FINAL
JUNE 2011 (N=22) 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

October 2011

FINAL
JUNE 2011 (N=22) GROUNDWATER AND METHANE MONITORING REPORT

FOR

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

FORT BRAGG, NORTH CAROLINA

Prepared by:

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

October 2011

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

FINAL
JUNE 2011 (N=22) 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
100 W. Oglethorpe Avenue
Savannah, GA 31401

OCTOBER 2011

TABLE OF CONTENTS

SECTION **PAGE**

1.0 INTRODUCTION 1

1.1 Project Background 1

1.2 Project Scope 1

2.0 PROJECT HISTORY 3

2.1 Site Description and History 3

2.2 General Site Geology and Hydrology 3

2.3 Previous Investigation and Results 4

3.0 METHODS 5

3.1 Methane Monitoring 5

3.2 Water-Level Gauging 5

3.3 Groundwater Sampling 5

3.4 Investigation Derived Wastes Handling 6

4.0 ANALYTICAL RESULTS AND STATISTICAL ANALYSIS 8

4.1 Analytical Data Summary 8

4.2 Statistical Analysis Results 8

4.3 Methane Monitoring Results 9

CONCLUSIONS AND RECOMMENATIONS 10

5.0 REFERENCES 11

In Order
Following
Page 11

FIGURES

Figure 1 Site Map – Ft. Bragg, NC

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

Figure 3 Methane Monitoring Results

Figure 4 Potentiometric Map

Figure 5 Groundwater Analytical Results

TABLES

Table 1 Methane Monitoring Results

Table 2 Groundwater Elevation Data

Table 3 Field Parameter Measurements

Table 4 Summary of Groundwater Detections

APPENDICES

Appendix A – Groundwater Sampling Logs

Appendix B – Data-Validation Reports

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

Appendix D – Statistical Reports – Electronic Only

LIST OF ACRONYMS

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

FINAL
JUNE 2011 (N=22) GROUNDWATER AND METHANE MONITORING REPORT FOR THE LAMONT ROAD LCID (CLOSED) AND C&D LANDFILLS NCDENR LANDFILL PERMIT #26-08 FORT BRAGG, NORTH CAROLINA

1.0 INTRODUCTION

This is the Report for the June 2011 groundwater and methane monitoring at the Lamont Road Landfills (Figure 1) performed by the United States Army Corps of Engineers (USACE), Savannah District in June 2011. The monitoring is required by the North Carolina Department of Environmental and Natural Resources (NCDENR) Solid Waste Management Division. This was the twenty-second (N=22) 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 12 selected methane monitoring wells and at three additional buildings, evaluating the analytical results, and reporting the results of the investigation. The groundwater sampling and data analyses included obtaining field parameter measurements (i.e. pH, temperature, etc.), measuring water levels at the monitoring well locations, determining groundwater flow directions, validating laboratory analytical data, performing statistical analysis for each detected constituent as required by NC regulations, and determining the concentration changes of chemicals of concern (COCs) with time.

.

2.0 PROJECT HISTORY

2.1 Site Description and History

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

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

2.2 General Site Geology and Hydrology

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

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

2.3 Previous Investigation and Results

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

The previous sampling event, held in November of 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 12 wells and at three additional buildings. The monitoring included measuring levels of methane, carbon dioxide, and oxygen at each location. The results of the monitoring are summarized in Table 1 and are also presented on Figure 3.

3.2 Water-Level Gauging

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

3.3 Groundwater Sampling

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

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

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

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

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

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

3.4 Investigation Derived Wastes Handling

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

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

4.0 ANALYTICAL RESULTS AND STATISTICAL ANALYSIS

4.1 Analytical Data Summary

Groundwater samples collected in June 2011 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 of the methane wells that were sampled were below 1% Methane by volume.

CONCLUSIONS AND RECOMMENATIONS

The annual monitoring program consists of two sampling events conducted six months apart. This was the June 2011 sampling event for groundwater and methane monitoring performed by the USACE, Savannah District. It was the N=22 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.

