	0.748762		123.557	159.544
181	0	0.7621	124.138	159.544	
182	0	0.778966		124.745	159.544
183	0	0.792618		125.373	159.544
184	0	0.806422		126.023	159.544
185	0	0.820379		126.696	159.544
186	0	0.838054		127.399	159.544
187	0	0.852385		128.125	159.544
188	0	0.866894		128.877	159.544
189	0	0.885291		129.66	159.544
190	0	0.900227		130.471	159.544
191	0	0.915365		131.309	159.544
192	0	0.93459	132.182	159.544	
193	0	0.950222		133.085	159.544
194	0	0.966088		134.018	159.544
195	0	0.982202		134.983	159.544
196	0.530628		1.00271	135.989	160.076
197	0.693147		1.01943	137.028	160.783
198	0.693147		1.03643	138.102	161.501
199	1.09861	1.05812	139.222	162.664	
200	1.09861	1.07584	140.379	163.846	
201	1.09861	1.0939	141.576	165.048	
202	1.09861	1.11232	142.813	166.27	
203	1.09861	1.1359	144.103	167.517	
204	1.09861	1.15522	145.438	168.787	
205	1.09861	1.17499	146.818	170.077	
206	1.09861	1.20036	148.259	171.396	
207	1.09861	1.22123	149.751	172.738	
208	1.38629	1.24264	151.295	174.46	
209	1.38629	1.26464	152.894	176.214	
210	1.60944	1.29303	154.566	178.295	
211	2.07944	1.31652	156.299	181.032	
212	2.19722	1.34075	158.097	183.978	
213	2.3979	1.3722	159.98	187.269	
214	2.56495	1.39838	161.935	190.855	
215	2.63906	1.42554	163.967	194.618	
216	2.77259	1.46106	166.102	198.668	
217	2.77259	1.49085	168.325	202.802	
218	2.83321	1.52203	170.641	207.114	
219	2.89037	1.55477	173.059	211.608	
220	2.89037	1.59819	175.613	216.227	
221	2.94444	1.63524	178.287	221.042	
222	3.04452	1.67466	181.091	226.141	
223	3.09104	1.72793	184.077	231.482	
224	3.21888	1.77438	187.226	237.193	
225	3.29584	1.82501	190.556	243.208	
226	3.55535	1.88079	194.094	249.895	
227	3.78419	1.95996	197.935	257.312	
228	3.82864	2.03352	202.07	265.098	
229	3.89182	2.12007	206.565	273.349	
230	3.91202	2.25713	211.66	282.179	
231	3.95124	2.40892	217.462	291.697	
232	4.86753	2.65209	224.496	304.606	

Data Set Standard Deviation = 1.48965

Numerator = 92784.8
Denominator = 115077
W Statistic = 0.806282 = 92784.8 / 115077

5% Critical value of 0.976 exceeds 0.806282
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.806282
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	218
	3/16/1999	ND<-0.693147	77.5
	9/23/1999	2.19722	212
	3/14/2000	ND<-0.693147	77.5
	9/23/2003	ND<-0.693147	77.5
	3/10/2004	3.21888	224
	10/12/2004	ND<-0.693147	77.5
	4/1/2005	ND<-0.693147	77.5
	10/26/2005	ND<-0.693147	77.5
	6/19/2006	ND<-0.693147	77.5
	11/18/2006	ND<0 J	77.5
	6/2/2007	1.09861	199
	11/15/2007	ND<-0.693147	77.5
	5/20/2008	ND<-0.693147	77.5
	11/20/2008	ND<-0.693147	77.5
	6/11/2009	-2.04022 J	163
	11/16/2009	-1.20397 J	177
	6/30/2010	-1.66073 J	172
	11/17/2010	-1.83258 J	166

Rank Sum = 2383.5
Rank Mean = 125.447

Background Rank Sum = 2383.5
Background Rank Mean = 125.447

Compliance Wells

Well ID	Date	Result	Rank
LMW-10	3/14/2000	3.91202	230
	9/23/2003	ND<-0.693147	77.5
	3/10/2004	4.86753	232
	10/12/2004	ND<-0.693147	77.5
	4/1/2005	ND<-0.693147	77.5
	10/26/2005	ND<-0.693147	77.5
	6/19/2006	ND<0 J	77.5
	11/18/2006	ND<-0.693147	77.5
	6/2/2007	1.38629	208
	11/15/2007	ND<-0.693147	77.5
	5/20/2008	ND<-0.693147	77.5
	11/20/2008	ND<0 J	77.5
	6/11/2009	ND<-3.21888 U	77.5
	11/16/2009	ND<-3.21888 U	77.5
	6/30/2010	-2.20727 J	160
	11/17/2010	ND<-3.21888 U	77.5

Rank Sum = 1760
Rank Mean = 110

LMW-9D	11/18/2006	1.09861	200
	6/2/2007	1.09861	201
	11/15/2007	ND<0 J	77.5
	5/20/2008	1.09861	202
	11/20/2008	ND<-0.693147	77.5
	6/11/2009	-0.34249	185
	11/16/2009	-1.17118	178
	6/30/2010	-1.46968 J	175
	11/17/2010	-0.820981	180

Rank Sum = 1476
Rank Mean = 164

LMW-14R	6/2/2007	1.38629	209
	11/15/2007	ND<-0.693147	77.5
	5/20/2008	ND<-0.693147	77.5
	11/20/2008	ND<-0.693147	77.5
	6/11/2009	-1.51413 J	174
	6/30/2010	-2.30259 J	159
	11/17/2010	-2.20727 J	161

Rank Sum = 935.5
Rank Mean = 133.643

LMW-8	1/16/1998	ND<-0.693147	77.5
	3/16/1999	ND<-0.693147	77.5
	9/23/1999	3.04452	222
	3/14/2000	ND<-0.693147	77.5
	9/23/2003	ND<-0.693147	77.5
	3/10/2004	ND<-0.693147	77.5
	10/12/2004	ND<-0.693147	77.5
	4/1/2005	ND<-0.693147	77.5
	10/26/2005	ND<-0.693147	77.5
	6/19/2006	ND<-0.693147	77.5
	11/18/2006	ND<-0.693147	77.5
	6/2/2007	ND<-0.693147	77.5
	11/15/2007	ND<-0.693147	77.5
	5/20/2008	ND<-0.693147	77.5
	11/20/2008	ND<-0.693147	77.5
	6/11/2009	ND<-3.21888 U	77.5
	11/16/2009	ND<-3.21888 U	77.5
	6/30/2010	ND<-3.21888 U	77.5
	11/17/2010	ND<-3.21888 U	77.5

Rank Sum = 1617
Rank Mean = 85.1053

LMW-3S	11/18/2006	ND<-0.693147	77.5
	6/2/2007	1.09861	203
	11/15/2007	0	189
	5/20/2008	ND<-0.693147	77.5
	11/20/2008	ND<-0.693147	77.5
	6/11/2009	-0.544727	184
	11/16/2009	ND<-3.21888 U	77.5
	6/30/2010	-2.40795 J	157
	11/17/2010	0.530628	196

Rank Sum = 1239
Rank Mean = 137.667

LMW-6	1/16/1998	ND<-0.693147	77.5
	3/16/1999	ND<-0.693147	77.5
	9/23/1999	2.77259	216
	3/14/2000	ND<-0.693147	77.5
	9/23/2003	ND<-0.693147	77.5

	3/10/2004	ND<-0.693147	77.5
	10/12/2004	ND<-0.693147	77.5
	4/1/2005	ND<-0.693147	77.5
	10/26/2005	ND<-0.693147	77.5
	6/19/2006	ND<-0.693147	77.5
	11/18/2006	ND<-0.693147	77.5
	6/2/2007	ND<0 J	77.5
	11/15/2007	ND<-0.693147	77.5
	5/20/2008	ND<-0.693147	77.5
	11/20/2008	ND<-0.693147	77.5
	6/11/2009	-2.52573 J	155
	11/16/2009	ND<-3.21888 U	77.5
	6/30/2010	-1.96611 J	164
	11/17/2010	-1.77196 J	169

Rank Sum = 1866.5
Rank Mean = 98.2368

LMW-7	1/16/1998	ND<-0.693147	77.5
	3/16/1999	ND<-0.693147	77.5
	9/23/1999	2.89037	219
	3/14/2000	2.77259	217
	9/23/2003	ND<-0.693147	77.5
	3/10/2004	ND<-0.693147	77.5
	10/12/2004	ND<-0.693147	77.5
	4/1/2005	1.09861	204
	10/26/2005	1.09861	205
	6/19/2006	1.09861	206
	11/18/2006	0	190
	6/2/2007	1.09861	207
	11/15/2007	ND<-0.693147	77.5
	5/20/2008	ND<-0.693147	77.5
	11/20/2008	ND<-0.693147	77.5
	6/11/2009	-0.127833	187
	11/17/2010	-0.150823	186

Rank Sum = 2441
Rank Mean = 143.588

LMW-3	11/19/1996	ND<-0.693147	77.5
	3/24/1997	2.3979	213
	1/16/1998	ND<-0.693147	77.5
	3/16/1999	ND<-0.693147	77.5
	9/23/1999	2.07944	211
	3/14/2000	ND<-0.693147	77.5
	9/23/2003	ND<-0.693147	77.5
	3/10/2004	ND<-0.693147	77.5
	10/12/2004	ND<-0.693147	77.5
	4/1/2005	ND<-0.693147	77.5
	10/26/2005	ND<-0.693147	77.5
	6/19/2006	ND<-0.693147	77.5
	11/18/2006	ND<-0.693147	77.5
	6/2/2007	ND<-0.693147	77.5
	11/15/2007	0	191
	5/20/2008	ND<-0.693147	77.5
	11/20/2008	ND<-0.693147	77.5
	6/11/2009	ND<-3.21888 U	77.5
	11/16/2009	-0.994252	179
	6/30/2010	-1.77196 J	170
	11/17/2010	-0.673345	181

Rank Sum = 2307.5
Rank Mean = 109.881

LMW-9S	11/18/2006	ND<-0.693147	77.5

	6/2/2007	0.693147	197
	11/15/2007	0	192
	5/20/2008	ND<-0.693147	77.5
	11/20/2008	ND<0 J	77.5
	6/11/2009	ND<-3.21888 U	77.5
	6/30/2010	-2.20727 J	162
	11/17/2010	-0.597837	182

Rank Sum = 1043
Rank Mean = 130.375

LMW-15R	11/18/2006	ND<0 J	77.5
	6/2/2007	ND<-0.693147	77.5
	11/15/2007	ND<-0.693147	77.5
	11/15/2007	ND<-0.693147	77.5
	5/20/2008	ND<-0.693147	77.5
	5/20/2008	ND<-0.693147	77.5
	11/20/2008	ND<-0.693147	77.5
	11/20/2008	0	193
	6/11/2009	-0.116534	188
	11/16/2009	ND<-3.21888 U	77.5
	11/16/2009	-1.56065 J	173
	11/16/2009	-1.96611 J	165
	6/30/2010	-2.52573 J	156
	11/17/2010	-1.83258 J	167

Rank Sum = 1662
Rank Mean = 118.714

LMW-16	11/18/2006	ND<0 J	77.5
	6/2/2007	1.60944	210
	11/15/2007	0.693147	198
	5/20/2008	ND<-0.693147	77.5
	11/20/2008	ND<-0.693147	77.5
	6/11/2009	ND<-3.21888 U	77.5
	11/16/2009	-2.40795 J	158
	6/30/2010	-1.34707 J	176
	11/17/2010	ND<-3.21888 U	77.5

Rank Sum = 1129.5
Rank Mean = 125.5

LMW-9	1/16/1998	ND<-0.693147	77.5
	3/16/1999	ND<-0.693147	77.5
	9/23/1999	3.29584	225
	3/14/2000	ND<-0.693147	77.5
	9/23/2003	ND<-0.693147	77.5
	3/10/2004	2.56495	214
	10/12/2004	ND<-0.693147	77.5
	4/1/2005	ND<0 J	77.5
	10/26/2005	ND<-0.693147	77.5
	6/19/2006	ND<0 J	77.5
	11/18/2006	ND<0 J	77.5
	6/2/2007	0	194
	11/15/2007	ND<-0.693147	77.5
	5/20/2008	0	195
	11/20/2008	ND<-0.693147	77.5
	6/11/2009	-1.77196 J	171
	11/16/2009	ND<-3.21888 U	77.5
	6/30/2010	-1.83258 J	168
	11/17/2010	-0.562119	183

Rank Sum = 2280
Rank Mean = 120

MW-5	1/16/1998	ND<-0.693147	77.5

	3/16/1999	ND<-0.693147	77.5
	9/23/1999	2.63906	215
	3/14/2000	3.09104	223
	9/23/2003	ND<-0.693147	77.5
	3/10/2004	3.95124	231
	10/12/2004	ND<-0.693147	77.5
	4/1/2005	ND<-0.693147	77.5
	10/26/2005	ND<-0.693147	77.5
	6/19/2006	ND<-0.693147	77.5
	11/15/2007	ND<-0.693147	77.5
	5/20/2008	ND<-0.693147	77.5
	11/20/2008	ND<-0.693147	77.5

Rank Sum = 1444
Rank Mean = 111.077

LMW-13	3/14/2000	3.78419	227
	9/23/2003	ND<-0.693147	77.5
	3/10/2004	3.55535	226
	10/12/2004	ND<-0.693147	77.5
	4/1/2005	ND<-0.693147	77.5
	10/26/2005	ND<-0.693147	77.5
	6/19/2006	ND<-0.693147	77.5
	6/2/2007	ND<-0.693147	77.5
	11/15/2007	ND<-0.693147	77.5
	5/20/2008	ND<-0.693147	77.5
	11/20/2008	ND<-0.693147	77.5

Rank Sum = 1150.5
Rank Mean = 104.591

LMW-11	3/14/2000	2.94444	221
	9/23/2003	ND<-0.693147	77.5
	3/10/2004	3.82864	228
	10/12/2004	ND<-0.693147	77.5
	4/1/2005	ND<-0.693147	77.5
	10/26/2005	ND<-0.693147	77.5
	6/19/2006	ND<-0.693147	77.5
	6/2/2007	ND<-0.693147	77.5
	11/15/2007	ND<-0.693147	77.5
	5/20/2008	ND<-0.693147	77.5
	11/20/2008	ND<-0.693147	77.5

Rank Sum = 1146.5
Rank Mean = 104.227

LMW-12	3/14/2000	3.89182	229
	9/23/2003	ND<-0.693147	77.5
	3/10/2004	2.89037	220
	10/12/2004	ND<-0.693147	77.5
	4/1/2005	ND<-0.693147	77.5
	10/26/2005	ND<-0.693147	77.5
	6/19/2006	ND<-0.693147	77.5
	6/2/2007	ND<-0.693147	77.5
	11/15/2007	ND<-0.693147	77.5
	5/20/2008	ND<-0.693147	77.5
	11/20/2008	ND<-0.693147	77.5

Rank Sum = 1146.5
Rank Mean = 104.227

Calculation Results:

Kruskal-Wallis H Statistic = 16.6223
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 23.4935

95% Confidence comparison value is 26.2962 at 16 degrees of freedom
16.6223 < 26.2962 indicating no significant group difference at 5% significance level
23.4935 < 26.2962 indicating no significant group difference at 5% significance level when adjusted for ties

Concentrations (ug/L)

Parameter: Mercury

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 207
Total Non-Detect: 202
Percent Non-Detects: 97.5845%
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<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
			11/17/2010	ND<0.09 U	ND<0.09 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-3S	7	7 (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
			11/17/2010	ND<0.09 U	ND<0.09 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<0 J	ND<0 J
			11/20/2008	ND<1	ND<1
			6/30/2010	ND<0.09 U	ND<0.09 U
			11/17/2010	ND<0.09 U	ND<0.09 U
LMW-9S	7	5 (71.4286%)	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	
		11/17/2010	0.23	0.23	
LMW-9D	7	7 (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	
		11/17/2010	ND<0.09 U	ND<0.09 U	
LMW-16	7	7 (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	
		11/17/2010	ND<0.09 U	ND<0.09 U	
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<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	
		11/17/2010	ND<0.09 U	ND<0.09 U	
LMW-15R	10	10 (100%)	11/18/2006	ND<1	ND<1
		6/2/2007	ND<0 J	ND<0 J	
		11/15/2007	ND<1	ND<1	
		11/15/2007	ND<0 J	ND<0 J	
		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	
		11/17/2010	ND<0.09 U	ND<0.09 U	
LMW-14R	6	6 (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	
		11/17/2010	ND<0.09 U	ND<0.09 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<0	ND<0	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/17/2010	ND<0.09 U	ND<0.09 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<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	
			11/17/2010	ND<0.09 U	ND<0.09 U	
LMW-8	17	14 (82.3529%)	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	
			11/17/2010	0.26	0.26	
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	
			6/30/2010	ND<0.09 U		ND<0.09 U
			11/17/2010	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	
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 = 207

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0	-2.652097.03356	0	
2	0	-2.3656112.6297	0	
3	0	-2.1972817.4578	0	
4	0	-2.0748521.7627	0	
5	0	-1.9773725.6727	0	
6	0	-1.9110329.3248	0	
7	0	-1.8384332.7046	0	
8	0	-1.7743835.853	0	
9	0	-1.7168838.8007	0	
10	0	-1.6645641.5715	0	
11	0	-1.6257644.2146	0	
12	0	-1.5804746.7124	0	
13	0	-1.5382 49.0785	0	
14	0	-1.4985251.324	0	
15	0	-1.4610653.4587	0	
16	0	-1.4325 55.5108	0	
17	0	-1.3983857.4663	0	
18	0	-1.3658159.3317	0	
19	0	-1.3346261.1129	0	
20	0	-1.3046962.8151	0	
21	0.045	-1.2815564.4575	-0.0576698	
22	0.045	-1.2535766.0289	-0.11408	
23	0.045	-1.2265367.5333	-0.169274	
24	0.045	-1.2003668.9741	-0.22329	
25	0.045	-1.1749970.3547	-0.276165	
26	0.045	-1.1503571.678	-0.32793	
27	0.045	-1.1311372.9575	-0.378831	
28	0.045	-1.1076874.1845	-0.428677	
29	0.045	-1.0848275.3613	-0.477494	
30	0.045	-1.0625276.4903	-0.525307	
31	0.045	-1.0407377.5734	-0.57214	
32	0.045	-1.0236578.6212	-0.618205	
33	0.045	-1.0027179.6267	-0.663327	
34	0.045	-0.982202	80.5914	-0.707526
35	0.045	-0.9621 81.517	-0.75082	
36	0.045	-0.942375	82.4051	-0.793227
37	0.045	-0.926859	83.2642	-0.834936
38	0.045	-0.907769	84.0882	-0.875785
39	0.045	-0.889006	84.8785	-0.915791
40	0.045	-0.8705585.6364	-0.954965	
41	0.045	-0.852385	86.363	-0.993323
42	0.18	-0.838054	87.0653	-1.14417
43	0.22	-0.820379	87.7383	-1.32466
44	0.23	-0.802956	88.3831	-1.50934
45	0.26	-0.785774	89.0005	-1.71364
46	0.5	-0.768821	89.5916	-2.09805
47	0.5	-0.755415	90.1622	-2.47575
48	0.5	-0.738846	90.7081	-2.84518
49	0.5	-0.722479	91.2301	-3.20642

50	0.5	-0.706302	91.729	-3.55957
51	0.5	-0.690309	92.2055	-3.90472
52	0.5	-0.6744992.6604	-4.24197	
53	0.5	-0.661955	93.0986	-4.57295
54	0.5	-0.646431	93.5165	-4.89616
55	0.5	-0.631062	93.9147	-5.21169
56	0.5	-0.615839	94.294	-5.51961
57	0.5	-0.6007694.6549	-5.81999	
58	0.5	-0.588793	95.0016	-6.11439
59	0.5	-0.573953	95.331	-6.40136
60	0.5	-0.559237	95.6437	-6.68098
61	0.5	-0.544642	95.9404	-6.9533
62	0.5	-0.530162	96.2214	-7.21838
63	0.5	-0.518658	96.4905	-7.47771
64	0.5	-0.504372	96.7448	-7.7299
65	0.5	-0.490189	96.9851	-7.97499
66	0.5	-0.476105	97.2118	-8.21305
67	0.5	-0.462114	97.4254	-8.4441
68	0.5	-0.450985	97.6287	-8.6696
69	0.5	-0.437153	97.8198	-8.88817
70	0.5	-0.423405	97.9991	-9.09988
71	0.5	-0.409735	98.167	-9.30474
72	0.5	-0.396142	98.3239	-9.50281
73	0.5	-0.385321	98.4724	-9.69547
74	0.5	-0.371856	98.6107	-9.8814
75	0.5	-0.358459	98.7392	-10.0606
76	0.5	-0.345126	98.8583	-10.2332
77	0.5	-0.331854	98.9684	-10.3991
78	0.5	-0.318639	99.0699	-10.5584
79	0.5	-0.308108	99.1649	-10.7125
80	0.5	-0.294992	99.2519	-10.86
81	0.5	-0.281926	99.3314	-11.001
82	0.5	-0.268908	99.4037	-11.1354
83	0.5	-0.255936	99.4692	-11.2634
84	0.5	-0.2455999.5295	-11.3862	
85	0.5	-0.232693	99.5836	-11.5025
86	0.5	-0.219834	99.632	-11.6124
87	0.5	-0.207012	99.6748	-11.7159
88	0.5	-0.194225	99.7126	-11.8131
89	0.5	-0.184017	99.7464	-11.9051
90	0.5	-0.171285	99.7758	-11.9907
91	0.5	-0.158579	99.8009	-12.07
92	0.5	-0.1459 99.8222	-12.1429	
93	0.5	-0.133244	99.8399	-12.2096
94	0.5	-0.123135	99.8551	-12.2711
95	0.5	-0.110516	99.8673	-12.3264
96	0.5	-0.0979139	99.8769	-12.3754
97	0.5	-0.0853288	99.8842	-12.418
98	0.5	-0.0727562	99.8895	-12.4544
99	0.5	-0.0627062	99.8934	-12.4857
100	0.5	-0.0501541	99.8959	-12.5108
101	0.5	-0.0376076	99.8973	-12.5296
102	0.5	-0.0250691	99.898	-12.5422
103	0.5	-0.0125328	99.8981	-12.5484
104	0.5	0 99.8981	-12.5484	
105	0.5	0.0125328	99.8983	-12.5422
106	0.5	0.0250691	99.8989	-12.5296
107	0.5	0.0376076	99.9003	-12.5108
108	0.5	0.0501541	99.9028	-12.4857
109	0.5	0.0627062	99.9068	-12.4544
110	0.5	0.0727562	99.9121	-12.418
111	0.5	0.0853288	99.9193	-12.3754

112	0.5	0.0979139	99.9289	-12.3264
113	0.5	0.110516	99.9411	-12.2711
114	0.5	0.123135	99.9563	-12.2096
115	0.5	0.133244	99.9741	-12.1429
116	0.5	0.1459	99.9954	-12.07
117	0.5	0.158579	100.02	-11.9907
118	0.5	0.171285	100.05	-11.9051
119	0.5	0.184017	100.084	-11.8131
120	0.5	0.194225	100.121	-11.7159
121	0.5	0.207012	100.164	-11.6124
122	0.5	0.219834	100.213	-11.5025
123	0.5	0.232693	100.267	-11.3862
124	0.5	0.24559	100.327	-11.2634
125	0.5	0.255936	100.393	-11.1354
126	0.5	0.268908	100.465	-11.001
127	0.5	0.281926	100.544	-10.86
128	0.5	0.294992	100.631	-10.7125
129	0.5	0.308108	100.726	-10.5584
130	0.5	0.318639	100.828	-10.3991
131	0.5	0.331854	100.938	-10.2332
132	0.5	0.345126	101.057	-10.0606
133	0.5	0.358459	101.186	-9.8814
134	0.5	0.371856	101.324	-9.69547
135	0.5	0.385321	101.472	-9.50281
136	0.5	0.396142	101.629	-9.30474
137	0.5	0.409735	101.797	-9.09988
138	0.5	0.423405	101.976	-8.88817
139	0.5	0.437153	102.168	-8.6696
140	0.5	0.450985	102.371	-8.4441
141	0.5	0.462114	102.584	-8.21305
142	0.5	0.476105	102.811	-7.97499
143	0.5	0.490189	103.051	-7.7299
144	0.5	0.504372	103.306	-7.47771
145	0.5	0.518658	103.575	-7.21838
146	0.5	0.530162	103.856	-6.9533
147	0.5	0.544642	104.153	-6.68098
148	0.5	0.559237	104.465	-6.40136
149	0.5	0.573953	104.795	-6.11439
150	0.5	0.588793	105.141	-5.81999
151	0.5	0.60076	105.502	-5.51961
152	0.5	0.615839	105.882	-5.21169
153	0.5	0.631062	106.28	-4.89616
154	0.5	0.646431	106.698	-4.57295
155	0.5	0.661955	107.136	-4.24197
156	0.5	0.67449	107.591	-3.90472
157	0.5	0.690309	108.067	-3.55957
158	0.5	0.706302	108.566	-3.20642
159	0.5	0.722479	109.088	-2.84518
160	0.5	0.738846	109.634	-2.47575
161	0.5	0.755415	110.205	-2.09805
162	0.5	0.768821	110.796	-1.71364
163	0.5	0.785774	111.413	-1.32075
164	0.5	0.802956	112.058	-0.919272
165	0.5	0.820379	112.731	-0.509082
166	0.5	0.838054	113.433	-0.0900554
167	0.5	0.852385	114.16	0.336137
168	0.5	0.87055	114.918	0.771412
169	0.5	0.889006	115.708	1.21592
170	0.5	0.907769	116.532	1.6698
171	0.5	0.926859	117.391	2.13323
172	0.5	0.942375	118.279	2.60442
173	0.5	0.9621	119.205	3.08547

174	0.5	0.982202		120.17	3.57657
175	0.5	1.00271	121.175	4.07792	
176	0.5	1.02365	122.223	4.58975	
177	0.5	1.04073	123.306	5.11012	
178	0.5	1.06252	124.435	5.64138	
179	0.5	1.08482	125.612	6.18379	
180	0.5	1.10768	126.839	6.73763	
181	0.5	1.13113	128.118	7.30319	
182	0.5	1.15035	129.442	7.87837	
183	0.5	1.17499	130.822	8.46586	
184	0.5	1.20036	132.263	9.06604	
185	0.5	1.22653	133.767	9.67931	
186	0.5	1.25357	135.339	10.3061	
187	0.5	1.28155	136.981	10.9469	
188	0.5	1.30469	138.683	11.5992	
189	0.5	1.33462	140.465	12.2665	
190	0.5	1.36581	142.33	12.9494	
191	0.5	1.39838	144.285	13.6486	
192	0.5	1.4325	146.338	14.3649	
193	0.5	1.46106	148.472	15.0954	
194	0.5	1.49852	150.718	15.8446	
195	0.5	1.5382	153.084	16.6137	
196	0.5	1.58047	155.582	17.404	
197	0.5	1.62576	158.225	18.2169	
198	0.5	1.66456	160.996	19.0491	
199	0.5	1.71688	163.943	19.9076	
200	0.5	1.77438	167.092	20.7948	
201	0.5	1.83843	170.471	21.714	
202	0.5	1.91103	174.124	22.6695	
203	0.5	1.97737	178.034	23.6582	
204	0.5	2.07485	182.339	24.6956	
205	0.5	2.19728	187.167	25.7943	
206	0.5	2.36561	192.763	26.9771	
207	1	2.65209	199.796	29.6291	

Data Set Standard Deviation = 0.19638
Numerator = 877.886
Denominator = 1587.27
W Statistic = 0.55308 = 877.886 / 1587.27

5% Critical value of 0.976 exceeds 0.55308
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.55308
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 = 207

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-3.10109	-2.65209	7.03356	8.22437
2	-3.10109	-2.36561	12.6297	15.5604
3	-3.10109	-2.19728	17.4578	22.3743
4	-3.10109	-2.07485	21.7627	28.8086
5	-3.10109	-1.97737	25.6727	34.9406
6	-3.10109	-1.91103	29.3248	40.8669
7	-3.10109	-1.83843	32.7046	46.568
8	-3.10109	-1.77438	35.853	52.0706
9	-3.10109	-1.71688	38.8007	57.3948
10	-3.10109	-1.66456	41.5715	62.5567
11	-3.10109	-1.62576	44.2146	67.5984
12	-3.10109	-1.58047	46.7124	72.4996
13	-3.10109	-1.5382	49.0785	77.2697
14	-3.10109	-1.49852	51.324	81.9167
15	-3.10109	-1.46106	53.4587	86.4476
16	-3.10109	-1.4325	55.5108	90.8899
17	-3.10109	-1.39838	57.4663	95.2264
18	-3.10109	-1.36581	59.3317	99.4619
19	-3.10109	-1.33462	61.1129	103.601
20	-3.10109	-1.30469	62.8151	107.647
21	-3.10109	-1.28155	64.4575	111.621
22	-1.7148	-1.25357	66.0289	113.77
23	-1.51413	-1.22653	67.5333	115.628
24	-1.46968	-1.20036	68.9741	117.392
25	-1.34707	-1.17499	70.3547	118.975
26	-0.693147	-1.15035	71.678	119.772
27	-0.693147	-1.13113	72.9575	120.556
28	-0.693147	-1.10768	74.1845	121.324
29	-0.693147	-1.08482	75.3613	122.076
30	-0.693147	-1.06252	76.4903	122.812
31	-0.693147	-1.04073	77.5734	123.533
32	-0.693147	-1.02365	78.6212	124.243
33	-0.693147	-1.00271	79.6267	124.938
34	-0.693147	-0.982202	80.5914	125.619
35	-0.693147	-0.9621	81.517	126.286
36	-0.693147	-0.942375	82.4051	126.939
37	-0.693147	-0.926859	83.2642	127.581
38	-0.693147	-0.907769	84.0882	128.211
39	-0.693147	-0.889006	84.8785	128.827
40	-0.693147	-0.870558	85.6364	129.43
41	-0.693147	-0.852385	86.363	130.021
42	-0.693147	-0.838054	87.0653	130.602
43	-0.693147	-0.820379	87.7383	131.171
44	-0.693147	-0.802956	88.3831	131.727
45	-0.693147	-0.785774	89.0005	132.272
46	-0.693147	-0.768821	89.5916	132.805
47	-0.693147	-0.755415	90.1622	133.328
48	-0.693147	-0.738846	90.7081	133.84
49	-0.693147	-0.722479	91.2301	134.341

50	-0.693147	-0.706302	91.729	134.831
51	-0.693147	-0.690309	92.2055	135.309
52	-0.693147	-0.674499	92.6604	135.777
53	-0.693147	-0.661955	93.0986	136.236
54	-0.693147	-0.646431	93.5165	136.684
55	-0.693147	-0.631062	93.9147	137.121
56	-0.693147	-0.615839	94.294	137.548
57	-0.693147	-0.600769	94.6549	137.964
58	-0.693147	-0.588793	95.0016	138.373
59	-0.693147	-0.573953	95.331	138.77
60	-0.693147	-0.559237	95.6437	139.158
61	-0.693147	-0.544642	95.9404	139.536
62	-0.693147	-0.530162	96.2214	139.903
63	-0.693147	-0.518658	96.4905	140.263
64	-0.693147	-0.504372	96.7448	140.612
65	-0.693147	-0.490189	96.9851	140.952
66	-0.693147	-0.476105	97.2118	141.282
67	-0.693147	-0.462114	97.4254	141.602
68	-0.693147	-0.450985	97.6287	141.915
69	-0.693147	-0.437153	97.8198	142.218
70	-0.693147	-0.423405	97.9991	142.511
71	-0.693147	-0.409735	98.167	142.795
72	-0.693147	-0.396142	98.3239	143.07
73	-0.693147	-0.385321	98.4724	143.337
74	-0.693147	-0.371856	98.6107	143.595
75	-0.693147	-0.358459	98.7392	143.843
76	-0.693147	-0.345126	98.8583	144.082
77	-0.693147	-0.331854	98.9684	144.312
78	-0.693147	-0.318639	99.0699	144.533
79	-0.693147	-0.308108	99.1649	144.747
80	-0.693147	-0.294992	99.2519	144.951
81	-0.693147	-0.281926	99.3314	145.147
82	-0.693147	-0.268908	99.4037	145.333
83	-0.693147	-0.255936	99.4692	145.511
84	-0.693147	-0.245599	99.5295	145.681
85	-0.693147	-0.232693	99.5836	145.842
86	-0.693147	-0.219834	99.632	145.994
87	-0.693147	-0.207012	99.6748	146.138
88	-0.693147	-0.194225	99.7126	146.273
89	-0.693147	-0.184017	99.7464	146.4
90	-0.693147	-0.171285	99.7758	146.519
91	-0.693147	-0.158579	99.8009	146.629
92	-0.693147	-0.1459	99.8222	146.73
93	-0.693147	-0.133244	99.8399	146.822
94	-0.693147	-0.123135	99.8551	146.908
95	-0.693147	-0.110516	99.8673	146.984
96	-0.693147	-0.0979139	99.8769	147.052
97	-0.693147	-0.0853288	99.8842	147.111
98	-0.693147	-0.0727562	99.8895	147.162
99	-0.693147	-0.0627062	99.8934	147.205
100	-0.693147	-0.0501541	99.8959	147.24
101	-0.693147	-0.0376076	99.8973	147.266
102	-0.693147	-0.0250691	99.898	147.283
103	-0.693147	-0.0125328	99.8981	147.292
104	-0.693147	0	99.8981	147.292
105	-0.693147	0.0125328	99.8983	147.283
106	-0.693147	0.0250691	99.8989	147.266
107	-0.693147	0.0376076	99.9003	147.24
108	-0.693147	0.0501541	99.9028	147.205
109	-0.693147	0.0627062	99.9068	147.162
110	-0.693147	0.0727562	99.9121	147.111
111	-0.693147	0.0853288	99.9193	147.052

112	-0.693147	0.0979139	99.9289	146.984
113	-0.693147	0.110516	99.9411	146.908
114	-0.693147	0.123135	99.9563	146.822
115	-0.693147	0.133244	99.9741	146.73
116	-0.693147	0.1459	99.9954	146.629
117	-0.693147	0.158579	100.02	146.519
118	-0.693147	0.171285	100.05	146.4
119	-0.693147	0.184017	100.084	146.273
120	-0.693147	0.194225	100.121	146.138
121	-0.693147	0.207012	100.164	145.994
122	-0.693147	0.219834	100.213	145.842
123	-0.693147	0.232693	100.267	145.681
124	-0.693147	0.24559	100.327	145.511
125	-0.693147	0.255936	100.393	145.333
126	-0.693147	0.268908	100.465	145.147
127	-0.693147	0.281926	100.544	144.951
128	-0.693147	0.294992	100.631	144.747
129	-0.693147	0.308108	100.726	144.533
130	-0.693147	0.318639	100.828	144.312
131	-0.693147	0.331854	100.938	144.082
132	-0.693147	0.345126	101.057	143.843
133	-0.693147	0.358459	101.186	143.595
134	-0.693147	0.371856	101.324	143.337
135	-0.693147	0.385321	101.472	143.07
136	-0.693147	0.396142	101.629	142.795
137	-0.693147	0.409735	101.797	142.511
138	-0.693147	0.423405	101.976	142.218
139	-0.693147	0.437153	102.168	141.915
140	-0.693147	0.450985	102.371	141.602
141	-0.693147	0.462114	102.584	141.282
142	-0.693147	0.476105	102.811	140.952
143	-0.693147	0.490189	103.051	140.612
144	-0.693147	0.504372	103.306	140.263
145	-0.693147	0.518658	103.575	139.903
146	-0.693147	0.530162	103.856	139.536
147	-0.693147	0.544642	104.153	139.158
148	-0.693147	0.559237	104.465	138.77
149	-0.693147	0.573953	104.795	138.373
150	-0.693147	0.588793	105.141	137.964
151	-0.693147	0.60076	105.502	137.548
152	-0.693147	0.615839	105.882	137.121
153	-0.693147	0.631062	106.28	136.684
154	-0.693147	0.646431	106.698	136.236
155	-0.693147	0.661955	107.136	135.777
156	-0.693147	0.67449	107.591	135.309
157	-0.693147	0.690309	108.067	134.831
158	-0.693147	0.706302	108.566	134.341
159	-0.693147	0.722479	109.088	133.84
160	-0.693147	0.738846	109.634	133.328
161	-0.693147	0.755415	110.205	132.805
162	-0.693147	0.768821	110.796	132.272
163	-0.693147	0.785774	111.413	131.727
164	-0.693147	0.802956	112.058	131.171
165	-0.693147	0.820379	112.731	130.602
166	-0.693147	0.838054	113.433	130.021
167	-0.693147	0.852385	114.16	129.43
168	-0.693147	0.87055	114.918	128.827
169	-0.693147	0.889006	115.708	128.211
170	-0.693147	0.907769	116.532	127.581
171	-0.693147	0.926859	117.391	126.939
172	-0.693147	0.942375	118.279	126.286
173	-0.693147	0.9621	119.205	125.619

174	-0.693147		0.982202	120.17	124.938
175	-0.693147		1.00271	121.175	124.243
176	-0.693147		1.02365	122.223	123.533
177	-0.693147		1.04073	123.306	122.812
178	-0.693147		1.06252	124.435	122.076
179	-0.693147		1.08482	125.612	121.324
180	-0.693147		1.10768	126.839	120.556
181	-0.693147		1.13113	128.118	119.772
182	-0.693147		1.15035	129.442	118.975
183	-0.693147		1.17499	130.822	118.16
184	-0.693147		1.20036	132.263	117.328
185	-0.693147		1.22653	133.767	116.478
186	-0.693147		1.25357	135.339	115.609
187	0	1.28155	136.981	115.609	
188	0	1.30469	138.683	115.609	
189	0	1.33462	140.465	115.609	
190	0	1.36581	142.33	115.609	
191	0	1.39838	144.285	115.609	
192	0	1.4325	146.338	115.609	
193	0	1.46106	148.472	115.609	
194	0	1.49852	150.718	115.609	
195	0	1.5382	153.084	115.609	
196	0	1.58047	155.582	115.609	
197	0	1.62576	158.225	115.609	
198	0	1.66456	160.996	115.609	
199	0	1.71688	163.943	115.609	
200	0	1.77438	167.092	115.609	
201	0	1.83843	170.471	115.609	
202	0	1.91103	174.124	115.609	
203	0	1.97737	178.034	115.609	
204	0	2.07485	182.339	115.609	
205	0	2.19728	187.167	115.609	
206	0	2.36561	192.763	115.609	
207	0	2.65209	199.796	115.609	

Data Set Standard Deviation = 0.785626
Numerator = 13365.4
Denominator = 25403.1
W Statistic = 0.526134 = 13365.4 / 25403.1

5% Critical value of 0.976 exceeds 0.526134
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.526134
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 = 97.5845%
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-3S	11/17/2010	1	-3.10109	FALSE
LMW-10	11/17/2010	1	-3.10109	FALSE
LMW-9S	11/17/2010	1	-1.46968	FALSE
LMW-9D	11/17/2010	1	-3.10109	FALSE
LMW-16	11/17/2010	1	-3.10109	FALSE
LMW-3	11/17/2010	1	-3.10109	FALSE
LMW-15R	11/17/2010	1	-3.10109	FALSE
LMW-14R	11/17/2010	1	-3.10109	FALSE
LMW-7	11/17/2010	1	-3.10109	FALSE
LMW-9	11/17/2010	1	-3.10109	FALSE
LMW-8	11/17/2010	1	-1.34707	FALSE
LMW-6	11/17/2010	1	-3.10109	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
LMW-12	11/20/2008	1	-0.693147	FALSE

Concentrations (ug/L)

Parameter: Nickel

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 232
Total Non-Detect: 149
Percent Non-Detects: 64.2241%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	19	11 (57.8947%)	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
			11/17/2010	1.1	1.1

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9D	9	3 (33.3333%)	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
			11/17/2010	0.6 J	0.6 J
LMW-8	19	12 (63.1579%)	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	
			11/17/2010	0.65 J	0.65 J	
LMW-6	19	12 (63.1579%)	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	
			11/17/2010	1.9	1.9	
LMW-3S	9	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	
			11/17/2010	3.1	3.1	
LMW-9	19	12 (63.1579%)	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	
			11/17/2010	0.63 J	0.63 J	
LMW-3	21	16 (76.1905%)	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	
			11/17/2010	3	3	
LMW-16	9	5 (55.5556%)	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	
			11/17/2010	ND<0.4 U	ND<0.4 U	
LMW-10	16	13 (81.25%)	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	
			11/17/2010	ND<0.4 U	ND<0.4 U	
LMW-15R	11	6 (54.5455%)	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	
			11/17/2010	0.98 J	0.98 J	
LMW-14R	7	2 (28.5714%)	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	
			11/17/2010	1.9	1.9	
LMW-9S	11	4 (36.3636%)	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	0.8 J B	0.8 J B	
			11/16/2009	0.97 J B	0.97 J B	
			11/16/2009	1.6 J B	1.6 J B	
			6/30/2010	ND<0.4 U		ND<0.4 U
			11/17/2010	0.44 J	0.44 J	
LMW-7	17	9 (52.9412%)	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	
			11/17/2010	1.7	1.7	
LMW-13	11	11 (100%)	3/14/2000	ND<30	ND<30	
			9/23/2003	ND<30	ND<30	
			3/10/2004	ND<30	ND<30	
			10/12/2004	ND<30	ND<30	
			4/1/2005	ND<30	ND<30	
			10/26/2005	ND<30	ND<30	
			6/19/2006	ND<30	ND<30	
			6/2/2007	ND<30	ND<30	
			11/15/2007	ND<30	ND<30	
			5/20/2008	ND<30	ND<30	
			11/20/2008	ND<30	ND<30	
LMW-12	11	11 (100%)	3/14/2000	ND<30	ND<30	
			9/23/2003	ND<30	ND<30	
			3/10/2004	ND<30	ND<30	
			10/12/2004	ND<30	ND<30	
			4/1/2005	ND<30	ND<30	
			10/26/2005	ND<30	ND<30	
			6/19/2006	ND<30	ND<30	
			6/2/2007	ND<30	ND<30	
			11/15/2007	ND<30	ND<30	
			5/20/2008	ND<30	ND<30	
			11/20/2008	ND<30	ND<30	
LMW-11	11	11 (100%)	3/14/2000	ND<30	ND<30	
			9/23/2003	ND<30	ND<30	
			3/10/2004	ND<30	ND<30	
			10/12/2004	ND<30	ND<30	
			4/1/2005	ND<30	ND<30	

			10/26/2005	ND<30	ND<30	
			6/19/2006	ND<30	ND<30	
			6/2/2007	ND<30	ND<30	
			11/15/2007	ND<30	ND<30	
			5/20/2008	ND<30	ND<30	
			11/20/2008	ND<30	ND<30	
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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.2	-2.65209	7.03356	-0.530417
2	0.2	-2.40892	12.8365	-1.0122
3	0.2	-2.25713	17.9311	-1.46363
4	0.2	-2.12007	22.4258	-1.88764
5	0.2	-2.03352	26.561	-2.29435
6	0.33	-1.95996	30.4025	-2.94113
7	0.38	-1.88079	33.9398	-3.65583
8	0.44	-1.82501	37.2705	-4.45884
9	0.46	-1.77438	40.4189	-5.27505
10	0.5	-1.72793	43.4046	-6.13902
11	0.53	-1.67466	46.2091	-7.02659
12	0.54	-1.63524	48.8831	-7.90961
13	0.55	-1.59819	51.4373	-8.78862
14	0.6	-1.55477	53.8547	-9.72148
15	0.61	-1.52203	56.1712	-10.6499
16	0.63	-1.49085	58.3939	-11.5892
17	0.64	-1.46106	60.5286	-12.5242
18	0.65	-1.42554	62.5608	-13.4508
19	0.66	-1.39838	64.5162	-14.3738
20	0.69	-1.3722	66.3992	-15.3206
21	0.69	-1.34075	68.1968	-16.2457
22	0.72	-1.31652	69.93	-17.1936
23	0.76	-1.29303	71.6019	-18.1763
24	0.79	-1.26464	73.2013	-19.1754
25	0.8	-1.24264	74.7454	-20.1695
26	0.84	-1.22123	76.2368	-21.1953
27	0.97	-1.20036	77.6777	-22.3597
28	0.97	-1.17499	79.0583	-23.4994
29	0.98	-1.15522	80.3928	-24.6315
30	1	-1.1359	81.6831	-25.7674
31	1	-1.11232	82.9203	-26.8797
32	1	-1.0939	84.1169	-27.9736
33	1	-1.07584	85.2744	-29.0495
34	1	-1.05812	86.394	-30.1076
35	1	-1.03643	87.4682	-31.144
36	1	-1.01943	88.5074	-32.1635
37	1	-1.00271	89.5128	-33.1662
38	1	-0.982202	90.4776	-34.1484
39	1	-0.966088	91.4109	-35.1145
40	1	-0.950222	92.3138	-36.0647
41	1	-0.93459	93.1873	-36.9993
42	1	-0.915365	94.0252	-37.9146
43	1	-0.900227	94.8356	-38.8149
44	1.1	-0.885291	95.6193	-39.7887
45	1.1	-0.866894	96.3708	-40.7423
46	1.2	-0.852385	97.0974	-41.7651
47	1.2	-0.838054	97.7997	-42.7708
48	1.3	-0.820379	98.4727	-43.8373
49	1.6	-0.806422	99.123	-45.1276

50	1.7	-0.792618	99.7513	-46.475
51	1.8	-0.778966	100.358	-47.8772
52	1.9	-0.7621	100.939	-49.3251
53	1.9	-0.748762	101.5	-50.7478
54	1.9	-0.735557	102.041	-52.1453
55	2	-0.719228	102.558	-53.5838
56	2	-0.706302	103.057	-54.9964
57	2	-0.693493	103.538	-56.3834
58	2	-0.680797	104.001	-57.745
59	2	-0.665079	104.443	-59.0751
60	2.2	-0.652622	104.869	-60.5109
61	2.2	-0.640266	105.279	-61.9195
62	2.6	-0.624956	105.67	-63.5444
63	2.8	-0.612813	106.045	-65.2603
64	3	-0.60076	106.406	-67.0625
65	3	-0.588793	106.753	-68.8289
66	3	-0.573953	107.082	-70.5508
67	3	-0.56217	107.398	-72.2373
68	3	-0.550465	107.701	-73.8887
69	3	-0.53594	107.989	-75.4965
70	3	-0.524401	108.264	-77.0697
71	3	-0.51293	108.527	-78.6085
72	3	-0.498687	108.776	-80.1046
73	3.1	-0.487364	109.013	-81.6154
74	4	-0.476105	109.24	-83.5198
75	4	-0.464904	109.456	-85.3794
76	4.1	-0.450985	109.659	-87.2285
77	5	-0.439913	109.853	-89.428
78	5	-0.428895	110.037	-91.5725
79	5	-0.415193	110.209	-93.6485
80	5	-0.40429	110.373	-95.6699
81	5.5	-0.393433	110.527	-97.8338
82	6	-0.382622	110.674	-100.13
83	6	-0.369171	110.81	-102.345
84	6	-0.358459	110.939	-104.495
85	6	-0.347787	111.059	-106.582
86	7	-0.334503	111.171	-108.924
87	9	-0.323919	111.276	-111.839
88	15	-0.31337	111.374	-116.539
89	15	-0.302855	111.466	-121.082
90	15	-0.28976	111.55	-125.429
91	15	-0.279319	111.628	-129.618
92	15	-0.268908	111.7	-133.652
93	15	-0.255936	111.766	-137.491
94	15	-0.24559	111.826	-141.175
95	15	-0.235269	111.882	-144.704
96	15	-0.222403	111.931	-148.04
97	15	-0.212137	111.976	-151.222
98	15	-0.201894	112.017	-154.25
99	15	-0.191671	112.054	-157.126
100	15	-0.17892	112.086	-159.809
101	15	-0.168741	112.114	-162.34
102	15	-0.158579	112.139	-164.719
103	15	-0.1459	112.161	-166.908
104	15	-0.135774	112.179	-168.944
105	15	-0.125661	112.195	-170.829
106	15	-0.115562	112.208	-172.563
107	15	-0.102953	112.219	-174.107
108	15	-0.0928787	112.227	-175.5
109	15	-0.0828129	112.234	-176.742
110	15	-0.0702426	112.239	-177.796
111	15	-0.0601949	112.243	-178.699

112	15	-0.0501541	112.245	-179.451
113	15	-0.0401167	112.247	-180.053
114	15	-0.0275759	112.248	-180.467
115	15	-0.0175476	112.248	-180.73
116	15	-0.00751925	112.248	-180.843
117	15	0.00751925	112.248	-180.73
118	15	0.0175476	112.248	-180.467
119	15	0.0275759	112.249	-180.053
120	15	0.0401167	112.251	-179.451
121	15	0.0501541	112.253	-178.699
122	15	0.0601949	112.257	-177.796
123	15	0.0702426	112.262	-176.742
124	15	0.0828129	112.269	-175.5
125	15	0.0928787	112.277	-174.107
126	15	0.102953	112.288	-172.563
127	15	0.115562	112.301	-170.829
128	15	0.125661	112.317	-168.944
129	15	0.135774	112.335	-166.908
130	15	0.1459	112.357	-164.719
131	15	0.158579	112.382	-162.34
132	15	0.168741	112.41	-159.809
133	15	0.17892	112.442	-157.126
134	15	0.191671	112.479	-154.25
135	15	0.201894	112.52	-151.222
136	15	0.212137	112.565	-148.04
137	15	0.222403	112.614	-144.704
138	15	0.235269	112.67	-141.175
139	15	0.24559	112.73	-137.491
140	15	0.255936	112.796	-133.652
141	15	0.268908	112.868	-129.618
142	15	0.279319	112.946	-125.429
143	15	0.28976	113.03	-121.082
144	15	0.302855	113.122	-116.539
145	15	0.31337	113.22	-111.839
146	15	0.323919	113.325	-106.98
147	15	0.334503	113.437	-101.963
148	15	0.347787	113.558	-96.7457
149	15	0.358459	113.686	-91.3688
150	15	0.369171	113.822	-85.8312
151	15	0.382622	113.969	-80.0919
152	15	0.393433	114.123	-74.1904
153	15	0.40429	114.287	-68.1261
154	15	0.415193	114.459	-61.8982
155	15	0.428895	114.643	-55.4647
156	15	0.439913	114.837	-48.866
157	15	0.450985	115.04	-42.1013
158	15	0.464904	115.256	-35.1277
159	15	0.476105	115.483	-27.9861
160	15	0.487364	115.721	-20.6757
161	15	0.498687	115.969	-13.1954
162	15	0.51293	116.232	-5.50141
163	15	0.524401	116.507	2.3646
164	15	0.53594	116.795	10.4037
165	15	0.550465	117.098	18.6607
166	15	0.56217	117.414	27.0932
167	15	0.573953	117.743	35.7025
168	15	0.588793	118.09	44.5344
169	15	0.60076	118.451	53.5458
170	15	0.612813	118.826	62.738
171	15	0.624956	119.217	72.1123
172	15	0.640266	119.627	81.7163
173	15	0.652622	120.053	91.5057

174	15	0.665079		120.495	101.482
175	15	0.680797		120.958	111.694
176	15	0.693493		121.439	122.096
177	15	0.706302		121.938	132.691
178	15	0.719228		122.455	143.479
179	15	0.735557		122.997	154.513
180	15	0.748762		123.557	165.744
181	15	0.7621	124.138	177.175	
182	15	0.778966		124.745	188.86
183	15	0.792618		125.373	200.749
184	15	0.806422		126.023	212.846
185	15	0.820379		126.696	225.151
186	15	0.838054		127.399	237.722
187	15	0.852385		128.125	250.508
188	15	0.866894		128.877	263.511
189	15	0.885291		129.66	276.791
190	15	0.900227		130.471	290.294
191	15	0.915365		131.309	304.024
192	15	0.93459	132.182	318.043	
193	15	0.950222		133.085	332.297
194	15	0.966088		134.018	346.788
195	15	0.982202		134.983	361.521
196	15	1.00271	135.989	376.562	
197	15	1.01943	137.028	391.853	
198	15	1.03643	138.102	407.4	
199	15	1.05812	139.222	423.271	
200	15	1.07584	140.379	439.409	
201	15	1.0939	141.576	455.817	
202	15	1.11232	142.813	472.502	
203	15	1.1359	144.103	489.541	
204	15	1.15522	145.438	506.869	
205	15	1.17499	146.818	524.494	
206	15	1.20036	148.259	542.499	
207	15	1.22123	149.751	560.818	
208	15	1.24264	151.295	579.457	
209	15	1.26464	152.894	598.427	
210	15	1.29303	154.566	617.822	
211	15	1.31652	156.299	637.57	
212	15	1.34075	158.097	657.681	
213	15	1.3722	159.98	678.265	
214	15	1.39838	161.935	699.24	
215	15	1.42554	163.967	720.623	
216	15	1.46106	166.102	742.539	
217	15	1.49085	168.325	764.902	
218	15	1.52203	170.641	787.733	
219	15	1.55477	173.059	811.054	
220	15	1.59819	175.613	835.027	
221	15	1.63524	178.287	859.556	
222	15	1.67466	181.091	884.675	
223	15	1.72793	184.077	910.594	
224	15	1.77438	187.226	937.21	
225	15	1.82501	190.556	964.585	
226	15	1.88079	194.094	992.797	
227	15	1.95996	197.935	1022.2	
228	15	2.03352	202.07	1052.7	
229	15	2.12007	206.565	1084.5	
230	15	2.25713	211.66	1118.36	
231	15	2.40892	217.462	1154.49	
232	18	2.65209	224.496	1202.23	

Data Set Standard Deviation = 6.41306

Numerator = 1.44535e+006
Denominator = 2.13281e+006
W Statistic = 0.677676 = 1.44535e+006 / 2.13281e+006

5% Critical value of 0.976 exceeds 0.677676
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.677676
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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-1.60944	-2.65209	7.03356	4.26837
2	-1.60944	-2.40892	12.8365	8.14538
3	-1.60944	-2.25713	17.9311	11.7781
4	-1.60944	-2.12007	22.4258	15.1902
5	-1.60944	-2.03352	26.561	18.463
6	-1.10866	-1.95996	30.4025	20.636
7	-0.967584	-1.88079	33.9398	22.4558
8	-0.820981	-1.82501	37.2705	23.9541
9	-0.776529	-1.77438	40.4189	25.3319
10	-0.693147	-1.72793	43.4046	26.5297
11	-0.634878	-1.67466	46.2091	27.5929
12	-0.616186	-1.63524	48.8831	28.6005
13	-0.597837	-1.59819	51.4373	29.5559
14	-0.510826	-1.55477	53.8547	30.3501
15	-0.494296	-1.52203	56.1712	31.1025
16	-0.462035	-1.49085	58.3939	31.7913
17	-0.446287	-1.46106	60.5286	32.4434
18	-0.430783	-1.42554	62.5608	33.0575
19	-0.415515	-1.39838	64.5162	33.6385
20	-0.371064	-1.3722	66.3992	34.1477
21	-0.371064	-1.34075	68.1968	34.6452
22	-0.328504	-1.31652	69.93	35.0777
23	-0.274437	-1.29303	71.6019	35.4325
24	-0.235722	-1.26464	73.2013	35.7306
25	-0.223144	-1.24264	74.7454	36.0079
26	-0.174353	-1.22123	76.2368	36.2208
27	-0.0304592	-1.20036	77.6777	36.2574
28	-0.0304592	-1.17499	79.0583	36.2932
29	-0.0202027	-1.15522	80.3928	36.3165
30	0	-1.1359	81.6831	36.3165
31	0	-1.11232	82.9203	36.3165
32	0	-1.0939	84.1169	36.3165
33	0	-1.07584	85.2744	36.3165
34	0	-1.05812	86.394	36.3165
35	0	-1.03643	87.4682	36.3165
36	0	-1.01943	88.5074	36.3165
37	0	-1.00271	89.5128	36.3165
38	0	-0.982202	90.4776	36.3165
39	0	-0.966088	91.4109	36.3165
40	0	-0.950222	92.3138	36.3165
41	0	-0.93459	93.1873	36.3165
42	0	-0.915365	94.0252	36.3165
43	0	-0.900227	94.8356	36.3165
44	0.0953102	-0.885291	95.6193	36.2322
45	0.0953102	-0.866894	96.3708	36.1495
46	0.182322	-0.852385	97.0974	35.9941
47	0.182322	-0.838054	97.7997	35.8413
48	0.262364	-0.820379	98.4727	35.6261
49	0.470004	-0.806422	99.123	35.2471

50	0.530628	-0.792618	99.7513	34.8265
51	0.587787	-0.778966	100.358	34.3686
52	0.641854	-0.7621	100.939	33.8795
53	0.641854	-0.748762	101.5	33.3989
54	0.641854	-0.735557	102.041	32.9267
55	0.693147	-0.719228	102.558	32.4282
56	0.693147	-0.706302	103.057	31.9386
57	0.693147	-0.693493	103.538	31.4579
58	0.693147	-0.680797	104.001	30.9861
59	0.693147	-0.665079	104.443	30.5251
60	0.788457	-0.652622	104.869	30.0105
61	0.788457	-0.640266	105.279	29.5057
62	0.955511	-0.624956	105.67	28.9085
63	1.02962	-0.612813	106.045	28.2776
64	1.09861	-0.60076	106.406	27.6176
65	1.09861	-0.588793	106.753	26.9707
66	1.09861	-0.573953	107.082	26.3401
67	1.09861	-0.56217	107.398	25.7225
68	1.09861	-0.550465	107.701	25.1178
69	1.09861	-0.53594	107.989	24.529
70	1.09861	-0.524401	108.264	23.9529
71	1.09861	-0.51293	108.527	23.3894
72	1.09861	-0.498687	108.776	22.8415
73	1.1314	-0.487364	109.013	22.2901
74	1.38629	-0.476105	109.24	21.6301
75	1.38629	-0.464904	109.456	20.9856
76	1.41099	-0.450985	109.659	20.3493
77	1.60944	-0.439913	109.853	19.6412
78	1.60944	-0.428895	110.037	18.951
79	1.60944	-0.415193	110.209	18.2827
80	1.60944	-0.40429	110.373	17.6321
81	1.70475	-0.393433	110.527	16.9614
82	1.79176	-0.382622	110.674	16.2758
83	1.79176	-0.369171	110.81	15.6143
84	1.79176	-0.358459	110.939	14.9721
85	1.79176	-0.347787	111.059	14.3489
86	1.94591	-0.334503	111.171	13.698
87	2.19722	-0.323919	111.276	12.9863
88	2.70805	-0.31337	111.374	12.1376
89	2.70805	-0.302855	111.466	11.3175
90	2.70805	-0.28976	111.55	10.5328
91	2.70805	-0.279319	111.628	9.7764
92	2.70805	-0.268908	111.7	9.04818
93	2.70805	-0.255936	111.766	8.35509
94	2.70805	-0.24559	111.826	7.69002
95	2.70805	-0.235269	111.882	7.0529
96	2.70805	-0.222403	111.931	6.45062
97	2.70805	-0.212137	111.976	5.87615
98	2.70805	-0.201894	112.017	5.32941
99	2.70805	-0.191671	112.054	4.81035
100	2.70805	-0.17892	112.086	4.32583
101	2.70805	-0.168741	112.114	3.86887
102	2.70805	-0.158579	112.139	3.43943
103	2.70805	-0.1459	112.161	3.04432
104	2.70805	-0.135774	112.179	2.67664
105	2.70805	-0.125661	112.195	2.33634
106	2.70805	-0.115562	112.208	2.02339
107	2.70805	-0.102953	112.219	1.74459
108	2.70805	-0.0928787	112.227	1.49307
109	2.70805	-0.0828129	112.234	1.26881
110	2.70805	-0.0702426	112.239	1.07859
111	2.70805	-0.0601949	112.243	0.915581

112	2.70805	-0.0501541	112.245	0.779761
113	2.70805	-0.0401167	112.247	0.671123
114	2.70805	-0.0275759	112.248	0.596446
115	2.70805	-0.0175476	112.248	0.548926
116	2.70805	-0.00751925	112.248	0.528564
117	2.70805	0.00751925	112.248	0.548926
118	2.70805	0.0175476	112.248	0.596446
119	2.70805	0.0275759	112.249	0.671123
120	2.70805	0.0401167	112.251	0.779761
121	2.70805	0.0501541	112.253	0.915581
122	2.70805	0.0601949	112.257	1.07859
123	2.70805	0.0702426	112.262	1.26881
124	2.70805	0.0828129	112.269	1.49307
125	2.70805	0.0928787	112.277	1.74459
126	2.70805	0.102953	112.288	2.02339
127	2.70805	0.115562	112.301	2.33634
128	2.70805	0.125661	112.317	2.67664
129	2.70805	0.135774	112.335	3.04432
130	2.70805	0.1459	112.357	3.43943
131	2.70805	0.158579	112.382	3.86887
132	2.70805	0.168741	112.41	4.32583
133	2.70805	0.17892	112.442	4.81035
134	2.70805	0.191671	112.479	5.32941
135	2.70805	0.201894	112.52	5.87615
136	2.70805	0.212137	112.565	6.45062
137	2.70805	0.222403	112.614	7.0529
138	2.70805	0.235269	112.67	7.69002
139	2.70805	0.24559	112.73	8.35509
140	2.70805	0.255936	112.796	9.04818
141	2.70805	0.268908	112.868	9.7764
142	2.70805	0.279319	112.946	10.5328
143	2.70805	0.28976	113.03	11.3175
144	2.70805	0.302855	113.122	12.1376
145	2.70805	0.31337	113.22	12.9863
146	2.70805	0.323919	113.325	13.8635
147	2.70805	0.334503	113.437	14.7693
148	2.70805	0.347787	113.558	15.7111
149	2.70805	0.358459	113.686	16.6819
150	2.70805	0.369171	113.822	17.6816
151	2.70805	0.382622	113.969	18.7177
152	2.70805	0.393433	114.123	19.7832
153	2.70805	0.40429	114.287	20.878
154	2.70805	0.415193	114.459	22.0024
155	2.70805	0.428895	114.643	23.1639
156	2.70805	0.439913	114.837	24.3552
157	2.70805	0.450985	115.04	25.5765
158	2.70805	0.464904	115.256	26.8354
159	2.70805	0.476105	115.483	28.1248
160	2.70805	0.487364	115.721	29.4446
161	2.70805	0.498687	115.969	30.795
162	2.70805	0.51293	116.232	32.1841
163	2.70805	0.524401	116.507	33.6042
164	2.70805	0.53594	116.795	35.0555
165	2.70805	0.550465	117.098	36.5462
166	2.70805	0.56217	117.414	38.0686
167	2.70805	0.573953	117.743	39.6229
168	2.70805	0.588793	118.09	41.2174
169	2.70805	0.60076	118.451	42.8443
170	2.70805	0.612813	118.826	44.5038
171	2.70805	0.624956	119.217	46.1962
172	2.70805	0.640266	119.627	47.9301
173	2.70805	0.652622	120.053	49.6974

174	2.70805	0.665079		120.495	51.4985
175	2.70805	0.680797		120.958	53.3421
176	2.70805	0.693493		121.439	55.2201
177	2.70805	0.706302		121.938	57.1328
178	2.70805	0.719228		122.455	59.0805
179	2.70805	0.735557		122.997	61.0725
180	2.70805	0.748762		123.557	63.1001
181	2.70805	0.7621	124.138	65.1639	
182	2.70805	0.778966		124.745	67.2734
183	2.70805	0.792618		125.373	69.4199
184	2.70805	0.806422		126.023	71.6037
185	2.70805	0.820379		126.696	73.8253
186	2.70805	0.838054		127.399	76.0948
187	2.70805	0.852385		128.125	78.4031
188	2.70805	0.866894		128.877	80.7507
189	2.70805	0.885291		129.66	83.1481
190	2.70805	0.900227		130.471	85.586
191	2.70805	0.915365		131.309	88.0648
192	2.70805	0.93459	132.182	90.5958	
193	2.70805	0.950222		133.085	93.169
194	2.70805	0.966088		134.018	95.7852
195	2.70805	0.982202		134.983	98.4451
196	2.70805	1.00271	135.989	101.16	
197	2.70805	1.01943	137.028	103.921	
198	2.70805	1.03643	138.102	106.728	
199	2.70805	1.05812	139.222	109.593	
200	2.70805	1.07584	140.379	112.507	
201	2.70805	1.0939	141.576	115.469	
202	2.70805	1.11232	142.813	118.481	
203	2.70805	1.1359	144.103	121.557	
204	2.70805	1.15522	145.438	124.686	
205	2.70805	1.17499	146.818	127.868	
206	2.70805	1.20036	148.259	131.118	
207	2.70805	1.22123	149.751	134.425	
208	2.70805	1.24264	151.295	137.791	
209	2.70805	1.26464	152.894	141.215	
210	2.70805	1.29303	154.566	144.717	
211	2.70805	1.31652	156.299	148.282	
212	2.70805	1.34075	158.097	151.913	
213	2.70805	1.3722	159.98	155.629	
214	2.70805	1.39838	161.935	159.416	
215	2.70805	1.42554	163.967	163.276	
216	2.70805	1.46106	166.102	167.233	
217	2.70805	1.49085	168.325	171.27	
218	2.70805	1.52203	170.641	175.392	
219	2.70805	1.55477	173.059	179.602	
220	2.70805	1.59819	175.613	183.93	
221	2.70805	1.63524	178.287	188.359	
222	2.70805	1.67466	181.091	192.894	
223	2.70805	1.72793	184.077	197.573	
224	2.70805	1.77438	187.226	202.378	
225	2.70805	1.82501	190.556	207.32	
226	2.70805	1.88079	194.094	212.414	
227	2.70805	1.95996	197.935	217.721	
228	2.70805	2.03352	202.07	223.228	
229	2.70805	2.12007	206.565	228.969	
230	2.70805	2.25713	211.66	235.082	
231	2.70805	2.40892	217.462	241.605	
232	2.89037	2.65209	224.496	249.271	

Data Set Standard Deviation = 1.29145

Numerator = 62135.9
Denominator = 86491.9
W Statistic = 0.718402 = 62135.9 / 86491.9

5% Critical value of 0.976 exceeds 0.718402
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.718402
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	75
	3/16/1999	ND<2.70805	75
	9/23/1999	ND<2.70805	75
	3/14/2000	ND<2.70805	75
	9/23/2003	ND<2.70805	75
	3/10/2004	ND<2.70805	75
	10/12/2004	ND<2.70805	75
	4/1/2005	ND<2.70805	75
	10/26/2005	ND<2.70805	75
	6/19/2006	ND<2.70805	75
	11/18/2006	0 J	174
	6/2/2007	1.79176	226
	11/15/2007	1.09861 J	208
	5/20/2008	1.60944 J	221
	11/20/2008	ND<2.70805	75
	6/11/2009	-0.235722	168
	11/16/2009	0.182322	190
	6/30/2010	-0.274437 J	167
	11/17/2010	0.0953102	188

Rank Sum = 2367
Rank Mean = 124.579

Background Rank Sum = 2367
Background Rank Mean = 124.579

Compliance Wells

Well ID	Date	Result	Rank
LMW-9D	11/18/2006	0.693147 J	199
	6/2/2007	ND<2.70805	75
	11/15/2007	ND<2.70805	75
	5/20/2008	0 J	175
	11/20/2008	ND<2.70805	75
	6/11/2009	-0.597837 J	157
	11/16/2009	-0.371064	164
	6/30/2010	-0.634878 J	155
	11/17/2010	-0.510826 J	158

Rank Sum = 1233
Rank Mean = 137

LMW-8	1/16/1998	ND<2.70805	75
	3/16/1999	1.79176 J	227
	9/23/1999	ND<2.70805	75
	3/14/2000	ND<2.70805	75
	9/23/2003	ND<2.70805	75
	3/10/2004	ND<2.70805	75

	10/12/2004	ND<2.70805	75
	4/1/2005	ND<2.70805	75
	10/26/2005	ND<2.70805	75
	6/19/2006	ND<2.70805	75
	11/18/2006	0 J	176
	6/2/2007	ND<2.70805	75
	11/15/2007	ND<2.70805	75
	5/20/2008	0 J	177
	11/20/2008	ND<2.70805	75
	6/11/2009	-0.494296	159
	11/16/2009	-0.446287	161
	6/30/2010	-0.371064 J	165
	11/17/2010	-0.430783 J	162

Rank Sum = 2127
Rank Mean = 111.947

LMW-6	1/16/1998	ND<2.70805	75
	3/16/1999	ND<2.70805	75
	9/23/1999	ND<2.70805	75
	3/14/2000	ND<2.70805	75
	9/23/2003	ND<2.70805	75
	3/10/2004	ND<2.70805	75
	10/12/2004	ND<2.70805	75
	4/1/2005	ND<2.70805	75
	10/26/2005	ND<2.70805	75
	6/19/2006	ND<2.70805	75
	11/18/2006	0 J	178
	6/2/2007	1.60944	222
	11/15/2007	ND<2.70805	75
	5/20/2008	0.693147 J	200
	11/20/2008	ND<2.70805	75
	6/11/2009	0.788457	204
	11/16/2009	0.587787 J	195
	6/30/2010	0.641854	196
	11/17/2010	0.641854	197

Rank Sum = 2292
Rank Mean = 120.632

LMW-3S	11/18/2006	0.693147 J	201
	6/2/2007	1.38629 J	218
	11/15/2007	1.60944 J	223
	5/20/2008	1.09861 J	209
	11/20/2008	1.09861 J	210
	6/11/2009	0.955511	206
	11/16/2009	1.02962	207
	6/30/2010	1.41099	220
	11/17/2010	1.1314	217

Rank Sum = 1911
Rank Mean = 212.333

LMW-9	1/16/1998	ND<2.70805	75
	3/16/1999	1.79176 J	228
	9/23/1999	ND<2.70805	75
	3/14/2000	ND<2.70805	75
	9/23/2003	ND<2.70805	75
	3/10/2004	ND<2.70805	75
	10/12/2004	ND<2.70805	75
	4/1/2005	ND<2.70805	75
	10/26/2005	ND<2.70805	75
	6/19/2006	ND<2.70805	75
	11/18/2006	ND<2.70805	75
	6/2/2007	1.09861 J	211

	11/15/2007	ND<2.70805	75
	5/20/2008	0 J	179
	11/20/2008	2.19722 J	231
	6/11/2009	-1.10866 J	150
	11/16/2009	-0.776529 J	153
	6/30/2010	ND<-1.60944 U	75
	11/17/2010	-0.462035 J	160

Rank Sum = 2212
Rank Mean = 116.421

LMW-3	11/19/1996	ND<2.70805	75
	3/24/1997	ND<2.70805	75
	1/16/1998	ND<2.70805	75
	3/16/1999	ND<2.70805	75
	9/23/1999	ND<2.70805	75
	3/14/2000	ND<2.70805	75
	9/23/2003	ND<2.70805	75
	3/10/2004	ND<2.70805	75
	10/12/2004	ND<2.70805	75
	4/1/2005	ND<2.70805	75
	10/26/2005	ND<2.70805	75
	6/19/2006	ND<2.70805	75
	11/18/2006	ND<2.70805	75
	6/2/2007	ND<2.70805	75
	11/15/2007	ND<2.70805	75
	5/20/2008	0 J	180
	11/20/2008	ND<2.70805	75
	6/11/2009	-0.616186 J	156
	11/16/2009	0.0953102	189
	6/30/2010	0.262364	192
	11/17/2010	1.09861	212

Rank Sum = 2129
Rank Mean = 101.381

LMW-16	11/18/2006	0 J	181
	6/2/2007	ND<2.70805	75
	11/15/2007	ND<2.70805	75
	5/20/2008	ND<2.70805	75
	11/20/2008	ND<2.70805	75
	6/11/2009	-0.328504	166
	11/16/2009	-0.415515	163
	6/30/2010	-0.0304592 J	171
	11/17/2010	ND<-1.60944 U	75

Rank Sum = 1056
Rank Mean = 117.333

LMW-10	3/14/2000	ND<2.70805	75
	9/23/2003	ND<2.70805	75
	3/10/2004	ND<2.70805	75
	10/12/2004	ND<2.70805	75
	4/1/2005	ND<2.70805	75
	10/26/2005	ND<2.70805	75
	6/19/2006	ND<2.70805	75
	11/18/2006	ND<2.70805	75
	6/2/2007	ND<2.70805	75
	11/15/2007	ND<2.70805	75
	5/20/2008	0 J	182
	11/20/2008	ND<2.70805	75
	6/11/2009	-0.967584 J	151
	11/16/2009	-0.693147 J	154
	6/30/2010	ND<-1.60944 U	75
	11/17/2010	ND<-1.60944 U	75

Rank Sum = 1462
Rank Mean = 91.375

LMW-15R	11/18/2006	0 J	183
	6/2/2007	ND<2.70805	75
	11/15/2007	ND<2.70805	75
	11/15/2007	ND<2.70805	75
	5/20/2008	ND<2.70805	75
	5/20/2008	0 J	184
	11/20/2008	ND<2.70805	75
	11/20/2008	ND<2.70805	75
	6/11/2009	1.09861	213
	6/30/2010	0	185
	11/17/2010	-0.0202027 J	173

Rank Sum = 1388
Rank Mean = 126.182

LMW-14R	6/2/2007	ND<2.70805	75
	11/15/2007	ND<2.70805	75
	5/20/2008	0.693147 J	202
	11/20/2008	1.09861 J	214
	6/11/2009	0.788457	205
	6/30/2010	-0.174353 J	170
	11/17/2010	0.641854	198

Rank Sum = 1139
Rank Mean = 162.714

LMW-9S	11/18/2006	0 J	186
	6/2/2007	ND<2.70805	75
	11/15/2007	ND<2.70805	75
	5/20/2008	0 J	187
	11/20/2008	ND<2.70805	75
	6/11/2009	0.182322	191
	11/16/2009	-0.223144 J B	169
	11/16/2009	-0.0304592 J B	172
	11/16/2009	0.470004 J B	193
	6/30/2010	ND<-1.60944 U	75
	11/17/2010	-0.820981 J	152

Rank Sum = 1550
Rank Mean = 140.909

LMW-7	1/16/1998	ND<2.70805	75
	3/16/1999	ND<2.70805	75
	9/23/1999	ND<2.70805	75
	3/14/2000	ND<2.70805	75
	9/23/2003	ND<2.70805	75
	3/10/2004	ND<2.70805	75
	10/12/2004	ND<2.70805	75
	4/1/2005	2.89037 J	232
	10/26/2005	ND<2.70805	75
	6/19/2006	ND<2.70805	75
	11/18/2006	1.38629 J	219
	6/2/2007	1.94591	230
	11/15/2007	1.60944 J	224
	5/20/2008	0.693147 J	203
	11/20/2008	1.09861 J	215
	6/11/2009	1.70475	225
	11/17/2010	0.530628	194

Rank Sum = 2417
Rank Mean = 142.176

LMW-13	3/14/2000	ND<2.70805	75

	9/23/2003	ND<2.70805	75
	3/10/2004	ND<2.70805	75
	10/12/2004	ND<2.70805	75
	4/1/2005	ND<2.70805	75
	10/26/2005	ND<2.70805	75
	6/19/2006	ND<2.70805	75
	6/2/2007	ND<2.70805	75
	11/15/2007	ND<2.70805	75
	5/20/2008	ND<2.70805	75
	11/20/2008	ND<2.70805	75

Rank Sum = 825
Rank Mean = 75

LMW-12	3/14/2000	ND<2.70805	75
	9/23/2003	ND<2.70805	75
	3/10/2004	ND<2.70805	75
	10/12/2004	ND<2.70805	75
	4/1/2005	ND<2.70805	75
	10/26/2005	ND<2.70805	75
	6/19/2006	ND<2.70805	75
	6/2/2007	ND<2.70805	75
	11/15/2007	ND<2.70805	75
	5/20/2008	ND<2.70805	75
	11/20/2008	ND<2.70805	75

Rank Sum = 825
Rank Mean = 75

LMW-11	3/14/2000	ND<2.70805	75
	9/23/2003	ND<2.70805	75
	3/10/2004	ND<2.70805	75
	10/12/2004	ND<2.70805	75
	4/1/2005	ND<2.70805	75
	10/26/2005	ND<2.70805	75
	6/19/2006	ND<2.70805	75
	6/2/2007	ND<2.70805	75
	11/15/2007	ND<2.70805	75
	5/20/2008	ND<2.70805	75
	11/20/2008	ND<2.70805	75

Rank Sum = 825
Rank Mean = 75

MW-5	1/16/1998	ND<2.70805	75
	3/16/1999	1.79176 J	229
	9/23/1999	ND<2.70805	75
	3/14/2000	ND<2.70805	75
	9/23/2003	ND<2.70805	75
	3/10/2004	ND<2.70805	75
	10/12/2004	ND<2.70805	75
	4/1/2005	ND<2.70805	75
	10/26/2005	ND<2.70805	75
	6/19/2006	ND<2.70805	75
	11/15/2007	1.09861 J	216
	5/20/2008	ND<2.70805	75
	11/20/2008	ND<2.70805	75

Rank Sum = 1270
Rank Mean = 97.6923

Calculation Results:

Kruskal-Wallis H Statistic = 44.0609
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 59.9387

95% Confidence comparison value is 26.2962 at 16 degrees of freedom
44.0609 > 26.2962 indicating a significant group difference at 5% significance level
59.9387 > 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 124.579

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9D	137	12.4211	63.1809
LMW-8	111.947	-12.6316	50.6574
LMW-6	120.632	-3.94737	50.6574
LMW-3S	212.333	87.7544	63.1809
LMW-9	116.421	-8.15789	50.6574
LMW-3	101.381	-23.198	49.4366
LMW-16	117.333	-7.24561	63.1809
LMW-10	91.375	-33.2039	52.9788
LMW-15R		126.182	1.60287 59.1551
LMW-14R		162.714	38.1353 69.0344
LMW-9S	140.909	16.3301	59.1551
LMW-7	142.176	17.5975	52.1261
LMW-13	75	-49.5789	59.1551
LMW-12	75	-49.5789	59.1551
LMW-11	75	-49.5789	59.1551
MW-5	97.6923	-26.8866	56.1994

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 124.579

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9D	137	12.4211	74.6263
LMW-8	111.947	-12.6316	59.8342
LMW-6	120.632	-3.94737	59.8342
LMW-3S	212.333	87.7544	74.6263
LMW-9	116.421	-8.15789	59.8342
LMW-3	101.381	-23.198	58.3922
LMW-16	117.333	-7.24561	74.6263
LMW-10	91.375	-33.2039	62.5761
LMW-15R		126.182	1.60287 69.8712
LMW-14R		162.714	38.1353 81.5402
LMW-9S	140.909	16.3301	69.8712
LMW-7	142.176	17.5975	61.5688
LMW-13	75	-49.5789	69.8712
LMW-12	75	-49.5789	69.8712
LMW-11	75	-49.5789	69.8712
MW-5	97.6923	-26.8866	66.38

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
1.1314	0.693147 J	0.438255	8	0
1.60944 J	1.38629 J	0.223144	9	0
1.09861 J	1.38629 J	-0.287682	9	1
1.09861 J	1.38629 J	-0.287682	9	2
0.955511	1.38629 J	-0.430783	9	3
1.02962	1.38629 J	-0.356675	9	4
1.41099	1.38629 J	0.0246926	10	4
1.1314	1.38629 J	-0.254892	10	5
1.09861 J	1.60944 J	-0.510826	10	6
1.09861 J	1.60944 J	-0.510826	10	7
0.955511	1.60944 J	-0.653926	10	8
1.02962	1.60944 J	-0.579818	10	9
1.41099	1.60944 J	-0.198451	10	10
1.1314	1.60944 J	-0.478036	10	11
1.09861 J	1.09861 J	0	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
1.1314	1.09861 J	0.0327898	12	13
0.955511	1.09861 J	-0.143101	12	14
1.02962	1.09861 J	-0.0689929	12	15
1.41099	1.09861 J	0.312375	13	15
1.1314	1.09861 J	0.0327898	14	15
1.02962	0.955511	0.074108	15	15
1.41099	0.955511	0.455476	16	15
1.1314	0.955511	0.175891	17	15
1.41099	1.02962	0.381368	18	15
1.1314	1.02962	0.101783	19	15
1.1314	1.41099	-0.279585	19	16

S Statistic = 19 - 16 = 3
Comparing at 1.0 - (0.05 / 2) = 97.5% confidence level (two-tailed)

Failed to calculate probability for S = 3
Table out of range

Concentrations (ug/L)

Parameter: Nitrate

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 119
Total Non-Detect: 57
Percent Non-Detects: 47.8992%
Total Background Measurements: 8
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	8	4 (50%)	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
			11/17/2010	ND<0.07 U	ND<0.07 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9	8	2 (25%)	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
			11/17/2010	0.09 J	0.09 J
LMW-16	8	5 (62.5%)	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
			11/17/2010	ND<0.07 U	ND<0.07 U
LMW-10	8	2 (25%)	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
			11/17/2010	0.52	0.52
LMW-9S	10	4 (40%)	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	
		11/17/2010	0.21 J	0.21 J	
LMW-9D	8	3 (37.5%)	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	
		11/17/2010	0.09 J	0.09 J	
LMW-6	8	3 (37.5%)	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	
		11/17/2010	1.4	1.4	
LMW-3S	8	3 (37.5%)	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
		11/17/2010	0.08 J	0.08 J	
LMW-3	8	2 (25%)	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	
		11/17/2010	0.19 J	0.19 J	
LMW-14R	6	4 (66.6667%)	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
		11/17/2010	ND<0.07 U		ND<0.07 U
LMW-7	6	2 (33.3333%)	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	
		11/17/2010	0.56 J	0.56 J	
LMW-8	8	2 (25%)	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	
			11/17/2010	0.61	0.61	
LMW-15R		10	6 (60%)	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	
			11/17/2010	1.6	1.6	
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-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	
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-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	

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 = 119

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.035	-2.408925	.80292	-0.0843123
2	0.035	-2.1444	10.4014	-0.159367
3	0.035	-1.9599	14.2428	-0.227965
4	0.08	-1.8384	17.6226	-0.375039
5	0.09	-1.7392	20.6475	-0.531567
6	0.09	-1.6448	23.353	-0.679604
7	0.19	-1.5717	25.8235	-0.978244
8	0.21	-1.5062	28.0923	-1.29456
9	0.52	-1.4395	30.1646	-2.04311
10	0.56	-1.3851	32.0833	-2.81881
11	0.61	-1.3346	33.8645	-3.63293
12	1.4	-1.2815	35.5069	-5.4271
13	1.6	-1.2372	37.0376	-7.40668
14	5	-1.1952	38.4662	-13.3828
15	5	-1.1503	39.7895	-19.1345
16	5	-1.1123	41.0268	-24.6961
17	5	-1.0758	42.1842	-30.0753
18	5	-1.0364	43.2584	-35.2575
19	5	-1.0027	44.2638	-40.271
20	5	-0.970094	45.2049	-45.1215
21	5	-0.9345	46.0783	-49.7945
22	5	-0.903992	46.8955	-54.3144
23	5	-0.874218	47.6598	-58.6855
24	5	-0.841621	48.3681	-62.8936
25	5	-0.813379	49.0297	-66.9605
26	5	-0.785774	49.6472	-70.8894
27	5	-0.755415	50.2178	-74.6665
28	5	-0.729003	50.7493	-78.3115
29	5	-0.703089	51.2436	-81.8269
30	5	-0.674	4951.6985	-85.1994
31	5	-0.649522	52.1204	-88.447
32	5	-0.624956	52.511	-91.5718
33	5	-0.597761	52.8683	-94.5606
34	5	-0.573953	53.1977	-97.4303
35	5	-0.550465	53.5007	-100.183
36	5	-0.524401	53.7757	-102.805
37	5	-0.501527	54.0273	-105.312
38	5	-0.478914	54.2566	-107.707
39	5	-0.453763	54.4625	-109.976
40	5	-0.431644	54.6488	-112.134
41	5	-0.409735	54.8167	-114.183
42	5	-0.385321	54.9652	-116.109
43	5	-0.363809	55.0975	-117.928
44	5	-0.342466	55.2148	-119.641
45	5	-0.318639	55.3164	-121.234
46	5	-0.297612	55.4049	-122.722
47	5	-0.276714	55.4815	-124.105
48	5	-0.253347	55.5457	-125.372
49	5	-0.232693	55.5998	-126.536

50	5	-0.212137		55.6448	-127.596
51	5	-0.189118		55.6806	-128.542
52	5	-0.168741		55.7091	-129.386
53	5	-0.148434		55.7311	-130.128
54	5	-0.125661		55.7469	-130.756
55	5	-0.105474		55.758	-131.283
56	5	-0.0853288		55.7653	-131.71
57	5	-0.0627062		55.7692	-132.024
58	5	-0.0426257		55.771	-132.237
59	5	-0.0225612		55.7716	-132.35
60	5	0	55.7716	-132.35	
61	5	0.0225612		55.7721	-132.237
62	18	0.0426257		55.7739	-131.469
63	18	0.0627062		55.7778	-130.341
64	18	0.0853288		55.7851	-128.805
65	45	0.105474		55.7962	-124.058
66	45	0.125661		55.812	-118.404
67	50	0.148434		55.834	-110.982
68	52	0.168741		55.8625	-102.207
69	58	0.189118		55.8983	-91.2386
70	60	0.212137		55.9433	-78.5104
71	78	0.232693		55.9974	-60.3603
72	84	0.253347		56.0616	-39.0792
73	99	0.276714		56.1382	-11.6846
74	107	0.297612		56.2268	20.1599
75	109	0.318639		56.3283	54.8916
76	119	0.342466		56.4456	95.645
77	128	0.363809		56.5779	142.213
78	166	0.385321		56.7264	206.176
79	180	0.409735		56.8943	279.928
80	180	0.431644		57.0806	357.624
81	180	0.453763		57.2865	439.301
82	196	0.478914		57.5159	533.169
83	209	0.501527		57.7674	637.988
84	216	0.524401		58.0424	751.258
85	295	0.550465		58.3454	913.645
86	321	0.573953		58.6748	1097.88
87	326	0.597761		59.0321	1292.75
88	333	0.624956		59.4227	1500.86
89	369	0.649522		59.8446	1740.54
90	370	0.67449	60.2995	1990.1	
91	371	0.703089		60.7939	2250.95
92	377	0.729003		61.3253	2525.78
93	398	0.755415		61.896	2826.44
94	406	0.785774		62.5134	3145.46
95	430	0.813379		63.175	3495.21
96	450	0.841621		63.8833	3873.94
97	455	0.874218		64.6476	4271.71
98	461	0.903992		65.4648	4688.45
99	515	0.93459	66.3382	5169.77	
100	546	0.970094		67.2793	5699.44
101	551	1.00271	68.2847	6251.93	
102	570	1.03643	69.3589	6842.7	
103	710	1.07584	70.5164	7606.54	
104	740	1.11232	71.7536	8429.66	
105	770	1.15035	73.0769	9315.43	
106	870	1.19522	74.5055	10355.3	
107	880	1.23724	76.0362	11444	
108	1000	1.28155	77.6786	12725.6	
109	1020	1.33462	79.4598	14086.9	
110	1150	1.38517	81.3785	15679.9	
111	1400	1.43953	83.4508	17695.2	

112	1410	1.50626	85.7196	19819
113	2100	1.57179	88.1901	23119.8
114	2400	1.64485	90.8956	27067.4
115	4780	1.7392	93.9205	35380.8
116	5000	1.83843	97.3003	44572.9
117	7300	1.95996	101.142	58880.6
118	17200	2.14441	105.74	95764.4
119	643000	2.40892	111.543	1.6447e+006

Data Set Standard Deviation = 58926.1
Numerator = 2.70505e+012
Denominator = 4.57025e+013
W Statistic = 0.0591881 = 2.70505e+012 / 4.57025e+013

5% Critical value of 0.976 exceeds 0.0591881
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.0591881
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 = 119

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-3.35241	-2.40892	5.80292	8.07569
2	-3.35241	-2.14441	10.4014	15.2646
3	-3.35241	-1.95996	14.2428	21.8352
4	-2.52573	-1.83843	17.6226	26.4786
5	-2.40795	-1.7392	20.6475	30.6665
6	-2.40795	-1.64485	23.353	34.6272
7	-1.66073	-1.57179	25.8235	37.2375
8	-1.56065	-1.50626	28.0923	39.5882
9	-0.653926		-1.43953	30.1646	40.5296
10	-0.579818		-1.38517	32.0833	41.3327
11	-0.494296		-1.33462	33.8645	41.9924
12	0.336472		-1.28155	35.5069	41.5612
13	0.470004		-1.23724	37.0376	40.9797
14	1.60944	-1.19522	38.4662	39.0561
15	1.60944	-1.15035	39.7895	37.2047
16	1.60944	-1.11232	41.0268	35.4145
17	1.60944	-1.07584	42.1842	33.683
18	1.60944	-1.03643	43.2584	32.0149
19	1.60944	-1.00271	44.2638	30.4011
20	1.60944	-0.970094	45.2049	28.8398
21	1.60944	-0.93459	46.0783	27.3356
22	1.60944	-0.903992	46.8955	25.8807
23	1.60944	-0.874218	47.6598	24.4737
24	1.60944	-0.841621	48.3681	23.1192
25	1.60944	-0.813379	49.0297	21.8101
26	1.60944	-0.785774	49.6472	20.5454
27	1.60944	-0.755415	50.2178	19.3296
28	1.60944	-0.729003	50.7493	18.1564
29	1.60944	-0.703089	51.2436	17.0248
30	1.60944	-0.674495	1.6985	15.9392
31	1.60944	-0.649522	52.1204	14.8939
32	1.60944	-0.624956	52.511	13.888
33	1.60944	-0.597761	52.8683	12.926
34	1.60944	-0.573953	53.1977	12.0022
35	1.60944	-0.550465	53.5007	11.1163
36	1.60944	-0.524401	53.7757	10.2723
37	1.60944	-0.501527	54.0273	9.46512
38	1.60944	-0.478914	54.2566	8.69434
39	1.60944	-0.453763	54.4625	7.96404
40	1.60944	-0.431644	54.6488	7.26933
41	1.60944	-0.409735	54.8167	6.60989
42	1.60944	-0.385321	54.9652	5.98974
43	1.60944	-0.363809	55.0975	5.40421
44	1.60944	-0.342466	55.2148	4.85303
45	1.60944	-0.318639	55.3164	4.3402
46	1.60944	-0.297612	55.4049	3.86122
47	1.60944	-0.276714	55.4815	3.41586
48	1.60944	-0.253347	55.5457	3.00812
49	1.60944	-0.232693	55.5998	2.63361