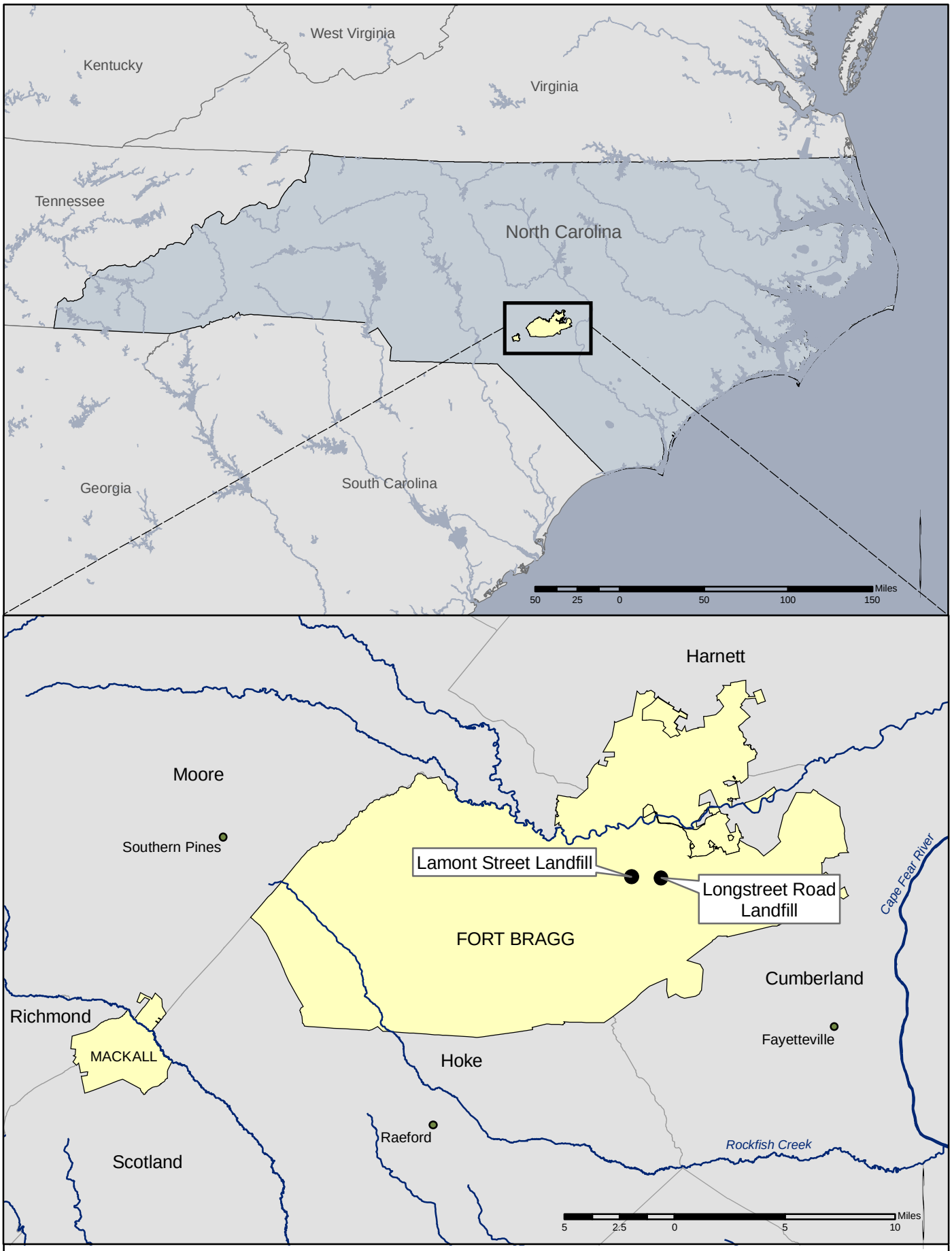
The methane levels were measured at 16 locations around Lamont landfill. All of the methane wells that were sampled were below 1% Methane by volume.

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.