50	1.60944	-0.212137		55.6448	2.29219
51	1.60944	-0.189118		55.6806	1.98782
52	1.60944	-0.168741		55.7091	1.71624
53	1.60944	-0.148434		55.7311	1.47734
54	1.60944	-0.125661		55.7469	1.2751
55	1.60944	-0.105474		55.758	1.10535
56	1.60944	-0.0853288		55.7653	0.968014
57	1.60944	-0.0627062		55.7692	0.867092
58	1.60944	-0.0426257		55.771	0.798488
59	1.60944	-0.0225612		55.7716	0.762178
60	1.60944	0	55.7716	0.762178	
61	1.60944	0.0225612		55.7721	0.798488
62	2.89037	0.0426257		55.7739	0.921693
63	2.89037	0.0627062		55.7778	1.10294
64	2.89037	0.0853288		55.7851	1.34957
65	3.80666	0.105474		55.7962	1.75107
66	3.80666	0.125661		55.812	2.22942
67	3.91202	0.148434		55.834	2.8101
68	3.95124	0.168741		55.8625	3.47684
69	4.06044	0.189118		55.8983	4.24474
70	4.09434	0.212137		55.9433	5.1133
71	4.35671	0.232693		55.9974	6.12708
72	4.43082	0.253347		56.0616	7.24961
73	4.59512	0.276714		56.1382	8.52115
74	4.67283	0.297612		56.2268	9.91183
75	4.69135	0.318639		56.3283	11.4067
76	4.77912	0.342466		56.4456	13.0434
77	4.85203	0.363809		56.5779	14.8086
78	5.11199	0.385321		56.7264	16.7783
79	5.19296	0.409735		56.8943	18.9061
80	5.19296	0.431644		57.0806	21.1476
81	5.19296	0.453763		57.2865	23.504
82	5.27811	0.478914		57.5159	26.0317
83	5.34233	0.501527		57.7674	28.711
84	5.37528	0.524401		58.0424	31.5298
85	5.68698	0.550465		58.3454	34.6603
86	5.77144	0.573953		58.6748	37.9729
87	5.7869	0.597761		59.0321	41.432
88	5.80814	0.624956		59.4227	45.0619
89	5.9108	0.649522		59.8446	48.9011
90	5.9135	0.67449	60.2995	52.8897	
91	5.9162	0.703089		60.7939	57.0493
92	5.93225	0.729003		61.3253	61.3739
93	5.98645	0.755415		61.896	65.8962
94	6.00635	0.785774		62.5134	70.6158
95	6.06379	0.813379		63.175	75.548
96	6.10925	0.841621		63.8833	80.6896
97	6.1203	0.874218		64.6476	86.0401
98	6.1334	0.903992		65.4648	91.5846
99	6.24417	0.93459	66.3382	97.4204	
100	6.30262	0.970094		67.2793	103.535
101	6.31173	1.00271	68.2847	109.863	
102	6.34564	1.03643	69.3589	116.44	
103	6.56526	1.07584	70.5164	123.503	
104	6.60665	1.11232	71.7536	130.852	
105	6.64639	1.15035	73.0769	138.498	
106	6.76849	1.19522	74.5055	146.588	
107	6.77992	1.23724	76.0362	154.976	
108	6.90776	1.28155	77.6786	163.829	
109	6.92756	1.33462	79.4598	173.074	
110	7.04752	1.38517	81.3785	182.836	
111	7.24423	1.43953	83.4508	193.265	

112	7.25134	1.50626	85.7196	204.187
113	7.64969	1.57179	88.1901	216.211
114	7.78322	1.64485	90.8956	229.013
115	8.4722	1.7392	93.9205	243.748
116	8.51719	1.83843	97.3003	259.406
117	8.89563	1.95996	101.142	276.841
118	9.75266	2.14441	105.74	297.755
119	13.3739	2.40892	111.543	329.971

Data Set Standard Deviation = 2.98347
Numerator = 108881
Denominator = 117157
W Statistic = 0.929359 = 108881 / 117157

5% Critical value of 0.976 exceeds 0.929359
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.929359
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	70
	6/2/2007	13.3739	119
	11/15/2007	ND<1.60944	29
	5/20/2008	5.9108	89
	11/20/2008	ND<1.60944	29
	11/16/2009	ND<5.19296 U	29
	6/30/2010	4.43082 J	75
	11/17/2010	ND<-3.35241 U	29

Rank Sum = 469
Rank Mean = 58.625

Background Rank Sum = 469
Background Rank Mean = 58.625

Compliance Wells

Well ID	Date	Result	Rank
LMW-9	11/18/2006	4.59512	76
	6/2/2007	9.75266	118
	11/15/2007	ND<1.60944	29
	5/20/2008	6.1203	97
	11/20/2008	ND<1.60944	29
	11/16/2009	6.10925 J M H	96
	6/30/2010	3.80666 J	68
	11/17/2010	-2.40795 J	59

Rank Sum = 572
Rank Mean = 71.5

LMW-16	11/18/2006	3.95124	71
	6/2/2007	5.11199	81
	11/15/2007	ND<1.60944	29
	5/20/2008	5.93225	92
	11/20/2008	ND<1.60944	29
	11/16/2009	ND<5.19296 U	29
	6/30/2010	ND<2.89037 U	29
	11/17/2010	ND<-3.35241 U	29

Rank Sum = 389
Rank Mean = 48.625

LMW-10	11/18/2006	6.31173	101
	6/2/2007	6.92756	109
	11/15/2007	ND<1.60944	29
	5/20/2008	6.00635	94
	11/20/2008	ND<1.60944	29
	11/16/2009	7.78322	114
	6/30/2010	5.9135	90

	11/17/2010	-0.653926	63

Rank Sum = 629
Rank Mean = 78.625

LMW-9S	11/18/2006	4.69135	78
	6/2/2007	6.90776	108
	11/15/2007	ND<1.60944	29
	5/20/2008	ND<1.60944	29
	11/20/2008	ND<1.60944	29
	11/16/2009	ND<5.19296 U	29
	11/16/2009	8.89563 H	117
	11/16/2009	6.64639 J M H	105
	6/30/2010	4.09434 J	73
	11/17/2010	-1.56065 J	62

Rank Sum = 659
Rank Mean = 65.9

LMW-9D	11/18/2006	4.67283	77
	6/2/2007	6.1334	98
	11/15/2007	ND<1.60944	29
	5/20/2008	ND<1.60944	29
	11/20/2008	ND<1.60944	29
	11/16/2009	6.06379 J M H	95
	6/30/2010	4.06044 J	72
	11/17/2010	-2.40795 J	60

Rank Sum = 489
Rank Mean = 61.125

LMW-6	11/18/2006	7.04752	110
	6/2/2007	ND<1.60944	29
	11/15/2007	ND<1.60944	29
	5/20/2008	7.25134	112
	11/20/2008	ND<1.60944	29
	11/16/2009	8.51719	116
	6/30/2010	6.77992	107
	11/17/2010	0.336472	66

Rank Sum = 598
Rank Mean = 74.75

LMW-3S	11/18/2006	5.77144	86
	6/2/2007	5.27811	82
	11/15/2007	ND<1.60944	29
	5/20/2008	6.30262	100
	11/20/2008	ND<1.60944	29
	11/16/2009	6.56526 J M	103
	6/30/2010	ND<2.89037 U	29
	11/17/2010	-2.52573 J	58

Rank Sum = 516
Rank Mean = 64.5

LMW-3	11/18/2006	5.80814	88
	6/2/2007	5.34233	83
	11/15/2007	ND<1.60944	29
	5/20/2008	6.24417	99
	11/20/2008	ND<1.60944	29
	11/16/2009	6.76849 J H	106
	6/30/2010	4.35671 J M	74
	11/17/2010	-1.66073 J	61

Rank Sum = 569
Rank Mean = 71.125

LMW-14R	6/2/2007	5.7869	87
	11/15/2007	ND<1.60944	29
	5/20/2008	5.9162	91
	11/20/2008	ND<1.60944	29
	6/30/2010	ND<2.89037 U	29
	11/17/2010	ND<-3.35241 U	29

Rank Sum = 294
Rank Mean = 49

LMW-7	11/18/2006	4.77912	79
	6/2/2007	5.68698	85
	11/15/2007	ND<1.60944	29
	5/20/2008	4.85203	80
	11/20/2008	ND<1.60944	29
	11/17/2010	-0.579818 J	64

Rank Sum = 366
Rank Mean = 61

LMW-8	11/18/2006	5.37528	84
	6/2/2007	5.98645	93
	11/15/2007	ND<1.60944	29
	5/20/2008	6.34564	102
	11/20/2008	ND<1.60944	29
	11/16/2009	6.60665 J	104
	6/30/2010	3.80666 J	69
	11/17/2010	-0.494296	65

Rank Sum = 575
Rank Mean = 71.875

LMW-15R	11/18/2006	8.4722	115
	6/2/2007	7.24423	111
	11/15/2007	ND<1.60944	29
	11/15/2007	ND<1.60944	29
	5/20/2008	ND<1.60944	29
	5/20/2008	ND<1.60944	29
	11/20/2008	ND<1.60944	29
	11/20/2008	ND<1.60944	29
	6/30/2010	7.64969	113
	11/17/2010	0.470004	67

Rank Sum = 580
Rank Mean = 58

MW-5	11/15/2007	ND<1.60944	29
	5/20/2008	ND<1.60944	29
	11/20/2008	ND<1.60944	29

Rank Sum = 87
Rank Mean = 29

LMW-13	6/2/2007	ND<1.60944	29
	11/15/2007	ND<1.60944	29
	5/20/2008	ND<1.60944	29
	11/20/2008	ND<1.60944	29

Rank Sum = 116
Rank Mean = 29

LMW-11	6/2/2007	ND<1.60944	29
	11/15/2007	ND<1.60944	29
	5/20/2008	ND<1.60944	29
	11/20/2008	ND<1.60944	29

Rank Sum = 116
Rank Mean = 29

LMW-12	6/2/2007	ND<1.60944	29
	11/15/2007	ND<1.60944	29
	5/20/2008	ND<1.60944	29
	11/20/2008	ND<1.60944	29

Rank Sum = 116
Rank Mean = 29

Calculation Results:

Kruskal-Wallis H Statistic = 20.5457
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 23.0817
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
20.5457 < 26.2962 indicating no significant group difference at 5% significance level
23.0817 < 26.2962 indicating no significant group difference at 5% significance level when adjusted for ties

Concentrations (ug/L)

Parameter: Selenium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 232
Total Non-Detect: 203
Percent Non-Detects: 87.5%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	19	19 (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
			11/17/2010	ND<0.21 U	ND<0.21 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-10	16	16 (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
			11/17/2010	ND<0.21 U	ND<0.21 U
LMW-8	19	9 (47.3684%)	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	
		11/17/2010	0.66	0.66	
LMW-9D	9	8 (88.8889%)	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
		11/17/2010	ND<0.21 U		ND<0.21 U
LMW-3S	9	9 (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
		11/17/2010	ND<0.21 U		ND<0.21 U
LMW-16	9	7 (77.7778%)	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
		11/17/2010	0.31 J	0.31 J	
LMW-6	19	8 (42.1053%)	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	
			11/17/2010	6	6	
LMW-7	17	17 (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	
			11/17/2010	ND<0.21 U	ND<0.21 U	
LMW-9S	11	8 (72.7273%)	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	
			11/17/2010	0.26 J	0.26 J	
LMW-14R	7	7 (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	
			11/17/2010	ND<0.21 U	ND<0.21 U	
LMW-15R	11	10 (90.9091%)	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	
			11/17/2010	ND<0.21 U	ND<0.21 U	
LMW-3	21	21 (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
			11/17/2010	ND<0.21 U		ND<0.21 U
LMW-9	19	18 (94.7368%)	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
			11/17/2010	ND<0.21 U		ND<0.21 U
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-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-13	11	11 (100%)	3/14/2000	ND<2	ND<2	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	

			10/12/2004	ND<2	ND<2
			4/1/2005	ND<2	ND<2
			10/26/2005	ND<2	ND<2
			6/19/2006	ND<2	ND<2
			6/2/2007	ND<2	ND<2
			11/15/2007	ND<2	ND<2
			5/20/2008	ND<2	ND<2
			11/20/2008	ND<2	ND<2
LMW-12	11	11 (100%)	3/14/2000	ND<2	ND<2
			9/23/2003	ND<2	ND<2
			3/10/2004	ND<2	ND<2
			10/12/2004	ND<2	ND<2
			4/1/2005	ND<2	ND<2
			10/26/2005	ND<2	ND<2
			6/19/2006	ND<2	ND<2
			6/2/2007	ND<2	ND<2
			11/15/2007	ND<2	ND<2
			5/20/2008	ND<2	ND<2
			11/20/2008	ND<2	ND<2

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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.105	-2.65209	7.03356	-0.278469
2	0.105	-2.40892	12.8365	-0.531406
3	0.105	-2.25713	17.9311	-0.768405
4	0.105	-2.12007	22.4258	-0.991012
5	0.105	-2.03352	26.561	-1.20453
6	0.105	-1.95996	30.4025	-1.41033
7	0.105	-1.88079	33.9398	-1.60781
8	0.105	-1.82501	37.2705	-1.79944
9	0.105	-1.77438	40.4189	-1.98575
10	0.105	-1.72793	43.4046	-2.16718
11	0.105	-1.67466	46.2091	-2.34302
12	0.105	-1.63524	48.8831	-2.51472
13	0.105	-1.59819	51.4373	-2.68253
14	0.105	-1.55477	53.8547	-2.84578
15	0.105	-1.52203	56.1712	-3.00559
16	0.105	-1.49085	58.3939	-3.16213
17	0.105	-1.46106	60.5286	-3.31554
18	0.105	-1.42554	62.5608	-3.46523
19	0.105	-1.39838	64.5162	-3.61205
20	0.105	-1.3722	66.3992	-3.75614
21	0.105	-1.34075	68.1968	-3.89692
22	0.105	-1.31652	69.93	-4.03515
23	0.105	-1.29303	71.6019	-4.17092
24	0.105	-1.26464	73.2013	-4.30371
25	0.105	-1.24264	74.7454	-4.43418
26	0.105	-1.22123	76.2368	-4.56241
27	0.105	-1.20036	77.6777	-4.68845
28	0.105	-1.17499	79.0583	-4.81182
29	0.105	-1.15522	80.3928	-4.93312
30	0.105	-1.1359	81.6831	-5.05239
31	0.105	-1.11232	82.9203	-5.16918
32	0.105	-1.0939	84.1169	-5.28404
33	0.105	-1.07584	85.2744	-5.39701
34	0.105	-1.05812	86.394	-5.50811
35	0.105	-1.03643	87.4682	-5.61694
36	0.105	-1.01943	88.5074	-5.72398
37	0.105	-1.00271	89.5128	-5.82926
38	0.105	-0.982202	90.4776	-5.93239
39	0.24	-0.966088	91.4109	-6.16425
40	0.26	-0.950222	92.3138	-6.41131
41	0.28	-0.93459	93.1873	-6.67299
42	0.31	-0.915365	94.0252	-6.95676
43	0.33	-0.900227	94.8356	-7.25383
44	0.59	-0.885291	95.6193	-7.77615
45	0.64	-0.866894	96.3708	-8.33097
46	0.66	-0.852385	97.0974	-8.89354
47	1	-0.838054	97.7997	-9.73159
48	1	-0.820379	98.4727	-10.552
49	1	-0.806422	99.123	-11.3584

50	1	-0.792618	99.7513	-12.151
51	1	-0.778966	100.358	-12.93
52	1	-0.7621	100.939	-13.6921
53	1	-0.748762	101.5	-14.4408
54	1	-0.735557	102.041	-15.1764
55	1	-0.719228	102.558	-15.8956
56	1	-0.706302	103.057	-16.6019
57	1	-0.693493	103.538	-17.2954
58	1	-0.680797	104.001	-17.9762
59	1	-0.665079	104.443	-18.6413
60	1	-0.652622	104.869	-19.2939
61	1	-0.640266	105.279	-19.9342
62	1	-0.624956	105.67	-20.5591
63	1	-0.612813	106.045	-21.172
64	1	-0.60076	106.406	-21.7727
65	1	-0.588793	106.753	-22.3615
66	1	-0.573953	107.082	-22.9355
67	1	-0.56217	107.398	-23.4976
68	1	-0.550465	107.701	-24.0481
69	1	-0.53594	107.989	-24.584
70	1	-0.524401	108.264	-25.1084
71	1	-0.51293	108.527	-25.6214
72	1	-0.498687	108.776	-26.1201
73	1	-0.487364	109.013	-26.6074
74	1	-0.476105	109.24	-27.0835
75	1	-0.464904	109.456	-27.5484
76	1	-0.450985	109.659	-27.9994
77	1	-0.439913	109.853	-28.4393
78	1	-0.428895	110.037	-28.8682
79	1	-0.415193	110.209	-29.2834
80	1	-0.40429	110.373	-29.6877
81	1	-0.393433	110.527	-30.0811
82	1	-0.382622	110.674	-30.4638
83	1	-0.369171	110.81	-30.8329
84	1	-0.358459	110.939	-31.1914
85	1	-0.347787	111.059	-31.5392
86	1	-0.334503	111.171	-31.8737
87	1	-0.323919	111.276	-32.1976
88	1	-0.31337	111.374	-32.511
89	1	-0.302855	111.466	-32.8138
90	1	-0.28976	111.55	-33.1036
91	1	-0.279319	111.628	-33.3829
92	1	-0.268908	111.7	-33.6518
93	1	-0.255936	111.766	-33.9077
94	1	-0.24559	111.826	-34.1533
95	1	-0.235269	111.882	-34.3886
96	1	-0.222403	111.931	-34.611
97	1	-0.212137	111.976	-34.8231
98	1	-0.201894	112.017	-35.025
99	1	-0.191671	112.054	-35.2167
100	1	-0.17892	112.086	-35.3956
101	1	-0.168741	112.114	-35.5644
102	1	-0.158579	112.139	-35.723
103	1	-0.1459	112.161	-35.8689
104	1	-0.135774	112.179	-36.0046
105	1	-0.125661	112.195	-36.1303
106	1	-0.115562	112.208	-36.2458
107	1	-0.102953	112.219	-36.3488
108	1	-0.0928787	112.227	-36.4417
109	1	-0.0828129	112.234	-36.5245
110	1	-0.0702426	112.239	-36.5947
111	1	-0.0601949	112.243	-36.6549

112	1	-0.0501541	112.245	-36.7051
113	1	-0.0401167	112.247	-36.7452
114	1	-0.0275759	112.248	-36.7728
115	1	-0.0175476	112.248	-36.7903
116	1	-0.00751925	112.248	-36.7978
117	1	0.00751925	112.248	-36.7903
118	1	0.0175476	112.248	-36.7728
119	1	0.0275759	112.249	-36.7452
120	1	0.0401167	112.251	-36.7051
121	1	0.0501541	112.253	-36.6549
122	1	0.0601949	112.257	-36.5947
123	1	0.0702426	112.262	-36.5245
124	1	0.0828129	112.269	-36.4417
125	1	0.0928787	112.277	-36.3488
126	1	0.102953	112.288	-36.2458
127	1	0.115562	112.301	-36.1303
128	1	0.125661	112.317	-36.0046
129	1	0.135774	112.335	-35.8689
130	1	0.1459	112.357	-35.723
131	1	0.158579	112.382	-35.5644
132	1	0.168741	112.41	-35.3956
133	1	0.17892	112.442	-35.2167
134	1	0.191671	112.479	-35.025
135	1	0.201894	112.52	-34.8231
136	1	0.212137	112.565	-34.611
137	1	0.222403	112.614	-34.3886
138	1	0.235269	112.67	-34.1533
139	1	0.24559	112.73	-33.9077
140	1	0.255936	112.796	-33.6518
141	1	0.268908	112.868	-33.3829
142	1	0.279319	112.946	-33.1036
143	1	0.28976	113.03	-32.8138
144	1	0.302855	113.122	-32.511
145	1	0.31337	113.22	-32.1976
146	1	0.323919	113.325	-31.8737
147	1	0.334503	113.437	-31.5392
148	1	0.347787	113.558	-31.1914
149	1	0.358459	113.686	-30.8329
150	1	0.369171	113.822	-30.4638
151	1	0.382622	113.969	-30.0811
152	1	0.393433	114.123	-29.6877
153	1	0.40429	114.287	-29.2834
154	1	0.415193	114.459	-28.8682
155	1	0.428895	114.643	-28.4393
156	1	0.439913	114.837	-27.9994
157	1	0.450985	115.04	-27.5484
158	1	0.464904	115.256	-27.0835
159	1	0.476105	115.483	-26.6074
160	1	0.487364	115.721	-26.1201
161	1	0.498687	115.969	-25.6214
162	1	0.51293	116.232	-25.1084
163	1	0.524401	116.507	-24.584
164	1	0.53594	116.795	-24.0481
165	1	0.550465	117.098	-23.4976
166	1	0.56217	117.414	-22.9355
167	1	0.573953	117.743	-22.3615
168	1	0.588793	118.09	-21.7727
169	1	0.60076	118.451	-21.172
170	1	0.612813	118.826	-20.5591
171	1	0.624956	119.217	-19.9342
172	1	0.640266	119.627	-19.2939
173	1	0.652622	120.053	-18.6413

174	1	0.665079	120.495	-17.9762
175	1	0.680797	120.958	-17.2954
176	1	0.693493	121.439	-16.6019
177	1	0.706302	121.938	-15.8956
178	1	0.719228	122.455	-15.1764
179	1	0.735557	122.997	-14.4408
180	1	0.748762	123.557	-13.6921
181	1	0.7621	124.138	-12.93
182	1	0.778966	124.745	-12.151
183	1	0.792618	125.373	-11.3584
184	1	0.806422	126.023	-10.552
185	1	0.820379	126.696	-9.73159
186	1	0.838054	127.399	-8.89354
187	1	0.852385	128.125	-8.04116
188	1	0.866894	128.877	-7.17426
189	1	0.885291	129.66	-6.28897
190	1	0.900227	130.471	-5.38874
191	1	0.915365	131.309	-4.47338
192	1	0.93459	132.182	-3.53879
193	1	0.950222	133.085	-2.58857
194	1	0.966088	134.018	-1.62248
195	1	0.982202	134.983	-0.640277
196	1	1.00271	135.989	0.362434
197	1	1.01943	137.028	1.38186
198	1	1.03643	138.102	2.41829
199	1	1.05812	139.222	3.47642
200	1	1.07584	140.379	4.55225
201	1	1.0939	141.576	5.64615
202	1	1.11232	142.813	6.75847
203	1	1.1359	144.103	7.89437
204	1	1.15522	145.438	9.04959
205	1	1.17499	146.818	10.2246
206	1	1.20036	148.259	11.4249
207	1	1.22123	149.751	12.6462
208	1	1.24264	151.295	13.8888
209	1	1.26464	152.894	15.1534
210	1	1.29303	154.566	16.4465
211	1	1.31652	156.299	17.763
212	1	1.34075	158.097	19.1038
213	1	1.3722	159.98	20.476
214	1	1.39838	161.935	21.8743
215	1	1.42554	163.967	23.2999
216	1	1.46106	166.102	24.7609
217	2	1.49085	168.325	27.7426
218	2	1.52203	170.641	30.7867
219	2	1.55477	173.059	33.8963
220	2	1.59819	175.613	37.0926
221	2	1.63524	178.287	40.3631
222	2	1.67466	181.091	43.7124
223	2.6	1.72793	184.077	48.2051
224	3	1.77438	187.226	53.5282
225	3	1.82501	190.556	59.0032
226	3.2	1.88079	194.094	65.0217
227	3.2	1.95996	197.935	71.2936
228	4	2.03352	202.07	79.4277
229	4	2.12007	206.565	87.908
230	4	2.25713	211.66	96.9365
231	4	2.40892	217.462	106.572
232	6	2.65209	224.496	122.485

Data Set Standard Deviation = 0.722312

Numerator = 15002.5
Denominator = 27056.4
W Statistic = 0.554489 = 15002.5 / 27056.4

5% Critical value of 0.976 exceeds 0.554489
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.554489
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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-2.25379	-2.65209	7.03356	5.97726
2	-2.25379	-2.40892	12.8365	11.4065
3	-2.25379	-2.25713	17.9311	16.4936
4	-2.25379	-2.12007	22.4258	21.2718
5	-2.25379	-2.03352	26.561	25.8549
6	-2.25379	-1.95996	30.4025	30.2723
7	-2.25379	-1.88079	33.9398	34.5112
8	-2.25379	-1.82501	37.2705	38.6244
9	-2.25379	-1.77438	40.4189	42.6235
10	-2.25379	-1.72793	43.4046	46.5179
11	-2.25379	-1.67466	46.2091	50.2922
12	-2.25379	-1.63524	48.8831	53.9777
13	-2.25379	-1.59819	51.4373	57.5797
14	-2.25379	-1.55477	53.8547	61.0838
15	-2.25379	-1.52203	56.1712	64.5142
16	-2.25379	-1.49085	58.3939	67.8743
17	-2.25379	-1.46106	60.5286	71.1672
18	-2.25379	-1.42554	62.5608	74.3801
19	-2.25379	-1.39838	64.5162	77.5317
20	-2.25379	-1.3722	66.3992	80.6244
21	-2.25379	-1.34075	68.1968	83.6462
22	-2.25379	-1.31652	69.93	86.6133
23	-2.25379	-1.29303	71.6019	89.5276
24	-2.25379	-1.26464	73.2013	92.3778
25	-2.25379	-1.24264	74.7454	95.1785
26	-2.25379	-1.22123	76.2368	97.9309
27	-2.25379	-1.20036	77.6777	100.636
28	-2.25379	-1.17499	79.0583	103.284
29	-2.25379	-1.15522	80.3928	105.888
30	-2.25379	-1.1359	81.6831	108.448
31	-2.25379	-1.11232	82.9203	110.955
32	-2.25379	-1.0939	84.1169	113.42
33	-2.25379	-1.07584	85.2744	115.845
34	-2.25379	-1.05812	86.394	118.23
35	-2.25379	-1.03643	87.4682	120.566
36	-2.25379	-1.01943	88.5074	122.863
37	-2.25379	-1.00271	89.5128	125.123
38	-2.25379	-0.982202	90.4776	127.337
39	-1.42712	-0.966088	91.4109	128.716
40	-1.34707	-0.950222	92.3138	129.996
41	-1.27297	-0.93459	93.1873	131.186
42	-1.17118	-0.915365	94.0252	132.258
43	-1.10866	-0.900227	94.8356	133.256
44	-0.527633	-0.885291	95.6193	133.723
45	-0.446287	-0.866894	96.3708	134.11
46	-0.415515	-0.852385	97.0974	134.464
47	0	-0.838054	97.7997	134.464
48	0	-0.820379	98.4727	134.464
49	0	-0.806422	99.123	134.464

50	0	-0.792618	99.7513	134.464
51	0	-0.778966	100.358	134.464
52	0	-0.7621	100.939	134.464
53	0	-0.748762	101.5	134.464
54	0	-0.735557	102.041	134.464
55	0	-0.719228	102.558	134.464
56	0	-0.706302	103.057	134.464
57	0	-0.693493	103.538	134.464
58	0	-0.680797	104.001	134.464
59	0	-0.665079	104.443	134.464
60	0	-0.652622	104.869	134.464
61	0	-0.640266	105.279	134.464
62	0	-0.624956	105.67	134.464
63	0	-0.612813	106.045	134.464
64	0	-0.60076	106.406	134.464
65	0	-0.588793	106.753	134.464
66	0	-0.573953	107.082	134.464
67	0	-0.56217	107.398	134.464
68	0	-0.550465	107.701	134.464
69	0	-0.53594	107.989	134.464
70	0	-0.524401	108.264	134.464
71	0	-0.51293	108.527	134.464
72	0	-0.498687	108.776	134.464
73	0	-0.487364	109.013	134.464
74	0	-0.476105	109.24	134.464
75	0	-0.464904	109.456	134.464
76	0	-0.450985	109.659	134.464
77	0	-0.439913	109.853	134.464
78	0	-0.428895	110.037	134.464
79	0	-0.415193	110.209	134.464
80	0	-0.40429	110.373	134.464
81	0	-0.393433	110.527	134.464
82	0	-0.382622	110.674	134.464
83	0	-0.369171	110.81	134.464
84	0	-0.358459	110.939	134.464
85	0	-0.347787	111.059	134.464
86	0	-0.334503	111.171	134.464
87	0	-0.323919	111.276	134.464
88	0	-0.31337	111.374	134.464
89	0	-0.302855	111.466	134.464
90	0	-0.28976	111.55	134.464
91	0	-0.279319	111.628	134.464
92	0	-0.268908	111.7	134.464
93	0	-0.255936	111.766	134.464
94	0	-0.24559	111.826	134.464
95	0	-0.235269	111.882	134.464
96	0	-0.222403	111.931	134.464
97	0	-0.212137	111.976	134.464
98	0	-0.201894	112.017	134.464
99	0	-0.191671	112.054	134.464
100	0	-0.17892	112.086	134.464
101	0	-0.168741	112.114	134.464
102	0	-0.158579	112.139	134.464
103	0	-0.1459	112.161	134.464
104	0	-0.135774	112.179	134.464
105	0	-0.125661	112.195	134.464
106	0	-0.115562	112.208	134.464
107	0	-0.102953	112.219	134.464
108	0	-0.0928787	112.227	134.464
109	0	-0.0828129	112.234	134.464
110	0	-0.0702426	112.239	134.464
111	0	-0.0601949	112.243	134.464

112	0	-0.0501541	112.245	134.464
113	0	-0.0401167	112.247	134.464
114	0	-0.0275759	112.248	134.464
115	0	-0.0175476	112.248	134.464
116	0	-0.00751925	112.248	134.464
117	0	0.00751925	112.248	134.464
118	0	0.0175476	112.248	134.464
119	0	0.0275759	112.249	134.464
120	0	0.0401167	112.251	134.464
121	0	0.0501541	112.253	134.464
122	0	0.0601949	112.257	134.464
123	0	0.0702426	112.262	134.464
124	0	0.0828129	112.269	134.464
125	0	0.0928787	112.277	134.464
126	0	0.102953	112.288	134.464
127	0	0.115562	112.301	134.464
128	0	0.125661	112.317	134.464
129	0	0.135774	112.335	134.464
130	0	0.1459	112.357	134.464
131	0	0.158579	112.382	134.464
132	0	0.168741	112.41	134.464
133	0	0.17892	112.442	134.464
134	0	0.191671	112.479	134.464
135	0	0.201894	112.52	134.464
136	0	0.212137	112.565	134.464
137	0	0.222403	112.614	134.464
138	0	0.235269	112.67	134.464
139	0	0.24559	112.73	134.464
140	0	0.255936	112.796	134.464
141	0	0.268908	112.868	134.464
142	0	0.279319	112.946	134.464
143	0	0.28976	113.03	134.464
144	0	0.302855	113.122	134.464
145	0	0.31337	113.22	134.464
146	0	0.323919	113.325	134.464
147	0	0.334503	113.437	134.464
148	0	0.347787	113.558	134.464
149	0	0.358459	113.686	134.464
150	0	0.369171	113.822	134.464
151	0	0.382622	113.969	134.464
152	0	0.393433	114.123	134.464
153	0	0.40429	114.287	134.464
154	0	0.415193	114.459	134.464
155	0	0.428895	114.643	134.464
156	0	0.439913	114.837	134.464
157	0	0.450985	115.04	134.464
158	0	0.464904	115.256	134.464
159	0	0.476105	115.483	134.464
160	0	0.487364	115.721	134.464
161	0	0.498687	115.969	134.464
162	0	0.51293	116.232	134.464
163	0	0.524401	116.507	134.464
164	0	0.53594	116.795	134.464
165	0	0.550465	117.098	134.464
166	0	0.56217	117.414	134.464
167	0	0.573953	117.743	134.464
168	0	0.588793	118.09	134.464
169	0	0.60076	118.451	134.464
170	0	0.612813	118.826	134.464
171	0	0.624956	119.217	134.464
172	0	0.640266	119.627	134.464
173	0	0.652622	120.053	134.464

174	0	0.665079		120.495	134.464
175	0	0.680797		120.958	134.464
176	0	0.693493		121.439	134.464
177	0	0.706302		121.938	134.464
178	0	0.719228		122.455	134.464
179	0	0.735557		122.997	134.464
180	0	0.748762		123.557	134.464
181	0	0.7621	124.138	134.464	
182	0	0.778966		124.745	134.464
183	0	0.792618		125.373	134.464
184	0	0.806422		126.023	134.464
185	0	0.820379		126.696	134.464
186	0	0.838054		127.399	134.464
187	0	0.852385		128.125	134.464
188	0	0.866894		128.877	134.464
189	0	0.885291		129.66	134.464
190	0	0.900227		130.471	134.464
191	0	0.915365		131.309	134.464
192	0	0.93459	132.182	134.464	
193	0	0.950222		133.085	134.464
194	0	0.966088		134.018	134.464
195	0	0.982202		134.983	134.464
196	0	1.00271	135.989	134.464	
197	0	1.01943	137.028	134.464	
198	0	1.03643	138.102	134.464	
199	0	1.05812	139.222	134.464	
200	0	1.07584	140.379	134.464	
201	0	1.0939	141.576	134.464	
202	0	1.11232	142.813	134.464	
203	0	1.1359	144.103	134.464	
204	0	1.15522	145.438	134.464	
205	0	1.17499	146.818	134.464	
206	0	1.20036	148.259	134.464	
207	0	1.22123	149.751	134.464	
208	0	1.24264	151.295	134.464	
209	0	1.26464	152.894	134.464	
210	0	1.29303	154.566	134.464	
211	0	1.31652	156.299	134.464	
212	0	1.34075	158.097	134.464	
213	0	1.3722	159.98	134.464	
214	0	1.39838	161.935	134.464	
215	0	1.42554	163.967	134.464	
216	0	1.46106	166.102	134.464	
217	0.693147		1.49085	168.325	135.497
218	0.693147		1.52203	170.641	136.552
219	0.693147		1.55477	173.059	137.63
220	0.693147		1.59819	175.613	138.738
221	0.693147		1.63524	178.287	139.871
222	0.693147		1.67466	181.091	141.032
223	0.955511		1.72793	184.077	142.683
224	1.09861	1.77438	187.226	144.632	
225	1.09861	1.82501	190.556	146.637	
226	1.16315	1.88079	194.094	148.825	
227	1.16315	1.95996	197.935	151.105	
228	1.38629	2.03352	202.07	153.924	
229	1.38629	2.12007	206.565	156.863	
230	1.38629	2.25713	211.66	159.992	
231	1.38629	2.40892	217.462	163.331	
232	1.79176	2.65209	224.496	168.083	

Data Set Standard Deviation = 0.922096

Numerator = 28251.9
Denominator = 44093.3
W Statistic = 0.64073 = 28251.9 / 44093.3

5% Critical value of 0.976 exceeds 0.64073
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.64073
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	102
	3/16/1999	ND<0	102
	9/23/1999	ND<0	102
	3/14/2000	ND<0	102
	9/23/2003	ND<0	102
	3/10/2004	ND<0	102
	10/12/2004	ND<0	102
	4/1/2005	ND<0	102
	10/26/2005	ND<0	102
	6/19/2006	ND<0	102
	11/18/2006	ND<0	102
	6/2/2007	ND<0	102
	11/15/2007	ND<0	102
	5/20/2008	ND<0	102
	11/20/2008	ND<0	102
	6/11/2009	ND<-2.25379 U	102
	11/16/2009	ND<-2.25379 U	102
	6/30/2010	ND<-2.25379 U	102
	11/17/2010	ND<-2.25379 U	102

Rank Sum = 1938
Rank Mean = 102

Background Rank Sum = 1938
Background Rank Mean = 102

Compliance Wells

Well ID	Date	Result	Rank
LMW-10	3/14/2000	ND<0	102
	9/23/2003	ND<0	102
	3/10/2004	ND<0	102
	10/12/2004	ND<0	102
	4/1/2005	ND<0	102
	10/26/2005	ND<0	102
	6/19/2006	ND<0	102
	11/18/2006	ND<0	102
	6/2/2007	ND<0	102
	11/15/2007	ND<0	102
	5/20/2008	ND<0	102
	11/20/2008	ND<0	102
	6/11/2009	ND<-2.25379 U	102
	11/16/2009	ND<-2.25379 U	102
	6/30/2010	ND<-2.25379 U	102
	11/17/2010	ND<-2.25379 U	102

Rank Sum = 1632
Rank Mean = 102

LMW-8	1/16/1998	ND<0	102	
	3/16/1999	ND<0	102	
	9/23/1999	ND<0	102	
	3/14/2000	ND<0	102	
	9/23/2003	ND<0	102	
	3/10/2004	ND<0	102	
	10/12/2004	ND<0	102	
	4/1/2005	1.09861	224	
	10/26/2005	0 J	212	
	6/19/2006	0 J	213	
	11/18/2006	0 J	214	
	6/2/2007	0 J	215	
	11/15/2007	1.09861		225
	5/20/2008	ND<0	102	
	11/20/2008	ND<0	102	
	6/11/2009	-0.446287		210
	11/16/2009	-0.527633		209
	6/30/2010	-1.10866 J		208
	11/17/2010	-0.415515		211

Rank Sum = 3059
Rank Mean = 161

LMW-9D	11/18/2006	ND<0	102	
	6/2/2007	ND<0	102	
	11/15/2007	1.38629		228
	5/20/2008	ND<0	102	
	11/20/2008	ND<0	102	
	6/11/2009	ND<-2.25379 U		102
	11/16/2009	ND<-2.25379 U		102
	6/30/2010	ND<-2.25379 U		102
	11/17/2010	ND<-2.25379 U		102

Rank Sum = 1044
Rank Mean = 116

LMW-3S	11/18/2006	ND<0	102	
	6/2/2007	ND<0	102	
	11/15/2007	ND<0	102	
	5/20/2008	ND<0	102	
	11/20/2008	ND<0	102	
	6/11/2009	ND<-2.25379 U		102
	11/16/2009	ND<-2.25379 U		102
	6/30/2010	ND<-2.25379 U		102
	11/17/2010	ND<-2.25379 U		102

Rank Sum = 918
Rank Mean = 102

LMW-16	11/18/2006	ND<0	102	
	6/2/2007	ND<0	102	
	11/15/2007	0.693147		217
	5/20/2008	ND<0	102	
	11/20/2008	ND<0	102	
	6/11/2009	ND<-2.25379 U		102
	11/16/2009	ND<-2.25379 U		102
	6/30/2010	ND<-2.25379 U		102
	11/17/2010	-1.17118 J		207

Rank Sum = 1138
Rank Mean = 126.444

LMW-6	1/16/1998	ND<0	102	
	3/16/1999	ND<0	102	
	9/23/1999	ND<0	102	

	3/14/2000	ND<0	102	
	9/23/2003	ND<0	102	
	3/10/2004	ND<0	102	
	10/12/2004	ND<0	102	
	4/1/2005	ND<0	102	
	10/26/2005	0 J	216	
	6/19/2006	0.693147		218
	11/18/2006	0.693147		219
	6/2/2007	0.693147	220	
	11/15/2007	1.38629		229
	5/20/2008	0.693147		221
	11/20/2008	0.693147		222
	6/11/2009	1.16315		226
	11/16/2009	0.955511		223
	6/30/2010	1.16315		227
	11/17/2010	1.79176		232

Rank Sum = 3269
Rank Mean = 172.053

LMW-7	1/16/1998	ND<0	102	
	3/16/1999	ND<0	102	
	9/23/1999	ND<0	102	
	3/14/2000	ND<0	102	
	9/23/2003	ND<0	102	
	3/10/2004	ND<0	102	
	10/12/2004	ND<0	102	
	4/1/2005	ND<0	102	
	10/26/2005	ND<0	102	
	6/19/2006	ND<0	102	
	11/18/2006	ND<0	102	
	6/2/2007	ND<0	102	
	11/15/2007	ND<0	102	
	5/20/2008	ND<0	102	
	11/20/2008	ND<0	102	
	6/11/2009	ND<-2.25379 U		102
	11/17/2010	ND<-2.25379 U		102

Rank Sum = 1734
Rank Mean = 102

LMW-9S	11/18/2006	1.38629		230
	6/2/2007	1.38629	231	
	11/15/2007	ND<0	102	
	5/20/2008	ND<0	102	
	11/20/2008	ND<0	102	
	6/11/2009	ND<-2.25379 U		102
	11/16/2009	ND<-2.25379 U		102
	11/16/2009	ND<-2.25379 U		102
	11/16/2009	ND<-2.25379 U		102
	6/30/2010	ND<-2.25379 U		102
	11/17/2010	-1.34707 J		205

Rank Sum = 1482
Rank Mean = 134.727

LMW-14R	6/2/2007	ND<0	102	
	11/15/2007	ND<0	102	
	5/20/2008	ND<0	102	
	11/20/2008	ND<0	102	
	6/11/2009	ND<-2.25379 U		102
	6/30/2010	ND<-2.25379 U		102
	11/17/2010	ND<-2.25379 U		102

Rank Sum = 714
Rank Mean = 102

LMW-15R	11/18/2006	ND<0		102
	6/2/2007	ND<0		102
	11/15/2007	ND<0		102
	11/15/2007	ND<0		102
	5/20/2008	ND<0		102
	5/20/2008	ND<0		102
	11/20/2008	ND<0		102
	11/20/2008	ND<0		102
	6/11/2009	-1.42712	J	204
	6/30/2010	ND<-2.25379	U	102
	11/17/2010	ND<-2.25379	U	102

Rank Sum = 1224
Rank Mean = 111.273

LMW-3	11/19/1996	ND<0		102
	3/24/1997	ND<0		102
	1/16/1998	ND<0		102
	3/16/1999	ND<0		102
	9/23/1999	ND<0		102
	3/14/2000	ND<0		102
	9/23/2003	ND<0		102
	3/10/2004	ND<0		102
	10/12/2004	ND<0		102
	4/1/2005	ND<0		102
	10/26/2005	ND<0		102
	6/19/2006	ND<0		102
	11/18/2006	ND<0		102
	6/2/2007	ND<0		102
	11/15/2007	ND<0		102
	5/20/2008	ND<0		102
	11/20/2008	ND<0		102
	6/11/2009	ND<-2.25379	U	102
	11/16/2009	ND<-2.25379	U	102
	6/30/2010	ND<-2.25379	U	102
	11/17/2010	ND<-2.25379	U	102

Rank Sum = 2142
Rank Mean = 102

LMW-9	1/16/1998	ND<0		102
	3/16/1999	ND<0		102
	9/23/1999	ND<0		102
	3/14/2000	ND<0		102
	9/23/2003	ND<0		102
	3/10/2004	ND<0		102
	10/12/2004	ND<0		102
	4/1/2005	ND<0		102
	10/26/2005	ND<0		102
	6/19/2006	ND<0		102
	11/18/2006	ND<0		102
	6/2/2007	ND<0		102
	11/15/2007	ND<0		102
	5/20/2008	ND<0		102
	11/20/2008	ND<0		102
	6/11/2009	-1.27297	J	206
	11/16/2009	ND<-2.25379	U	102
	6/30/2010	ND<-2.25379	U	102
	11/17/2010	ND<-2.25379	U	102

Rank Sum = 2042
Rank Mean = 107.474

MW-5	1/16/1998	ND<0		102

	3/16/1999	ND<0	102
	9/23/1999	ND<0	102
	3/14/2000	ND<0	102
	9/23/2003	ND<0	102
	3/10/2004	ND<0	102
	10/12/2004	ND<0	102
	4/1/2005	ND<0	102
	10/26/2005	ND<0	102
	6/19/2006	ND<0	102
	11/15/2007	ND<0	102
	5/20/2008	ND<0	102
	11/20/2008	ND<0	102

Rank Sum = 1326
Rank Mean = 102

LMW-11	3/14/2000	ND<0	102
	9/23/2003	ND<0	102
	3/10/2004	ND<0	102
	10/12/2004	ND<0	102
	4/1/2005	ND<0	102
	10/26/2005	ND<0	102
	6/19/2006	ND<0	102
	6/2/2007	ND<0	102
	11/15/2007	ND<0	102
	5/20/2008	ND<0	102
	11/20/2008	ND<0	102

Rank Sum = 1122
Rank Mean = 102

LMW-13	3/14/2000	ND<0	102
	9/23/2003	ND<0	102
	3/10/2004	ND<0	102
	10/12/2004	ND<0	102
	4/1/2005	ND<0	102
	10/26/2005	ND<0	102
	6/19/2006	ND<0	102
	6/2/2007	ND<0	102
	11/15/2007	ND<0	102
	5/20/2008	ND<0	102
	11/20/2008	ND<0	102

Rank Sum = 1122
Rank Mean = 102

LMW-12	3/14/2000	ND<0	102
	9/23/2003	ND<0	102
	3/10/2004	ND<0	102
	10/12/2004	ND<0	102
	4/1/2005	ND<0	102
	10/26/2005	ND<0	102
	6/19/2006	ND<0	102
	6/2/2007	ND<0	102
	11/15/2007	ND<0	102
	5/20/2008	ND<0	102
	11/20/2008	ND<0	102

Rank Sum = 1122
Rank Mean = 102

Calculation Results:

Kruskal-Wallis H Statistic = 29.0898
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 88.1289

95% Confidence comparison value is 26.2962 at 16 degrees of freedom
29.0898 > 26.2962 indicating a significant group difference at 5% significance level
88.1289 > 26.2962 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634
Mean background rank is 102

Well	Mean Rank		Dif from Bkg	Critical Value
LMW-10	102	0	52.9788	
LMW-8	161	59	50.6574	
LMW-9D	116	14	63.1809	
LMW-3S	102	0	63.1809	
LMW-16	126.444	24.4444	63.1809	
LMW-6	172.053	70.0526	50.6574	
LMW-7	102	0	52.1261	
LMW-9S	134.727	32.7273	59.1551	
LMW-14R		102	0	69.0344
LMW-15R		111.273	9.27273	59.1551
LMW-3	102	0	49.4366	
LMW-9	107.474	5.47368	50.6574	
MW-5	102	0	56.1994	
LMW-11	102	0	59.1551	
LMW-13	102	0	59.1551	
LMW-12	102	0	59.1551	

Individual Well Comparisons at Groupwise 5% Significance Level (0.3125% Significance Level per comparison)

0.3125% Z score is 2.74777
Mean background rank is 102

Well	Mean Rank		Dif from Bkg	Critical Value
LMW-10	102	0	62.5761	
LMW-8	161	59	59.8342	
LMW-9D	116	14	74.6263	
LMW-3S	102	0	74.6263	
LMW-16	126.444	24.4444	74.6263	
LMW-6	172.053	70.0526	59.8342	
LMW-7	102	0	61.5688	
LMW-9S	134.727	32.7273	69.8712	
LMW-14R		102	0	81.5402
LMW-15R		111.273	9.27273	69.8712
LMW-3	102	0	58.3922	
LMW-9	107.474	5.47368	59.8342	
MW-5	102	0	66.38	
LMW-11	102	0	69.8712	
LMW-13	102	0	69.8712	
LMW-12	102	0	69.8712	

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	
-0.415515		ND<0	-0.415515	2	4
ND<0	ND<0	0	2	4	
ND<0	ND<0	0	2	4	
ND<0	ND<0	0	2	4	
ND<0	ND<0	0	2	4	
ND<0	ND<0	0	2	4	
1.09861		ND<0	1.09861	3	4
0 J	ND<0	0	3	4	
0 J	ND<0	0	3	4	
0 J	ND<0	0	3	4	
0 J	ND<0	0	3	4	
1.09861		ND<0	1.09861	4	4
ND<0	ND<0	0	4	4	
ND<0	ND<0	0	4	4	
-0.446287		ND<0	-0.446287	4	5
-0.527633		ND<0	-0.527633	4	6
-1.10866 J		ND<0	-1.108664	7	
-0.415515		ND<0	-0.415515	4	8
ND<0	ND<0	0	4	8	
ND<0	ND<0	0	4	8	
ND<0	ND<0	0	4	8	
ND<0	ND<0	0	4	8	
1.09861		ND<0	1.09861	5	8
0 J	ND<0	0	5	8	
0 J	ND<0	0	5	8	
0 J	ND<0	0	5	8	
0 J	ND<0	0	5	8	
1.09861		ND<0	1.09861	6	8
ND<0	ND<0	0	6	8	

ND<0	ND<0	0	6	8		
-0.446287		ND<0	-0.446287		6	9
-0.527633		ND<0	-0.527633		6	10
-1.10866 J		ND<0	-1.108666		11	
-0.415515		ND<0	-0.415515		6	12
ND<0	ND<0	0	6	12		
ND<0	ND<0	0	6	12		
ND<0	ND<0	0	6	12		
1.09861		ND<0	1.09861	7	12	
0 J	ND<0	0	7	12		
0 J	ND<0	0	7	12		
0 J	ND<0	0	7	12		
0 J	ND<0	0	7	12		
1.09861		ND<0	1.09861	8	12	
ND<0	ND<0	0	8	12		
ND<0	ND<0	0	8	12		
-0.446287		ND<0	-0.446287		8	13
-0.527633		ND<0	-0.527633		8	14
-1.10866 J		ND<0	-1.108668		15	
-0.415515		ND<0	-0.415515		8	16
ND<0	ND<0	0	8	16		
ND<0	ND<0	0	8	16		
1.09861		ND<0	1.09861	9	16	
0 J	ND<0	0	9	16		
0 J	ND<0	0	9	16		
0 J	ND<0	0	9	16		
0 J	ND<0	0	9	16		
1.09861		ND<0	1.09861	10	16	
ND<0	ND<0	0	10	16		
ND<0	ND<0	0	10	16		
-0.446287		ND<0	-0.446287		10	17
-0.527633		ND<0	-0.527633		10	18
-1.10866 J		ND<0	-1.108610		19	
-0.415515		ND<0	-0.415515		10	20
ND<0	ND<0	0	10	20		
1.09861		ND<0	1.09861	11	20	
0 J	ND<0	0	11	20		
0 J	ND<0	0	11	20		
0 J	ND<0	0	11	20		
0 J	ND<0	0	11	20		
1.09861		ND<0	1.09861	12	20	
ND<0	ND<0	0	12	20		
ND<0	ND<0	0	12	20		
-0.446287		ND<0	-0.446287		12	21
-0.527633		ND<0	-0.527633		12	22
-1.10866 J		ND<0	-1.108612		23	
-0.415515		ND<0	-0.415515		12	24
1.09861		ND<0	1.09861	13	24	
0 J	ND<0	0	13	24		
0 J	ND<0	0	13	24		
0 J	ND<0	0	13	24		
0 J	ND<0	0	13	24		
1.09861		ND<0	1.09861	14	24	
ND<0	ND<0	0	14	24		
ND<0	ND<0	0	14	24		
-0.446287		ND<0	-0.446287		14	25
-0.527633		ND<0	-0.527633		14	26
-1.10866 J		ND<0	-1.108614		27	

-0.415515		ND<0	-0.415515	14	28
0 J	1.09861		-1.0986	14	29
0 J	1.09861		-1.0986	14	30
0 J	1.09861		-1.0986	14	31
0 J	1.09861		-1.0986	14	32
1.09861		1.09861	0	14	32
ND<0	1.09861		-1.0986	14	33
ND<0	1.09861		-1.0986	14	34
-0.446287		1.09861	-1.5449	14	35
-0.527633		1.09861	-1.6262	14	36
-1.10866 J		1.09861	-2.2072	14	37
-0.415515		1.09861	-1.5141	14	38
0 J	0 J	0	14	38	
0 J	0 J	0	14	38	
0 J	0 J	0	14	38	
1.09861		0 J	1.09861	15	38
ND<0	0 J	0	15	38	
ND<0	0 J	0	15	38	
-0.446287		0 J	-0.446287	15	39
-0.527633		0 J	-0.527633	15	40
-1.10866 J		0 J	-1.1086	15	41
-0.415515		0 J	-0.415515	15	42
0 J	0 J	0	15	42	
0 J	0 J	0	15	42	
1.09861		0 J	1.09861	16	42
ND<0	0 J	0	16	42	
ND<0	0 J	0	16	42	
-0.446287		0 J	-0.446287	16	43
-0.527633		0 J	-0.527633	16	44
-1.10866 J		0 J	-1.1086	16	45
-0.415515		0 J	-0.415515	16	46
0 J	0 J	0	16	46	
1.09861		0 J	1.09861	17	46
ND<0	0 J	0	17	46	
ND<0	0 J	0	17	46	
-0.446287		0 J	-0.446287	17	47
-0.527633		0 J	-0.527633	17	48
-1.10866 J		0 J	-1.1086	17	49
-0.415515		0 J	-0.415515	17	50
1.09861		0 J	1.09861	18	50
ND<0	0 J	0	18	50	
ND<0	0 J	0	18	50	
-0.446287		0 J	-0.446287	18	51
-0.527633		0 J	-0.527633	18	52
-1.10866 J		0 J	-1.1086	18	53
-0.415515		0 J	-0.415515	18	54
ND<0	1.09861		-1.0986	18	55
ND<0	1.09861		-1.0986	18	56
-0.446287		1.09861	-1.5449	18	57
-0.527633		1.09861	-1.6262	18	58
-1.10866 J		1.09861	-2.2072	18	59
-0.415515		1.09861	-1.5141	18	60
ND<0	ND<0	0	18	60	
-0.446287		ND<0	-0.446287	18	61

-0.527633	ND<0	-0.527633	18	62
-1.10866 J	ND<0	-1.1086618	63	
-0.415515	ND<0	-0.415515	18	64
-0.446287	ND<0	-0.446287	18	65
-0.527633	ND<0	-0.527633	18	66
-1.10866 J	ND<0	-1.1086618	67	
-0.415515	ND<0	-0.415515	18	68
-0.527633	-0.446287	-0.0813456	18	69
-1.10866 J	-0.446287	-0.662376	18	70
-0.415515	-0.446287	0.0307717	19	70
-1.10866 J	-0.527633	-0.5810319	71	
-0.415515	-0.527633	0.112117	20	71
-0.415515	-1.10866 J	0.693147	21	71

S Statistic = 21 - 71 = -50

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
11/17/2010		1

There are 0 time periods with multiple data

A = 4854
B = 0
C = 1716
D = 0
E = 158
F = 0
a = 14706
b = 52326
c = 684
Group Variance = 547.333
Z-Score = -2.09445
Comparison Level at 1.0 - (0.05 / 2) = 97.5% confidence level = 1.97737 (two-tailed)
|-2.09445| > 1.97737 indicating a trend

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
1.79176		ND<0	1.79176	10	0
ND<0	ND<0	0	10	0	
ND<0	ND<0	0	10	0	
ND<0	ND<0	0	10	0	
ND<0	ND<0	0	10	0	
ND<0	ND<0	0	10	0	
ND<0	ND<0	0	10	0	
0 J	ND<0	0	10	0	
0.693147		ND<0	0.693147	11	0
0.693147		ND<0	0.693147	12	0
0.693147		ND<0	0.693147	13	0
1.38629		ND<0	1.38629	14	0
0.693147		ND<0	0.693147	15	0
0.693147		ND<0	0.693147	16	0
1.16315		ND<0	1.16315	17	0
0.955511		ND<0	0.955511	18	0
1.16315		ND<0	1.16315	19	0
1.79176		ND<0	1.79176	20	0
ND<0	ND<0	0	20	0	
ND<0	ND<0	0	20	0	
ND<0	ND<0	0	20	0	
ND<0	ND<0	0	20	0	
ND<0	ND<0	0	20	0	
0 J	ND<0	0	20	0	
0.693147		ND<0	0.693147	21	0
0.693147		ND<0	0.693147	22	0
0.693147		ND<0	0.693147	23	0
1.38629		ND<0	1.38629	24	0
0.693147		ND<0	0.693147	25	0

0.693147	ND<0	0.693147	26	0
1.16315	ND<0	1.16315	27	0
0.955511	ND<0	0.955511	28	0
1.16315	ND<0	1.16315	29	0
1.79176	ND<0	1.79176	30	0

ND<0	ND<0	0	30	0
ND<0	ND<0	0	30	0
ND<0	ND<0	0	30	0
ND<0	ND<0	0	30	0
0 J	ND<0	0	30	0
0.693147	ND<0	0.693147	31	0
0.693147	ND<0	0.693147	32	0
0.693147	ND<0	0.693147	33	0
1.38629	ND<0	1.38629	34	0
0.693147	ND<0	0.693147	35	0
0.693147	ND<0	0.693147	36	0
1.16315	ND<0	1.16315	37	0
0.955511	ND<0	0.955511	38	0
1.16315	ND<0	1.16315	39	0
1.79176	ND<0	1.79176	40	0

ND<0	ND<0	0	40	0
ND<0	ND<0	0	40	0
ND<0	ND<0	0	40	0
0 J	ND<0	0	40	0
0.693147	ND<0	0.693147	41	0
0.693147	ND<0	0.693147	42	0
0.693147	ND<0	0.693147	43	0
1.38629	ND<0	1.38629	44	0
0.693147	ND<0	0.693147	45	0
0.693147	ND<0	0.693147	46	0
1.16315	ND<0	1.16315	47	0
0.955511	ND<0	0.955511	48	0
1.16315	ND<0	1.16315	49	0
1.79176	ND<0	1.79176	50	0

ND<0	ND<0	0	50	0
ND<0	ND<0	0	50	0
0 J	ND<0	0	50	0
0.693147	ND<0	0.693147	51	0
0.693147	ND<0	0.693147	52	0
0.693147	ND<0	0.693147	53	0
1.38629	ND<0	1.38629	54	0
0.693147	ND<0	0.693147	55	0
0.693147	ND<0	0.693147	56	0
1.16315	ND<0	1.16315	57	0
0.955511	ND<0	0.955511	58	0
1.16315	ND<0	1.16315	59	0
1.79176	ND<0	1.79176	60	0

ND<0	ND<0	0	60	0
0 J	ND<0	0	60	0
0.693147	ND<0	0.693147	61	0
0.693147	ND<0	0.693147	62	0
0.693147	ND<0	0.693147	63	0
1.38629	ND<0	1.38629	64	0
0.693147	ND<0	0.693147	65	0
0.693147	ND<0	0.693147	66	0
1.16315	ND<0	1.16315	67	0
0.955511	ND<0	0.955511	68	0
1.16315	ND<0	1.16315	69	0

1.79176	ND<0	1.79176	70	0	
0 J	ND<0	0	70	0	
0.693147	ND<0	0.693147	71	0	
0.693147	ND<0	0.693147	72	0	
0.693147	ND<0	0.693147	73	0	
1.38629	ND<0	1.38629	74	0	
0.693147	ND<0	0.693147	75	0	
0.693147	ND<0	0.693147	76	0	
1.16315	ND<0	1.16315	77	0	
0.955511	ND<0	0.955511	78	0	
1.16315	ND<0	1.16315	79	0	
1.79176	ND<0	1.79176	80	0	
0.693147	0 J	0.693147	81	0	
0.693147	0 J	0.693147	82	0	
0.693147	0 J	0.693147	83	0	
1.38629	0 J	1.38629	84	0	
0.693147	0 J	0.693147	85	0	
0.693147	0 J	0.693147	86	0	
1.16315	0 J	1.16315	87	0	
0.955511	0 J	0.955511	88	0	
1.16315	0 J	1.16315	89	0	
1.79176	0 J	1.79176	90	0	
0.693147	0.693147	0	90	0	
0.693147	0.693147	0	90	0	
1.38629	0.693147	0.693147	91	0	
0.693147	0.693147	0	91	0	
0.693147	0.693147	0	91	0	
1.16315	0.693147	0.470004	92	0	
0.955511	0.693147	0.262364	93	0	
1.16315	0.693147	0.470004	94	0	
1.79176	0.693147	1.09861	95	0	
0.693147	0.693147	0	95	0	
1.38629	0.693147	0.693147	96	0	
0.693147	0.693147	0	96	0	
0.693147	0.693147	0	96	0	
1.16315	0.693147	0.470004	97	0	
0.955511	0.693147	0.262364	98	0	
1.16315	0.693147	0.470004	99	0	
1.79176	0.693147	1.09861	100	0	
1.38629	0.693147	0.693147	101	0	
0.693147	0.693147	0	101	0	
0.693147	0.693147	0	101	0	
1.16315	0.693147	0.470004	102	0	
0.955511	0.693147	0.262364	103	0	
1.16315	0.693147	0.470004	104	0	
1.79176	0.693147	1.09861	105	0	
0.693147	1.38629	-0.693147	105	1	
0.693147	1.38629	-0.693147	105	2	
1.16315	1.38629	-0.223144	105	3	
0.955511	1.38629	-0.430783	105	4	
1.16315	1.38629	-0.223144	105	5	
1.79176	1.38629	0.405465	106	5	
0.693147	0.693147	0	106	5	
1.16315	0.693147	0.470004	107	5	

0.955511	0.693147	0.262364	108	5
1.16315	0.693147	0.470004	109	5
1.79176	0.693147	1.09861	110	5
1.16315	0.693147	0.470004	111	5
0.955511	0.693147	0.262364	112	5
1.16315	0.693147	0.470004	113	5
1.79176	0.693147	1.09861	114	5
0.955511	1.16315	-0.207639	114	6
1.16315	1.16315	0	114	6
1.79176	1.16315	0.628609	115	6
1.16315	0.955511	0.207639	116	6
1.79176	0.955511	0.836248	117	6
1.79176	1.16315	0.628609	118	6

S Statistic = 118 - 6 = 112

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
11/17/2010	1

There are 0 time periods with multiple data

A = 1974
B = 0
C = 564
D = 0
E = 94
F = 0
a = 14706
b = 52326
c = 684
Group Variance = 707.333
Z-Score = 4.1736
Comparison Level at 1.0 - (0.05 / 2) = 97.5% confidence level = 1.97737 (two-tailed)

|4.1736| > 1.97737 indicating a trend

Concentrations (ug/L)

Parameter: Tetrachloroethylene

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 232
Total Non-Detect: 225
Percent Non-Detects: 96.9828%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	19	19 (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
			11/17/2010	ND<0.15 U	ND<0.15 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9D	9	9 (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
			11/17/2010	ND<0.15 U	ND<0.15 U
LMW-3S	9	9 (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
			11/17/2010	ND<0.15 U	ND<0.15 U
LMW-6	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<0.15 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
			11/17/2010	0.22 J	0.22 J	
LMW-3	21	21 (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
			11/17/2010	ND<0.15 U		ND<0.15 U
LMW-9S	11	11 (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
			11/17/2010	ND<0.15 U		ND<0.15 U
LMW-10	16	14 (87.5%)	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
			11/17/2010	0.27 J	0.27 J	
LMW-16	9	9 (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
			11/17/2010	ND<0.15 U		ND<0.15 U
LMW-8	19	15 (78.9474%)	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	
			11/17/2010	0.19 J	0.19 J	
LMW-9	19	19 (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
			11/17/2010	ND<0.15 U		ND<0.15 U
LMW-7	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	
			11/17/2010	ND<0.15 U	ND<0.15 U	
LMW-15R	11	11 (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	
			11/17/2010	ND<0.15 U	ND<0.15 U	
LMW-14R	7	7 (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	
			11/17/2010	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-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	
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: Tetrachloroethylene

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 232

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	0.075	-2.03352	26.561	-0.152514
6	0.075	-1.95996	30.4025	-0.299511
7	0.075	-1.88079	33.9398	-0.44057
8	0.075	-1.82501	37.2705	-0.577446
9	0.075	-1.77438	40.4189	-0.710524
10	0.075	-1.72793	43.4046	-0.840119
11	0.075	-1.67466	46.2091	-0.965719
12	0.075	-1.63524	48.8831	-1.08836
13	0.075	-1.59819	51.4373	-1.20823
14	0.075	-1.55477	53.8547	-1.32483
15	0.075	-1.52203	56.1712	-1.43899
16	0.075	-1.49085	58.3939	-1.5508
17	0.075	-1.46106	60.5286	-1.66038
18	0.075	-1.42554	62.5608	-1.7673
19	0.075	-1.39838	64.5162	-1.87217
20	0.075	-1.3722	66.3992	-1.97509
21	0.075	-1.34075	68.1968	-2.07565
22	0.075	-1.31652	69.93	-2.17438
23	0.075	-1.29303	71.6019	-2.27136
24	0.075	-1.26464	73.2013	-2.36621
25	0.075	-1.24264	74.7454	-2.45941
26	0.075	-1.22123	76.2368	-2.551
27	0.075	-1.20036	77.6777	-2.64103
28	0.075	-1.17499	79.0583	-2.72915
29	0.075	-1.15522	80.3928	-2.81579
30	0.075	-1.1359	81.6831	-2.90099
31	0.075	-1.11232	82.9203	-2.98441
32	0.075	-1.0939	84.1169	-3.06645
33	0.075	-1.07584	85.2744	-3.14714
34	0.075	-1.05812	86.394	-3.2265
35	0.075	-1.03643	87.4682	-3.30423
36	0.075	-1.01943	88.5074	-3.38069
37	0.075	-1.00271	89.5128	-3.45589
38	0.075	-0.982202	90.4776	-3.52956
39	0.075	-0.966088	91.4109	-3.60201
40	0.075	-0.950222	92.3138	-3.67328
41	0.075	-0.93459	93.1873	-3.74337
42	0.075	-0.915365	94.0252	-3.81203
43	0.075	-0.900227	94.8356	-3.87954
44	0.075	-0.885291	95.6193	-3.94594
45	0.075	-0.866894	96.3708	-4.01096
46	0.075	-0.852385	97.0974	-4.07489
47	0.075	-0.838054	97.7997	-4.13774
48	0.19	-0.820379	98.4727	-4.29361
49	0.22	-0.806422	99.123	-4.47102

50	0.24	-0.792618	99.7513	-4.66125
51	0.25	-0.778966	100.358	-4.85599
52	0.26	-0.7621	100.939	-5.05414
53	0.27	-0.748762	101.5	-5.25631
54	0.31	-0.735557	102.041	-5.48433
55	0.5	-0.719228	102.558	-5.84394
56	0.5	-0.706302	103.057	-6.19709
57	0.5	-0.693493	103.538	-6.54384
58	0.5	-0.680797	104.001	-6.88424
59	0.5	-0.665079	104.443	-7.21678
60	0.5	-0.652622	104.869	-7.54309
61	0.5	-0.640266	105.279	-7.86322
62	0.5	-0.624956	105.67	-8.1757
63	0.5	-0.612813	106.045	-8.48211
64	0.5	-0.60076	106.406	-8.78249
65	0.5	-0.588793	106.753	-9.07688
66	0.5	-0.573953	107.082	-9.36386
67	0.5	-0.56217	107.398	-9.64495
68	0.5	-0.550465	107.701	-9.92018
69	0.5	-0.53594	107.989	-10.1881
70	0.5	-0.524401	108.264	-10.4503
71	0.5	-0.51293	108.527	-10.7068
72	0.5	-0.498687	108.776	-10.9562
73	0.5	-0.487364	109.013	-11.1998
74	0.5	-0.476105	109.24	-11.4379
75	0.5	-0.464904	109.456	-11.6703
76	0.5	-0.450985	109.659	-11.8958
77	0.5	-0.439913	109.853	-12.1158
78	0.5	-0.428895	110.037	-12.3302
79	0.5	-0.415193	110.209	-12.5378
80	0.5	-0.40429	110.373	-12.74
81	0.5	-0.393433	110.527	-12.9367
82	0.5	-0.382622	110.674	-13.128
83	0.5	-0.369171	110.81	-13.3126
84	0.5	-0.358459	110.939	-13.4918
85	0.5	-0.347787	111.059	-13.6657
86	0.5	-0.334503	111.171	-13.833
87	0.5	-0.323919	111.276	-13.9949
88	0.5	-0.31337	111.374	-14.1516
89	0.5	-0.302855	111.466	-14.303
90	0.5	-0.28976	111.55	-14.4479
91	0.5	-0.279319	111.628	-14.5876
92	0.5	-0.268908	111.7	-14.722
93	0.5	-0.255936	111.766	-14.85
94	0.5	-0.24559	111.826	-14.9728
95	0.5	-0.235269	111.882	-15.0904
96	0.5	-0.222403	111.931	-15.2016
97	0.5	-0.212137	111.976	-15.3077
98	0.5	-0.201894	112.017	-15.4087
99	0.5	-0.191671	112.054	-15.5045
100	0.5	-0.17892	112.086	-15.5939
101	0.5	-0.168741	112.114	-15.6783
102	0.5	-0.158579	112.139	-15.7576
103	0.5	-0.1459	112.161	-15.8306
104	0.5	-0.135774	112.179	-15.8984
105	0.5	-0.125661	112.195	-15.9613
106	0.5	-0.115562	112.208	-16.0191
107	0.5	-0.102953	112.219	-16.0705
108	0.5	-0.0928787	112.227	-16.117
109	0.5	-0.0828129	112.234	-16.1584
110	0.5	-0.0702426	112.239	-16.1935
111	0.5	-0.0601949	112.243	-16.2236

112	0.5	-0.0501541	112.245	-16.2487
113	0.5	-0.0401167	112.247	-16.2687
114	0.5	-0.0275759	112.248	-16.2825
115	0.5	-0.0175476	112.248	-16.2913
116	0.5	-0.00751925	112.248	-16.2951
117	0.5	0.00751925	112.248	-16.2913
118	0.5	0.0175476	112.248	-16.2825
119	0.5	0.0275759	112.249	-16.2687
120	0.5	0.0401167	112.251	-16.2487
121	0.5	0.0501541	112.253	-16.2236
122	0.5	0.0601949	112.257	-16.1935
123	0.5	0.0702426	112.262	-16.1584
124	0.5	0.0828129	112.269	-16.117
125	0.5	0.0928787	112.277	-16.0705
126	0.5	0.102953	112.288	-16.0191
127	0.5	0.115562	112.301	-15.9613
128	0.5	0.125661	112.317	-15.8984
129	0.5	0.135774	112.335	-15.8306
130	0.5	0.1459	112.357	-15.7576
131	0.5	0.158579	112.382	-15.6783
132	0.5	0.168741	112.41	-15.5939
133	0.5	0.17892	112.442	-15.5045
134	0.5	0.191671	112.479	-15.4087
135	0.5	0.201894	112.52	-15.3077
136	0.5	0.212137	112.565	-15.2016
137	0.5	0.222403	112.614	-15.0904
138	0.5	0.235269	112.67	-14.9728
139	0.5	0.24559	112.73	-14.85
140	0.5	0.255936	112.796	-14.722
141	0.5	0.268908	112.868	-14.5876
142	0.5	0.279319	112.946	-14.4479
143	0.5	0.28976	113.03	-14.303
144	0.5	0.302855	113.122	-14.1516
145	0.5	0.31337	113.22	-13.9949
146	0.5	0.323919	113.325	-13.833
147	0.5	0.334503	113.437	-13.6657
148	0.5	0.347787	113.558	-13.4918
149	0.5	0.358459	113.686	-13.3126
150	0.5	0.369171	113.822	-13.128
151	0.5	0.382622	113.969	-12.9367
152	0.5	0.393433	114.123	-12.74
153	0.5	0.40429	114.287	-12.5378
154	0.5	0.415193	114.459	-12.3302
155	0.5	0.428895	114.643	-12.1158
156	0.5	0.439913	114.837	-11.8958
157	0.5	0.450985	115.04	-11.6703
158	0.5	0.464904	115.256	-11.4379
159	0.5	0.476105	115.483	-11.1998
160	0.5	0.487364	115.721	-10.9562
161	0.5	0.498687	115.969	-10.7068
162	0.5	0.51293	116.232	-10.4503
163	0.5	0.524401	116.507	-10.1881
164	0.5	0.53594	116.795	-9.92018
165	0.5	0.550465	117.098	-9.64495
166	0.5	0.56217	117.414	-9.36386
167	0.5	0.573953	117.743	-9.07688
168	0.5	0.588793	118.09	-8.78249
169	0.5	0.60076	118.451	-8.48211
170	0.5	0.612813	118.826	-8.1757
171	0.5	0.624956	119.217	-7.86322
172	0.5	0.640266	119.627	-7.54309
173	0.5	0.652622	120.053	-7.21678

174	0.5	0.665079	120.495	-6.88424
175	0.5	0.680797	120.958	-6.54384
176	0.5	0.693493	121.439	-6.19709
177	0.5	0.706302	121.938	-5.84394
178	0.5	0.719228	122.455	-5.48433
179	0.5	0.735557	122.997	-5.11655
180	0.5	0.748762	123.557	-4.74217
181	0.5	0.7621	124.138	-4.36112
182	0.5	0.778966	124.745	-3.97164
183	0.5	0.792618	125.373	-3.57533
184	0.5	0.806422	126.023	-3.17212
185	0.5	0.820379	126.696	-2.76193
186	0.5	0.838054	127.399	-2.3429
187	0.5	0.852385	128.125	-1.91671
188	0.5	0.866894	128.877	-1.48326
189	0.5	0.885291	129.66	-1.04062
190	0.5	0.900227	130.471	-0.590502
191	0.5	0.915365	131.309	-0.132819
192	0.5	0.93459	132.182	0.334476
193	0.5	0.950222	133.085	0.809587
194	0.5	0.966088	134.018	1.29263
195	0.5	0.982202	134.983	1.78373
196	0.5	1.00271	135.989	2.28509
197	0.5	1.01943	137.028	2.7948
198	0.5	1.03643	138.102	3.31302
199	0.5	1.05812	139.222	3.84208
200	0.5	1.07584	140.379	4.38
201	0.5	1.0939	141.576	4.92695
202	0.5	1.11232	142.813	5.48311
203	0.5	1.1359	144.103	6.05105
204	0.5	1.15522	145.438	6.62866
205	0.5	1.17499	146.818	7.21616
206	0.5	1.20036	148.259	7.81634
207	0.5	1.22123	149.751	8.42695
208	0.5	1.24264	151.295	9.04827
209	0.5	1.26464	152.894	9.68059
210	0.5	1.29303	154.566	10.3271
211	0.5	1.31652	156.299	10.9854
212	0.5	1.34075	158.097	11.6557
213	0.5	1.3722	159.98	12.3419
214	0.5	1.39838	161.935	13.041
215	0.5	1.42554	163.967	13.7538
216	0.5	1.46106	166.102	14.4843
217	0.5	1.49085	168.325	15.2298
218	0.5	1.52203	170.641	15.9908
219	0.5	1.55477	173.059	16.7682
220	0.5	1.59819	175.613	17.5673
221	0.5	1.63524	178.287	18.3849
222	0.5	1.67466	181.091	19.2222
223	0.5	1.72793	184.077	20.0862
224	0.5	1.77438	187.226	20.9734
225	0.5	1.82501	190.556	21.8859
226	0.5	1.88079	194.094	22.8263
227	0.5	1.95996	197.935	23.8062
228	0.5	2.03352	202.07	24.823
229	0.5	2.12007	206.565	25.883
230	0.5	2.25713	211.66	27.0116
231	0.5	2.40892	217.462	28.2161
232	0.5	2.65209	224.496	29.5421

Data Set Standard Deviation = 0.175628

Numerator = 872.736
Denominator = 1599.58
W Statistic = 0.545602 = 872.736 / 1599.58

5% Critical value of 0.976 exceeds 0.545602
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.545602
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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-2.59027	-2.65209	7.03356	6.86961
2	-2.59027	-2.40892	12.8365	13.1094
3	-2.59027	-2.25713	17.9311	18.9559
4	-2.59027	-2.12007	22.4258	24.4475
5	-2.59027	-2.03352	26.561	29.7148
6	-2.59027	-1.95996	30.4025	34.7917
7	-2.59027	-1.88079	33.9398	39.6634
8	-2.59027	-1.82501	37.2705	44.3907
9	-2.59027	-1.77438	40.4189	48.9868
10	-2.59027	-1.72793	43.4046	53.4626
11	-2.59027	-1.67466	46.2091	57.8004
12	-2.59027	-1.63524	48.8831	62.0361
13	-2.59027	-1.59819	51.4373	66.1758
14	-2.59027	-1.55477	53.8547	70.2031
15	-2.59027	-1.52203	56.1712	74.1456
16	-2.59027	-1.49085	58.3939	78.0073
17	-2.59027	-1.46106	60.5286	81.7918
18	-2.59027	-1.42554	62.5608	85.4844
19	-2.59027	-1.39838	64.5162	89.1065
20	-2.59027	-1.3722	66.3992	92.6609
21	-2.59027	-1.34075	68.1968	96.1338
22	-2.59027	-1.31652	69.93	99.544
23	-2.59027	-1.29303	71.6019	102.893
24	-2.59027	-1.26464	73.2013	106.169
25	-2.59027	-1.24264	74.7454	109.388
26	-2.59027	-1.22123	76.2368	112.551
27	-2.59027	-1.20036	77.6777	115.66
28	-2.59027	-1.17499	79.0583	118.704
29	-2.59027	-1.15522	80.3928	121.696
30	-2.59027	-1.1359	81.6831	124.639
31	-2.59027	-1.11232	82.9203	127.52
32	-2.59027	-1.0939	84.1169	130.353
33	-2.59027	-1.07584	85.2744	133.14
34	-2.59027	-1.05812	86.394	135.881
35	-2.59027	-1.03643	87.4682	138.565
36	-2.59027	-1.01943	88.5074	141.206
37	-2.59027	-1.00271	89.5128	143.803
38	-2.59027	-0.982202	90.4776	146.347
39	-2.59027	-0.966088	91.4109	148.85
40	-2.59027	-0.950222	92.3138	151.311
41	-2.59027	-0.93459	93.1873	153.732
42	-2.59027	-0.915365	94.0252	156.103
43	-2.59027	-0.900227	94.8356	158.435
44	-1.66073	-0.885291	95.6193	159.905
45	-1.51413	-0.866894	96.3708	161.218
46	-1.42712	-0.852385	97.0974	162.434
47	-1.38629	-0.838054	97.7997	163.596
48	-1.34707	-0.820379	98.4727	164.701
49	-1.30933	-0.806422	99.123	165.757

50	-1.17118	-0.792618	99.7513	166.685
51	-0.693147	-0.778966	100.358	167.225
52	-0.693147	-0.7621	100.939	167.753
53	-0.693147	-0.748762	101.5	168.272
54	-0.693147	-0.735557	102.041	168.782
55	-0.693147	-0.719228	102.558	169.281
56	-0.693147	-0.706302	103.057	169.77
57	-0.693147	-0.693493	103.538	170.251
58	-0.693147	-0.680797	104.001	170.723
59	-0.693147	-0.665079	104.443	171.184
60	-0.693147	-0.652622	104.869	171.636
61	-0.693147	-0.640266	105.279	172.08
62	-0.693147	-0.624956	105.67	172.513
63	-0.693147	-0.612813	106.045	172.938
64	-0.693147	-0.60076	106.406	173.354
65	-0.693147	-0.588793	106.753	173.763
66	-0.693147	-0.573953	107.082	174.16
67	-0.693147	-0.56217	107.398	174.55
68	-0.693147	-0.550465	107.701	174.932
69	-0.693147	-0.53594	107.989	175.303
70	-0.693147	-0.524401	108.264	175.667
71	-0.693147	-0.51293	108.527	176.022
72	-0.693147	-0.498687	108.776	176.368
73	-0.693147	-0.487364	109.013	176.706
74	-0.693147	-0.476105	109.24	177.036
75	-0.693147	-0.464904	109.456	177.358
76	-0.693147	-0.450985	109.659	177.67
77	-0.693147	-0.439913	109.853	177.975
78	-0.693147	-0.428895	110.037	178.273
79	-0.693147	-0.415193	110.209	178.56
80	-0.693147	-0.40429	110.373	178.841
81	-0.693147	-0.393433	110.527	179.113
82	-0.693147	-0.382622	110.674	179.379
83	-0.693147	-0.369171	110.81	179.635
84	-0.693147	-0.358459	110.939	179.883
85	-0.693147	-0.347787	111.059	180.124
86	-0.693147	-0.334503	111.171	180.356
87	-0.693147	-0.323919	111.276	180.58
88	-0.693147	-0.31337	111.374	180.798
89	-0.693147	-0.302855	111.466	181.008
90	-0.693147	-0.28976	111.55	181.208
91	-0.693147	-0.279319	111.628	181.402
92	-0.693147	-0.268908	111.7	181.588
93	-0.693147	-0.255936	111.766	181.766
94	-0.693147	-0.24559	111.826	181.936
95	-0.693147	-0.235269	111.882	182.099
96	-0.693147	-0.222403	111.931	182.253
97	-0.693147	-0.212137	111.976	182.4
98	-0.693147	-0.201894	112.017	182.54
99	-0.693147	-0.191671	112.054	182.673
100	-0.693147	-0.17892	112.086	182.797
101	-0.693147	-0.168741	112.114	182.914
102	-0.693147	-0.158579	112.139	183.024
103	-0.693147	-0.1459	112.161	183.125
104	-0.693147	-0.135774	112.179	183.219
105	-0.693147	-0.125661	112.195	183.306
106	-0.693147	-0.115562	112.208	183.386
107	-0.693147	-0.102953	112.219	183.458
108	-0.693147	-0.0928787	112.227	183.522
109	-0.693147	-0.0828129	112.234	183.58
110	-0.693147	-0.0702426	112.239	183.628
111	-0.693147	-0.0601949	112.243	183.67

112	-0.693147	-0.0501541	112.245	183.705
113	-0.693147	-0.0401167	112.247	183.733
114	-0.693147	-0.0275759	112.248	183.752
115	-0.693147	-0.0175476	112.248	183.764
116	-0.693147	-0.00751925	112.248	183.769
117	-0.693147	0.00751925	112.248	183.764
118	-0.693147	0.0175476	112.248	183.752
119	-0.693147	0.0275759	112.249	183.733
120	-0.693147	0.0401167	112.251	183.705
121	-0.693147	0.0501541	112.253	183.67
122	-0.693147	0.0601949	112.257	183.628
123	-0.693147	0.0702426	112.262	183.58
124	-0.693147	0.0828129	112.269	183.522
125	-0.693147	0.0928787	112.277	183.458
126	-0.693147	0.102953	112.288	183.386
127	-0.693147	0.115562	112.301	183.306
128	-0.693147	0.125661	112.317	183.219
129	-0.693147	0.135774	112.335	183.125
130	-0.693147	0.1459	112.357	183.024
131	-0.693147	0.158579	112.382	182.914
132	-0.693147	0.168741	112.41	182.797
133	-0.693147	0.17892	112.442	182.673
134	-0.693147	0.191671	112.479	182.54
135	-0.693147	0.201894	112.52	182.4
136	-0.693147	0.212137	112.565	182.253
137	-0.693147	0.222403	112.614	182.099
138	-0.693147	0.235269	112.67	181.936
139	-0.693147	0.24559	112.73	181.766
140	-0.693147	0.255936	112.796	181.588
141	-0.693147	0.268908	112.868	181.402
142	-0.693147	0.279319	112.946	181.208
143	-0.693147	0.28976	113.03	181.008
144	-0.693147	0.302855	113.122	180.798
145	-0.693147	0.31337	113.22	180.58
146	-0.693147	0.323919	113.325	180.356
147	-0.693147	0.334503	113.437	180.124
148	-0.693147	0.347787	113.558	179.883
149	-0.693147	0.358459	113.686	179.635
150	-0.693147	0.369171	113.822	179.379
151	-0.693147	0.382622	113.969	179.113
152	-0.693147	0.393433	114.123	178.841
153	-0.693147	0.40429	114.287	178.56
154	-0.693147	0.415193	114.459	178.273
155	-0.693147	0.428895	114.643	177.975
156	-0.693147	0.439913	114.837	177.67
157	-0.693147	0.450985	115.04	177.358
158	-0.693147	0.464904	115.256	177.036
159	-0.693147	0.476105	115.483	176.706
160	-0.693147	0.487364	115.721	176.368
161	-0.693147	0.498687	115.969	176.022
162	-0.693147	0.51293	116.232	175.667
163	-0.693147	0.524401	116.507	175.303
164	-0.693147	0.53594	116.795	174.932
165	-0.693147	0.550465	117.098	174.55
166	-0.693147	0.56217	117.414	174.16
167	-0.693147	0.573953	117.743	173.763
168	-0.693147	0.588793	118.09	173.354
169	-0.693147	0.60076	118.451	172.938
170	-0.693147	0.612813	118.826	172.513
171	-0.693147	0.624956	119.217	172.08
172	-0.693147	0.640266	119.627	171.636
173	-0.693147	0.652622	120.053	171.184

174	-0.693147		0.665079	120.495	170.723
175	-0.693147		0.680797	120.958	170.251
176	-0.693147		0.693493	121.439	169.77
177	-0.693147		0.706302	121.938	169.281
178	-0.693147		0.719228	122.455	168.782
179	-0.693147		0.735557	122.997	168.272
180	-0.693147		0.748762	123.557	167.753
181	-0.693147		0.7621	124.138	167.225
182	-0.693147		0.778966	124.745	166.685
183	-0.693147		0.792618	125.373	166.136
184	-0.693147		0.806422	126.023	165.577
185	-0.693147		0.820379	126.696	165.008
186	-0.693147		0.838054	127.399	164.427
187	-0.693147		0.852385	128.125	163.836
188	-0.693147		0.866894	128.877	163.236
189	-0.693147		0.885291	129.66	162.622
190	-0.693147		0.900227	130.471	161.998
191	-0.693147		0.915365	131.309	161.363
192	-0.693147		0.93459	132.182	160.716
193	-0.693147		0.950222	133.085	160.057
194	-0.693147		0.966088	134.018	159.387
195	-0.693147		0.982202	134.983	158.707
196	-0.693147		1.00271	135.989	158.012
197	-0.693147		1.01943	137.028	157.305
198	-0.693147		1.03643	138.102	156.587
199	-0.693147		1.05812	139.222	155.853
200	-0.693147		1.07584	140.379	155.107
201	-0.693147		1.0939	141.576	154.349
202	-0.693147		1.11232	142.813	153.578
203	-0.693147		1.1359	144.103	152.791
204	-0.693147		1.15522	145.438	151.99
205	-0.693147		1.17499	146.818	151.176
206	-0.693147		1.20036	148.259	150.344
207	-0.693147		1.22123	149.751	149.497
208	-0.693147		1.24264	151.295	148.636
209	-0.693147		1.26464	152.894	147.759
210	-0.693147		1.29303	154.566	146.863
211	-0.693147		1.31652	156.299	145.95
212	-0.693147		1.34075	158.097	145.021
213	-0.693147		1.3722	159.98	144.07
214	-0.693147		1.39838	161.935	143.101
215	-0.693147		1.42554	163.967	142.113
216	-0.693147		1.46106	166.102	141.1
217	-0.693147		1.49085	168.325	140.066
218	-0.693147		1.52203	170.641	139.011
219	-0.693147		1.55477	173.059	137.934
220	-0.693147		1.59819	175.613	136.826
221	-0.693147		1.63524	178.287	135.692
222	-0.693147		1.67466	181.091	134.532
223	-0.693147		1.72793	184.077	133.334
224	-0.693147		1.77438	187.226	132.104
225	-0.693147		1.82501	190.556	130.839
226	-0.693147		1.88079	194.094	129.535
227	-0.693147		1.95996	197.935	128.177
228	-0.693147		2.03352	202.07	126.767
229	0	2.12007	206.565	126.767	
230	0	2.25713	211.66	126.767	
231	0	2.40892	217.462	126.767	
232	0	2.65209	224.496	126.767	

Data Set Standard Deviation = 0.750472

Numerator = 16070
Denominator = 29207.2
W Statistic = 0.550206 = 16070 / 29207.2

5% Critical value of 0.976 exceeds 0.550206
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.550206
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 = 96.9828%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 19
Maximum Background Concentration = 0
Confidence Level = 70.4%
False Positive Rate = 29.6%

Location	Date	Samples	Mean	Significant
LMW-9D	11/17/2010	1	-2.59027	FALSE
LMW-3S	11/17/2010	1	-2.59027	FALSE
LMW-6	11/17/2010	1	-1.51413	FALSE
LMW-3	11/17/2010	1	-2.59027	FALSE
LMW-9S	11/17/2010	1	-2.59027	FALSE
LMW-10	11/17/2010	1	-1.30933	FALSE
LMW-16	11/17/2010	1	-2.59027	FALSE
LMW-8	11/17/2010	1	-1.66073	FALSE
LMW-9	11/17/2010	1	-2.59027	FALSE
LMW-7	11/17/2010	1	-2.59027	FALSE
LMW-15R	11/17/2010	1	-2.59027	FALSE
LMW-14R	11/17/2010	1	-2.59027	FALSE
MW-5	11/20/2008	1	-0.693147	FALSE
LMW-11	11/20/2008	1	-0.693147	FALSE
LMW-12	11/20/2008	1	-0.693147	FALSE
LMW-13	11/20/2008	1	-0.693147	FALSE

Concentrations (ug/L)

Parameter: Thallium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 232
Total Non-Detect: 228
Percent Non-Detects: 98.2759%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	19	19 (100%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.1 U	ND<0.1 U
			11/16/2009	ND<0.1 U	ND<0.1 U
			6/30/2010	ND<0.1 U	ND<0.1 U
			11/17/2010	ND<0.1 U	ND<0.1 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-8	19	19 (100%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.1 U	ND<0.1 U
			11/16/2009	ND<0.1 U	ND<0.1 U
			6/30/2010	ND<0.1 U	ND<0.1 U
			11/17/2010	ND<0.1 U	ND<0.1 U
LMW-16	9	9 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1