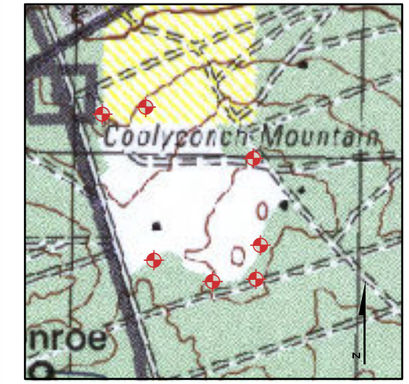
FIGURES



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

Figure 1

Site Map -- Ft. Bragg, NC



METHANE SAMPLE
MONITORING WELL
STREAM
PAVED ROAD
DIRT ROAD
BUILDING

1 inch = 240 feet

0 112.5 225 450'

N

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

LOCATION MAP- LAMONT STREET LANDFILL

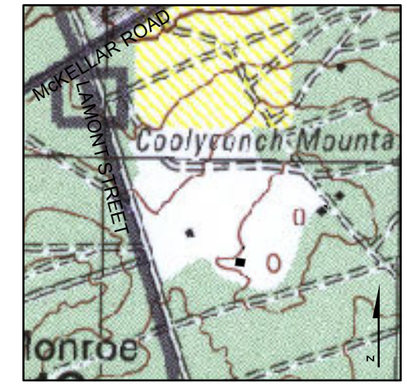
FT. BRAGG, NC

DATE: OCT 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
Scale house	0.0%	20.0%
Office	0.0%	20.1%
O-3533	0.0%	19.9%



METHANE SAMPLE
STREAM
BUILDING
ROAD
TRAIL

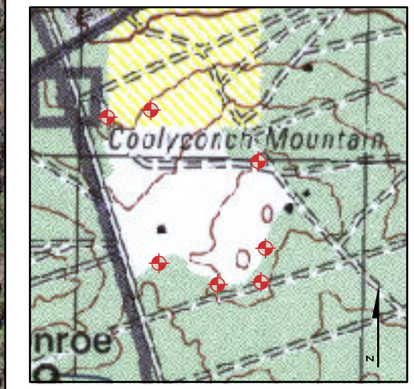
1 inch = 205 feet
0 100 200 400'
N

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

METHANE MONITORING RESULTS

LAMONT STREET LANDFILL
FT. BRAGG, NC

DATE: OCT 2011 | FIGURE 3



Monitoring Well
Groundwater Contour

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

1 inch = 250 feet

0 125 250 500'

N

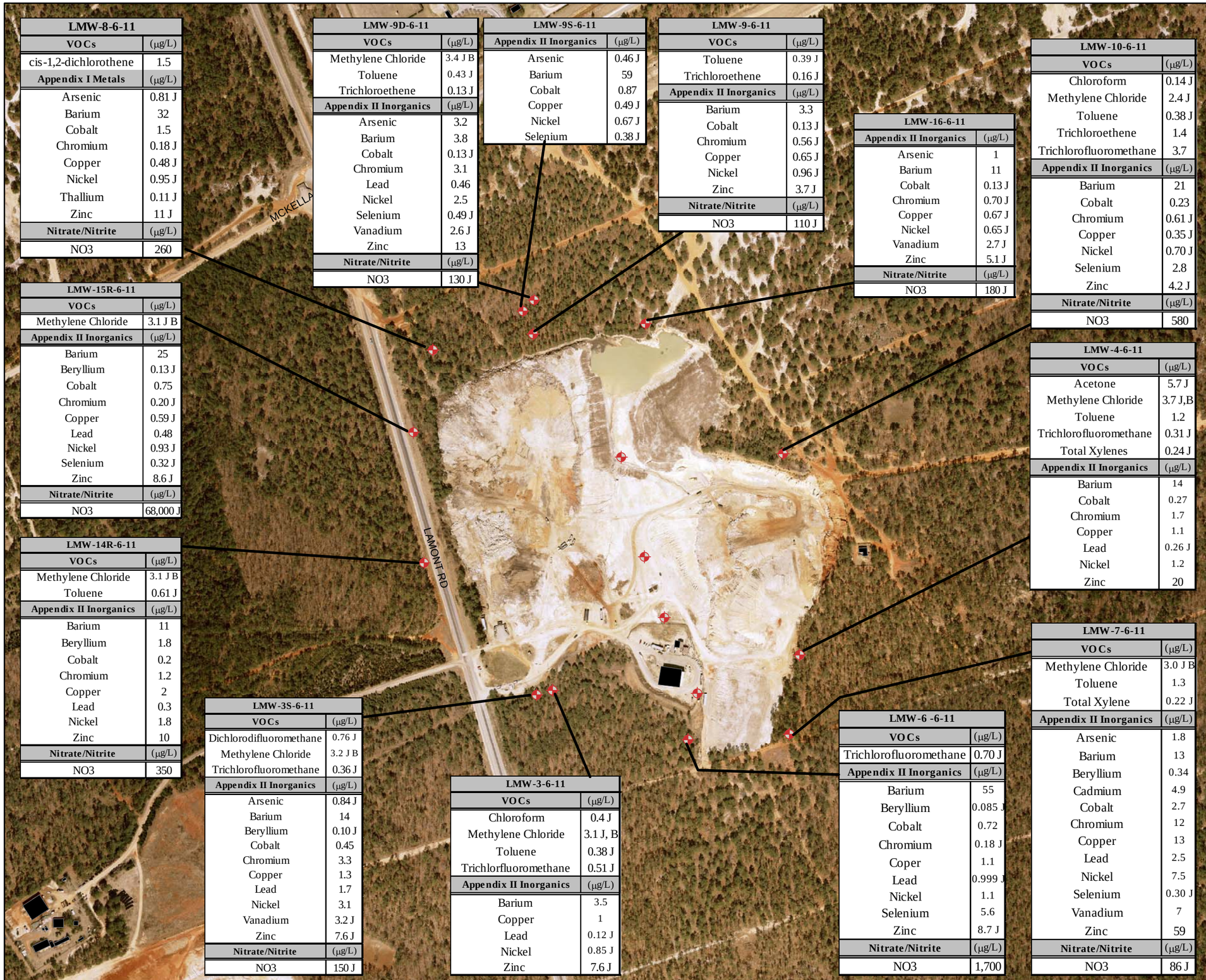
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