			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.1 U		ND<0.1 U
			11/16/2009	ND<0.1 U		ND<0.1 U
			6/30/2010	ND<0.1 U		ND<0.1 U
			11/17/2010	ND<0.1 U		ND<0.1 U
LMW-10	16	16 (100%)	3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.1 U		ND<0.1 U
			11/16/2009	ND<0.1 U		ND<0.1 U
			6/30/2010	ND<0.1 U		ND<0.1 U
			11/17/2010	ND<0.1 U		ND<0.1 U
LMW-9S	11	10 (90.9091%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.1 U		ND<0.1 U
			11/16/2009	0.17 J	0.17 J	
			11/16/2009	ND<0.1 U		ND<0.1 U
			11/16/2009	ND<0.1 U		ND<0.1 U
			6/30/2010	ND<0.1 U		ND<0.1 U
			11/17/2010	ND<0.1 U		ND<0.1 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	0.13 J	0.13 J	
			11/16/2009	ND<0.1 U		ND<0.1 U
			6/30/2010	ND<0.1 U		ND<0.1 U
			11/17/2010	ND<0.1 U		ND<0.1 U
LMW-14R	7	7 (100%)	6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.1 U		ND<0.1 U

			6/30/2010	ND<0.1 U	ND<0.1 U	
			11/17/2010	ND<0.1 U	ND<0.1 U	
LMW-15R	11	11 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.1 U	ND<0.1 U	
			6/30/2010	ND<0.1 U	ND<0.1 U	
			11/17/2010	ND<0.1 U	ND<0.1 U	
LMW-3	21	21 (100%)	11/19/1996	ND<1	ND<1	
			3/24/1997	ND<1	ND<1	
			1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.1 U	ND<0.1 U	
			11/16/2009	ND<0.1 U	ND<0.1 U	
			6/30/2010	ND<0.1 U	ND<0.1 U	
			11/17/2010	ND<0.1 U	ND<0.1 U	
LMW-3S	9	9 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.1 U	ND<0.1 U	
			11/16/2009	ND<0.1 U	ND<0.1 U	
			6/30/2010	ND<0.1 U	ND<0.1 U	
			11/17/2010	ND<0.1 U	ND<0.1 U	
LMW-6	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<0.1 U		ND<0.1 U
			11/16/2009	ND<0.1 U		ND<0.1 U
			6/30/2010	ND<0.1 U		ND<0.1 U
			11/17/2010	0.18 J	0.18 J	
LMW-9D9		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<0.1 U		ND<0.1 U
			11/16/2009	ND<0.1 U		ND<0.1 U
			6/30/2010	ND<0.1 U		ND<0.1 U
			11/17/2010	0.13 J	0.13 J	
LMW-7	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<0.1 U		ND<0.1 U
			11/17/2010	ND<0.1 U		ND<0.1 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: Thallium

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.05	-2.65209	7.03356	-0.132604
2	0.05	-2.40892	12.8365	-0.253051
3	0.05	-2.25713	17.9311	-0.365907
4	0.05	-2.12007	22.4258	-0.47191
5	0.05	-2.03352	26.561	-0.573586
6	0.05	-1.95996	30.4025	-0.671585
7	0.05	-1.88079	33.9398	-0.765624
8	0.05	-1.82501	37.2705	-0.856874
9	0.05	-1.77438	40.4189	-0.945593
10	0.05	-1.72793	43.4046	-1.03199
11	0.05	-1.67466	46.2091	-1.11572
12	0.05	-1.63524	48.8831	-1.19748
13	0.05	-1.59819	51.4373	-1.27739
14	0.05	-1.55477	53.8547	-1.35513
15	0.05	-1.52203	56.1712	-1.43123
16	0.05	-1.49085	58.3939	-1.50578
17	0.05	-1.46106	60.5286	-1.57883
18	0.05	-1.42554	62.5608	-1.65011
19	0.05	-1.39838	64.5162	-1.72003
20	0.05	-1.3722	66.3992	-1.78864
21	0.05	-1.34075	68.1968	-1.85567
22	0.05	-1.31652	69.93	-1.9215
23	0.05	-1.29303	71.6019	-1.98615
24	0.05	-1.26464	73.2013	-2.04938
25	0.05	-1.24264	74.7454	-2.11152
26	0.05	-1.22123	76.2368	-2.17258
27	0.05	-1.20036	77.6777	-2.2326
28	0.05	-1.17499	79.0583	-2.29134
29	0.05	-1.15522	80.3928	-2.34911
30	0.05	-1.1359	81.6831	-2.4059
31	0.05	-1.11232	82.9203	-2.46152
32	0.05	-1.0939	84.1169	-2.51621
33	0.05	-1.07584	85.2744	-2.57
34	0.05	-1.05812	86.394	-2.62291
35	0.05	-1.03643	87.4682	-2.67473
36	0.05	-1.01943	88.5074	-2.7257
37	0.05	-1.00271	89.5128	-2.77584
38	0.05	-0.982202	90.4776	-2.82495
39	0.05	-0.966088	91.4109	-2.87325
40	0.05	-0.950222	92.3138	-2.92076
41	0.05	-0.93459	93.1873	-2.96749
42	0.05	-0.915365	94.0252	-3.01326
43	0.05	-0.900227	94.8356	-3.05827
44	0.05	-0.885291	95.6193	-3.10254
45	0.05	-0.866894	96.3708	-3.14588
46	0.05	-0.852385	97.0974	-3.1885
47	0.13	-0.838054	97.7997	-3.29745
48	0.13	-0.820379	98.4727	-3.4041
49	0.17	-0.806422	99.123	-3.54119

50	0.18	-0.792618	99.7513	-3.68386
51	0.5	-0.778966	100.358	-4.07334
52	0.5	-0.7621	100.939	-4.45439
53	0.5	-0.748762	101.5	-4.82877
54	0.5	-0.735557	102.041	-5.19655
55	0.5	-0.719228	102.558	-5.55617
56	0.5	-0.706302	103.057	-5.90932
57	0.5	-0.693493	103.538	-6.25606
58	0.5	-0.680797	104.001	-6.59646
59	0.5	-0.665079	104.443	-6.929
60	0.5	-0.652622	104.869	-7.25531
61	0.5	-0.640266	105.279	-7.57545
62	0.5	-0.624956	105.67	-7.88792
63	0.5	-0.612813	106.045	-8.19433
64	0.5	-0.60076	106.406	-8.49471
65	0.5	-0.588793	106.753	-8.78911
66	0.5	-0.573953	107.082	-9.07608
67	0.5	-0.56217	107.398	-9.35717
68	0.5	-0.550465	107.701	-9.6324
69	0.5	-0.53594	107.989	-9.90037
70	0.5	-0.524401	108.264	-10.1626
71	0.5	-0.51293	108.527	-10.419
72	0.5	-0.498687	108.776	-10.6684
73	0.5	-0.487364	109.013	-10.9121
74	0.5	-0.476105	109.24	-11.1501
75	0.5	-0.464904	109.456	-11.3826
76	0.5	-0.450985	109.659	-11.6081
77	0.5	-0.439913	109.853	-11.828
78	0.5	-0.428895	110.037	-12.0425
79	0.5	-0.415193	110.209	-12.2501
80	0.5	-0.40429	110.373	-12.4522
81	0.5	-0.393433	110.527	-12.6489
82	0.5	-0.382622	110.674	-12.8402
83	0.5	-0.369171	110.81	-13.0248
84	0.5	-0.358459	110.939	-13.204
85	0.5	-0.347787	111.059	-13.3779
86	0.5	-0.334503	111.171	-13.5452
87	0.5	-0.323919	111.276	-13.7072
88	0.5	-0.31337	111.374	-13.8638
89	0.5	-0.302855	111.466	-14.0153
90	0.5	-0.28976	111.55	-14.1601
91	0.5	-0.279319	111.628	-14.2998
92	0.5	-0.268908	111.7	-14.4343
93	0.5	-0.255936	111.766	-14.5622
94	0.5	-0.24559	111.826	-14.685
95	0.5	-0.235269	111.882	-14.8027
96	0.5	-0.222403	111.931	-14.9139
97	0.5	-0.212137	111.976	-15.0199
98	0.5	-0.201894	112.017	-15.1209
99	0.5	-0.191671	112.054	-15.2167
100	0.5	-0.17892	112.086	-15.3062
101	0.5	-0.168741	112.114	-15.3905
102	0.5	-0.158579	112.139	-15.4698
103	0.5	-0.1459	112.161	-15.5428
104	0.5	-0.135774	112.179	-15.6107
105	0.5	-0.125661	112.195	-15.6735
106	0.5	-0.115562	112.208	-15.7313
107	0.5	-0.102953	112.219	-15.7828
108	0.5	-0.0928787	112.227	-15.8292
109	0.5	-0.0828129	112.234	-15.8706
110	0.5	-0.0702426	112.239	-15.9057
111	0.5	-0.0601949	112.243	-15.9358

112	0.5	-0.0501541	112.245	-15.9609
113	0.5	-0.0401167	112.247	-15.981
114	0.5	-0.0275759	112.248	-15.9947
115	0.5	-0.0175476	112.248	-16.0035
116	0.5	-0.00751925	112.248	-16.0073
117	0.5	0.00751925	112.248	-16.0035
118	0.5	0.0175476	112.248	-15.9947
119	0.5	0.0275759	112.249	-15.981
120	0.5	0.0401167	112.251	-15.9609
121	0.5	0.0501541	112.253	-15.9358
122	0.5	0.0601949	112.257	-15.9057
123	0.5	0.0702426	112.262	-15.8706
124	0.5	0.0828129	112.269	-15.8292
125	0.5	0.0928787	112.277	-15.7828
126	0.5	0.102953	112.288	-15.7313
127	0.5	0.115562	112.301	-15.6735
128	0.5	0.125661	112.317	-15.6107
129	0.5	0.135774	112.335	-15.5428
130	0.5	0.1459	112.357	-15.4698
131	0.5	0.158579	112.382	-15.3905
132	0.5	0.168741	112.41	-15.3062
133	0.5	0.17892	112.442	-15.2167
134	0.5	0.191671	112.479	-15.1209
135	0.5	0.201894	112.52	-15.0199
136	0.5	0.212137	112.565	-14.9139
137	0.5	0.222403	112.614	-14.8027
138	0.5	0.235269	112.67	-14.685
139	0.5	0.24559	112.73	-14.5622
140	0.5	0.255936	112.796	-14.4343
141	0.5	0.268908	112.868	-14.2998
142	0.5	0.279319	112.946	-14.1601
143	0.5	0.28976	113.03	-14.0153
144	0.5	0.302855	113.122	-13.8638
145	0.5	0.31337	113.22	-13.7072
146	0.5	0.323919	113.325	-13.5452
147	0.5	0.334503	113.437	-13.3779
148	0.5	0.347787	113.558	-13.204
149	0.5	0.358459	113.686	-13.0248
150	0.5	0.369171	113.822	-12.8402
151	0.5	0.382622	113.969	-12.6489
152	0.5	0.393433	114.123	-12.4522
153	0.5	0.40429	114.287	-12.2501
154	0.5	0.415193	114.459	-12.0425
155	0.5	0.428895	114.643	-11.828
156	0.5	0.439913	114.837	-11.6081
157	0.5	0.450985	115.04	-11.3826
158	0.5	0.464904	115.256	-11.1501
159	0.5	0.476105	115.483	-10.9121
160	0.5	0.487364	115.721	-10.6684
161	0.5	0.498687	115.969	-10.419
162	0.5	0.51293	116.232	-10.1626
163	0.5	0.524401	116.507	-9.90037
164	0.5	0.53594	116.795	-9.6324
165	0.5	0.550465	117.098	-9.35717
166	0.5	0.56217	117.414	-9.07608
167	0.5	0.573953	117.743	-8.78911
168	0.5	0.588793	118.09	-8.49471
169	0.5	0.60076	118.451	-8.19433
170	0.5	0.612813	118.826	-7.88792
171	0.5	0.624956	119.217	-7.57545
172	0.5	0.640266	119.627	-7.25531
173	0.5	0.652622	120.053	-6.929

174	0.5	0.665079	120.495	-6.59646
175	0.5	0.680797	120.958	-6.25606
176	0.5	0.693493	121.439	-5.90932
177	0.5	0.706302	121.938	-5.55617
178	0.5	0.719228	122.455	-5.19655
179	0.5	0.735557	122.997	-4.82877
180	0.5	0.748762	123.557	-4.45439
181	0.5	0.7621	124.138	-4.07334
182	0.5	0.778966	124.745	-3.68386
183	0.5	0.792618	125.373	-3.28755
184	0.5	0.806422	126.023	-2.88434
185	0.5	0.820379	126.696	-2.47415
186	0.5	0.838054	127.399	-2.05512
187	0.5	0.852385	128.125	-1.62893
188	0.5	0.866894	128.877	-1.19548
189	0.5	0.885291	129.66	-0.752839
190	0.5	0.900227	130.471	-0.302726
191	0.5	0.915365	131.309	0.154957
192	0.5	0.93459	132.182	0.622252
193	0.5	0.950222	133.085	1.09736
194	0.5	0.966088	134.018	1.58041
195	0.5	0.982202	134.983	2.07151
196	0.5	1.00271	135.989	2.57286
197	0.5	1.01943	137.028	3.08258
198	0.5	1.03643	138.102	3.60079
199	0.5	1.05812	139.222	4.12985
200	0.5	1.07584	140.379	4.66777
201	0.5	1.0939	141.576	5.21472
202	0.5	1.11232	142.813	5.77088
203	0.5	1.1359	144.103	6.33883
204	0.5	1.15522	145.438	6.91644
205	0.5	1.17499	146.818	7.50393
206	0.5	1.20036	148.259	8.10411
207	0.5	1.22123	149.751	8.71473
208	0.5	1.24264	151.295	9.33605
209	0.5	1.26464	152.894	9.96837
210	0.5	1.29303	154.566	10.6149
211	0.5	1.31652	156.299	11.2731
212	0.5	1.34075	158.097	11.9435
213	0.5	1.3722	159.98	12.6296
214	0.5	1.39838	161.935	13.3288
215	0.5	1.42554	163.967	14.0416
216	0.5	1.46106	166.102	14.7721
217	0.5	1.49085	168.325	15.5175
218	0.5	1.52203	170.641	16.2786
219	0.5	1.55477	173.059	17.0559
220	0.5	1.59819	175.613	17.855
221	0.5	1.63524	178.287	18.6727
222	0.5	1.67466	181.091	19.51
223	0.5	1.72793	184.077	20.374
224	0.5	1.77438	187.226	21.2611
225	0.5	1.82501	190.556	22.1736
226	0.5	1.88079	194.094	23.114
227	0.5	1.95996	197.935	24.094
228	0.5	2.03352	202.07	25.1108
229	0.5	2.12007	206.565	26.1708
230	0.5	2.25713	211.66	27.2994
231	0.5	2.40892	217.462	28.5038
232	0.5	2.65209	224.496	29.8299

Data Set Standard Deviation = 0.182536

Numerator = 889.822
Denominator = 1727.9
W Statistic = 0.514974 = 889.822 / 1727.9

5% Critical value of 0.976 exceeds 0.514974
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.514974
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Thallium

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-2.99573	-2.65209	7.03356	7.94494
2	-2.99573	-2.40892	12.8365	15.1614
3	-2.99573	-2.25713	17.9311	21.9232
4	-2.99573	-2.12007	22.4258	28.2743
5	-2.99573	-2.03352	26.561	34.3662
6	-2.99573	-1.95996	30.4025	40.2377
7	-2.99573	-1.88079	33.9398	45.8721
8	-2.99573	-1.82501	37.2705	51.3393
9	-2.99573	-1.77438	40.4189	56.6549
10	-2.99573	-1.72793	43.4046	61.8313
11	-2.99573	-1.67466	46.2091	66.8481
12	-2.99573	-1.63524	48.8831	71.7469
13	-2.99573	-1.59819	51.4373	76.5346
14	-2.99573	-1.55477	53.8547	81.1923
15	-2.99573	-1.52203	56.1712	85.7519
16	-2.99573	-1.49085	58.3939	90.2181
17	-2.99573	-1.46106	60.5286	94.595
18	-2.99573	-1.42554	62.5608	98.8656
19	-2.99573	-1.39838	64.5162	103.055
20	-2.99573	-1.3722	66.3992	107.166
21	-2.99573	-1.34075	68.1968	111.182
22	-2.99573	-1.31652	69.93	115.126
23	-2.99573	-1.29303	71.6019	119
24	-2.99573	-1.26464	73.2013	122.788
25	-2.99573	-1.24264	74.7454	126.511
26	-2.99573	-1.22123	76.2368	130.169
27	-2.99573	-1.20036	77.6777	133.765
28	-2.99573	-1.17499	79.0583	137.285
29	-2.99573	-1.15522	80.3928	140.746
30	-2.99573	-1.1359	81.6831	144.149
31	-2.99573	-1.11232	82.9203	147.481
32	-2.99573	-1.0939	84.1169	150.758
33	-2.99573	-1.07584	85.2744	153.981
34	-2.99573	-1.05812	86.394	157.151
35	-2.99573	-1.03643	87.4682	160.256
36	-2.99573	-1.01943	88.5074	163.309
37	-2.99573	-1.00271	89.5128	166.313
38	-2.99573	-0.982202	90.4776	169.256
39	-2.99573	-0.966088	91.4109	172.15
40	-2.99573	-0.950222	92.3138	174.997
41	-2.99573	-0.93459	93.1873	177.796
42	-2.99573	-0.915365	94.0252	180.538
43	-2.99573	-0.900227	94.8356	183.235
44	-2.99573	-0.885291	95.6193	185.887
45	-2.99573	-0.866894	96.3708	188.484
46	-2.99573	-0.852385	97.0974	191.038
47	-2.04022	-0.838054	97.7997	192.748
48	-2.04022	-0.820379	98.4727	194.421
49	-1.77196	-0.806422	99.123	195.85

50	-1.7148	-0.792618	99.7513	197.21
51	-0.693147	-0.778966	100.358	197.75
52	-0.693147	-0.7621	100.939	198.278
53	-0.693147	-0.748762	101.5	198.797
54	-0.693147	-0.735557	102.041	199.307
55	-0.693147	-0.719228	102.558	199.805
56	-0.693147	-0.706302	103.057	200.295
57	-0.693147	-0.693493	103.538	200.775
58	-0.693147	-0.680797	104.001	201.247
59	-0.693147	-0.665079	104.443	201.708
60	-0.693147	-0.652622	104.869	202.161
61	-0.693147	-0.640266	105.279	202.604
62	-0.693147	-0.624956	105.67	203.038
63	-0.693147	-0.612813	106.045	203.462
64	-0.693147	-0.60076	106.406	203.879
65	-0.693147	-0.588793	106.753	204.287
66	-0.693147	-0.573953	107.082	204.685
67	-0.693147	-0.56217	107.398	205.074
68	-0.693147	-0.550465	107.701	205.456
69	-0.693147	-0.53594	107.989	205.828
70	-0.693147	-0.524401	108.264	206.191
71	-0.693147	-0.51293	108.527	206.547
72	-0.693147	-0.498687	108.776	206.892
73	-0.693147	-0.487364	109.013	207.23
74	-0.693147	-0.476105	109.24	207.56
75	-0.693147	-0.464904	109.456	207.882
76	-0.693147	-0.450985	109.659	208.195
77	-0.693147	-0.439913	109.853	208.5
78	-0.693147	-0.428895	110.037	208.797
79	-0.693147	-0.415193	110.209	209.085
80	-0.693147	-0.40429	110.373	209.365
81	-0.693147	-0.393433	110.527	209.638
82	-0.693147	-0.382622	110.674	209.903
83	-0.693147	-0.369171	110.81	210.159
84	-0.693147	-0.358459	110.939	210.407
85	-0.693147	-0.347787	111.059	210.648
86	-0.693147	-0.334503	111.171	210.88
87	-0.693147	-0.323919	111.276	211.105
88	-0.693147	-0.31337	111.374	211.322
89	-0.693147	-0.302855	111.466	211.532
90	-0.693147	-0.28976	111.55	211.733
91	-0.693147	-0.279319	111.628	211.926
92	-0.693147	-0.268908	111.7	212.113
93	-0.693147	-0.255936	111.766	212.29
94	-0.693147	-0.24559	111.826	212.46
95	-0.693147	-0.235269	111.882	212.624
96	-0.693147	-0.222403	111.931	212.778
97	-0.693147	-0.212137	111.976	212.925
98	-0.693147	-0.201894	112.017	213.065
99	-0.693147	-0.191671	112.054	213.198
100	-0.693147	-0.17892	112.086	213.322
101	-0.693147	-0.168741	112.114	213.439
102	-0.693147	-0.158579	112.139	213.548
103	-0.693147	-0.1459	112.161	213.65
104	-0.693147	-0.135774	112.179	213.744
105	-0.693147	-0.125661	112.195	213.831
106	-0.693147	-0.115562	112.208	213.911
107	-0.693147	-0.102953	112.219	213.982
108	-0.693147	-0.0928787	112.227	214.047
109	-0.693147	-0.0828129	112.234	214.104
110	-0.693147	-0.0702426	112.239	214.153
111	-0.693147	-0.0601949	112.243	214.194

112	-0.693147	-0.0501541	112.245	214.229
113	-0.693147	-0.0401167	112.247	214.257
114	-0.693147	-0.0275759	112.248	214.276
115	-0.693147	-0.0175476	112.248	214.288
116	-0.693147	-0.00751925	112.248	214.293
117	-0.693147	0.00751925	112.248	214.288
118	-0.693147	0.0175476	112.248	214.276
119	-0.693147	0.0275759	112.249	214.257
120	-0.693147	0.0401167	112.251	214.229
121	-0.693147	0.0501541	112.253	214.194
122	-0.693147	0.0601949	112.257	214.153
123	-0.693147	0.0702426	112.262	214.104
124	-0.693147	0.0828129	112.269	214.047
125	-0.693147	0.0928787	112.277	213.982
126	-0.693147	0.102953	112.288	213.911
127	-0.693147	0.115562	112.301	213.831
128	-0.693147	0.125661	112.317	213.744
129	-0.693147	0.135774	112.335	213.65
130	-0.693147	0.1459	112.357	213.548
131	-0.693147	0.158579	112.382	213.439
132	-0.693147	0.168741	112.41	213.322
133	-0.693147	0.17892	112.442	213.198
134	-0.693147	0.191671	112.479	213.065
135	-0.693147	0.201894	112.52	212.925
136	-0.693147	0.212137	112.565	212.778
137	-0.693147	0.222403	112.614	212.624
138	-0.693147	0.235269	112.67	212.46
139	-0.693147	0.24559	112.73	212.29
140	-0.693147	0.255936	112.796	212.113
141	-0.693147	0.268908	112.868	211.926
142	-0.693147	0.279319	112.946	211.733
143	-0.693147	0.28976	113.03	211.532
144	-0.693147	0.302855	113.122	211.322
145	-0.693147	0.31337	113.22	211.105
146	-0.693147	0.323919	113.325	210.88
147	-0.693147	0.334503	113.437	210.648
148	-0.693147	0.347787	113.558	210.407
149	-0.693147	0.358459	113.686	210.159
150	-0.693147	0.369171	113.822	209.903
151	-0.693147	0.382622	113.969	209.638
152	-0.693147	0.393433	114.123	209.365
153	-0.693147	0.40429	114.287	209.085
154	-0.693147	0.415193	114.459	208.797
155	-0.693147	0.428895	114.643	208.5
156	-0.693147	0.439913	114.837	208.195
157	-0.693147	0.450985	115.04	207.882
158	-0.693147	0.464904	115.256	207.56
159	-0.693147	0.476105	115.483	207.23
160	-0.693147	0.487364	115.721	206.892
161	-0.693147	0.498687	115.969	206.547
162	-0.693147	0.51293	116.232	206.191
163	-0.693147	0.524401	116.507	205.828
164	-0.693147	0.53594	116.795	205.456
165	-0.693147	0.550465	117.098	205.074
166	-0.693147	0.56217	117.414	204.685
167	-0.693147	0.573953	117.743	204.287
168	-0.693147	0.588793	118.09	203.879
169	-0.693147	0.60076	118.451	203.462
170	-0.693147	0.612813	118.826	203.038
171	-0.693147	0.624956	119.217	202.604
172	-0.693147	0.640266	119.627	202.161
173	-0.693147	0.652622	120.053	201.708

174	-0.693147	0.665079		120.495	201.247
175	-0.693147	0.680797		120.958	200.775
176	-0.693147	0.693493		121.439	200.295
177	-0.693147	0.706302		121.938	199.805
178	-0.693147	0.719228		122.455	199.307
179	-0.693147	0.735557		122.997	198.797
180	-0.693147	0.748762		123.557	198.278
181	-0.693147	0.7621	124.138	197.75	
182	-0.693147	0.778966		124.745	197.21
183	-0.693147	0.792618		125.373	196.66
184	-0.693147	0.806422		126.023	196.101
185	-0.693147	0.820379		126.696	195.533
186	-0.693147	0.838054		127.399	194.952
187	-0.693147	0.852385		128.125	194.361
188	-0.693147	0.866894		128.877	193.76
189	-0.693147	0.885291		129.66	193.146
190	-0.693147	0.900227		130.471	192.522
191	-0.693147	0.915365		131.309	191.888
192	-0.693147	0.93459	132.182	191.24	
193	-0.693147	0.950222		133.085	190.581
194	-0.693147	0.966088		134.018	189.912
195	-0.693147	0.982202		134.983	189.231
196	-0.693147	1.00271	135.989	188.536	
197	-0.693147	1.01943	137.028	187.829	
198	-0.693147	1.03643	138.102	187.111	
199	-0.693147	1.05812	139.222	186.378	
200	-0.693147	1.07584	140.379	185.632	
201	-0.693147	1.0939	141.576	184.874	
202	-0.693147	1.11232	142.813	184.103	
203	-0.693147	1.1359	144.103	183.315	
204	-0.693147	1.15522	145.438	182.514	
205	-0.693147	1.17499	146.818	181.7	
206	-0.693147	1.20036	148.259	180.868	
207	-0.693147	1.22123	149.751	180.022	
208	-0.693147	1.24264	151.295	179.16	
209	-0.693147	1.26464	152.894	178.284	
210	-0.693147	1.29303	154.566	177.387	
211	-0.693147	1.31652	156.299	176.475	
212	-0.693147	1.34075	158.097	175.545	
213	-0.693147	1.3722	159.98	174.594	
214	-0.693147	1.39838	161.935	173.625	
215	-0.693147	1.42554	163.967	172.637	
216	-0.693147	1.46106	166.102	171.624	
217	-0.693147	1.49085	168.325	170.591	
218	-0.693147	1.52203	170.641	169.536	
219	-0.693147	1.55477	173.059	168.458	
220	-0.693147	1.59819	175.613	167.35	
221	-0.693147	1.63524	178.287	166.217	
222	-0.693147	1.67466	181.091	165.056	
223	-0.693147	1.72793	184.077	163.858	
224	-0.693147	1.77438	187.226	162.628	
225	-0.693147	1.82501	190.556	161.363	
226	-0.693147	1.88079	194.094	160.06	
227	-0.693147	1.95996	197.935	158.701	
228	-0.693147	2.03352	202.07	157.292	
229	-0.693147	2.12007	206.565	155.822	
230	-0.693147	2.25713	211.66	154.258	
231	-0.693147	2.40892	217.462	152.588	
232	-0.693147	2.65209	224.496	150.75	

Data Set Standard Deviation = 0.923222

Numerator = 22725.5
Denominator = 44201.1
W Statistic = 0.514139 = 22725.5 / 44201.1

5% Critical value of 0.976 exceeds 0.514139
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.514139
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Thallium

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

Total Percent Non-Detects = 98.2759%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 19
Maximum Background Concentration = 0
Confidence Level = 70.4%
False Positive Rate = 29.6%

Location	Date	Samples	Mean	Significant
LMW-8	11/17/2010	1	-2.99573	FALSE
LMW-16	11/17/2010	1	-2.99573	FALSE
LMW-10	11/17/2010	1	-2.99573	FALSE
LMW-9S	11/17/2010	1	-2.99573	FALSE
LMW-9	11/17/2010	1	-2.99573	FALSE
LMW-14R	11/17/2010	1	-2.99573	FALSE
LMW-15R	11/17/2010	1	-2.99573	FALSE
LMW-3	11/17/2010	1	-2.99573	FALSE
LMW-3S	11/17/2010	1	-2.99573	FALSE
LMW-6	11/17/2010	1	-1.7148	FALSE
LMW-9D	11/17/2010	1	-2.04022	FALSE
LMW-7	11/17/2010	1	-2.99573	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 (ug/L)

Parameter: Tin

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 37
Total Non-Detect: 35
Percent Non-Detects: 94.5946%
Total Background Measurements: 3
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	3	3 (100%)	11/16/2009	ND<0.4 U	ND<0.4 U
			6/30/2010	ND<0.4 U	ND<0.4 U
			11/17/2010	ND<0.4 U	ND<0.4 U

There are 12 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9S	5	5 (100%)	11/16/2009	ND<0.4 U	ND<0.4 U
			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
			11/17/2010	ND<0.4 U	ND<0.4 U
LMW-7	1	1 (100%)	11/17/2010	ND<0.4 U	ND<0.4 U
LMW-9	3	3 (100%)	11/16/2009	ND<0.4 U	ND<0.4 U
			6/30/2010	ND<0.4 U	ND<0.4 U
			11/17/2010	ND<0.4 U	ND<0.4 U
LMW-8	3	3 (100%)	11/16/2009	ND<0.4 U	ND<0.4 U
			6/30/2010	ND<0.4 U	ND<0.4 U
			11/17/2010	ND<0.4 U	ND<0.4 U
LMW-16	3	3 (100%)	11/16/2009	ND<0.4 U	ND<0.4 U
			6/30/2010	ND<0.4 U	ND<0.4 U
			11/17/2010	ND<0.4 U	ND<0.4 U
LMW-10	3	2 (66.6667%)	11/16/2009	0.63 J	0.63 J
			6/30/2010	ND<0.4 U	ND<0.4 U
			11/17/2010	ND<0.4 U	ND<0.4 U
LMW-14R	2	2 (100%)	6/30/2010	ND<0.4 U	ND<0.4 U
			11/17/2010	ND<0.4 U	ND<0.4 U
LMW-9D	3	3 (100%)	11/16/2009	ND<0.4 U	ND<0.4 U
			6/30/2010	ND<0.4 U	ND<0.4 U
			11/17/2010	ND<0.4 U	ND<0.4 U
LMW-6	3	3 (100%)	11/16/2009	ND<0.4 U	ND<0.4 U
			6/30/2010	ND<0.4 U	ND<0.4 U
			11/17/2010	ND<0.4 U	ND<0.4 U
LMW-3S	3	2 (66.6667%)	11/16/2009	ND<0.4 U	ND<0.4 U
			6/30/2010	ND<0.4 U	ND<0.4 U

			11/17/2010	0.67 J	0.67 J	
LMW-15R	2	2 (100%)	6/30/2010	ND<0.4 U	ND<0.4 U	
			11/17/2010	ND<0.4 U	ND<0.4 U	
LMW-3	3	3 (100%)	11/16/2009	ND<0.4 U	ND<0.4 U	
			6/30/2010	ND<0.4 U	ND<0.4 U	
			11/17/2010	ND<0.4 U	ND<0.4 U	

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Wilks Test of Normality

Parameter: Tin

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
K = 18 for 37 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.2	0.67	0.47	0.404	0.18988
2	0.2	0.63	0.43	0.2794	0.120142
3	0.2	0.2	0	0.2403	0
4	0.2	0.2	0	0.2116	0
5	0.2	0.2	0	0.1883	0
6	0.2	0.2	0	0.1683	0
7	0.2	0.2	0	0.1503	0
8	0.2	0.2	0	0.1344	0
9	0.2	0.2	0	0.1196	0
10	0.2	0.2	0	0.1056	0
11	0.2	0.2	0	0.0924	0
12	0.2	0.2	0	0.0798	0
13	0.2	0.2	0	0.0677	0
14	0.2	0.2	0	0.0559	0
15	0.2	0.2	0	0.0444	0
16	0.2	0.2	0	0.0331	0
17	0.2	0.2	0	0.022	0
18	0.2	0.2	0	0.011	0
19	0.2	0.2	0		
20	0.2	0.2	0		
21	0.2	0.2	0		
22	0.2	0.2	0		
23	0.2	0.2	0		
24	0.2	0.2	0		
25	0.2	0.2	0		
26	0.2	0.2	0		
27	0.2	0.2	0		
28	0.2	0.2	0		
29	0.2	0.2	0		
30	0.2	0.2	0		
31	0.2	0.2	0		
32	0.2	0.2	0		
33	0.2	0.2	0		
34	0.2	0.2	0		
35	0.2	0.2	0		
36	0.63	0.2	-0.43		
37	0.67	0.2	-0.47		

Sum of b values = 0.310022
Sample Standard Deviation = 0.103267
W Statistic = 0.250356

5% Critical value of 0.936 exceeds 0.250356
Evidence of non-normality at 95% level of significance

1% Critical value of 0.914 exceeds 0.250356
Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Tin

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
K = 18 for 37 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-1.60944	-0.400478	1.20896	0.404	0.48842
2	-1.60944	-0.462035	1.1474	0.2794	0.320584
3	-1.60944	-1.609440	0.2403	0	
4	-1.60944	-1.609440	0.2116	0	
5	-1.60944	-1.609440	0.1883	0	
6	-1.60944	-1.609440	0.1683	0	
7	-1.60944	-1.609440	0.1503	0	
8	-1.60944	-1.609440	0.1344	0	
9	-1.60944	-1.609440	0.1196	0	
10	-1.60944	-1.609440	0.1056	0	
11	-1.60944	-1.609440	0.0924	0	
12	-1.60944	-1.609440	0.0798	0	
13	-1.60944	-1.609440	0.0677	0	
14	-1.60944	-1.609440	0.0559	0	
15	-1.60944	-1.609440	0.0444	0	
16	-1.60944	-1.609440	0.0331	0	
17	-1.60944	-1.609440	0.022	0	
18	-1.60944	-1.609440	0.011	0	
19	-1.60944	-1.609440			
20	-1.60944	-1.609440			
21	-1.60944	-1.609440			
22	-1.60944	-1.609440			
23	-1.60944	-1.609440			
24	-1.60944	-1.609440			
25	-1.60944	-1.609440			
26	-1.60944	-1.609440			
27	-1.60944	-1.609440			
28	-1.60944	-1.609440			
29	-1.60944	-1.609440			
30	-1.60944	-1.609440			
31	-1.60944	-1.609440			
32	-1.60944	-1.609440			
33	-1.60944	-1.609440			
34	-1.60944	-1.609440			
35	-1.60944	-1.609440			
36	-0.462035	-1.60944	-1.1474		
37	-0.400478	-1.60944	-1.20896		

Sum of b values = 0.809004
Sample Standard Deviation = 0.270188
W Statistic = 0.249039

5% Critical value of 0.936 exceeds 0.249039
Evidence of non-normality at 95% level of significance

1% Critical value of 0.914 exceeds 0.249039
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Tin

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

Total Percent Non-Detects = 94.5946%
Number of comparisons = 12
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 3
Maximum Background Concentration = 0
Confidence Level = 27.3%
False Positive Rate = 72.7%

Location	Date	Samples	Mean	Significant
LMW-9S	11/17/2010	1	-1.60944	FALSE
LMW-7	11/17/2010	1	-1.60944	FALSE
LMW-9	11/17/2010	1	-1.60944	FALSE
LMW-8	11/17/2010	1	-1.60944	FALSE
LMW-16	11/17/2010	1	-1.60944	FALSE
LMW-10	11/17/2010	1	-1.60944	FALSE
LMW-14R	11/17/2010	1	-1.60944	FALSE
LMW-9D	11/17/2010	1	-1.60944	FALSE
LMW-6	11/17/2010	1	-1.60944	FALSE
LMW-3S	11/17/2010	1	-0.400478	FALSE
LMW-15R	11/17/2010	1	-1.60944	FALSE
LMW-3	11/17/2010	1	-1.60944	FALSE

Concentrations (ug/L)

Parameter: Trichloroethylene

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 232
Total Non-Detect: 224
Percent Non-Detects: 96.5517%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	19	19 (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
			11/17/2010	ND<0.13 U	ND<0.13 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-16	9	9 (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
			11/17/2010	ND<0.13 U	ND<0.13 U
LMW-14R	7	7 (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
			11/17/2010	ND<0.13 U	ND<0.13 U
LMW-15R	11	11 (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
			11/17/2010	ND<0.13 U		ND<0.13 U
LMW-3	21	21 (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
			11/17/2010	ND<0.13 U		ND<0.13 U
LMW-3S	9	9 (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
			11/17/2010	ND<0.13 U		ND<0.13 U
LMW-6	19	19 (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
			11/17/2010	ND<0.13 U		ND<0.13 U
LMW-9D	9	9 (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
			11/17/2010	ND<0.13 U		ND<0.13 U
LMW-7	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<0.13 U		ND<0.13 U
			11/17/2010	ND<0.13 U		ND<0.13 U
LMW-10	16	12 (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<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	
			11/17/2010	0.97 J	0.97 J	
LMW-8	19	15 (78.9474%)	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	
			11/17/2010	0.14 J	0.14 J	

LMW-9S	11	11 (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
			11/17/2010		ND<0.13 U	ND<0.13 U
LMW-9	19	19 (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
			11/17/2010		ND<0.13 U	ND<0.13 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<0 J	ND<0 J
			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-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	

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 = 232

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	0.065	-1.77438	40.4189	-0.115335
10	0.065	-1.72793	43.4046	-0.22765
11	0.065	-1.67466	46.2091	-0.336503
12	0.065	-1.63524	48.8831	-0.442793
13	0.065	-1.59819	51.4373	-0.546676
14	0.065	-1.55477	53.8547	-0.647736
15	0.065	-1.52203	56.1712	-0.746668
16	0.065	-1.49085	58.3939	-0.843574
17	0.065	-1.46106	60.5286	-0.938542
18	0.065	-1.42554	62.5608	-1.0312
19	0.065	-1.39838	64.5162	-1.1221
20	0.065	-1.3722	66.3992	-1.21129
21	0.065	-1.34075	68.1968	-1.29844
22	0.065	-1.31652	69.93	-1.38401
23	0.065	-1.29303	71.6019	-1.46806
24	0.065	-1.26464	73.2013	-1.55026
25	0.065	-1.24264	74.7454	-1.63103
26	0.065	-1.22123	76.2368	-1.71041
27	0.065	-1.20036	77.6777	-1.78844
28	0.065	-1.17499	79.0583	-1.86481
29	0.065	-1.15522	80.3928	-1.9399
30	0.065	-1.1359	81.6831	-2.01373
31	0.065	-1.11232	82.9203	-2.08603
32	0.065	-1.0939	84.1169	-2.15714
33	0.065	-1.07584	85.2744	-2.22707
34	0.065	-1.05812	86.394	-2.29585
35	0.065	-1.03643	87.4682	-2.36321
36	0.065	-1.01943	88.5074	-2.42948
37	0.065	-1.00271	89.5128	-2.49465
38	0.065	-0.982202	90.4776	-2.5585
39	0.065	-0.966088	91.4109	-2.62129
40	0.065	-0.950222	92.3138	-2.68306
41	0.065	-0.934599	93.1873	-2.7438
42	0.065	-0.915365	94.0252	-2.8033
43	0.065	-0.900227	94.8356	-2.86182
44	0.065	-0.885291	95.6193	-2.91936
45	0.065	-0.866894	96.3708	-2.97571
46	0.065	-0.852385	97.0974	-3.03111
47	0.065	-0.838054	97.7997	-3.08559
48	0.065	-0.820379	98.4727	-3.13891
49	0.065	-0.806422	99.123	-3.19133

50	0.065	-0.792618	99.7513	-3.24285
51	0.14	-0.778966	100.358	-3.35191
52	0.19	-0.7621	100.939	-3.4967
53	0.29	-0.748762	101.5	-3.71385
54	0.41	-0.735557	102.041	-4.01542
55	0.5	-0.719228	102.558	-4.37504
56	0.5	-0.706302	103.057	-4.72819
57	0.5	-0.693493	103.538	-5.07494
58	0.5	-0.680797	104.001	-5.41533
59	0.5	-0.665079	104.443	-5.74787
60	0.5	-0.652622	104.869	-6.07418
61	0.5	-0.640266	105.279	-6.39432
62	0.5	-0.624956	105.67	-6.7068
63	0.5	-0.612813	106.045	-7.0132
64	0.5	-0.60076	106.406	-7.31358
65	0.5	-0.588793	106.753	-7.60798
66	0.5	-0.573953	107.082	-7.89496
67	0.5	-0.56217	107.398	-8.17604
68	0.5	-0.550465	107.701	-8.45127
69	0.5	-0.53594	107.989	-8.71924
70	0.5	-0.524401	108.264	-8.98144
71	0.5	-0.51293	108.527	-9.23791
72	0.5	-0.498687	108.776	-9.48725
73	0.5	-0.487364	109.013	-9.73093
74	0.5	-0.476105	109.24	-9.96899
75	0.5	-0.464904	109.456	-10.2014
76	0.5	-0.450985	109.659	-10.4269
77	0.5	-0.439913	109.853	-10.6469
78	0.5	-0.428895	110.037	-10.8613
79	0.5	-0.415193	110.209	-11.0689
80	0.5	-0.40429	110.373	-11.2711
81	0.5	-0.393433	110.527	-11.4678
82	0.5	-0.382622	110.674	-11.6591
83	0.5	-0.369171	110.81	-11.8437
84	0.5	-0.358459	110.939	-12.0229
85	0.5	-0.347787	111.059	-12.1968
86	0.5	-0.334503	111.171	-12.3641
87	0.5	-0.323919	111.276	-12.526
88	0.5	-0.31337	111.374	-12.6827
89	0.5	-0.302855	111.466	-12.8341
90	0.5	-0.28976	111.55	-12.979
91	0.5	-0.279319	111.628	-13.1187
92	0.5	-0.268908	111.7	-13.2531
93	0.5	-0.255936	111.766	-13.3811
94	0.5	-0.24559	111.826	-13.5039
95	0.5	-0.235269	111.882	-13.6215
96	0.5	-0.222403	111.931	-13.7327
97	0.5	-0.212137	111.976	-13.8388
98	0.5	-0.201894	112.017	-13.9397
99	0.5	-0.191671	112.054	-14.0356
100	0.5	-0.17892	112.086	-14.125
101	0.5	-0.168741	112.114	-14.2094
102	0.5	-0.158579	112.139	-14.2887
103	0.5	-0.1459	112.161	-14.3617
104	0.5	-0.135774	112.179	-14.4295
105	0.5	-0.125661	112.195	-14.4924
106	0.5	-0.115562	112.208	-14.5501
107	0.5	-0.102953	112.219	-14.6016
108	0.5	-0.0928787	112.227	-14.6481
109	0.5	-0.0828129	112.234	-14.6895
110	0.5	-0.0702426	112.239	-14.7246
111	0.5	-0.0601949	112.243	-14.7547

112	0.5	-0.0501541	112.245	-14.7798
113	0.5	-0.0401167	112.247	-14.7998
114	0.5	-0.0275759	112.248	-14.8136
115	0.5	-0.0175476	112.248	-14.8224
116	0.5	-0.00751925	112.248	-14.8261
117	0.5	0.00751925	112.248	-14.8224
118	0.5	0.0175476	112.248	-14.8136
119	0.5	0.0275759	112.249	-14.7998
120	0.5	0.0401167	112.251	-14.7798
121	0.5	0.0501541	112.253	-14.7547
122	0.5	0.0601949	112.257	-14.7246
123	0.5	0.0702426	112.262	-14.6895
124	0.5	0.0828129	112.269	-14.6481
125	0.5	0.0928787	112.277	-14.6016
126	0.5	0.102953	112.288	-14.5501
127	0.5	0.115562	112.301	-14.4924
128	0.5	0.125661	112.317	-14.4295
129	0.5	0.135774	112.335	-14.3617
130	0.5	0.1459	112.357	-14.2887
131	0.5	0.158579	112.382	-14.2094
132	0.5	0.168741	112.41	-14.125
133	0.5	0.17892	112.442	-14.0356
134	0.5	0.191671	112.479	-13.9397
135	0.5	0.201894	112.52	-13.8388
136	0.5	0.212137	112.565	-13.7327
137	0.5	0.222403	112.614	-13.6215
138	0.5	0.235269	112.67	-13.5039
139	0.5	0.24559	112.73	-13.3811
140	0.5	0.255936	112.796	-13.2531
141	0.5	0.268908	112.868	-13.1187
142	0.5	0.279319	112.946	-12.979
143	0.5	0.28976	113.03	-12.8341
144	0.5	0.302855	113.122	-12.6827
145	0.5	0.31337	113.22	-12.526
146	0.5	0.323919	113.325	-12.3641
147	0.5	0.334503	113.437	-12.1968
148	0.5	0.347787	113.558	-12.0229
149	0.5	0.358459	113.686	-11.8437
150	0.5	0.369171	113.822	-11.6591
151	0.5	0.382622	113.969	-11.4678
152	0.5	0.393433	114.123	-11.2711
153	0.5	0.40429	114.287	-11.0689
154	0.5	0.415193	114.459	-10.8613
155	0.5	0.428895	114.643	-10.6469
156	0.5	0.439913	114.837	-10.4269
157	0.5	0.450985	115.04	-10.2014
158	0.5	0.464904	115.256	-9.96899
159	0.5	0.476105	115.483	-9.73093
160	0.5	0.487364	115.721	-9.48725
161	0.5	0.498687	115.969	-9.23791
162	0.5	0.51293	116.232	-8.98144
163	0.5	0.524401	116.507	-8.71924
164	0.5	0.53594	116.795	-8.45127
165	0.5	0.550465	117.098	-8.17604
166	0.5	0.56217	117.414	-7.89496
167	0.5	0.573953	117.743	-7.60798
168	0.5	0.588793	118.09	-7.31358
169	0.5	0.60076	118.451	-7.0132
170	0.5	0.612813	118.826	-6.7068
171	0.5	0.624956	119.217	-6.39432
172	0.5	0.640266	119.627	-6.07418
173	0.5	0.652622	120.053	-5.74787