LAMONT ST LANDFILL, FORT BRAGG, NC

POTENTIOMETRIC MAP

DATE: OCT 2011

FIGURE 4



LMW-8-6-11	
VOCs	(µg/L)
cis-1,2-dichlorothene	1.5
Appendix I Metals	(µg/L)
Arsenic	0.81 J
Barium	32
Cobalt	1.5
Chromium	0.18 J
Copper	0.48 J
Nickel	0.95 J
Thallium	0.11 J
Zinc	11 J
Nitrate/Nitrite	(µg/L)
NO3	260

LMW-9D-6-11	
VOCs	(µg/L)
Methylene Chloride	3.4 J B
Toluene	0.43 J
Trichloroethene	0.13 J
Appendix II Inorganics	(µg/L)
Arsenic	3.2
Barium	3.8
Cobalt	0.13 J
Chromium	3.1
Lead	0.46
Nickel	2.5
Selenium	0.49 J
Vanadium	2.6 J
Zinc	13
Nitrate/Nitrite	(µg/L)
NO3	130 J

LMW-9S-6-11	
Appendix II Inorganics	(µg/L)
Arsenic	0.46 J
Barium	59
Cobalt	0.87
Copper	0.49 J
Nickel	0.67 J
Selenium	0.38 J

LMW-9-6-11	
VOCs	(µg/L)
Toluene	0.39 J
Trichloroethene	0.16 J
Appendix II Inorganics	(µg/L)
Barium	3.3
Cobalt	0.13 J
Chromium	0.56 J
Copper	0.65 J
Nickel	0.96 J
Zinc	3.7 J
Nitrate/Nitrite	(µg/L)
NO3	110 J

LMW-16-6-11	
Appendix II Inorganics	(µg/L)
Arsenic	1
Barium	11
Cobalt	0.13 J
Chromium	0.70 J
Copper	0.67 J
Nickel	0.65 J
Vanadium	2.7 J
Zinc	5.1 J
Nitrate/Nitrite	(µg/L)
NO3	180 J

LMW-10-6-11	
VOCs	(µg/L)
Chloroform	0.14 J
Methylene Chloride	2.4 J
Toluene	0.38 J
Trichloroethene	1.4
Trichlorofluoromethane	3.7
Appendix II Inorganics	(µg/L)
Barium	21
Cobalt	0.23
Chromium	0.61 J
Copper	0.35 J
Nickel	0.70 J
Selenium	2.8
Zinc	4.2 J
Nitrate/Nitrite	(µg/L)
NO3	580