174	0.5	0.665079		120.495	-5.41533
175	0.5	0.680797		120.958	-5.07494
176	0.5	0.693493		121.439	-4.72819
177	0.5	0.706302		121.938	-4.37504
178	0.5	0.719228		122.455	-4.01542
179	0.5	0.735557		122.997	-3.64765
180	0.5	0.748762		123.557	-3.27326
181	0.5	0.7621	124.138	-2.89221	
182	0.5	0.778966		124.745	-2.50273
183	0.5	0.792618		125.373	-2.10642
184	0.5	0.806422		126.023	-1.70321
185	0.5	0.820379		126.696	-1.29302
186	0.5	0.838054		127.399	-0.873996
187	0.5	0.852385		128.125	-0.447803
188	0.5	0.866894		128.877	-0.0143559
189	0.5	0.885291		129.66	0.428289
190	0.5	0.900227		130.471	0.878403
191	0.5	0.915365		131.309	1.33609
192	0.5	0.93459	132.182	1.80338	
193	0.5	0.950222		133.085	2.27849
194	0.5	0.966088		134.018	2.76154
195	0.5	0.982202		134.983	3.25264
196	0.5	1.00271	135.989	3.75399	
197	0.5	1.01943	137.028	4.26371	
198	0.5	1.03643	138.102	4.78192	
199	0.5	1.05812	139.222	5.31098	
200	0.5	1.07584	140.379	5.8489	
201	0.5	1.0939	141.576	6.39585	
202	0.5	1.11232	142.813	6.95201	
203	0.5	1.1359	144.103	7.51996	
204	0.5	1.15522	145.438	8.09757	
205	0.5	1.17499	146.818	8.68506	
206	0.5	1.20036	148.259	9.28524	
207	0.5	1.22123	149.751	9.89586	
208	0.5	1.24264	151.295	10.5172	
209	0.5	1.26464	152.894	11.1495	
210	0.5	1.29303	154.566	11.796	
211	0.5	1.31652	156.299	12.4543	
212	0.5	1.34075	158.097	13.1247	
213	0.5	1.3722	159.98	13.8108	
214	0.5	1.39838	161.935	14.5099	
215	0.5	1.42554	163.967	15.2227	
216	0.5	1.46106	166.102	15.9532	
217	0.5	1.49085	168.325	16.6987	
218	0.5	1.52203	170.641	17.4597	
219	0.5	1.55477	173.059	18.2371	
220	0.5	1.59819	175.613	19.0362	
221	0.5	1.63524	178.287	19.8538	
222	0.5	1.67466	181.091	20.6911	
223	0.5	1.72793	184.077	21.5551	
224	0.5	1.77438	187.226	22.4423	
225	0.5	1.82501	190.556	23.3548	
226	0.5	1.88079	194.094	24.2952	
227	0.5	1.95996	197.935	25.2752	
228	0.5	2.03352	202.07	26.2919	
229	0.88	2.12007	206.565	28.1576	
230	0.97	2.25713	211.66	30.347	
231	1.1	2.40892	217.462	32.9968	
232	1.7	2.65209	224.496	37.5054	

Data Set Standard Deviation = 0.213842

Numerator = 1406.65
Denominator = 2371.42
W Statistic = 0.593169 = 1406.65 / 2371.42

5% Critical value of 0.976 exceeds 0.593169
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.593169
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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-2.73337	-2.65209	7.03356	7.24913
2	-2.73337	-2.40892	12.8365	13.8336
3	-2.73337	-2.25713	17.9311	20.0032
4	-2.73337	-2.12007	22.4258	25.7981
5	-2.73337	-2.03352	26.561	31.3565
6	-2.73337	-1.95996	30.4025	36.7138
7	-2.73337	-1.88079	33.9398	41.8546
8	-2.73337	-1.82501	37.2705	46.8431
9	-2.73337	-1.77438	40.4189	51.6931
10	-2.73337	-1.72793	43.4046	56.4162
11	-2.73337	-1.67466	46.2091	60.9936
12	-2.73337	-1.63524	48.8831	65.4633
13	-2.73337	-1.59819	51.4373	69.8318
14	-2.73337	-1.55477	53.8547	74.0815
15	-2.73337	-1.52203	56.1712	78.2418
16	-2.73337	-1.49085	58.3939	82.3169
17	-2.73337	-1.46106	60.5286	86.3105
18	-2.73337	-1.42554	62.5608	90.207
19	-2.73337	-1.39838	64.5162	94.0293
20	-2.73337	-1.3722	66.3992	97.78
21	-2.73337	-1.34075	68.1968	101.445
22	-2.73337	-1.31652	69.93	105.043
23	-2.73337	-1.29303	71.6019	108.578
24	-2.73337	-1.26464	73.2013	112.034
25	-2.73337	-1.24264	74.7454	115.431
26	-2.73337	-1.22123	76.2368	118.769
27	-2.73337	-1.20036	77.6777	122.05
28	-2.73337	-1.17499	79.0583	125.262
29	-2.73337	-1.15522	80.3928	128.419
30	-2.73337	-1.1359	81.6831	131.524
31	-2.73337	-1.11232	82.9203	134.565
32	-2.73337	-1.0939	84.1169	137.555
33	-2.73337	-1.07584	85.2744	140.495
34	-2.73337	-1.05812	86.394	143.388
35	-2.73337	-1.03643	87.4682	146.22
36	-2.73337	-1.01943	88.5074	149.007
37	-2.73337	-1.00271	89.5128	151.748
38	-2.73337	-0.982202	90.4776	154.432
39	-2.73337	-0.966088	91.4109	157.073
40	-2.73337	-0.950222	92.3138	159.67
41	-2.73337	-0.93459	93.1873	162.225
42	-2.73337	-0.915365	94.0252	164.727
43	-1.96611	-0.900227	94.8356	166.497
44	-1.66073	-0.885291	95.6193	167.967
45	-1.23787	-0.866894	96.3708	169.04
46	-0.891598	-0.852385	97.0974	169.8
47	-0.693147	-0.838054	97.7997	170.381
48	-0.693147	-0.820379	98.4727	170.95
49	-0.693147	-0.806422	99.123	171.509

50	-0.693147	-0.792618	99.7513	172.058
51	-0.693147	-0.778966	100.358	172.598
52	-0.693147	-0.7621	100.939	173.126
53	-0.693147	-0.748762	101.5	173.645
54	-0.693147	-0.735557	102.041	174.155
55	-0.693147	-0.719228	102.558	174.654
56	-0.693147	-0.706302	103.057	175.143
57	-0.693147	-0.693493	103.538	175.624
58	-0.693147	-0.680797	104.001	176.096
59	-0.693147	-0.665079	104.443	176.557
60	-0.693147	-0.652622	104.869	177.009
61	-0.693147	-0.640266	105.279	177.453
62	-0.693147	-0.624956	105.67	177.886
63	-0.693147	-0.612813	106.045	178.311
64	-0.693147	-0.60076	106.406	178.727
65	-0.693147	-0.588793	106.753	179.136
66	-0.693147	-0.573953	107.082	179.533
67	-0.693147	-0.56217	107.398	179.923
68	-0.693147	-0.550465	107.701	180.305
69	-0.693147	-0.53594	107.989	180.676
70	-0.693147	-0.524401	108.264	181.04
71	-0.693147	-0.51293	108.527	181.395
72	-0.693147	-0.498687	108.776	181.741
73	-0.693147	-0.487364	109.013	182.079
74	-0.693147	-0.476105	109.24	182.409
75	-0.693147	-0.464904	109.456	182.731
76	-0.693147	-0.450985	109.659	183.043
77	-0.693147	-0.439913	109.853	183.348
78	-0.693147	-0.428895	110.037	183.646
79	-0.693147	-0.415193	110.209	183.933
80	-0.693147	-0.40429	110.373	184.214
81	-0.693147	-0.393433	110.527	184.486
82	-0.693147	-0.382622	110.674	184.752
83	-0.693147	-0.369171	110.81	185.008
84	-0.693147	-0.358459	110.939	185.256
85	-0.693147	-0.347787	111.059	185.497
86	-0.693147	-0.334503	111.171	185.729
87	-0.693147	-0.323919	111.276	185.953
88	-0.693147	-0.31337	111.374	186.171
89	-0.693147	-0.302855	111.466	186.381
90	-0.693147	-0.28976	111.55	186.581
91	-0.693147	-0.279319	111.628	186.775
92	-0.693147	-0.268908	111.7	186.961
93	-0.693147	-0.255936	111.766	187.139
94	-0.693147	-0.24559	111.826	187.309
95	-0.693147	-0.235269	111.882	187.472
96	-0.693147	-0.222403	111.931	187.626
97	-0.693147	-0.212137	111.976	187.773
98	-0.693147	-0.201894	112.017	187.913
99	-0.693147	-0.191671	112.054	188.046
100	-0.693147	-0.17892	112.086	188.17
101	-0.693147	-0.168741	112.114	188.287
102	-0.693147	-0.158579	112.139	188.397
103	-0.693147	-0.1459	112.161	188.498
104	-0.693147	-0.135774	112.179	188.592
105	-0.693147	-0.125661	112.195	188.679
106	-0.693147	-0.115562	112.208	188.759
107	-0.693147	-0.102953	112.219	188.831
108	-0.693147	-0.0928787	112.227	188.895
109	-0.693147	-0.0828129	112.234	188.953
110	-0.693147	-0.0702426	112.239	189.001
111	-0.693147	-0.0601949	112.243	189.043

112	-0.693147	-0.0501541	112.245	189.078
113	-0.693147	-0.0401167	112.247	189.106
114	-0.693147	-0.0275759	112.248	189.125
115	-0.693147	-0.0175476	112.248	189.137
116	-0.693147	-0.00751925	112.248	189.142
117	-0.693147	0.00751925	112.248	189.137
118	-0.693147	0.0175476	112.248	189.125
119	-0.693147	0.0275759	112.249	189.106
120	-0.693147	0.0401167	112.251	189.078
121	-0.693147	0.0501541	112.253	189.043
122	-0.693147	0.0601949	112.257	189.001
123	-0.693147	0.0702426	112.262	188.953
124	-0.693147	0.0828129	112.269	188.895
125	-0.693147	0.0928787	112.277	188.831
126	-0.693147	0.102953	112.288	188.759
127	-0.693147	0.115562	112.301	188.679
128	-0.693147	0.125661	112.317	188.592
129	-0.693147	0.135774	112.335	188.498
130	-0.693147	0.1459	112.357	188.397
131	-0.693147	0.158579	112.382	188.287
132	-0.693147	0.168741	112.41	188.17
133	-0.693147	0.17892	112.442	188.046
134	-0.693147	0.191671	112.479	187.913
135	-0.693147	0.201894	112.52	187.773
136	-0.693147	0.212137	112.565	187.626
137	-0.693147	0.222403	112.614	187.472
138	-0.693147	0.235269	112.67	187.309
139	-0.693147	0.24559	112.73	187.139
140	-0.693147	0.255936	112.796	186.961
141	-0.693147	0.268908	112.868	186.775
142	-0.693147	0.279319	112.946	186.581
143	-0.693147	0.28976	113.03	186.381
144	-0.693147	0.302855	113.122	186.171
145	-0.693147	0.31337	113.22	185.953
146	-0.693147	0.323919	113.325	185.729
147	-0.693147	0.334503	113.437	185.497
148	-0.693147	0.347787	113.558	185.256
149	-0.693147	0.358459	113.686	185.008
150	-0.693147	0.369171	113.822	184.752
151	-0.693147	0.382622	113.969	184.486
152	-0.693147	0.393433	114.123	184.214
153	-0.693147	0.40429	114.287	183.933
154	-0.693147	0.415193	114.459	183.646
155	-0.693147	0.428895	114.643	183.348
156	-0.693147	0.439913	114.837	183.043
157	-0.693147	0.450985	115.04	182.731
158	-0.693147	0.464904	115.256	182.409
159	-0.693147	0.476105	115.483	182.079
160	-0.693147	0.487364	115.721	181.741
161	-0.693147	0.498687	115.969	181.395
162	-0.693147	0.51293	116.232	181.04
163	-0.693147	0.524401	116.507	180.676
164	-0.693147	0.53594	116.795	180.305
165	-0.693147	0.550465	117.098	179.923
166	-0.693147	0.56217	117.414	179.533
167	-0.693147	0.573953	117.743	179.136
168	-0.693147	0.588793	118.09	178.727
169	-0.693147	0.60076	118.451	178.311
170	-0.693147	0.612813	118.826	177.886
171	-0.693147	0.624956	119.217	177.453
172	-0.693147	0.640266	119.627	177.009
173	-0.693147	0.652622	120.053	176.557

174	-0.693147	0.665079	120.495	176.096
175	-0.693147	0.680797	120.958	175.624
176	-0.693147	0.693493	121.439	175.143
177	-0.693147	0.706302	121.938	174.654
178	-0.693147	0.719228	122.455	174.155
179	-0.693147	0.735557	122.997	173.645
180	-0.693147	0.748762	123.557	173.126
181	-0.693147	0.7621	124.138	172.598
182	-0.693147	0.778966	124.745	172.058
183	-0.693147	0.792618	125.373	171.509
184	-0.693147	0.806422	126.023	170.95
185	-0.693147	0.820379	126.696	170.381
186	-0.693147	0.838054	127.399	169.8
187	-0.693147	0.852385	128.125	169.209
188	-0.693147	0.866894	128.877	168.609
189	-0.693147	0.885291	129.66	167.995
190	-0.693147	0.900227	130.471	167.371
191	-0.693147	0.915365	131.309	166.736
192	-0.693147	0.93459	132.182	166.089
193	-0.693147	0.950222	133.085	165.43
194	-0.693147	0.966088	134.018	164.76
195	-0.693147	0.982202	134.983	164.08
196	-0.693147	1.00271	135.989	163.385
197	-0.693147	1.01943	137.028	162.678
198	-0.693147	1.03643	138.102	161.96
199	-0.693147	1.05812	139.222	161.226
200	-0.693147	1.07584	140.379	160.48
201	-0.693147	1.0939	141.576	159.722
202	-0.693147	1.11232	142.813	158.951
203	-0.693147	1.1359	144.103	158.164
204	-0.693147	1.15522	145.438	157.363
205	-0.693147	1.17499	146.818	156.549
206	-0.693147	1.20036	148.259	155.717
207	-0.693147	1.22123	149.751	154.87
208	-0.693147	1.24264	151.295	154.009
209	-0.693147	1.26464	152.894	153.132
210	-0.693147	1.29303	154.566	152.236
211	-0.693147	1.31652	156.299	151.323
212	-0.693147	1.34075	158.097	150.394
213	-0.693147	1.3722	159.98	149.443
214	-0.693147	1.39838	161.935	148.474
215	-0.693147	1.42554	163.967	147.486
216	-0.693147	1.46106	166.102	146.473
217	-0.693147	1.49085	168.325	145.439
218	-0.693147	1.52203	170.641	144.384
219	-0.693147	1.55477	173.059	143.307
220	-0.693147	1.59819	175.613	142.199
221	-0.127833	1.63524	178.287	141.99
222	-0.0304592	1.67466	181.091	141.939
223	0	1.72793	184.077	141.939
224	0	1.77438	187.226	141.939
225	0	1.82501	190.556	141.939
226	0	1.88079	194.094	141.939
227	0	1.95996	197.935	141.939
228	0	2.03352	202.07	141.939
229	0	2.12007	206.565	141.939
230	0	2.25713	211.66	141.939
231	0.0953102	2.40892	217.462	142.169
232	0.530628	2.65209	224.496	143.576

Data Set Standard Deviation = 0.824229

Numerator = 20614
Denominator = 35230.3
W Statistic = 0.585121 = 20614 / 35230.3

5% Critical value of 0.976 exceeds 0.585121
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.585121
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 = 96.5517%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 19
Maximum Background Concentration = 0
Confidence Level = 70.4%
False Positive Rate = 29.6%

Location	Date	Samples	Mean	Significant
LMW-16	11/17/2010	1	-2.73337	FALSE
LMW-14R	11/17/2010	1	-2.73337	FALSE
LMW-15R	11/17/2010	1	-2.73337	FALSE
LMW-3	11/17/2010	1	-2.73337	FALSE
LMW-3S	11/17/2010	1	-2.73337	FALSE
LMW-6	11/17/2010	1	-2.73337	FALSE
LMW-9D	11/17/2010	1	-2.73337	FALSE
LMW-7	11/17/2010	1	-2.73337	FALSE
LMW-10	11/17/2010	1	-0.0304592	FALSE
LMW-8	11/17/2010	1	-1.96611	FALSE
LMW-9S	11/17/2010	1	-2.73337	FALSE
LMW-9	11/17/2010	1	-2.73337	FALSE
MW-5	11/20/2008	1	-0.693147	FALSE
LMW-11	11/20/2008	1	-0.693147	FALSE
LMW-12	11/20/2008	1	-0.693147	FALSE
LMW-13	11/20/2008	1	-0.693147	FALSE

Concentrations (ug/L)

Parameter: Trichlorofluoromethane

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 244
Total Non-Detect: 194
Percent Non-Detects: 79.5082%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	9 (45%)	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
			11/17/2010	1.7	1.7

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-8	20	19 (95%)	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
			11/17/2010	ND<0.25 U	ND<0.25 U

LMW-7	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<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
			11/17/2010	ND<0.25 U		ND<0.25 U
LMW-9	20	19 (95%)	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	7 J	7 J	
			11/16/2009	ND<0.25 U		ND<0.25 U
			6/30/2010	ND<0.25 U		ND<0.25 U
			11/17/2010	ND<0.25 U		ND<0.25 U
LMW-9S	14	11 (78.5714%)	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	26 B	26 B	
			11/16/2009	9.1 J B	9.1 J B	
			11/16/2009	15 B	15 B	
			11/16/2009	ND<0.25 U		ND<0.25 U
			6/30/2010	ND<0.25 U		ND<0.25 U
			11/17/2010	ND<0.25 U		ND<0.25 U
LMW-16	10	9 (90%)	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	9.3 J B	9.3 J B	
			11/16/2009	ND<0.25 U		ND<0.25 U

		6/30/2010	ND<0.25 U	ND<0.25 U	
		11/17/2010	ND<0.25 U	ND<0.25 U	
LMW-10	17	7 (41.1765%)	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	21	21	
		11/16/2009	13	13	
		6/30/2010	5.8	5.8	
		11/17/2010	7.3	7.3	
LMW-14R	7	7 (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	
		11/17/2010	ND<0.25 U	ND<0.25 U	
LMW-15R	11	11 (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	
		11/17/2010	ND<0.25 U	ND<0.25 U	
LMW-3	22	17 (77.2727%)	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	

			11/17/2010	0.52 J	0.52 J	
LMW-3S	10	4 (40%)	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	
			11/17/2010	1.1	1.1	
LMW-6	20	12 (60%)	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	41	41	
			11/16/2009	1.1	1.1	
			6/30/2010	0.72 J	0.72 J	
			11/17/2010	0.48 J	0.48 J	
LMW-9D	10	9 (90%)	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	
			11/17/2010	ND<0.25 U	ND<0.25 U	
MW-5	13	12 (92.3077%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/15/2007	7	7	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
LMW-12	11	11 (100%)	3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	

			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
LMW-11	11	11 (100%)	3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
LMW-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: Trichlorofluoromethane

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 244

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	-2.14441	22.5296	0
5	0	-2.05375	26.7475	0
6	0	-1.97737	30.6575	0
7	0	-1.91103	34.3095	0
8	0	-1.85218	37.7401	0
9	0	-1.79912	40.9769	0
10	0	-1.75069	44.0418	0
11	0	-1.70604	46.9524	0
12	0	-1.66456	49.7231	0
13	0	-1.61644	52.336	0
14	0.125	-1.58047	54.8339	-0.197558
15	0.125	-1.54643	57.2253	-0.390862
16	0.125	-1.5141	59.5178	-0.580125
17	0.125	-1.48328	61.718	-0.765535
18	0.125	-1.4538	63.8315	-0.947261
19	0.125	-1.42554	65.8637	-1.12545
20	0.125	-1.39838	67.8191	-1.30025
21	0.125	-1.3722	69.7021	-1.47178
22	0.125	-1.34694	71.5163	-1.64014
23	0.125	-1.32251	73.2653	-1.80546
24	0.125	-1.29884	74.9523	-1.96781
25	0.125	-1.27024	76.5658	-2.12659
26	0.125	-1.24809	78.1235	-2.2826
27	0.125	-1.22653	79.6279	-2.43592
28	0.125	-1.20553	81.0812	-2.58661
29	0.125	-1.18504	82.4855	-2.73474
30	0.125	-1.16505	83.8429	-2.88037
31	0.125	-1.1455	85.155	-3.02356
32	0.125	-1.12639	86.4238	-3.16436
33	0.125	-1.10768	87.6508	-3.30282
34	0.125	-1.08935	88.8374	-3.43899
35	0.125	-1.07138	89.9853	-3.57291
36	0.125	-1.05375	91.0957	-3.70463
37	0.125	-1.03215	92.161	-3.83365
38	0.125	-1.01522	93.1917	-3.96055
39	0.125	-0.998575	94.1888	-4.08537
40	0.125	-0.982202	95.1536	-4.20815
41	0.125	-0.966088	96.0869	-4.32891
42	0.125	-0.950222	96.9898	-4.44768
43	0.125	-0.934599	97.8633	-4.56451
44	0.48	-0.919183	98.7082	-5.00572
45	0.5	-0.903992	99.5254	-5.45771
46	0.5	-0.889006	100.316	-5.90221
47	0.5	-0.874218	101.08	-6.33932
48	0.5	-0.859618	101.819	-6.76913
49	0.5	-0.841621	102.527	-7.18994

50	0.5	-0.827417	103.212	-7.60365
51	0.5	-0.813379	103.873	-8.01034
52	0.5	-0.7995	104.513	-8.41009
53	0.5	-0.785774	105.13	-8.80298
54	0.5	-0.772193	105.726	-9.18907
55	0.5	-0.758753	106.302	-9.56845
56	0.5	-0.745449	106.858	-9.94118
57	0.5	-0.732275	107.394	-10.3073
58	0.5	-0.719228	107.911	-10.6669
59	0.5	-0.706302	108.41	-11.0201
60	0.5	-0.693493	108.891	-11.3668
61	0.5	-0.680797	109.355	-11.7072
62	0.5	-0.665079	109.797	-12.0398
63	0.5	-0.652622	110.223	-12.3661
64	0.5	-0.640266	110.633	-12.6862
65	0.5	-0.628006	111.027	-13.0002
66	0.5	-0.615839	111.406	-13.3081
67	0.5	-0.603765	111.771	-13.61
68	0.5	-0.591776	112.121	-13.9059
69	0.5	-0.579873	112.457	-14.1958
70	0.5	-0.568052	112.78	-14.4799
71	0.5	-0.556308	113.09	-14.758
72	0.5	-0.544642	113.386	-15.0303
73	0.5	-0.533048	113.67	-15.2969
74	0.5	-0.518658	113.939	-15.5562
75	0.5	-0.507221	114.197	-15.8098
76	0.5	-0.49585	114.442	-16.0577
77	0.5	-0.484544	114.677	-16.3
78	0.5	-0.473299	114.901	-16.5366
79	0.5	-0.462114	115.115	-16.7677
80	0.5	-0.450985	115.318	-16.9932
81	0.5	-0.439913	115.512	-17.2132
82	0.5	-0.428895	115.696	-17.4276
83	0.5	-0.417928	115.87	-17.6366
84	0.5	-0.40701	116.036	-17.8401
85	0.5	-0.396142	116.193	-18.0381
86	0.5	-0.382622	116.339	-18.2295
87	0.5	-0.371856	116.478	-18.4154
88	0.5	-0.361133	116.608	-18.5959
89	0.5	-0.350451	116.731	-18.7712
90	0.5	-0.33981	116.846	-18.9411
91	0.5	-0.329206	116.955	-19.1057
92	0.5	-0.318639	117.056	-19.265
93	0.5	-0.308108	117.151	-19.4191
94	0.5	-0.297612	117.24	-19.5679
95	0.5	-0.287147	117.322	-19.7114
96	0.5	-0.276714	117.399	-19.8498
97	0.5	-0.266311	117.47	-19.9829
98	0.5	-0.253347	117.534	-20.1096
99	0.5	-0.243007	117.593	-20.2311
100	0.5	-0.232693	117.647	-20.3475
101	0.5	-0.222403	117.696	-20.4587
102	0.5	-0.212137	117.741	-20.5647
103	0.5	-0.201894	117.782	-20.6657
104	0.5	-0.191671	117.819	-20.7615
105	0.5	-0.181468	117.852	-20.8523
106	0.5	-0.171285	117.881	-20.9379
107	0.5	-0.161119	117.907	-21.0185
108	0.5	-0.150969	117.93	-21.0939
109	0.5	-0.140835	117.95	-21.1644
110	0.5	-0.130716	117.967	-21.2297
111	0.5	-0.118085	117.981	-21.2888

112	0.5	-0.107995	117.993	-21.3428
113	0.5	-0.0979139	118.002	-21.3917
114	0.5	-0.0878447	118.01	-21.4356
115	0.5	-0.0777834	118.016	-21.4745
116	0.5	-0.0677301	118.02	-21.5084
117	0.5	-0.0576847	118.024	-21.5372
118	0.5	-0.0476439	118.026	-21.5611
119	0.5	-0.0376076	118.027	-21.5799
120	0.5	-0.0275759	118.028	-21.5937
121	0.5	-0.0175476	118.029	-21.6024
122	0.5	-0.00751925	118.029	-21.6062
123	0.5	0.00751925	118.029	-21.6024
124	0.5	0.0175476	118.029	-21.5937
125	0.5	0.0275759	118.03	-21.5799
126	0.5	0.0376076	118.031	-21.5611
127	0.5	0.0476439	118.033	-21.5372
128	0.5	0.0576847	118.037	-21.5084
129	0.5	0.0677301	118.041	-21.4745
130	0.5	0.0777834	118.047	-21.4356
131	0.5	0.0878447	118.055	-21.3917
132	0.5	0.0979139	118.065	-21.3428
133	0.5	0.107995	118.076	-21.2888
134	0.5	0.118085	118.09	-21.2297
135	0.5	0.130716	118.107	-21.1644
136	0.5	0.140835	118.127	-21.0939
137	0.5	0.150969	118.15	-21.0185
138	0.5	0.161119	118.176	-20.9379
139	0.5	0.171285	118.205	-20.8523
140	0.5	0.181468	118.238	-20.7615
141	0.5	0.191671	118.275	-20.6657
142	0.5	0.201894	118.316	-20.5647
143	0.5	0.212137	118.361	-20.4587
144	0.5	0.222403	118.41	-20.3475
145	0.5	0.232693	118.464	-20.2311
146	0.5	0.243007	118.523	-20.1096
147	0.5	0.253347	118.588	-19.9829
148	0.5	0.266311	118.659	-19.8498
149	0.5	0.276714	118.735	-19.7114
150	0.5	0.287147	118.818	-19.5679
151	0.5	0.297612	118.906	-19.4191
152	0.5	0.308108	119.001	-19.265
153	0.5	0.318639	119.103	-19.1057
154	0.5	0.329206	119.211	-18.9411
155	0.5	0.33981	119.326	-18.7712
156	0.5	0.350451	119.449	-18.5959
157	0.5	0.361133	119.58	-18.4154
158	0.5	0.371856	119.718	-18.2295
159	0.5	0.382622	119.864	-18.0381
160	0.5	0.396142	120.021	-17.8401
161	0.5	0.40701	120.187	-17.6366
162	0.5	0.417928	120.362	-17.4276
163	0.5	0.428895	120.546	-17.2132
164	0.5	0.439913	120.739	-16.9932
165	0.5	0.450985	120.942	-16.7677
166	0.5	0.462114	121.156	-16.5366
167	0.5	0.473299	121.38	-16.3
168	0.5	0.484544	121.615	-16.0577
169	0.5	0.49585	121.861	-15.8098
170	0.5	0.507221	122.118	-15.5562
171	0.5	0.518658	122.387	-15.2969
172	0.5	0.533048	122.671	-15.0303
173	0.5	0.544642	122.968	-14.758

174	0.5	0.556308		123.277	-14.4799
175	0.5	0.568052		123.6	-14.1958
176	0.5	0.579873		123.936	-13.9059
177	0.5	0.591776		124.286	-13.61
178	0.5	0.603765		124.651	-13.3081
179	0.5	0.615839		125.03	-13.0002
180	0.5	0.628006		125.424	-12.6862
181	0.5	0.640266		125.834	-12.3661
182	0.5	0.652622		126.26	-12.0398
183	0.5	0.665079		126.703	-11.7072
184	0.5	0.680797		127.166	-11.3668
185	0.5	0.693493		127.647	-11.0201
186	0.5	0.706302		128.146	-10.6669
187	0.5	0.719228		128.663	-10.3073
188	0.5	0.732275		129.199	-9.94118
189	0.5	0.745449		129.755	-9.56845
190	0.5	0.758753		130.331	-9.18907
191	0.5	0.772193		130.927	-8.80298
192	0.5	0.785774		131.545	-8.41009
193	0.5	0.7995	132.184	-8.01034	
194	0.5	0.813379		132.845	-7.60365
195	0.5	0.827417		133.53	-7.18994
196	0.52	0.841621		134.238	-6.7523
197	0.58	0.859618		134.977	-6.25372
198	0.68	0.874218		135.742	-5.65925
199	0.72	0.889006		136.532	-5.01917
200	0.82	0.903992		137.349	-4.2779
201	0.84	0.919183		138.194	-3.50578
202	0.95	0.93459	139.067	-2.61792	
203	0.97	0.950222		139.97	-1.69621
204	1	0.966088		140.904	-0.730118
205	1	0.982202		141.868	0.252084
206	1	0.998575		142.866	1.25066
207	1	1.01522	143.896	2.26588	
208	1.1	1.03215	144.962	3.40125	
209	1.1	1.05375	146.072	4.56037	
210	1.1	1.07138	147.22	5.73888	
211	1.4	1.08935	148.406	7.26397	
212	1.7	1.10768	149.633	9.14703	
213	2	1.12639	150.902	11.3998	
214	2	1.1455	152.214	13.6908	
215	2	1.16505	153.572	16.0209	
216	2	1.18504	154.976	18.391	
217	2	1.20553	156.429	20.8021	
218	2	1.22653	157.934	23.2551	
219	2	1.24809	159.491	25.7513	
220	2.4	1.27024	161.105	28.7999	
221	3	1.29884	162.792	32.6964	
222	3	1.32251	164.541	36.6639	
223	3	1.34694	166.355	40.7047	
224	3	1.3722	168.238	44.8213	
225	4	1.39838	170.194	50.4148	
226	5.8	1.42554	172.226	58.683	
227	6.6	1.4538	174.339	68.2781	
228	7	1.48328	176.539	78.661	
229	7	1.5141	178.832	89.2598	
230	7	1.54643	181.223	100.085	
231	7.3	1.58047	183.721	111.622	
232	9.1	1.61644	186.334	126.332	
233	9.3	1.66456	189.105	141.812	
234	10	1.70604	192.015	158.873	
235	13	1.75069	195.08	181.632	

236	13	1.79912	198.317	205.02
237	15	1.85218	201.748	232.803
238	16	1.91103	205.4	263.379
239	19	1.97737	209.31	300.949
240	21	2.05375	213.528	344.078
241	25	2.14441	218.126	397.688
242	26	2.25713	223.221	456.373
243	32	2.40892	229.024	533.459
244	41	2.65209	236.057	642.195

Data Set Standard Deviation = 4.79916
Numerator = 412414
Denominator = 1.32116e+006
W Statistic = 0.312161 = 412414 / 1.32116e+006

5% Critical value of 0.976 exceeds 0.312161
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.312161
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 = 244

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	-2.14441	22.5296	19.6768
5	-2.07944	-2.05375	26.7475	23.9475
6	-2.07944	-1.97737	30.6575	28.0593
7	-2.07944	-1.91103	34.3095	32.0332
8	-2.07944	-1.85218	37.7401	35.8847
9	-2.07944	-1.79912	40.9769	39.6258
10	-2.07944	-1.75069	44.0418	43.2663
11	-2.07944	-1.70604	46.9524	46.8139
12	-2.07944	-1.66456	49.7231	50.2752
13	-2.07944	-1.61644	52.336	53.6365
14	-2.07944	-1.58047	54.8339	56.923
15	-2.07944	-1.54643	57.2253	60.1387
16	-2.07944	-1.5141	59.5178	63.2872
17	-2.07944	-1.48328	61.718	66.3716
18	-2.07944	-1.4538	63.8315	69.3947
19	-2.07944	-1.42554	65.8637	72.359
20	-2.07944	-1.39838	67.8191	75.2669
21	-2.07944	-1.3722	69.7021	78.1203
22	-2.07944	-1.34694	71.5163	80.9212
23	-2.07944	-1.32251	73.2653	83.6713
24	-2.07944	-1.29884	74.9523	86.3721
25	-2.07944	-1.27024	76.5658	89.0135
26	-2.07944	-1.24809	78.1235	91.6088
27	-2.07944	-1.22653	79.6279	94.1593
28	-2.07944	-1.20553	81.0812	96.6661
29	-2.07944	-1.18504	82.4855	99.1304
30	-2.07944	-1.16505	83.8429	101.553
31	-0.733969	-1.1455	85.155	102.394
32	-0.693147	-1.12639	86.4238	103.175
33	-0.693147	-1.10768	87.6508	103.942
34	-0.693147	-1.08935	88.8374	104.697
35	-0.693147	-1.07138	89.9853	105.44
36	-0.693147	-1.05375	91.0957	106.17
37	-0.693147	-1.03215	92.161	106.886
38	-0.693147	-1.01522	93.1917	107.59
39	-0.693147	-0.998575	94.1888	108.282
40	-0.693147	-0.982202	95.1536	108.963
41	-0.693147	-0.966088	96.0869	109.632
42	-0.693147	-0.950222	96.9898	110.291
43	-0.693147	-0.93459	97.8633	110.939
44	-0.693147	-0.919183	98.7082	111.576
45	-0.693147	-0.903992	99.5254	112.202
46	-0.693147	-0.889006	100.316	112.819
47	-0.693147	-0.874218	101.08	113.425
48	-0.693147	-0.859618	101.819	114.02
49	-0.693147	-0.841621	102.527	114.604

50	-0.693147	-0.827417	103.212	115.177
51	-0.693147	-0.813379	103.873	115.741
52	-0.693147	-0.7995	104.513	116.295
53	-0.693147	-0.785774	105.13	116.84
54	-0.693147	-0.772193	105.726	117.375
55	-0.693147	-0.758753	106.302	117.901
56	-0.693147	-0.745449	106.858	118.418
57	-0.693147	-0.732275	107.394	118.925
58	-0.693147	-0.719228	107.911	119.424
59	-0.693147	-0.706302	108.41	119.913
60	-0.693147	-0.693493	108.891	120.394
61	-0.693147	-0.680797	109.355	120.866
62	-0.693147	-0.665079	109.797	121.327
63	-0.693147	-0.652622	110.223	121.779
64	-0.693147	-0.640266	110.633	122.223
65	-0.693147	-0.628006	111.027	122.658
66	-0.693147	-0.615839	111.406	123.085
67	-0.693147	-0.603765	111.771	123.504
68	-0.693147	-0.591776	112.121	123.914
69	-0.693147	-0.579873	112.457	124.316
70	-0.693147	-0.568052	112.78	124.71
71	-0.693147	-0.556308	113.09	125.095
72	-0.693147	-0.544642	113.386	125.473
73	-0.693147	-0.533048	113.67	125.842
74	-0.693147	-0.518658	113.939	126.202
75	-0.693147	-0.507221	114.197	126.553
76	-0.693147	-0.49585	114.442	126.897
77	-0.693147	-0.484544	114.677	127.233
78	-0.693147	-0.473299	114.901	127.561
79	-0.693147	-0.462114	115.115	127.881
80	-0.693147	-0.450985	115.318	128.194
81	-0.693147	-0.439913	115.512	128.499
82	-0.693147	-0.428895	115.696	128.796
83	-0.693147	-0.417928	115.87	129.086
84	-0.693147	-0.40701	116.036	129.368
85	-0.693147	-0.396142	116.193	129.643
86	-0.693147	-0.382622	116.339	129.908
87	-0.693147	-0.371856	116.478	130.165
88	-0.693147	-0.361133	116.608	130.416
89	-0.693147	-0.350451	116.731	130.659
90	-0.693147	-0.33981	116.846	130.894
91	-0.693147	-0.329206	116.955	131.122
92	-0.693147	-0.318639	117.056	131.343
93	-0.693147	-0.308108	117.151	131.557
94	-0.693147	-0.297612	117.24	131.763
95	-0.693147	-0.287147	117.322	131.962
96	-0.693147	-0.276714	117.399	132.154
97	-0.693147	-0.266311	117.47	132.339
98	-0.693147	-0.253347	117.534	132.514
99	-0.693147	-0.243007	117.593	132.683
100	-0.693147	-0.232693	117.647	132.844
101	-0.693147	-0.222403	117.696	132.998
102	-0.693147	-0.212137	117.741	133.145
103	-0.693147	-0.201894	117.782	133.285
104	-0.693147	-0.191671	117.819	133.418
105	-0.693147	-0.181468	117.852	133.544
106	-0.693147	-0.171285	117.881	133.662
107	-0.693147	-0.161119	117.907	133.774
108	-0.693147	-0.150969	117.93	133.879
109	-0.693147	-0.140835	117.95	133.976
110	-0.693147	-0.130716	117.967	134.067
111	-0.693147	-0.118085	117.981	134.149

112	-0.693147	-0.107995	117.993	134.224
113	-0.693147	-0.0979139	118.002	134.292
114	-0.693147	-0.0878447	118.01	134.352
115	-0.693147	-0.0777834	118.016	134.406
116	-0.693147	-0.0677301	118.02	134.453
117	-0.693147	-0.0576847	118.024	134.493
118	-0.693147	-0.0476439	118.026	134.526
119	-0.693147	-0.0376076	118.027	134.552
120	-0.693147	-0.0275759	118.028	134.572
121	-0.693147	-0.0175476	118.029	134.584
122	-0.693147	-0.00751925	118.029	134.589
123	-0.693147	0.00751925	118.029	134.584
124	-0.693147	0.0175476	118.029	134.572
125	-0.693147	0.0275759	118.03	134.552
126	-0.693147	0.0376076	118.031	134.526
127	-0.693147	0.0476439	118.033	134.493
128	-0.693147	0.0576847	118.037	134.453
129	-0.693147	0.0677301	118.041	134.406
130	-0.693147	0.0777834	118.047	134.352
131	-0.693147	0.0878447	118.055	134.292
132	-0.693147	0.0979139	118.065	134.224
133	-0.693147	0.107995	118.076	134.149
134	-0.693147	0.118085	118.09	134.067
135	-0.693147	0.130716	118.107	133.976
136	-0.693147	0.140835	118.127	133.879
137	-0.693147	0.150969	118.15	133.774
138	-0.693147	0.161119	118.176	133.662
139	-0.693147	0.171285	118.205	133.544
140	-0.693147	0.181468	118.238	133.418
141	-0.693147	0.191671	118.275	133.285
142	-0.693147	0.201894	118.316	133.145
143	-0.693147	0.212137	118.361	132.998
144	-0.693147	0.222403	118.41	132.844
145	-0.693147	0.232693	118.464	132.683
146	-0.693147	0.243007	118.523	132.514
147	-0.693147	0.253347	118.588	132.339
148	-0.693147	0.266311	118.659	132.154
149	-0.693147	0.276714	118.735	131.962
150	-0.693147	0.287147	118.818	131.763
151	-0.693147	0.297612	118.906	131.557
152	-0.693147	0.308108	119.001	131.343
153	-0.693147	0.318639	119.103	131.122
154	-0.693147	0.329206	119.211	130.894
155	-0.693147	0.33981	119.326	130.659
156	-0.693147	0.350451	119.449	130.416
157	-0.693147	0.361133	119.58	130.165
158	-0.693147	0.371856	119.718	129.908
159	-0.693147	0.382622	119.864	129.643
160	-0.693147	0.396142	120.021	129.368
161	-0.693147	0.40701	120.187	129.086
162	-0.693147	0.417928	120.362	128.796
163	-0.693147	0.428895	120.546	128.499
164	-0.693147	0.439913	120.739	128.194
165	-0.693147	0.450985	120.942	127.881
166	-0.693147	0.462114	121.156	127.561
167	-0.693147	0.473299	121.38	127.233
168	-0.693147	0.484544	121.615	126.897
169	-0.693147	0.49585	121.861	126.553
170	-0.693147	0.507221	122.118	126.202
171	-0.693147	0.518658	122.387	125.842
172	-0.693147	0.533048	122.671	125.473
173	-0.693147	0.544642	122.968	125.095

174	-0.693147	0.556308	123.277	124.71
175	-0.693147	0.568052	123.6	124.316
176	-0.693147	0.579873	123.936	123.914
177	-0.693147	0.591776	124.286	123.504
178	-0.693147	0.603765	124.651	123.085
179	-0.693147	0.615839	125.03	122.658
180	-0.693147	0.628006	125.424	122.223
181	-0.693147	0.640266	125.834	121.779
182	-0.693147	0.652622	126.26	121.327
183	-0.653926	0.665079	126.703	120.892
184	-0.544727	0.680797	127.166	120.521
185	-0.385662	0.693493	127.647	120.254
186	-0.328504	0.706302	128.146	120.022
187	-0.198451	0.719228	128.663	119.879
188	-0.174353	0.732275	129.199	119.751
189	-0.0512933	0.745449	129.755	119.713
190	-0.0304592	0.758753	130.331	119.69
191	0	0.772193	130.927	119.69
192	0	0.785774	131.545	119.69
193	0	0.7995	132.184	119.69
194	0	0.813379	132.845	119.69
195	0	0.827417	133.53	119.69
196	0	0.841621	134.238	119.69
197	0	0.859618	134.977	119.69
198	0	0.874218	135.742	119.69
199	0	0.889006	136.532	119.69
200	0	0.903992	137.349	119.69
201	0	0.919183	138.194	119.69
202	0	0.93459	139.067	119.69
203	0	0.950222	139.97	119.69
204	0	0.966088	140.904	119.69
205	0	0.982202	141.868	119.69
206	0	0.998575	142.866	119.69
207	0	1.01522	143.896	119.69
208	0.0953102	1.03215	144.962	119.788
209	0.0953102	1.05375	146.072	119.889
210	0.0953102	1.07138	147.22	119.991
211	0.336472	1.08935	148.406	120.357
212	0.530628	1.10768	149.633	120.945
213	0.693147	1.12639	150.902	121.726
214	0.693147	1.1455	152.214	122.52
215	0.693147	1.16505	153.572	123.328
216	0.693147	1.18504	154.976	124.149
217	0.693147	1.20553	156.429	124.985
218	0.693147	1.22653	157.934	125.835
219	0.693147	1.24809	159.491	126.7
220	0.875469	1.27024	161.105	127.812
221	1.09861	1.29884	162.792	129.239
222	1.09861	1.32251	164.541	130.692
223	1.09861	1.34694	166.355	132.171
224	1.09861	1.3722	168.238	133.679
225	1.38629	1.39838	170.194	135.618
226	1.75786	1.42554	172.226	138.123
227	1.88707	1.4538	174.339	140.867
228	1.94591	1.48328	176.539	143.753
229	1.94591	1.5141	178.832	146.7
230	1.94591	1.54643	181.223	149.709
231	1.98787	1.58047	183.721	152.851
232	2.20827	1.61644	186.334	156.42
233	2.23001	1.66456	189.105	160.132
234	2.30259	1.70604	192.015	164.06
235	2.56495	1.75069	195.08	168.551

236	2.56495	1.79912	198.317	173.165
237	2.70805	1.85218	201.748	178.181
238	2.77259	1.91103	205.4	183.48
239	2.94444	1.97737	209.31	189.302
240	3.04452	2.05375	213.528	195.555
241	3.21888	2.14441	218.126	202.457
242	3.2581	2.25713	223.221	209.811
243	3.46574	2.40892	229.024	218.16
244	3.71357	2.65209	236.057	228.009

Data Set Standard Deviation = 1.10454
Numerator = 51987.9
Denominator = 69982.2
W Statistic = 0.742873 = 51987.9 / 69982.2

5% Critical value of 0.976 exceeds 0.742873
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.742873
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	97.5
	3/16/1999	ND<-0.693147	97.5
	9/23/1999	ND<-0.693147	97.5
	3/14/2000	ND<-0.693147	97.5
	9/23/2003	ND<-0.693147	97.5
	3/10/2004	ND<-0.693147	97.5
	10/12/2004	ND<-0.693147	97.5
	4/1/2005	0.693147	213
	10/26/2005	ND<0 J	97.5
	6/19/2006	0.693147	214
	11/18/2006	0.693147	215
	6/2/2007	1.09861	221
	11/15/2007	ND<-0.693147	97.5
	5/20/2008	1.09861	222
	11/20/2008	0.693147	216
	6/11/2009	-0.198451 J	200
	11/16/2009	0.875469	220
	11/16/2009	2.77259 B	238
	6/30/2010	0.693147	217
	11/17/2010	0.530628	212

Rank Sum = 3265.5
Rank Mean = 163.275

Background Rank Sum = 3265.5
Background Rank Mean = 163.275

Compliance Wells

Well ID	Date	Result	Rank
LMW-8	1/16/1998	ND<-0.693147	97.5
	3/16/1999	ND<-0.693147	97.5
	9/23/1999	ND<-0.693147	97.5
	3/14/2000	ND<-0.693147	97.5
	9/23/2003	ND<-0.693147	97.5
	3/10/2004	ND<-0.693147	97.5
	10/12/2004	ND<-0.693147	97.5
	4/1/2005	ND<-0.693147	97.5
	10/26/2005	ND<-0.693147	97.5
	6/19/2006	ND<-0.693147	97.5
	11/18/2006	ND<-0.693147	97.5
	6/2/2007	ND<-0.693147	97.5
	11/15/2007	ND<-0.693147	97.5
	5/20/2008	ND<-0.693147	97.5
	11/20/2008	ND<-0.693147	97.5
	6/11/2009	ND<-2.07944 U	97.5
	11/16/2009	2.94444	239
	11/16/2009	ND<-2.07944 U	97.5

	6/30/2010	ND<-2.07944 U	97.5
	11/17/2010	ND<-2.07944 U	97.5

Rank Sum = 2091.5
Rank Mean = 104.575

LMW-7	1/16/1998	ND<-0.693147	97.5
	3/16/1999	ND<-0.693147	97.5
	9/23/1999	ND<-0.693147	97.5
	3/14/2000	ND<-0.693147	97.5
	9/23/2003	ND<-0.693147	97.5
	3/10/2004	ND<-0.693147	97.5
	10/12/2004	ND<-0.693147	97.5
	4/1/2005	ND<-0.693147	97.5
	10/26/2005	ND<-0.693147	97.5
	6/19/2006	ND<-0.693147	97.5
	11/18/2006	ND<-0.693147	97.5
	6/2/2007	0.693147	218
	11/15/2007	1.38629	225
	5/20/2008	ND<-0.693147	97.5
	11/20/2008	ND<-0.693147	97.5
	6/11/2009	ND<-2.07944 U	97.5
	11/17/2010	ND<-2.07944 U	97.5

Rank Sum = 1905.5
Rank Mean = 112.088

LMW-9	1/16/1998	ND<-0.693147	97.5
	3/16/1999	ND<-0.693147	97.5
	9/23/1999	ND<-0.693147	97.5
	3/14/2000	ND<-0.693147	97.5
	9/23/2003	ND<-0.693147	97.5
	3/10/2004	ND<-0.693147	97.5
	10/12/2004	ND<-0.693147	97.5
	4/1/2005	ND<-0.693147	97.5
	10/26/2005	ND<-0.693147	97.5
	6/19/2006	ND<-0.693147	97.5
	11/18/2006	ND<-0.693147	97.5
	6/2/2007	ND<-0.693147	97.5
	11/15/2007	ND<-0.693147	97.5
	5/20/2008	ND<-0.693147	97.5
	11/20/2008	ND<-0.693147	97.5
	6/11/2009	ND<-2.07944 U	97.5
	11/16/2009	1.94591 J	228
	11/16/2009	ND<-2.07944 U	97.5
	6/30/2010	ND<-2.07944 U	97.5
	11/17/2010	ND<-2.07944 U	97.5

Rank Sum = 2080.5
Rank Mean = 104.025

LMW-9S	11/18/2006	ND<-0.693147	97.5
	6/2/2007	ND<-0.693147	97.5
	11/15/2007	ND<-0.693147	97.5
	5/20/2008	ND<-0.693147	97.5
	11/20/2008	ND<-0.693147	97.5
	6/11/2009	ND<-2.07944 U	97.5
	11/16/2009	ND<-2.07944 U	97.5
	11/16/2009	ND<-2.07944 U	97.5
	11/16/2009	3.2581 B	242
	11/16/2009	2.20827 J B	232
	11/16/2009	2.70805 B	237
	11/16/2009	ND<-2.07944 U	97.5
	6/30/2010	ND<-2.07944 U	97.5
	11/17/2010	ND<-2.07944 U	97.5

Rank Sum = 1783.5
Rank Mean = 127.393

LMW-16	11/18/2006	ND<-0.693147	97.5
	6/2/2007	ND<-0.693147	97.5
	11/15/2007	ND<-0.693147	97.5
	5/20/2008	ND<-0.693147	97.5
	11/20/2008	ND<-0.693147	97.5
	6/11/2009	ND<-2.07944 U	97.5
	11/16/2009	2.23001 J B	233
	11/16/2009	ND<-2.07944 U	97.5
	6/30/2010	ND<-2.07944 U	97.5
	11/17/2010	ND<-2.07944 U	97.5

Rank Sum = 1110.5
Rank Mean = 111.05

LMW-10	3/14/2000	ND<-0.693147	97.5
	9/23/2003	ND<-0.693147	97.5
	3/10/2004	ND<-0.693147	97.5
	10/12/2004	ND<-0.693147	97.5
	4/1/2005	ND<-0.693147	97.5
	10/26/2005	ND<0 J	97.5
	6/19/2006	0.693147	219
	11/18/2006	1.94591	229
	6/2/2007	1.09861	223
	11/15/2007	ND<-0.693147	97.5
	5/20/2008	2.30259	234
	11/20/2008	1.09861	224
	6/11/2009	1.88707	227
	11/16/2009	3.04452	240
	11/16/2009	2.56495	235
	6/30/2010	1.75786	226
	11/17/2010	1.98787	231

Rank Sum = 2970.5
Rank Mean = 174.735

LMW-14R	6/2/2007	ND<-0.693147	97.5
	11/15/2007	ND<-0.693147	97.5
	5/20/2008	ND<-0.693147	97.5
	11/20/2008	ND<-0.693147	97.5
	6/11/2009	ND<-2.07944 U	97.5
	6/30/2010	ND<-2.07944 U	97.5
	11/17/2010	ND<-2.07944 U	97.5

Rank Sum = 682.5
Rank Mean = 97.5

LMW-15R	11/18/2006	ND<-0.693147	97.5
	6/2/2007	ND<-0.693147	97.5
	11/15/2007	ND<-0.693147	97.5
	11/15/2007	ND<-0.693147	97.5
	5/20/2008	ND<-0.693147	97.5
	5/20/2008	ND<-0.693147	97.5
	11/20/2008	ND<-0.693147	97.5
	11/20/2008	ND<-0.693147	97.5
	6/11/2009	ND<-2.07944 U	97.5
	6/30/2010	ND<-2.07944 U	97.5
	11/17/2010	ND<-2.07944 U	97.5

Rank Sum = 1072.5
Rank Mean = 97.5

LMW-3	11/19/1996	ND<-0.693147	97.5
	3/24/1997	ND<-0.693147	97.5

	1/16/1998	ND<-0.693147		97.5
	3/16/1999	ND<-0.693147		97.5
	9/23/1999	ND<-0.693147		97.5
	3/14/2000	ND<-0.693147		97.5
	9/23/2003	ND<-0.693147		97.5
	3/10/2004	ND<-0.693147		97.5
	10/12/2004	ND<-0.693147		97.5
	4/1/2005	ND<0 J	97.5	
	10/26/2005	ND<0 J	97.5	
	6/19/2006	ND<0 J	97.5	
	11/18/2006	ND<-0.693147		97.5
	6/2/2007	ND<-0.693147	97.5	
	11/15/2007	ND<0 J	97.5	
	5/20/2008	ND<0 J	97.5	
	11/20/2008	ND<0 J	97.5	
	6/11/2009	-0.174353 J		201
	11/16/2009	-0.385662 J		198
	11/16/2009	3.46574 B		243
	6/30/2010	-0.544727 J		197
	11/17/2010	-0.653926 J		196

Rank Sum = 2692.5
Rank Mean = 122.386

LMW-3S	11/18/2006	ND<-0.693147		97.5
	6/2/2007	ND<-0.693147	97.5	
	11/15/2007	0	204	
	5/20/2008	ND<0 J	97.5	
	11/20/2008	ND<0 J	97.5	
	6/11/2009	0.0953102		208
	11/16/2009	2.56495		236
	11/16/2009	-0.0304592 J		203
	6/30/2010	0.336472		211
	11/17/2010	0.0953102		209

Rank Sum = 1661
Rank Mean = 166.1

LMW-6	1/16/1998	ND<-0.693147		97.5
	3/16/1999	ND<-0.693147		97.5
	9/23/1999	ND<-0.693147		97.5
	3/14/2000	ND<-0.693147		97.5
	9/23/2003	ND<-0.693147		97.5
	3/10/2004	ND<-0.693147		97.5
	10/12/2004	ND<-0.693147		97.5
	4/1/2005	ND<0 J	97.5	
	10/26/2005	0	205	
	6/19/2006	0	206	
	11/18/2006	ND<-0.693147		97.5
	6/2/2007	ND<-0.693147	97.5	
	11/15/2007	ND<0 J	97.5	
	5/20/2008	0	207	
	11/20/2008	ND<0 J	97.5	
	6/11/2009	-0.0512933 J		202
	11/16/2009	3.71357		244
	11/16/2009	0.0953102		210
	6/30/2010	-0.328504 J		199
	11/17/2010	-0.733969 J		195

Rank Sum = 2838
Rank Mean = 141.9

LMW-9D	11/18/2006	ND<-0.693147		97.5
	6/2/2007	ND<-0.693147	97.5	
	11/15/2007	ND<-0.693147		97.5

	5/20/2008	ND<-0.693147	97.5
	11/20/2008	ND<-0.693147	97.5
	6/11/2009	ND<-2.07944 U	97.5
	11/16/2009	3.21888	241
	11/16/2009	ND<-2.07944 U	97.5
	6/30/2010	ND<-2.07944 U	97.5
	11/17/2010	ND<-2.07944 U	97.5

Rank Sum = 1118.5
Rank Mean = 111.85

MW-5	1/16/1998	ND<-0.693147	97.5
	3/16/1999	ND<-0.693147	97.5
	9/23/1999	ND<-0.693147	97.5
	3/14/2000	ND<-0.693147	97.5
	9/23/2003	ND<-0.693147	97.5
	3/10/2004	ND<-0.693147	97.5
	10/12/2004	ND<-0.693147	97.5
	4/1/2005	ND<-0.693147	97.5
	10/26/2005	ND<-0.693147	97.5
	6/19/2006	ND<-0.693147	97.5
	11/15/2007	1.94591	230
	5/20/2008	ND<-0.693147	97.5
	11/20/2008	ND<-0.693147	97.5

Rank Sum = 1400
Rank Mean = 107.692

LMW-12	3/14/2000	ND<-0.693147	97.5
	9/23/2003	ND<-0.693147	97.5
	3/10/2004	ND<-0.693147	97.5
	10/12/2004	ND<-0.693147	97.5
	4/1/2005	ND<-0.693147	97.5
	10/26/2005	ND<-0.693147	97.5
	6/19/2006	ND<-0.693147	97.5
	6/2/2007	ND<-0.693147	97.5
	11/15/2007	ND<-0.693147	97.5
	5/20/2008	ND<-0.693147	97.5
	11/20/2008	ND<-0.693147	97.5

Rank Sum = 1072.5
Rank Mean = 97.5

LMW-11	3/14/2000	ND<-0.693147	97.5
	9/23/2003	ND<-0.693147	97.5
	3/10/2004	ND<-0.693147	97.5
	10/12/2004	ND<-0.693147	97.5
	4/1/2005	ND<-0.693147	97.5
	10/26/2005	ND<-0.693147	97.5
	6/19/2006	ND<-0.693147	97.5
	6/2/2007	ND<-0.693147	97.5
	11/15/2007	ND<-0.693147	97.5
	5/20/2008	ND<-0.693147	97.5
	11/20/2008	ND<-0.693147	97.5

Rank Sum = 1072.5
Rank Mean = 97.5

LMW-13	3/14/2000	ND<-0.693147	97.5
	9/23/2003	ND<-0.693147	97.5
	3/10/2004	ND<-0.693147	97.5
	10/12/2004	ND<-0.693147	97.5
	4/1/2005	ND<-0.693147	97.5
	10/26/2005	ND<-0.693147	97.5
	6/19/2006	ND<-0.693147	97.5
	6/2/2007	ND<-0.693147	97.5

11/15/2007	ND<-0.693147	97.5
5/20/2008	ND<-0.693147	97.5
11/20/2008	ND<-0.693147	97.5

Rank Sum = 1072.5
Rank Mean = 97.5

Calculation Results:

Kruskal-Wallis H Statistic = 31.872
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 64.0784
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
31.872 > 26.2962 indicating a significant group difference at 5% significance level
64.0784 > 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 163.275

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-8	104.575	-58.7	51.9231
LMW-7	112.088	-51.1868	54.1654
LMW-9	104.025	-59.25	51.9231
LMW-9S	127.393	-35.8821	57.2165
LMW-16	111.05	-52.225	63.5926
LMW-10	174.735	11.4603	54.1654
LMW-14R	97.5	-65.775	72.1072
LMW-15R	97.5	-65.775	61.6354
LMW-3	122.386	-40.8886	50.7293
LMW-3S	166.1	2.825	63.5926
LMW-6	141.9	-21.375	51.9231
LMW-9D	111.85	-51.425	63.5926
MW-5	107.692	-55.5827	58.4967
LMW-12	97.5	-65.775	61.6354
LMW-11	97.5	-65.775	61.6354
LMW-13	97.5	-65.775	61.6354

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 163.275

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-8	104.575	-58.7	61.3292
LMW-7	112.088	-51.1868	63.9777
LMW-9	104.025	-59.25	61.3292
LMW-9S	127.393	-35.8821	67.5814
LMW-16	111.05	-52.225	75.1126
LMW-10	174.735	11.4603	63.9777
LMW-14R	97.5	-65.775	85.1696
LMW-15R	97.5	-65.775	72.8009
LMW-3	122.386	-40.8886	59.9191
LMW-3S	166.1	2.825	75.1126
LMW-6	141.9	-21.375	61.3292
LMW-9D	111.85	-51.425	75.1126
MW-5	107.692	-55.5827	69.0935
LMW-12	97.5	-65.775	72.8009
LMW-11	97.5	-65.775	72.8009
LMW-13	97.5	-65.775	72.8009

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Trichlorofluoromethane

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

Total Percent Non-Detects = 79.5082%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 20
Maximum Background Concentration = 2.77259
Confidence Level = 71.4%
False Positive Rate = 28.6%

Location	Date	Samples	Mean	Significant
LMW-8	11/17/2010	1	-2.07944	FALSE
LMW-7	11/17/2010	1	-2.07944	FALSE
LMW-9	11/17/2010	1	-2.07944	FALSE
LMW-9S	11/17/2010	1	-2.07944	FALSE
LMW-16	11/17/2010	1	-2.07944	FALSE
LMW-10	11/17/2010	1	1.98787	FALSE
LMW-14R	11/17/2010	1	-2.07944	FALSE
LMW-15R	11/17/2010	1	-2.07944	FALSE
LMW-3	11/17/2010	1	-0.653926	FALSE
LMW-3S	11/17/2010	1	0.0953102	FALSE
LMW-6	11/17/2010	1	-0.733969	FALSE
LMW-9D	11/17/2010	1	-2.07944	FALSE
MW-5	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
LMW-13	11/20/2008	1	-0.693147	FALSE

Concentrations (ug/L)

Parameter: Vanadium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 232
Total Non-Detect: 195
Percent Non-Detects: 84.0517%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	19	18 (94.7368%)	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
			11/17/2010	ND<1.4 U	ND<1.4 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-8	19	18 (94.7368%)	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
			11/17/2010	ND<1.4 U	ND<1.4 U
LMW-15R	11	10 (90.9091%)	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
			11/17/2010	ND<1.4 U		ND<1.4 U
LMW-3	21	20 (95.2381%)	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
			11/17/2010	1.8 J	1.8 J	
LMW-3S	9	6 (66.6667%)	11/18/2006	ND<20	ND<20	
			6/2/2007	9	9	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	2.1 J	2.1 J	
			11/16/2009	ND<1.4 U		ND<1.4 U
			6/30/2010	ND<1.4 U		ND<1.4 U
			11/17/2010	4.6 J	4.6 J	
LMW-6	19	18 (94.7368%)	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
			11/17/2010	ND<1.4 U		ND<1.4 U

LMW-7	17	9 (52.9412%)	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	
			11/17/2010	ND<1.4 U		ND<1.4 U
LMW-16	9	8 (88.8889%)	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
			11/17/2010	ND<1.4 U		ND<1.4 U
LMW-9	19	12 (63.1579%)	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
			11/17/2010	5	5	
LMW-14R		7	6 (85.7143%)	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
			11/17/2010	ND<1.4 U		ND<1.4 U
LMW-9D	9	1 (11.1111%)	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	
			11/17/2010	2.3 J	2.3 J	
LMW-9S	11	9 (81.8182%)	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
			11/17/2010	6.2	6.2	
LMW-10	16	14 (87.5%)	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
			11/17/2010	ND<1.4 U		ND<1.4 U
MW-5	13	13 (100%)	1/16/1998	ND<20	ND<20	
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
LMW-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

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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.7	-2.65209	7.03356	-1.85646
2	0.7	-2.40892	12.8365	-3.54271
3	0.7	-2.25713	17.9311	-5.1227
4	0.7	-2.12007	22.4258	-6.60675
5	0.7	-2.03352	26.561	-8.03021
6	0.7	-1.95996	30.4025	-9.40218
7	0.7	-1.88079	33.9398	-10.7187
8	0.7	-1.82501	37.2705	-11.9962
9	0.7	-1.77438	40.4189	-13.2383
10	0.7	-1.72793	43.4046	-14.4479
11	0.7	-1.67466	46.2091	-15.6201
12	0.7	-1.63524	48.8831	-16.7648
13	0.7	-1.59819	51.4373	-17.8835
14	0.7	-1.55477	53.8547	-18.9719
15	0.7	-1.52203	56.1712	-20.0373
16	0.7	-1.49085	58.3939	-21.0809
17	0.7	-1.46106	60.5286	-22.1036
18	0.7	-1.42554	62.5608	-23.1015
19	0.7	-1.39838	64.5162	-24.0804
20	0.7	-1.3722	66.3992	-25.0409
21	0.7	-1.34075	68.1968	-25.9794
22	0.7	-1.31652	69.93	-26.901
23	0.7	-1.29303	71.6019	-27.8061
24	0.7	-1.26464	73.2013	-28.6914
25	0.7	-1.24264	74.7454	-29.5612
26	0.7	-1.22123	76.2368	-30.4161
27	0.7	-1.20036	77.6777	-31.2563
28	0.7	-1.17499	79.0583	-32.0788
29	0.7	-1.15522	80.3928	-32.8875
30	0.7	-1.1359	81.6831	-33.6826
31	0.7	-1.11232	82.9203	-34.4612
32	0.7	-1.0939	84.1169	-35.227
33	0.7	-1.07584	85.2744	-35.98
34	0.7	-1.05812	86.394	-36.7207
35	0.7	-1.03643	87.4682	-37.4462
36	0.7	-1.01943	88.5074	-38.1598
37	0.7	-1.00271	89.5128	-38.8617
38	0.7	-0.982202	90.4776	-39.5493
39	1.8	-0.966088	91.4109	-41.2882
40	1.8	-0.950222	92.3138	-42.9986
41	2	-0.93459	93.1873	-44.8678
42	2	-0.915365	94.0252	-46.6985
43	2.1	-0.900227	94.8356	-48.589
44	2.3	-0.885291	95.6193	-50.6252
45	2.3	-0.866894	96.3708	-52.619
46	2.5	-0.852385	97.0974	-54.75
47	2.6	-0.838054	97.7997	-56.9289
48	2.9	-0.820379	98.4727	-59.308
49	3	-0.806422	99.123	-61.7273

50	3	-0.792618	99.7513	-64.1052
51	3	-0.778966	100.358	-66.4421
52	4.6	-0.7621	100.939	-69.9477
53	5	-0.748762	101.5	-73.6915
54	5	-0.735557	102.041	-77.3693
55	5	-0.719228	102.558	-80.9655
56	5	-0.706302	103.057	-84.497
57	5	-0.693493	103.538	-87.9644
58	6.2	-0.680797	104.001	-92.1854
59	7	-0.665079	104.443	-96.8409
60	7	-0.652622	104.869	-101.409
61	7	-0.640266	105.279	-105.891
62	7.5	-0.624956	105.67	-110.578
63	8	-0.612813	106.045	-115.481
64	8	-0.60076	106.406	-120.287
65	8	-0.588793	106.753	-124.997
66	9	-0.573953	107.082	-130.163
67	10	-0.56217	107.398	-135.785
68	10	-0.550465	107.701	-141.289
69	10	-0.53594	107.989	-146.649
70	10	-0.524401	108.264	-151.893
71	10	-0.51293	108.527	-157.022
72	10	-0.498687	108.776	-162.009
73	10	-0.487364	109.013	-166.882
74	10	-0.476105	109.24	-171.643
75	10	-0.464904	109.456	-176.292
76	10	-0.450985	109.659	-180.802
77	10	-0.439913	109.853	-185.201
78	10	-0.428895	110.037	-189.49
79	10	-0.415193	110.209	-193.642
80	10	-0.40429	110.373	-197.685
81	10	-0.393433	110.527	-201.62
82	10	-0.382622	110.674	-205.446
83	10	-0.369171	110.81	-209.138
84	10	-0.358459	110.939	-212.722
85	10	-0.347787	111.059	-216.2
86	10	-0.334503	111.171	-219.545
87	10	-0.323919	111.276	-222.784
88	10	-0.31337	111.374	-225.918
89	10	-0.302855	111.466	-228.946
90	10	-0.28976	111.55	-231.844
91	10	-0.279319	111.628	-234.637
92	10	-0.268908	111.7	-237.326
93	10	-0.255936	111.766	-239.886
94	10	-0.24559	111.826	-242.342
95	10	-0.235269	111.882	-244.694
96	10	-0.222403	111.931	-246.918
97	10	-0.212137	111.976	-249.04
98	10	-0.201894	112.017	-251.059
99	10	-0.191671	112.054	-252.975
100	10	-0.17892	112.086	-254.765
101	10	-0.168741	112.114	-256.452
102	10	-0.158579	112.139	-258.038
103	10	-0.1459	112.161	-259.497
104	10	-0.135774	112.179	-260.854
105	10	-0.125661	112.195	-262.111
106	10	-0.115562	112.208	-263.267
107	10	-0.102953	112.219	-264.296
108	10	-0.0928787	112.227	-265.225
109	10	-0.0828129	112.234	-266.053
110	10	-0.0702426	112.239	-266.756
111	10	-0.0601949	112.243	-267.358

112	10	-0.0501541	112.245	-267.859
113	10	-0.0401167	112.247	-268.26
114	10	-0.0275759	112.248	-268.536
115	10	-0.0175476	112.248	-268.711
116	10	-0.00751925	112.248	-268.787
117	10	0.00751925	112.248	-268.711
118	10	0.0175476	112.248	-268.536
119	10	0.0275759	112.249	-268.26
120	10	0.0401167	112.251	-267.859
121	10	0.0501541	112.253	-267.358
122	10	0.0601949	112.257	-266.756
123	10	0.0702426	112.262	-266.053
124	10	0.0828129	112.269	-265.225
125	10	0.0928787	112.277	-264.296
126	10	0.102953	112.288	-263.267
127	10	0.115562	112.301	-262.111
128	10	0.125661	112.317	-260.854
129	10	0.135774	112.335	-259.497
130	10	0.1459	112.357	-258.038
131	10	0.158579	112.382	-256.452
132	10	0.168741	112.41	-254.765
133	10	0.17892	112.442	-252.975
134	10	0.191671	112.479	-251.059
135	10	0.201894	112.52	-249.04
136	10	0.212137	112.565	-246.918
137	10	0.222403	112.614	-244.694
138	10	0.235269	112.67	-242.342
139	10	0.24559	112.73	-239.886
140	10	0.255936	112.796	-237.326
141	10	0.268908	112.868	-234.637
142	10	0.279319	112.946	-231.844
143	10	0.28976	113.03	-228.946
144	10	0.302855	113.122	-225.918
145	10	0.31337	113.22	-222.784
146	10	0.323919	113.325	-219.545
147	10	0.334503	113.437	-216.2
148	10	0.347787	113.558	-212.722
149	10	0.358459	113.686	-209.138
150	10	0.369171	113.822	-205.446
151	10	0.382622	113.969	-201.62
152	10	0.393433	114.123	-197.685
153	10	0.40429	114.287	-193.642
154	10	0.415193	114.459	-189.49
155	10	0.428895	114.643	-185.201
156	10	0.439913	114.837	-180.802
157	10	0.450985	115.04	-176.292
158	10	0.464904	115.256	-171.643
159	10	0.476105	115.483	-166.882
160	10	0.487364	115.721	-162.009
161	10	0.498687	115.969	-157.022
162	10	0.51293	116.232	-151.893
163	10	0.524401	116.507	-146.649
164	10	0.53594	116.795	-141.289
165	10	0.550465	117.098	-135.785
166	10	0.56217	117.414	-130.163
167	10	0.573953	117.743	-124.423
168	10	0.588793	118.09	-118.535
169	10	0.60076	118.451	-112.528
170	10	0.612813	118.826	-106.4
171	10	0.624956	119.217	-100.15
172	10	0.640266	119.627	-93.7474
173	10	0.652622	120.053	-87.2212

174	10	0.665079		120.495	-80.5704
175	10	0.680797		120.958	-73.7624
176	10	0.693493		121.439	-66.8275
177	10	0.706302		121.938	-59.7645
178	10	0.719228		122.455	-52.5722
179	10	0.735557		122.997	-45.2166
180	10	0.748762		123.557	-37.729
181	10	0.7621	124.138	-30.108	
182	10	0.778966		124.745	-22.3183
183	10	0.792618		125.373	-14.3922
184	10	0.806422		126.023	-6.32795
185	10	0.820379		126.696	1.87584
186	10	0.838054		127.399	10.2564
187	10	0.852385		128.125	18.7802
188	10	0.866894		128.877	27.4492
189	10	0.885291		129.66	36.3021
190	10	0.900227		130.471	45.3043
191	10	0.915365		131.309	54.458
192	10	0.93459	132.182	63.8039	
193	10	0.950222		133.085	73.3061
194	10	0.966088		134.018	82.967
195	10	0.982202		134.983	92.789
196	10	1.00271	135.989	102.816	
197	10	1.01943	137.028	113.01	
198	10	1.03643	138.102	123.375	
199	10	1.05812	139.222	133.956	
200	10	1.07584	140.379	144.714	
201	10	1.0939	141.576	155.653	
202	10	1.11232	142.813	166.777	
203	10	1.1359	144.103	178.135	
204	10	1.15522	145.438	189.688	
205	10	1.17499	146.818	201.438	
206	10	1.20036	148.259	213.441	
207	10	1.22123	149.751	225.653	
208	10	1.24264	151.295	238.08	
209	10	1.26464	152.894	250.726	
210	10	1.29303	154.566	263.657	
211	10	1.31652	156.299	276.822	
212	10	1.34075	158.097	290.229	
213	10	1.3722	159.98	303.951	
214	10	1.39838	161.935	317.935	
215	10	1.42554	163.967	332.191	
216	10	1.46106	166.102	346.801	
217	10	1.49085	168.325	361.71	
218	10	1.52203	170.641	376.93	
219	10	1.55477	173.059	392.478	
220	10	1.59819	175.613	408.46	
221	10	1.63524	178.287	424.812	
222	10	1.67466	181.091	441.559	
223	10	1.72793	184.077	458.838	
224	10	1.77438	187.226	476.582	
225	11	1.82501	190.556	496.657	
226	12	1.88079	194.094	519.226	
227	14	1.95996	197.935	546.666	
228	15	2.03352	202.07	577.169	
229	18	2.12007	206.565	615.33	
230	30	2.25713	211.66	683.044	
231	41	2.40892	217.462	781.81	
232	49	2.65209	224.496	911.762	

Data Set Standard Deviation = 5.33449

Numerator = 831310
Denominator = 1.47573e+006
W Statistic = 0.563321 = 831310 / 1.47573e+006

5% Critical value of 0.976 exceeds 0.563321
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.563321
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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)	
1	-0.356675	-2.65209	7.03356	0.945933	
2	-0.356675	-2.40892	12.8365	1.80514	
3	-0.356675	-2.25713	17.9311	2.6102	
4	-0.356675	-2.12007	22.4258	3.36637	
5	-0.356675	-2.03352	26.561	4.09168	
6	-0.356675	-1.95996	30.4025	4.79075	
7	-0.356675	-1.88079	33.9398	5.46158	
8	-0.356675	-1.82501	37.2705	6.11251	
9	-0.356675	-1.77438	40.4189	6.74539	
10	-0.356675	-1.72793	43.4046	7.3617	
11	-0.356675	-1.67466	46.2091	7.95901	
12	-0.356675	-1.63524	48.8831	8.54226	
13	-0.356675	-1.59819	51.4373	9.11229	
14	-0.356675	-1.55477	53.8547	9.66684	
15	-0.356675	-1.52203	56.1712	10.2097	
16	-0.356675	-1.49085	58.3939	10.7415	
17	-0.356675	-1.46106	60.5286	11.2626	
18	-0.356675	-1.42554	62.5608	11.771	
19	-0.356675	-1.39838	64.5162	12.2698	
20	-0.356675	-1.3722	66.3992	12.7592	
21	-0.356675	-1.34075	68.1968	13.2374	
22	-0.356675	-1.31652	69.93	13.707	
23	-0.356675	-1.29303	71.6019	14.1682	
24	-0.356675	-1.26464	73.2013	14.6193	
25	-0.356675	-1.24264	74.7454	15.0625	
26	-0.356675	-1.22123	76.2368	15.4981	
27	-0.356675	-1.20036	77.6777	15.9262	
28	-0.356675	-1.17499	79.0583	16.3453	
29	-0.356675	-1.15522	80.3928	16.7573	
30	-0.356675	-1.1359	81.6831	17.1625	
31	-0.356675	-1.11232	82.9203	17.5592	
32	-0.356675	-1.0939	84.1169	17.9494	
33	-0.356675	-1.07584	85.2744	18.3331	
34	-0.356675	-1.05812	86.394	18.7105	
35	-0.356675	-1.03643	87.4682	19.0802	
36	-0.356675	-1.01943	88.5074	19.4438	
37	-0.356675	-1.00271	89.5128	19.8014	
38	-0.356675	-0.982202		90.4776	20.1518
39	0.587787	-0.966088		91.4109	19.5839
40	0.587787	-0.950222		92.3138	19.0254
41	0.693147	-0.93459	93.1873	18.3776	
42	0.693147	-0.915365		94.0252	17.7431
43	0.741937	-0.900227		94.8356	17.0752
44	0.832909	-0.885291		95.6193	16.3378
45	0.832909	-0.866894		96.3708	15.6158
46	0.916291	-0.852385		97.0974	14.8347
47	0.955511	-0.838054		97.7997	14.034
48	1.06471	-0.820379	98.4727	13.1605	
49	1.09861	-0.806422	99.123	12.2746	

50	1.09861	-0.792618	99.7513	11.4038
51	1.09861	-0.778966	100.358	10.548
52	1.52606	-0.7621	100.939	9.38499
53	1.60944	-0.748762	101.5	8.1799
54	1.60944	-0.735557	102.041	6.99607
55	1.60944	-0.719228	102.558	5.83851
56	1.60944	-0.706302	103.057	4.70176
57	1.60944	-0.693493	103.538	3.58563
58	1.82455	-0.680797	104.001	2.34348
59	1.94591	-0.665079	104.443	1.0493
60	1.94591	-0.652622	104.869	-0.220645
61	1.94591	-0.640266	105.279	-1.46655
62	2.0149	-0.624956	105.67	-2.72577
63	2.07944	-0.612813	106.045	-4.00008
64	2.07944	-0.60076	106.406	-5.24933
65	2.07944	-0.588793	106.753	-6.47369
66	2.19722	-0.573953	107.082	-7.73479
67	2.30259	-0.56217	107.398	-9.02923
68	2.30259	-0.550465	107.701	-10.2967
69	2.30259	-0.53594	107.989	-11.5308
70	2.30259	-0.524401	108.264	-12.7383
71	2.30259	-0.51293	108.527	-13.9193
72	2.30259	-0.498687	108.776	-15.0676
73	2.30259	-0.487364	109.013	-16.1898
74	2.30259	-0.476105	109.24	-17.2861
75	2.30259	-0.464904	109.456	-18.3565
76	2.30259	-0.450985	109.659	-19.395
77	2.30259	-0.439913	109.853	-20.4079
78	2.30259	-0.428895	110.037	-21.3955
79	2.30259	-0.415193	110.209	-22.3515
80	2.30259	-0.40429	110.373	-23.2824
81	2.30259	-0.393433	110.527	-24.1883
82	2.30259	-0.382622	110.674	-25.0693
83	2.30259	-0.369171	110.81	-25.9194
84	2.30259	-0.358459	110.939	-26.7448
85	2.30259	-0.347787	111.059	-27.5456
86	2.30259	-0.334503	111.171	-28.3158
87	2.30259	-0.323919	111.276	-29.0616
88	2.30259	-0.31337	111.374	-29.7832
89	2.30259	-0.302855	111.466	-30.4806
90	2.30259	-0.28976	111.55	-31.1478
91	2.30259	-0.279319	111.628	-31.7909
92	2.30259	-0.268908	111.7	-32.4101
93	2.30259	-0.255936	111.766	-32.9994
94	2.30259	-0.24559	111.826	-33.5649
95	2.30259	-0.235269	111.882	-34.1066
96	2.30259	-0.222403	111.931	-34.6187
97	2.30259	-0.212137	111.976	-35.1072
98	2.30259	-0.201894	112.017	-35.5721
99	2.30259	-0.191671	112.054	-36.0134
100	2.30259	-0.17892	112.086	-36.4254
101	2.30259	-0.168741	112.114	-36.8139
102	2.30259	-0.158579	112.139	-37.1791
103	2.30259	-0.1459	112.161	-37.515
104	2.30259	-0.135774	112.179	-37.8277
105	2.30259	-0.125661	112.195	-38.117
106	2.30259	-0.115562	112.208	-38.3831
107	2.30259	-0.102953	112.219	-38.6201
108	2.30259	-0.0928787	112.227	-38.834
109	2.30259	-0.0828129	112.234	-39.0247
110	2.30259	-0.0702426	112.239	-39.1864
111	2.30259	-0.0601949	112.243	-39.325

112	2.30259	-0.0501541	112.245	-39.4405
113	2.30259	-0.0401167	112.247	-39.5329
114	2.30259	-0.0275759	112.248	-39.5964
115	2.30259	-0.0175476	112.248	-39.6368
116	2.30259	-0.00751925	112.248	-39.6541
117	2.30259	0.00751925	112.248	-39.6368
118	2.30259	0.0175476	112.248	-39.5964
119	2.30259	0.0275759	112.249	-39.5329
120	2.30259	0.0401167	112.251	-39.4405
121	2.30259	0.0501541	112.253	-39.325
122	2.30259	0.0601949	112.257	-39.1864
123	2.30259	0.0702426	112.262	-39.0247
124	2.30259	0.0828129	112.269	-38.834
125	2.30259	0.0928787	112.277	-38.6201
126	2.30259	0.102953	112.288	-38.3831
127	2.30259	0.115562	112.301	-38.117
128	2.30259	0.125661	112.317	-37.8277
129	2.30259	0.135774	112.335	-37.515
130	2.30259	0.1459	112.357	-37.1791
131	2.30259	0.158579	112.382	-36.8139
132	2.30259	0.168741	112.41	-36.4254
133	2.30259	0.17892	112.442	-36.0134
134	2.30259	0.191671	112.479	-35.5721
135	2.30259	0.201894	112.52	-35.1072
136	2.30259	0.212137	112.565	-34.6187
137	2.30259	0.222403	112.614	-34.1066
138	2.30259	0.235269	112.67	-33.5649
139	2.30259	0.24559	112.73	-32.9994
140	2.30259	0.255936	112.796	-32.4101
141	2.30259	0.268908	112.868	-31.7909
142	2.30259	0.279319	112.946	-31.1478
143	2.30259	0.28976	113.03	-30.4806
144	2.30259	0.302855	113.122	-29.7832
145	2.30259	0.31337	113.22	-29.0616
146	2.30259	0.323919	113.325	-28.3158
147	2.30259	0.334503	113.437	-27.5456
148	2.30259	0.347787	113.558	-26.7448
149	2.30259	0.358459	113.686	-25.9194
150	2.30259	0.369171	113.822	-25.0693
151	2.30259	0.382622	113.969	-24.1883
152	2.30259	0.393433	114.123	-23.2824
153	2.30259	0.40429	114.287	-22.3515
154	2.30259	0.415193	114.459	-21.3955
155	2.30259	0.428895	114.643	-20.4079
156	2.30259	0.439913	114.837	-19.395
157	2.30259	0.450985	115.04	-18.3565
158	2.30259	0.464904	115.256	-17.2861
159	2.30259	0.476105	115.483	-16.1898
160	2.30259	0.487364	115.721	-15.0676
161	2.30259	0.498687	115.969	-13.9193
162	2.30259	0.51293	116.232	-12.7383
163	2.30259	0.524401	116.507	-11.5308
164	2.30259	0.53594	116.795	-10.2967
165	2.30259	0.550465	117.098	-9.02923
166	2.30259	0.56217	117.414	-7.73479
167	2.30259	0.573953	117.743	-6.41321
168	2.30259	0.588793	118.09	-5.05747
169	2.30259	0.60076	118.451	-3.67417
170	2.30259	0.612813	118.826	-2.26311
171	2.30259	0.624956	119.217	-0.824099
172	2.30259	0.640266	119.627	0.650168
173	2.30259	0.652622	120.053	2.15289

174	2.30259	0.665079		120.495	3.68429
175	2.30259	0.680797		120.958	5.25188
176	2.30259	0.693493		121.439	6.84871
177	2.30259	0.706302		121.938	8.47503
178	2.30259	0.719228		122.455	10.1311
179	2.30259	0.735557		122.997	11.8248
180	2.30259	0.748762		123.557	13.5489
181	2.30259	0.7621	124.138	15.3037	
182	2.30259	0.778966		124.745	17.0973
183	2.30259	0.792618		125.373	18.9224
184	2.30259	0.806422		126.023	20.7792
185	2.30259	0.820379		126.696	22.6682
186	2.30259	0.838054		127.399	24.5979
187	2.30259	0.852385		128.125	26.5606
188	2.30259	0.866894		128.877	28.5567
189	2.30259	0.885291		129.66	30.5952
190	2.30259	0.900227		130.471	32.668
191	2.30259	0.915365		131.309	34.7757
192	2.30259	0.93459	132.182	36.9277	
193	2.30259	0.950222		133.085	39.1157
194	2.30259	0.966088		134.018	41.3402
195	2.30259	0.982202		134.983	43.6018
196	2.30259	1.00271	135.989	45.9106	
197	2.30259	1.01943	137.028	48.2579	
198	2.30259	1.03643	138.102	50.6444	
199	2.30259	1.05812	139.222	53.0808	
200	2.30259	1.07584	140.379	55.558	
201	2.30259	1.0939	141.576	58.0768	
202	2.30259	1.11232	142.813	60.638	
203	2.30259	1.1359	144.103	63.2535	
204	2.30259	1.15522	145.438	65.9135	
205	2.30259	1.17499	146.818	68.619	
206	2.30259	1.20036	148.259	71.3829	
207	2.30259	1.22123	149.751	74.1949	
208	2.30259	1.24264	151.295	77.0562	
209	2.30259	1.26464	152.894	79.9682	
210	2.30259	1.29303	154.566	82.9455	
211	2.30259	1.31652	156.299	85.9769	
212	2.30259	1.34075	158.097	89.0641	
213	2.30259	1.3722	159.98	92.2237	
214	2.30259	1.39838	161.935	95.4436	
215	2.30259	1.42554	163.967	98.726	
216	2.30259	1.46106	166.102	102.09	
217	2.30259	1.49085	168.325	105.523	
218	2.30259	1.52203	170.641	109.028	
219	2.30259	1.55477	173.059	112.608	
220	2.30259	1.59819	175.613	116.288	
221	2.30259	1.63524	178.287	120.053	
222	2.30259	1.67466	181.091	123.909	
223	2.30259	1.72793	184.077	127.888	
224	2.30259	1.77438	187.226	131.973	
225	2.3979	1.82501	190.556	136.349	
226	2.48491	1.88079	194.094	141.023	
227	2.63906	1.95996	197.935	146.196	
228	2.70805	2.03352	202.07	151.702	
229	2.89037	2.12007	206.565	157.83	
230	3.4012	2.25713	211.66	165.507	
231	3.71357	2.40892	217.462	174.453	
232	3.89182	2.65209	224.496	184.774	

Data Set Standard Deviation = 1.02643

Numerator = 34141.5
Denominator = 54635.7
W Statistic = 0.624894 = 34141.5 / 54635.7

5% Critical value of 0.976 exceeds 0.624894
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.624894
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	98
	3/16/1999	ND<2.30259	98
	9/23/1999	ND<2.30259	98
	3/14/2000	ND<2.30259	98
	9/23/2003	ND<2.30259	98
	3/10/2004	ND<2.30259	98
	10/12/2004	ND<2.30259	98
	4/1/2005	ND<2.30259	98
	10/26/2005	ND<2.30259	98
	6/19/2006	ND<2.30259	98
	11/18/2006	ND<2.30259	98
	6/2/2007	2.70805	228
	11/15/2007	ND<2.30259	98
	5/20/2008	ND<2.30259	98
	11/20/2008	ND<2.30259	98
	6/11/2009	ND<-0.356675 U	98
	11/16/2009	ND<-0.356675 U	98
	6/30/2010	ND<-0.356675 U	98
	11/17/2010	ND<-0.356675 U	98

Rank Sum = 1992
Rank Mean = 104.842

Background Rank Sum = 1992
Background Rank Mean = 104.842

Compliance Wells

Well ID	Date	Result	Rank
LMW-8	1/16/1998	ND<2.30259	98
	3/16/1999	ND<2.30259	98
	9/23/1999	1.94591 J	216
	3/14/2000	ND<2.30259	98
	9/23/2003	ND<2.30259	98
	3/10/2004	ND<2.30259	98
	10/12/2004	ND<2.30259	98
	4/1/2005	ND<2.30259	98
	10/26/2005	ND<2.30259	98
	6/19/2006	ND<2.30259	98
	11/18/2006	ND<2.30259	98
	6/2/2007	ND<2.30259	98
	11/15/2007	ND<2.30259	98
	5/20/2008	ND<2.30259	98
	11/20/2008	ND<2.30259	98
	6/11/2009	ND<-0.356675 U	98
	11/16/2009	ND<-0.356675 U	98
	6/30/2010	ND<-0.356675 U	98
	11/17/2010	ND<-0.356675 U	98

Rank Sum = 1980
Rank Mean = 104.211

LMW-15R	11/18/2006	ND<2.30259	98
	6/2/2007	ND<2.30259	98
	11/15/2007	ND<2.30259	98
	11/15/2007	ND<2.30259	98
	5/20/2008	ND<2.30259	98
	5/20/2008	ND<2.30259	98
	11/20/2008	ND<2.30259	98
	11/20/2008	ND<2.30259	98
	6/11/2009	2.0149	219
	6/30/2010	ND<-0.356675 U	98
	11/17/2010	ND<-0.356675 U	98