LMW-15R-6-11	
VOCs	(µg/L)
Methylene Chloride	3.1 J B
Appendix II Inorganics	(µg/L)
Barium	25
Beryllium	0.13 J
Cobalt	0.75
Chromium	0.20 J
Copper	0.59 J
Lead	0.48
Nickel	0.93 J
Selenium	0.32 J
Zinc	8.6 J
Nitrate/Nitrite	(µg/L)
NO3	68,000 J

LMW-4-6-11	
VOCs	(µg/L)
Acetone	5.7 J
Methylene Chloride	3.7 J,B
Toluene	1.2
Trichlorofluoromethane	0.31 J
Total Xylenes	0.24 J
Appendix II Inorganics	(µg/L)
Barium	14
Cobalt	0.27
Chromium	1.7
Copper	1.1
Lead	0.26 J
Nickel	1.2
Zinc	20

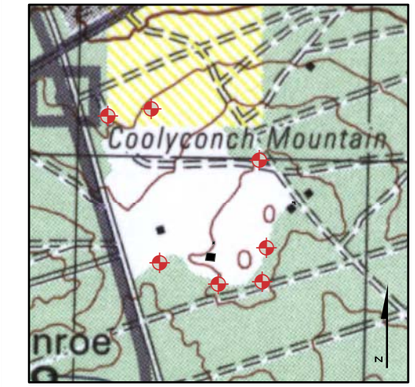
LMW-14R-6-11	
VOCs	(µg/L)
Methylene Chloride	3.1 J B
Toluene	0.61 J
Appendix II Inorganics	(µg/L)
Barium	11
Beryllium	1.8
Cobalt	0.2
Chromium	1.2
Copper	2
Lead	0.3
Nickel	1.8
Zinc	10
Nitrate/Nitrite	(µg/L)
NO3	350

LMW-7-6-11	
VOCs	(µg/L)
Methylene Chloride	3.0 J B
Toluene	1.3
Total Xylene	0.22 J
Appendix II Inorganics	(µg/L)
Arsenic	1.8
Barium	13
Beryllium	0.34
Cadmium	4.9
Cobalt	2.7
Chromium	12
Copper	13
Lead	2.5
Nickel	7.5
Selenium	0.30 J
Vanadium	7
Zinc	59
Nitrate/Nitrite	(µg/L)
NO3	86 J

LMW-3S-6-11	
VOCs	(µg/L)
Dichlorodifluoromethane	0.76 J
Methylene Chloride	3.2 J B
Trichlorofluoromethane	0.36 J
Appendix II Inorganics	(µg/L)
Arsenic	0.84 J
Barium	14
Beryllium	0.10 J
Cobalt	0.45
Chromium	3.3
Copper	1.3
Lead	1.7
Nickel	3.1
Vanadium	3.2 J
Zinc	7.6 J
Nitrate/Nitrite	(µg/L)
NO3	150 J

LMW-3-6-11	
VOCs	(µg/L)
Chloroform	0.4 J
Methylene Chloride	3.1 J, B
Toluene	0.38 J
Trichlorfluoromethane	0.51 J
Appendix II Inorganics	(µg/L)
Barium	3.5
Copper	1
Lead	0.12 J
Nickel	0.85 J
Zinc	7.6 J

LMW-6 -6-11	
VOCs	(µg/L)
Trichlorofluoromethane	0.70 J
Appendix II Inorganics	(µg/L)
Barium	55
Beryllium	0.085 J
Cobalt	0.72
Chromium	0.18 J
Coper	1.1
Lead	0.999 J
Nickel	1.1
Selenium	5.6
Zinc	8.7 J
Nitrate/Nitrite	(µg/L)
NO3	1,700