Rank Sum = 1199
Rank Mean = 109

LMW-3	11/19/1996	ND<2.30259	98
	3/24/1997	ND<2.30259	98
	1/16/1998	ND<2.30259	98
	3/16/1999	ND<2.30259	98
	9/23/1999	ND<2.30259	98
	3/14/2000	ND<2.30259	98
	9/23/2003	ND<2.30259	98
	3/10/2004	ND<2.30259	98
	10/12/2004	ND<2.30259	98
	4/1/2005	ND<2.30259	98
	10/26/2005	ND<2.30259	98
	6/19/2006	ND<2.30259	98
	11/18/2006	ND<2.30259	98
	6/2/2007	ND<2.30259	98
	11/15/2007	ND<2.30259	98
	5/20/2008	ND<2.30259	98
	11/20/2008	ND<2.30259	98
	6/11/2009	ND<-0.356675 U	98
	11/16/2009	ND<-0.356675 U	98
	6/30/2010	ND<-0.356675 U	98
	11/17/2010	0.587787 J	196

Rank Sum = 2156
Rank Mean = 102.667

LMW-3S	11/18/2006	ND<2.30259	98
	6/2/2007	2.19722	223
	11/15/2007	ND<2.30259	98
	5/20/2008	ND<2.30259	98
	11/20/2008	ND<2.30259	98
	6/11/2009	0.741937 J	200
	11/16/2009	ND<-0.356675 U	98
	6/30/2010	ND<-0.356675 U	98
	11/17/2010	1.52606 J	209

Rank Sum = 1220
Rank Mean = 135.556

LMW-6	1/16/1998	ND<2.30259	98
	3/16/1999	ND<2.30259	98
	9/23/1999	ND<2.30259	98
	3/14/2000	ND<2.30259	98
	9/23/2003	ND<2.30259	98
	3/10/2004	ND<2.30259	98
	10/12/2004	ND<2.30259	98
	4/1/2005	ND<2.30259	98
	10/26/2005	ND<2.30259	98

	6/19/2006	ND<2.30259	98
	11/18/2006	ND<2.30259	98
	6/2/2007	1.09861	206
	11/15/2007	ND<2.30259	98
	5/20/2008	ND<2.30259	98
	11/20/2008	ND<2.30259	98
	6/11/2009	ND<-0.356675 U	98
	11/16/2009	ND<-0.356675 U	98
	6/30/2010	ND<-0.356675 U	98
	11/17/2010	ND<-0.356675 U	98

Rank Sum = 1970
Rank Mean = 103.684

LMW-7	1/16/1998	ND<2.30259	98
	3/16/1999	1.94591 J	217
	9/23/1999	3.89182	232
	3/14/2000	ND<2.30259	98
	9/23/2003	ND<2.30259	98
	3/10/2004	ND<2.30259	98
	10/12/2004	ND<2.30259	98
	4/1/2005	2.48491 J	226
	10/26/2005	2.89037 J	229
	6/19/2006	2.07944 J	220
	11/18/2006	1.09861 J	207
	6/2/2007	2.63906	227
	11/15/2007	ND<2.30259	98
	5/20/2008	ND<2.30259	98
	11/20/2008	ND<2.30259	98
	6/11/2009	1.06471 J	205
	11/17/2010	ND<-0.356675 U	98

Rank Sum = 2645
Rank Mean = 155.588

LMW-16	11/18/2006	ND<2.30259	98
	6/2/2007	3.71357	231
	11/15/2007	ND<2.30259	98
	5/20/2008	ND<2.30259	98
	11/20/2008	ND<2.30259	98
	6/11/2009	ND<-0.356675 U	98
	11/16/2009	ND<-0.356675 U	98
	6/30/2010	ND<-0.356675 U	98
	11/17/2010	ND<-0.356675 U	98

Rank Sum = 1015
Rank Mean = 112.778

LMW-9	1/16/1998	ND<2.30259	98
	3/16/1999	ND<2.30259	98
	9/23/1999	ND<2.30259	98
	3/14/2000	ND<2.30259	98
	9/23/2003	ND<2.30259	98
	3/10/2004	ND<2.30259	98
	10/12/2004	ND<2.30259	98
	4/1/2005	2.07944 J	221
	10/26/2005	2.3979 J	225
	6/19/2006	3.4012	230
	11/18/2006	ND<2.30259	98
	6/2/2007	1.94591	218
	11/15/2007	ND<2.30259	98
	5/20/2008	0.693147 J	198
	11/20/2008	ND<2.30259	98
	6/11/2009	0.955511 J	204
	11/16/2009	ND<-0.356675 U	98

	6/30/2010	ND<-0.356675 U	98
	11/17/2010	1.60944	210

Rank Sum = 2682
Rank Mean = 141.158

LMW-14R	6/2/2007	0.693147 J	199
	11/15/2007	ND<2.30259	98
	5/20/2008	ND<2.30259	98
	11/20/2008	ND<2.30259	98
	6/11/2009	ND<-0.356675 U	98
	6/30/2010	ND<-0.356675 U	98
	11/17/2010	ND<-0.356675 U	98

Rank Sum = 787
Rank Mean = 112.429

LMW-9D	11/18/2006	2.30259 J	224
	6/2/2007	1.60944	211
	11/15/2007	ND<2.30259	98
	5/20/2008	1.60944 J	212
	11/20/2008	1.60944 J	213
	6/11/2009	0.916291 J	203
	11/16/2009	0.832909 J	201
	6/30/2010	0.587787 J	197
	11/17/2010	0.832909 J	202

Rank Sum = 1761
Rank Mean = 195.667

LMW-9S	11/18/2006	ND<2.30259	98
	6/2/2007	1.60944	214
	11/15/2007	ND<2.30259	98
	5/20/2008	ND<2.30259	98
	11/20/2008	ND<2.30259	98
	6/11/2009	ND<-0.356675 U	98
	11/16/2009	ND<-0.356675 U	98
	11/16/2009	ND<-0.356675 U	98
	11/16/2009	ND<-0.356675 U	98
	6/30/2010	ND<-0.356675 U	98
	11/17/2010	1.82455	215

Rank Sum = 1311
Rank Mean = 119.182

LMW-10	3/14/2000	ND<2.30259	98
	9/23/2003	ND<2.30259	98
	3/10/2004	ND<2.30259	98
	10/12/2004	ND<2.30259	98
	4/1/2005	ND<2.30259	98
	10/26/2005	ND<2.30259	98
	6/19/2006	2.07944 J	222
	11/18/2006	ND<2.30259	98
	6/2/2007	1.09861 J	208
	11/15/2007	ND<2.30259	98
	5/20/2008	ND<2.30259	98
	11/20/2008	ND<2.30259	98
	6/11/2009	ND<-0.356675 U	98
	11/16/2009	ND<-0.356675 U	98
	6/30/2010	ND<-0.356675 U	98
	11/17/2010	ND<-0.356675 U	98

Rank Sum = 1802
Rank Mean = 112.625

MW-5	1/16/1998	ND<2.30259	98
	3/16/1999	ND<2.30259	98

	9/23/1999	ND<2.30259	98
	3/14/2000	ND<2.30259	98
	9/23/2003	ND<2.30259	98
	3/10/2004	ND<2.30259	98
	10/12/2004	ND<2.30259	98
	4/1/2005	ND<2.30259	98
	10/26/2005	ND<2.30259	98
	6/19/2006	ND<2.30259	98
	11/15/2007	ND<2.30259	98
	5/20/2008	ND<2.30259	98
	11/20/2008	ND<2.30259	98

Rank Sum = 1274
Rank Mean = 98

LMW-11	3/14/2000	ND<2.30259	98
	9/23/2003	ND<2.30259	98
	3/10/2004	ND<2.30259	98
	10/12/2004	ND<2.30259	98
	4/1/2005	ND<2.30259	98
	10/26/2005	ND<2.30259	98
	6/19/2006	ND<2.30259	98
	6/2/2007	ND<2.30259	98
	11/15/2007	ND<2.30259	98
	5/20/2008	ND<2.30259	98
	11/20/2008	ND<2.30259	98

Rank Sum = 1078
Rank Mean = 98

LMW-13	3/14/2000	ND<2.30259	98
	9/23/2003	ND<2.30259	98
	3/10/2004	ND<2.30259	98
	10/12/2004	ND<2.30259	98
	4/1/2005	ND<2.30259	98
	10/26/2005	ND<2.30259	98
	6/19/2006	ND<2.30259	98
	6/2/2007	ND<2.30259	98
	11/15/2007	ND<2.30259	98
	5/20/2008	ND<2.30259	98
	11/20/2008	ND<2.30259	98

Rank Sum = 1078
Rank Mean = 98

LMW-12	3/14/2000	ND<2.30259	98
	9/23/2003	ND<2.30259	98
	3/10/2004	ND<2.30259	98
	10/12/2004	ND<2.30259	98
	4/1/2005	ND<2.30259	98
	10/26/2005	ND<2.30259	98
	6/19/2006	ND<2.30259	98
	6/2/2007	ND<2.30259	98
	11/15/2007	ND<2.30259	98
	5/20/2008	ND<2.30259	98
	11/20/2008	ND<2.30259	98

Rank Sum = 1078
Rank Mean = 98

Calculation Results:

Kruskal-Wallis H Statistic = 28.1295
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 69.2495
95% Confidence comparison value is 26.2962 at 16 degrees of freedom

28.1295 > 26.2962 indicating a significant group difference at 5% significance level
69.2495 > 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 104.842

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-8	104.211	-0.631579	50.6574
LMW-15R	109	4.15789	59.1551
LMW-3	102.667	-2.17544	49.4366
LMW-3S	135.556	30.7135	63.1809
LMW-6	103.684	-1.15789	50.6574
LMW-7	155.588	50.7461	52.1261
LMW-16	112.778	7.93567	63.1809
LMW-9	141.158	36.3158	50.6574
LMW-14R	112.429	7.58647	69.0344
LMW-9D	195.667	90.8246	63.1809
LMW-9S	119.182	14.3397	59.1551
LMW-10	112.625	7.78289	52.9788
MW-5	98	-6.8421	56.1994
LMW-11	98	-6.8421	59.1551
LMW-13	98	-6.8421	59.1551
LMW-12	98	-6.8421	59.1551

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 104.842

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-8	104.211	-0.631579	59.8342
LMW-15R	109	4.15789	69.8712
LMW-3	102.667	-2.17544	58.3922
LMW-3S	135.556	30.7135	74.6263
LMW-6	103.684	-1.15789	59.8342
LMW-7	155.588	50.7461	61.5688
LMW-16	112.778	7.93567	74.6263
LMW-9	141.158	36.3158	59.8342
LMW-14R	112.429	7.58647	81.5402
LMW-9D	195.667	90.8246	74.6263
LMW-9S	119.182	14.3397	69.8712
LMW-10	112.625	7.78289	62.5761
MW-5	98	-6.8421	66.38
LMW-11	98	-6.8421	69.8712
LMW-13	98	-6.8421	69.8712
LMW-12	98	-6.8421	69.8712

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	
0.832909 J		2.30259 J	-1.469680	7	
ND<2.30259		1.60944	0.693147	1	7
1.60944 J		1.60944	0 1	7	
1.60944 J		1.60944	0 1	7	
0.916291 J		1.60944	-0.693147	1	8
0.832909 J		1.60944	-0.776529	1	9
0.587787 J		1.60944	-1.021651	10	
0.832909 J		1.60944	-0.776529	1	11
1.60944 J		ND<2.30259	-0.693147	1	12
1.60944 J		ND<2.30259	-0.693147	1	13
0.916291 J		ND<2.30259	-1.386291	14	
0.832909 J		ND<2.30259	-1.469681	15	
0.587787 J		ND<2.30259	-1.7148 1	16	
0.832909 J		ND<2.30259	-1.469681	17	
1.60944 J		1.60944 J	0 1	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		1.60944 J	-0.776529	1	21
0.916291 J		1.60944 J	-0.693147	1	22
0.832909 J		1.60944 J	-0.776529	1	23
0.587787 J		1.60944 J	-1.021651	24	
0.832909 J		1.60944 J	-0.776529	1	25
0.832909 J		0.916291 J	-0.0833816	1	26
0.587787 J		0.916291 J	-0.328504	1	27
0.832909 J		0.916291 J	-0.0833816	1	28
0.587787 J		0.832909 J	-0.245122	1	29
0.832909 J		0.832909 J	0 1	29	
0.832909 J		0.587787 J	0.245122	2	29

S Statistic = 2 - 29 = -27
Comparing at 1.0 - (0.05 / 2) = 97.5% confidence level (two-tailed)

Failed to calculate probability for S = -27
Table out of range

Concentrations (ug/L)

Parameter: Zinc

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 220
Total Non-Detect: 139
Percent Non-Detects: 63.1818%
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<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
			11/17/2010	7.3 J	7.3 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-15R		11	6 (54.5455%)	11/18/2006	14 J	14 J
			6/2/2007	ND<60	ND<60
			11/15/2007	ND<60	ND<60
			11/15/2007	ND<60	ND<60
			5/20/2008	39 J	39 J
			5/20/2008	ND<60	ND<60
			11/20/2008	ND<60	ND<60
			11/20/2008	ND<60	ND<60
			6/11/2009	6.5 J	6.5 J
			6/30/2010	6.6 J	6.6 J
			11/17/2010	8.3 J	8.3 J
LMW-7	17	7 (41.1765%)	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
			11/17/2010		9.5 J	9.5 J
LMW-14R	7	2 (28.5714%)	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
			11/17/2010		4.5 J	4.5 J
LMW-3	20	13 (65%)	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
			11/17/2010		11	11
LMW-3S	8	1 (12.5%)	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
			11/17/2010		11	11
LMW-6	18	8 (44.4444%)	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

			11/17/2010	8.6 J	8.6 J	
LMW-9S	8	4 (50%)	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	
			11/17/2010	3.6 J	3.6 J	
LMW-10	15	12 (80%)	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	
			11/17/2010	5.3 J	5.3 J	
LMW-16	8	3 (37.5%)	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	
			11/17/2010	5.4 J	5.4 J	
LMW-9	18	12 (66.6667%)	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	
			11/17/2010	4.5 J	4.5 J	
LMW-8	18	13 (72.2222%)	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
			11/17/2010		3.2 J	3.2 J
LMW-9D8		3 (37.5%)	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
			11/17/2010		5.1 J	5.1 J
LMW-13	11	11 (100%)	3/14/2000		ND<60	ND<60
			9/23/2003		ND<60	ND<60
			3/10/2004		ND<60	ND<60
			10/12/2004		ND<60	ND<60
			4/1/2005	ND<60	ND<60	
			10/26/2005		ND<60	ND<60
			6/19/2006		ND<60	ND<60
			6/2/2007	ND<60	ND<60	
			11/15/2007		ND<60	ND<60
			5/20/2008		ND<60	ND<60
			11/20/2008		ND<60	ND<60
LMW-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

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 = 220

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	-2.22621	17.5857	-9.41708
4	3.2	-2.09693	21.9828	-16.1273
5	3.5	-2.01409	26.0394	-23.1766
6	3.5	-1.92684	29.7521	-29.9205
7	3.6	-1.86629	33.2351	-36.6392
8	3.6	-1.79912	36.472	-43.116
9	4.4	-1.75069	39.5369	-50.819
10	4.5	-1.6954	42.4112	-58.4483
11	4.5	-1.65463	45.149	-65.8941
12	4.5	-1.60725	47.7323	-73.1267
13	4.9	-1.57179	50.2028	-80.8285
14	5	-1.53007	52.5439	-88.4788
15	5.1	-1.49852	54.7894	-96.1213
16	5.2	-1.46106	56.9241	-103.719
17	5.3	-1.4325	58.9762	-111.311
18	5.4	-1.39838	60.9316	-118.862
19	5.6	-1.3722	62.8146	-126.547
20	6	-1.34075	64.6122	-134.591
21	6.3	-1.31058	66.3298	-142.848
22	6.5	-1.28727	67.9869	-151.215
23	6.6	-1.25908	69.5722	-159.525
24	6.7	-1.23724	71.1029	-167.814
25	6.9	-1.21073	72.5688	-176.169
26	7	-1.19012	73.9852	-184.499
27	7	-1.16505	75.3425	-192.655
28	7	-1.1455	76.6547	-200.673
29	7.3	-1.12168	77.9129	-208.861
30	7.3	-1.10306	79.1296	-216.914
31	7.9	-1.08032	80.2967	-225.448
32	8.2	-1.06252	81.4257	-234.161
33	8.2	-1.04073	82.5088	-242.695
34	8.3	-1.02365	83.5566	-251.191
35	8.5	-1.00271	84.5621	-259.714
36	8.6	-0.986272	85.5348	-268.196
37	9.5	-0.966088	86.4681	-277.374
38	10	-0.950222	87.3711	-286.876
39	10	-0.930718	88.2373	-296.184
40	10	-0.915365	89.0752	-305.337
41	11	-0.896473	89.8788	-315.198
42	11	-0.877897	90.6496	-324.855
43	11	-0.863249	91.3947	-334.351
44	11	-0.845198	92.1091	-343.648
45	12	-0.830953	92.7996	-353.62
46	14	-0.813379	93.4612	-365.007
47	14	-0.7995	94.1004	-376.2
48	15	-0.782366	94.7125	-387.935
49	15	-0.768821	95.3036	-399.468

50	15	-0.752084	95.8692	-410.749
51	15	-0.738846	96.4151	-421.832
52	16	-0.722479	96.9371	-433.391
53	16	-0.709522	97.4405	-444.744
54	17	-0.693493	97.9214	-456.533
55	17	-0.680797	98.3849	-468.107
56	18	-0.665079	98.8272	-480.078
57	18	-0.652622	99.2531	-491.825
58	18	-0.637192	99.6592	-503.295
59	20	-0.624956	100.05	-515.794
60	20	-0.609791	100.422	-527.99
61	20	-0.594766	100.775	-539.885
62	20	-0.582841	101.115	-551.542
63	21	-0.568052	101.438	-563.471
64	27	-0.556308	101.747	-578.491
65	27	-0.541736	102.041	-593.118
66	29	-0.530162	102.322	-608.493
67	30	-0.515791	102.588	-623.966
68	30	-0.504372	102.842	-639.098
69	30	-0.490189	103.082	-653.803
70	30	-0.478914	103.312	-668.171
71	30	-0.464904	103.528	-682.118
72	30	-0.453763	103.734	-695.731
73	30	-0.439913	103.927	-708.928
74	30	-0.428895	104.111	-721.795
75	30	-0.415193	104.284	-734.251
76	30	-0.40429	104.447	-746.379
77	30	-0.390726	104.6	-758.101
78	30	-0.379927	104.744	-769.499
79	30	-0.36649	104.878	-780.494
80	30	-0.355788	105.005	-791.167
81	30	-0.342466	105.122	-801.441
82	30	-0.329206	105.231	-811.318
83	30	-0.318639	105.332	-820.877
84	30	-0.305481	105.426	-830.041
85	30	-0.294992	105.513	-838.891
86	30	-0.281926	105.592	-847.349
87	30	-0.271509	105.666	-855.494
88	30	-0.258527	105.733	-863.25
89	30	-0.248174	105.794	-870.695
90	30	-0.235269	105.85	-877.753
91	30	-0.224974	105.9	-884.502
92	30	-0.212137	105.945	-890.866
93	30	-0.201894	105.986	-896.923
94	30	-0.189118	106.022	-902.597
95	30	-0.17892	106.054	-907.964
96	30	-0.166199	106.081	-912.95
97	30	-0.156042	106.106	-917.632
98	30	-0.143367	106.126	-921.933
99	30	-0.133244	106.144	-925.93
100	30	-0.12061	106.159	-929.548
101	30	-0.107995	106.17	-932.788
102	30	-0.0979139	106.18	-935.726
103	30	-0.0853288	106.187	-938.285
104	30	-0.0752698	106.193	-940.543
105	30	-0.0627062	106.197	-942.425
106	30	-0.0526632	106.199	-944.005
107	30	-0.0401167	106.201	-945.208
108	30	-0.0300838	106.202	-946.111
109	30	-0.0175476	106.202	-946.637
110	30	-0.00751925	106.202	-946.863
111	30	0.00751925	106.202	-946.637

112	30	0.0175476	106.203	-946.111
113	30	0.0300838	106.204	-945.208
114	30	0.0401167	106.205	-944.005
115	30	0.0526632	106.208	-942.425
116	30	0.0627062	106.212	-940.543
117	30	0.0752698	106.218	-938.285
118	30	0.0853288	106.225	-935.726
119	30	0.0979139	106.234	-932.788
120	30	0.107995	106.246	-929.548
121	30	0.12061	106.261	-925.93
122	30	0.133244	106.278	-921.933
123	30	0.143367	106.299	-917.632
124	30	0.156042	106.323	-912.95
125	30	0.166199	106.351	-907.964
126	30	0.17892	106.383	-902.597
127	30	0.189118	106.419	-896.923
128	30	0.201894	106.459	-890.866
129	30	0.212137	106.504	-884.502
130	30	0.224974	106.555	-877.753
131	30	0.235269	106.61	-870.695
132	30	0.248174	106.672	-863.25
133	30	0.258527	106.739	-855.494
134	30	0.271509	106.813	-847.349
135	30	0.281926	106.892	-838.891
136	30	0.294992	106.979	-830.041
137	30	0.305481	107.072	-820.877
138	30	0.318639	107.174	-811.318
139	30	0.329206	107.282	-801.441
140	30	0.342466	107.4	-791.167
141	30	0.355788	107.526	-780.494
142	30	0.36649	107.661	-769.499
143	30	0.379927	107.805	-758.101
144	30	0.390726	107.958	-746.379
145	30	0.40429	108.121	-734.251
146	30	0.415193	108.293	-721.795
147	30	0.428895	108.477	-708.928
148	30	0.439913	108.671	-695.731
149	30	0.453763	108.877	-682.118
150	30	0.464904	109.093	-668.171
151	30	0.478914	109.322	-653.803
152	30	0.490189	109.563	-639.098
153	30	0.504372	109.817	-623.966
154	30	0.515791	110.083	-608.493
155	30	0.530162	110.364	-592.588
156	30	0.541736	110.657	-576.336
157	30	0.556308	110.967	-559.647
158	30	0.568052	111.29	-542.605
159	30	0.582841	111.629	-525.12
160	30	0.594766	111.983	-507.277
161	30	0.609791	112.355	-488.983
162	30	0.624956	112.746	-470.234
163	30	0.637192	113.152	-451.119
164	30	0.652622	113.577	-431.54
165	30	0.665079	114.02	-411.588
166	30	0.680797	114.483	-391.164
167	30	0.693493	114.964	-370.359
168	30	0.709522	115.468	-349.073
169	30	0.722479	115.99	-327.399
170	30	0.738846	116.535	-305.233
171	30	0.752084	117.101	-282.671
172	30	0.768821	117.692	-259.606
173	30	0.782366	118.304	-236.135

174	30	0.7995	118.943	-212.15	
175	30	0.813379		119.605	-187.749
176	30	0.830953		120.296	-162.82
177	30	0.845198		121.01	-137.464
178	30	0.863249		121.755	-111.567
179	30	0.877897		122.526	-85.2301
180	30	0.896473		123.329	-58.3359
181	30	0.915365		124.167	-30.8749
182	30	0.930718		125.034	-2.9534
183	30	0.950222		125.937	25.5533
184	30	0.966088		126.87	54.5359
185	30	0.986272		127.843	84.1241
186	30	1.00271	128.848	114.205	
187	30	1.02365	129.896	144.915	
188	30	1.04073	130.979	176.137	
189	30	1.06252	132.108	208.013	
190	30	1.08032	133.275	240.422	
191	30	1.10306	134.492	273.514	
192	30	1.12168	135.75	307.164	
193	30	1.1455	137.062	341.529	
194	30	1.16505	138.419	376.481	
195	30	1.19012	139.836	412.184	
196	30	1.21073	141.302	448.506	
197	30	1.23724	142.832	485.623	
198	30	1.25908	144.418	523.396	
199	30	1.28727	146.075	562.014	
200	30	1.31058	147.792	601.331	
201	30	1.34075	149.59	641.554	
202	30	1.3722	151.473	682.72	
203	30	1.39838	153.428	724.671	
204	31	1.4325	155.481	769.079	
205	32	1.46106	157.615	815.833	
206	36	1.49852	159.861	869.779	
207	39	1.53007	162.202	929.452	
208	40	1.57179	164.672	992.324	
209	40	1.60725	167.256	1056.61	
210	40	1.65463	169.993	1122.8	
211	40	1.6954	172.868	1190.61	
212	47	1.75069	175.933	1272.9	
213	48	1.79912	179.17	1359.25	
214	50	1.86629	182.653	1452.57	
215	51	1.92684	186.365	1550.84	
216	53	2.01409	190.422	1657.58	
217	66	2.09693	194.819	1795.98	
218	69	2.22621	199.775	1949.59	
219	90	2.36561	205.371	2162.5	
220	90	2.65209	212.405	2401.18	

Data Set Standard Deviation = 12.9311
Numerator = 5.76568e+006
Denominator = 7.77819e+006
W Statistic = 0.741262 = 5.76568e+006 / 7.77819e+006

5% Critical value of 0.976 exceeds 0.741262
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.741262
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 = 220

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.262364	-2.65209	7.03356	-0.695813
2	0.262364	-2.36561	12.6297	-1.31647
3	0.262364	-2.22621	17.5857	-1.90054
4	1.16315	-2.09693	21.9828	-4.33959
5	1.25276	-2.01409	26.0394	-6.86277
6	1.25276	-1.92684	29.7521	-9.27664
7	1.28093	-1.86629	33.2351	-11.6672
8	1.28093	-1.79912	36.472	-13.9718
9	1.4816	-1.75069	39.5369	-16.5656
10	1.50408	-1.6954	42.4112	-19.1156
11	1.50408	-1.65463	45.149	-21.6043
12	1.50408	-1.60725	47.7323	-24.0217
13	1.58924	-1.57179	50.2028	-26.5197
14	1.60944	-1.53007	52.5439	-28.9822
15	1.62924	-1.49852	54.7894	-31.4237
16	1.64866	-1.46106	56.9241	-33.8325
17	1.66771	-1.4325	58.9762	-36.2214
18	1.6864	-1.39838	60.9316	-38.5797
19	1.72277	-1.3722	62.8146	-40.9437
20	1.79176	-1.34075	64.6122	-43.346
21	1.84055	-1.31058	66.3298	-45.7582
22	1.8718	-1.28727	67.9869	-48.1677
23	1.88707	-1.25908	69.5722	-50.5436
24	1.90211	-1.23724	71.1029	-52.897
25	1.93152	-1.21073	72.5688	-55.2356
26	1.94591	-1.19012	73.9852	-57.5514
27	1.94591	-1.16505	75.3425	-59.8185
28	1.94591	-1.1455	76.6547	-62.0475
29	1.98787	-1.12168	77.9129	-64.2773
30	1.98787	-1.10306	79.1296	-66.47
31	2.06686	-1.08032	80.2967	-68.7029
32	2.10413	-1.06252	81.4257	-70.9386
33	2.10413	-1.04073	82.5088	-73.1284
34	2.11626	-1.02365	83.5566	-75.2948
35	2.14007	-1.00271	84.5621	-77.4406
36	2.15176	-0.986272	85.5348	-79.5628
37	2.25129	-0.966088	86.4681	-81.7378
38	2.30259	-0.950222	87.3711	-83.9258
39	2.30259	-0.930718	88.2373	-86.0688
40	2.30259	-0.915365	89.0752	-88.1765
41	2.3979	-0.896473	89.8788	-90.3262
42	2.3979	-0.877897	90.6496	-92.4313
43	2.3979	-0.863249	91.3947	-94.5013
44	2.3979	-0.845198	92.1091	-96.528
45	2.48491	-0.830953	92.7996	-98.5928
46	2.63906	-0.813379	93.4612	-100.739
47	2.63906	-0.7995	94.1004	-102.849
48	2.70805	-0.782366	94.7125	-104.968
49	2.70805	-0.768821	95.3036	-107.05

50	2.70805	-0.752084	95.8692	-109.087
51	2.70805	-0.738846	96.4151	-111.087
52	2.77259	-0.722479	96.9371	-113.091
53	2.77259	-0.709522	97.4405	-115.058
54	2.83321	-0.693493	97.9214	-117.023
55	2.83321	-0.680797	98.3849	-118.951
56	2.89037	-0.665079	98.8272	-120.874
57	2.89037	-0.652622	99.2531	-122.76
58	2.89037	-0.637192	99.6592	-124.602
59	2.99573	-0.624956	100.05	-126.474
60	2.99573	-0.609791	100.422	-128.301
61	2.99573	-0.594766	100.775	-130.083
62	2.99573	-0.582841	101.115	-131.829
63	3.04452	-0.568052	101.438	-133.558
64	3.29584	-0.556308	101.747	-135.392
65	3.29584	-0.541736	102.041	-137.177
66	3.3673	-0.530162	102.322	-138.962
67	3.4012	-0.515791	102.588	-140.717
68	3.4012	-0.504372	102.842	-142.432
69	3.4012	-0.490189	103.082	-144.099
70	3.4012	-0.478914	103.312	-145.728
71	3.4012	-0.464904	103.528	-147.309
72	3.4012	-0.453763	103.734	-148.853
73	3.4012	-0.439913	103.927	-150.349
74	3.4012	-0.428895	104.111	-151.808
75	3.4012	-0.415193	104.284	-153.22
76	3.4012	-0.40429	104.447	-154.595
77	3.4012	-0.390726	104.6	-155.924
78	3.4012	-0.379927	104.744	-157.216
79	3.4012	-0.36649	104.878	-158.463
80	3.4012	-0.355788	105.005	-159.673
81	3.4012	-0.342466	105.122	-160.837
82	3.4012	-0.329206	105.231	-161.957
83	3.4012	-0.318639	105.332	-163.041
84	3.4012	-0.305481	105.426	-164.08
85	3.4012	-0.294992	105.513	-165.083
86	3.4012	-0.281926	105.592	-166.042
87	3.4012	-0.271509	105.666	-166.966
88	3.4012	-0.258527	105.733	-167.845
89	3.4012	-0.248174	105.794	-168.689
90	3.4012	-0.235269	105.85	-169.489
91	3.4012	-0.224974	105.9	-170.254
92	3.4012	-0.212137	105.945	-170.976
93	3.4012	-0.201894	105.986	-171.663
94	3.4012	-0.189118	106.022	-172.306
95	3.4012	-0.17892	106.054	-172.914
96	3.4012	-0.166199	106.081	-173.48
97	3.4012	-0.156042	106.106	-174.01
98	3.4012	-0.143367	106.126	-174.498
99	3.4012	-0.133244	106.144	-174.951
100	3.4012	-0.12061	106.159	-175.361
101	3.4012	-0.107995	106.17	-175.729
102	3.4012	-0.0979139	106.18	-176.062
103	3.4012	-0.0853288	106.187	-176.352
104	3.4012	-0.0752698	106.193	-176.608
105	3.4012	-0.0627062	106.197	-176.821
106	3.4012	-0.0526632	106.199	-177
107	3.4012	-0.0401167	106.201	-177.137
108	3.4012	-0.0300838	106.202	-177.239
109	3.4012	-0.0175476	106.202	-177.299
110	3.4012	-0.00751925	106.202	-177.324
111	3.4012	0.00751925	106.202	-177.299

112	3.4012	0.0175476	106.203	-177.239
113	3.4012	0.0300838	106.204	-177.137
114	3.4012	0.0401167	106.205	-177
115	3.4012	0.0526632	106.208	-176.821
116	3.4012	0.0627062	106.212	-176.608
117	3.4012	0.0752698	106.218	-176.352
118	3.4012	0.0853288	106.225	-176.062
119	3.4012	0.0979139	106.234	-175.729
120	3.4012	0.107995	106.246	-175.361
121	3.4012	0.12061	106.261	-174.951
122	3.4012	0.133244	106.278	-174.498
123	3.4012	0.143367	106.299	-174.01
124	3.4012	0.156042	106.323	-173.48
125	3.4012	0.166199	106.351	-172.914
126	3.4012	0.17892	106.383	-172.306
127	3.4012	0.189118	106.419	-171.663
128	3.4012	0.201894	106.459	-170.976
129	3.4012	0.212137	106.504	-170.254
130	3.4012	0.224974	106.555	-169.489
131	3.4012	0.235269	106.61	-168.689
132	3.4012	0.248174	106.672	-167.845
133	3.4012	0.258527	106.739	-166.966
134	3.4012	0.271509	106.813	-166.042
135	3.4012	0.281926	106.892	-165.083
136	3.4012	0.294992	106.979	-164.08
137	3.4012	0.305481	107.072	-163.041
138	3.4012	0.318639	107.174	-161.957
139	3.4012	0.329206	107.282	-160.837
140	3.4012	0.342466	107.4	-159.673
141	3.4012	0.355788	107.526	-158.463
142	3.4012	0.36649	107.661	-157.216
143	3.4012	0.379927	107.805	-155.924
144	3.4012	0.390726	107.958	-154.595
145	3.4012	0.40429	108.121	-153.22
146	3.4012	0.415193	108.293	-151.808
147	3.4012	0.428895	108.477	-150.349
148	3.4012	0.439913	108.671	-148.853
149	3.4012	0.453763	108.877	-147.309
150	3.4012	0.464904	109.093	-145.728
151	3.4012	0.478914	109.322	-144.099
152	3.4012	0.490189	109.563	-142.432
153	3.4012	0.504372	109.817	-140.717
154	3.4012	0.515791	110.083	-138.962
155	3.4012	0.530162	110.364	-137.159
156	3.4012	0.541736	110.657	-135.317
157	3.4012	0.556308	110.967	-133.424
158	3.4012	0.568052	111.29	-131.492
159	3.4012	0.582841	111.629	-129.51
160	3.4012	0.594766	111.983	-127.487
161	3.4012	0.609791	112.355	-125.413
162	3.4012	0.624956	112.746	-123.287
163	3.4012	0.637192	113.152	-121.12
164	3.4012	0.652622	113.577	-118.901
165	3.4012	0.665079	114.02	-116.638
166	3.4012	0.680797	114.483	-114.323
167	3.4012	0.693493	114.964	-111.964
168	3.4012	0.709522	115.468	-109.551
169	3.4012	0.722479	115.99	-107.094
170	3.4012	0.738846	116.535	-104.581
171	3.4012	0.752084	117.101	-102.023
172	3.4012	0.768821	117.692	-99.4079
173	3.4012	0.782366	118.304	-96.7469

174	3.4012	0.7995	118.943	-94.0276
175	3.4012	0.813379	119.605	-91.2612
176	3.4012	0.830953	120.296	-88.4349
177	3.4012	0.845198	121.01	-85.5602
178	3.4012	0.863249	121.755	-82.6242
179	3.4012	0.877897	122.526	-79.6383
180	3.4012	0.896473	123.329	-76.5892
181	3.4012	0.915365	124.167	-73.4758
182	3.4012	0.930718	125.034	-70.3103
183	3.4012	0.950222	125.937	-67.0784
184	3.4012	0.966088	126.87	-63.7925
185	3.4012	0.986272	127.843	-60.438
186	3.4012	1.00271	128.848	-57.0276
187	3.4012	1.02365	129.896	-53.546
188	3.4012	1.04073	130.979	-50.0062
189	3.4012	1.06252	132.108	-46.3924
190	3.4012	1.08032	133.275	-42.718
191	3.4012	1.10306	134.492	-38.9663
192	3.4012	1.12168	135.75	-35.1512
193	3.4012	1.1455	137.062	-31.2552
194	3.4012	1.16505	138.419	-27.2926
195	3.4012	1.19012	139.836	-23.2448
196	3.4012	1.21073	141.302	-19.1268
197	3.4012	1.23724	142.832	-14.9188
198	3.4012	1.25908	144.418	-10.6364
199	3.4012	1.28727	146.075	-6.2581
200	3.4012	1.31058	147.792	-1.80056
201	3.4012	1.34075	149.59	2.75961
202	3.4012	1.3722	151.473	7.42675
203	3.4012	1.39838	153.428	12.1829
204	3.43399	1.4325	155.481	17.1021
205	3.46574	1.46106	157.615	22.1657
206	3.58352	1.49852	159.861	27.5357
207	3.66356	1.53007	162.202	33.1412
208	3.68888	1.57179	164.672	38.9393
209	3.68888	1.60725	167.256	44.8683
210	3.68888	1.65463	169.993	50.972
211	3.68888	1.6954	172.868	57.2261
212	3.85015	1.75069	175.933	63.9665
213	3.8712	1.79912	179.17	70.9313
214	3.91202	1.86629	182.653	78.2322
215	3.93183	1.92684	186.365	85.8082
216	3.97029	2.01409	190.422	93.8048
217	4.18965	2.09693	194.819	102.59
218	4.23411	2.22621	199.775	112.016
219	4.49981	2.36561	205.371	122.661
220	4.49981	2.65209	212.405	134.595

Data Set Standard Deviation = 0.734858
Numerator = 18115.8
Denominator = 25119.8
W Statistic = 0.721176 = 18115.8 / 25119.8

5% Critical value of 0.976 exceeds 0.721176
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.721176
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	214
	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	177
	6/2/2007	3.85015	212
	11/15/2007	ND<3.4012	70
	5/20/2008	2.70805 J	184
	11/20/2008	ND<3.4012	70
	6/11/2009	1.90211 J	160
	6/30/2010	1.93152 J	161
	11/17/2010	1.98787 J	165

Rank Sum = 2043
Rank Mean = 113.5

Background Rank Sum = 2043
Background Rank Mean = 113.5

Compliance Wells

Well ID	Date	Result	Rank
LMW-15R	11/18/2006	2.63906 J	182
	6/2/2007	ND<3.4012	70
	11/15/2007	ND<3.4012	70
	11/15/2007	ND<3.4012	70
	5/20/2008	3.66356 J	207
	5/20/2008	ND<3.4012	70
	11/20/2008	ND<3.4012	70
	11/20/2008	ND<3.4012	70
	6/11/2009	1.8718 J	158
	6/30/2010	1.88707 J	159
	11/17/2010	2.11626 J	170

Rank Sum = 1296
Rank Mean = 117.818

LMW-7	1/16/1998	ND<3.4012	70
	3/16/1999	2.99573 J	195
	9/23/1999	3.68888 J	208
	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	200
	10/26/2005	3.43399	J	204
	6/19/2006	3.68888	J	209
	11/18/2006	3.04452	J	199
	6/2/2007	3.93183		215
	11/15/2007	ND<3.4012		70
	5/20/2008	2.30259	J	174
	11/20/2008	ND<3.4012		70
	6/11/2009	3.3673	B	202
	11/17/2010	2.25129	J	173

Rank Sum = 2469
Rank Mean = 145.235

LMW-14R	6/2/2007	2.70805	J	185
	11/15/2007	ND<3.4012		70
	5/20/2008	2.89037	J	192
	11/20/2008	ND<3.4012		70
	6/11/2009	1.84055	J	157
	6/30/2010	1.58924	J	149
	11/17/2010	1.50408	J	146

Rank Sum = 969
Rank Mean = 138.429

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	196
	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	156
	6/2/2007	ND<3.4012		70
	11/15/2007	4.18965		217
	5/20/2008	2.48491	J	181
	11/20/2008	ND<3.4012		70
	6/11/2009	1.98787	J B	166
	6/30/2010	2.14007	J	171
	11/17/2010	2.3979		178

Rank Sum = 2175
Rank Mean = 108.75

LMW-3S	11/18/2006	2.30259	J	175
	6/2/2007	2.77259	J	188
	11/15/2007	3.8712	J	213
	5/20/2008	2.70805	J	186
	11/20/2008	ND<3.4012		70
	6/11/2009	2.89037	B	193
	6/30/2010	2.63906	Q	183
	11/17/2010	2.3979		179

Rank Sum = 1387
Rank Mean = 173.375

LMW-6	1/16/1998	ND<3.4012		70
	3/16/1999	3.4012	J	203
	9/23/1999	3.97029	J	216

	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	197
	11/18/2006	1.94591	J	162
	6/2/2007	2.83321	J	190
	11/15/2007	3.29584	J	201
	5/20/2008	2.30259	J	176
	11/20/2008	ND<3.4012		70
	6/11/2009	2.10413	J B	168
	6/30/2010	2.3979		180
	11/17/2010	2.15176	J	172

Rank Sum = 2425
Rank Mean = 134.722

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	205
	11/20/2008	ND<3.4012		70
	6/11/2009	1.64866	J	152
	6/30/2010	1.25276	J	141
	11/17/2010	1.28093	J	143

Rank Sum = 921
Rank Mean = 115.125

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	210
	11/20/2008	ND<3.4012		70
	6/11/2009	ND<0.262364	U	70
	6/30/2010	1.28093	J	144
	11/17/2010	1.66771	J	153

Rank Sum = 1347
Rank Mean = 89.8

LMW-16	11/18/2006	ND<3.4012		70
	6/2/2007	2.77259	J	189
	11/15/2007	4.23411		218
	5/20/2008	2.70805	J	187
	11/20/2008	ND<3.4012		70
	6/11/2009	ND<0.262364	U	70
	6/30/2010	2.06686	J	167
	11/17/2010	1.6864	J	154

Rank Sum = 1125
Rank Mean = 140.625

LMW-9	1/16/1998	ND<3.4012		70
	3/16/1999	4.49981		219
	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	198
	11/18/2006	ND<3.4012	70
	6/2/2007	2.83321 J	191
	11/15/2007	ND<3.4012	70
	5/20/2008	1.94591 J	163
	11/20/2008	ND<3.4012	70
	6/11/2009	ND<0.262364 U	70
	6/30/2010	1.4816 J	145
	11/17/2010	1.50408 J	147

Rank Sum = 1903
Rank Mean = 105.722

LMW-8	1/16/1998	ND<3.4012	70
	3/16/1999	4.49981	220
	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	150
	11/20/2008	ND<3.4012	70
	6/11/2009	2.10413 J	169
	6/30/2010	1.50408 J	148
	11/17/2010	1.16315 J	140

Rank Sum = 1737
Rank Mean = 96.5

LMW-9D	11/18/2006	1.94591 J	164
	6/2/2007	ND<3.4012	70
	11/15/2007	ND<3.4012	70
	5/20/2008	2.89037 J	194
	11/20/2008	ND<3.4012	70
	6/11/2009	1.25276 J	142
	6/30/2010	1.72277 J	155
	11/17/2010	1.62924 J	151

Rank Sum = 1016
Rank Mean = 127

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

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	211
	9/23/1999	3.58352 J	206
	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 = 1187
Rank Mean = 91.3077

Calculation Results:

Kruskal-Wallis H Statistic = 36.4943
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 48.8029
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
36.4943 > 26.2962 indicating a significant group difference at 5% significance level
48.8029 > 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 113.5

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-15R	117.818	4.31818	56.6705
LMW-7	145.235	31.7353	50.0799
LMW-14R	138.429	24.9286	65.9592

LMW-3	108.75	-4.75	48.1095
LMW-3S	173.375	59.875	62.921
LMW-6	134.722	21.2222	49.3593
LMW-9S	115.125	1.625	62.921
LMW-10	89.8	-23.7	51.7685
LMW-16	140.625	27.125	62.921
LMW-9	105.722	-7.77778	49.3593
LMW-8	96.5	-17	49.3593
LMW-9D	127	13.5	62.921
LMW-13	70	-43.5	56.6705
LMW-11	70	-43.5	56.6705
LMW-12	70	-43.5	56.6705
MW-5	91.3077	-22.1923	53.8968

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 113.5

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-15R	117.818	4.31818	66.9365
LMW-7	145.235	31.7353	59.1521
LMW-14R	138.429	24.9286	77.9079
LMW-3	108.75	-4.75	56.8247
LMW-3S	173.375	59.875	74.3194
LMW-6	134.722	21.2222	58.3009
LMW-9S	115.125	1.625	74.3194
LMW-10	89.8	-23.7	61.1465
LMW-16	140.625	27.125	74.3194
LMW-9	105.722	-7.77778	58.3009
LMW-8	96.5	-17	58.3009
LMW-9D	127	13.5	74.3194
LMW-13	70	-43.5	66.9365
LMW-11	70	-43.5	66.9365
LMW-12	70	-43.5	66.9365
MW-5	91.3077	-22.1923	63.6604

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Zinc

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

Total Percent Non-Detects = 63.1818%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 18
Maximum Background Concentration = 3.91202
Confidence Level = 69.2%
False Positive Rate = 30.8%

Location	Date	Samples	Mean	Significant
LMW-15R	11/17/2010	1	2.11626	FALSE
LMW-7	11/17/2010	1	2.25129	FALSE
LMW-14R	11/17/2010	1	1.50408	FALSE
LMW-3	11/17/2010	1	2.3979	FALSE
LMW-3S	11/17/2010	1	2.3979	FALSE
LMW-6	11/17/2010	1	2.15176	FALSE
LMW-9S	11/17/2010	1	1.28093	FALSE
LMW-10	11/17/2010	1	1.66771	FALSE
LMW-16	11/17/2010	1	1.6864	FALSE
LMW-9	11/17/2010	1	1.50408	FALSE
LMW-8	11/17/2010	1	1.16315	FALSE
LMW-9D	11/17/2010	1	1.62924	FALSE
LMW-13	11/20/2008	1	3.4012	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