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

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

LAMONT ST LANDFILL, FORT BRAGG, NC

GROUNDWATER ANALYTICAL RESULTS

DATE: OCT2011 | 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	26-JUNE-2011	17:00	0.0 %	12.3%	5.6%
Gas-MW-2	26-JUNE-2011	17:24	0.0 %	19.5%	0.3%
Gas-MW-3	26-JUNE-2011	16:33	0.0%	11.9%	5.4%
Gas-MW-4	26-JUNE-2011	16:41	0.0%	19.7%	0.4%
Gas-MW-5	26-JUNE-2011	15:45	0.0 %	16.8%	2.3%
Gas-MW-6	26-JUNE-2011	17:49	0.0%	16.4%	2.9%
Gas-MW-7	26-JUNE-2011	15:01	0.0%	14.2%	2.9%
Gas-MW-8	26-JUNE-2011	15:06	0.0%	14.5%	2.7%
Gas-MW-9	26-JUNE-2011	18:00	0.7%	0.5%	20.1%
Gas-MW-10	26-JUNE-2011	NA	NA	NA	NA
Gas-MW-11	26-JUNE-2011	17:10	0.0%	18.3%	1.4%
Gas-MW-12	26-JUNE-2011	17:06	0.0%	6.8%	8.2%
Gas-MW-13	26-JUNE-2011	17:03	0.3%	19.7%	0.1%
Office	26-JUNE-2011	17:33	0.0%	20.1%	0.0%
Scale House	26-JUNE-2011	17:28	0.0%	20.0%	0.0%
O-3533	26-JUNE-2011	17:41	0.0%	19.9%	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) 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	Water Level (ft. btoc) 6/11	Water Elev. (ft. amsl) 6/11
LMW-3	408.32	102.18	306.14	103.2	305.12	102.21	306.11	87.27	321.05	102.13	306.19	102.79	305.56	104.00	304.32
LMW-3s	*	59.19	NA	60.4	NA	59.12	NA	59.61	NA	58.91	NA	59.64	NA	61.26	NA
LMW-4	441.79	75.42	366.37	74.65	367.14	74.74	367.05	75.39	366.4	74.83	366.96	75.33	366.46	75.81	365.98
LMW-6	431.45	80.3	351.15	81.65	349.8	80.15	351.3	80.75	350.7	80.04	351.41	80.93	350.52	82.70	348.75
LMW-7	436.62	125.87	310.75	125.63	310.99	124.78	311.84	128.8	307.82	124.54	312.08	124.78	311.84	125.00	311.62
LMW-8	354.07	48.68	305.39	76.66	277.41	46.85	307.22	304.86	49.21	46.86	307.21	48.95	305.12	51.02	303.05
LMW-9	364.79	82.16	282.63	80	284.79	80.71	284.08	87.27	277.52	80.73	284.06	82.43	282.36	85.00	279.79
LMW-9s	*	52.46	NA	49.01	NA	51.01	NA	53.35	NA	51	NA	52.89	NA	55.05	NA
LMW-9d	*	76.95	NA	76.66	NA	75.41	NA	77.03	NA	75.48	NA	77.29	NA	79.73	NA
LMW-10	428.68	76.81	351.87	76.48	352.2	76.38	352.3	72.11	356.57	NA	NA	76.89	NA	78.84	349.84
LMW-14R	*	50.07	NA	49	NA	48.97	NA	50.06	NA	48.99	NA	50.25	NA	51.53	NA
LMW-15R	*	40.89	NA	37	NA	37.55	NA	40.31	NA	38.19	NA	40.28	NA	41.68	NA
LMW-16	*	86.02	NA	36.48	NA	37.5	NA	37.28	NA	36.61	NA	36	NA	36.80	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-3-6-11	4.48	0.015	21.39	0.91	29.0	180.1
LMW-3s	GW-LMW-3s-6-11	4.67	0.022	20.90	127	7.5	167.8
LMW-4	GW-LMW-4-6-11	4.23	0.023	33.08	63.2	16.9	181.5
LMW-6	GW-LMW-6-6-11	5.26	0.314	21.04	4.48	7.4	184.8
LMW-7	GW-LMW-7-6-11	5.65	0.025	21.40	247	16.8	170.8
LMW-8	GW-LMW-8-6-11	5.87	0.42	19.83	10.0	6.4	3.2
LMW-9	GW-LMW-9-6-11	5.27	0.026	21.6	9.94	63.4	229.1
LMW-9s	GW-LMW-9s-6-11	5.94	0.322	24.38	4.14	2.7	112.8
LMW-9d	GW-LMW-9d-6-11	6.74	0.047	24.1	9.83	67.3	81.2
LMW-10	GW-LMW-10-6-11	4.59	0.044	29.16	9.88	7.5	208.9
LMW-14R	GW-LMW-14R-6-11	4.93	0.014	27.7	3.77	72.3	176.3
LMW-15R	GW-LMW-15R-6-11	5.45	0.040	22.37	7.12	59.0	149.4
LMW-16	GW-LMW-16-6-11	6.36	0.321	25.92	24.7	0.8	57.7

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) | Lamont | | |

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

| COMPOUNDS (µg/L) | Groundwater NC 2L Standard (ug/l) | EPA Drinking water MCL (ug/l) | Lamont |
|---|---|---

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

COMPOUNDS (µg/L)	Groundwater NC 2L Standard (ug/l)	EPA Drinking water MCL (ug/l)	Lamont																																											
			LMW-9D 06/10	LMW-9D 11/10	LMW-9D 6/11	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-9S 6/11	LMW-15 11/06	LMW-16 11/06	GW-LMW-16 06/07	GW-LMW-16 11/07	GW-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	LMW-16 6/11	GW-LMW-16-DUP11/07	GW-LMW-16-DUP11/08	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	LMW-14R 6/11	GW-LMW-14R DUP11/08	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	LMW-15R 6/11
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	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-dichloroethane	700	810*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,3-trichloropropane	0.005	NA	<2	<2	<2	<2	<2	**0.76 J**	<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	<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	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.3 J	<2	<2	<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	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dibromoethane	0.0004	0.05	<2	<2	<2	<2	<2	**0.43 J**	<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	<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	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichloropropane	0.56	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,4-dichlorobenzene	75	75	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-butanone	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
acetone	700	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
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	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
benzene	1	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
carbon disulfide	700	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chlorobenzene	50	100	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloroethane	2800	4.6*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloroform	70	80	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloromethane (methyl chloride)	2.6	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.8	<2	<2	<2	<2	<2
cis-1,2-dichloroethene	70	70	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
dibromochloromethane	0.41	80	<2	<2	<2	<2	<2	0.20 J	<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	<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	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
diisopropyl ether	70	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
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	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
m&p xylene	530#	10000#	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.47 J	<2	<2	<2	<2	<2
methylene chloride (dichloromethane)	4.6	5	<2	<2	3.4 J B	<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	3.1 J B	<2	<2	<2	<2	<2	<2	<2	<2	3.1 J B
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	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-xylene	530#	10000#	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.24 J	<2	<2	<2	<2	<2
sec-butylbenzene	70	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
tetrachloroethene	0.7	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
toluene	1000	1000	<2	<2	0.43 J	<2	<2	<2	<2	0.20 J	<2	<2	<2	<2	<2	<2	0.240J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	0.61 J	<2	<2	<2	<2	0.29 J	<2	<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	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
trichloroethene	2.8	5	<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	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
trichlorofluoromethane	2100	1300*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
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	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
vinyl chloride	0.015	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Appendix I Metals (EPA 6010B/6020A)																																														
Arsenic	10	10	1.8	2	3.2	<2	1.68 J	4.54	<2	<2	2.1	0.47 J	0.57 J	1.2	0.46 J	<2	<2	2.13	<2	<2	9.27	0.56 J	0.59 J	0.5 J	0.54 J	1	<2	11	1.11 J	<2	<2	9.08	0.41 J	<2	<2	<2	<1	NS	<2	<2	<2	**12.7**	2.5	<2	<2	<2	<1
Barium	2000	2000	2.1	2.8	3.8	77.3	80.9	2	75.3	61	3.1	48	38	53	59	37.4	23.1	41.3	35	22.9	23	14	13	8.8	10	11	29	4 J	14.6	12	9.72	133	13	12	13	12	11	NS	38.5	27	24.3	37.6	42	14	36	30	25
Beryllium	NA	4	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA	0.071 J	<0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.20	NA		NA	NA	NA	NA	NA	NA	NA	NA	1.8	NA	NA	NA	NA	NA	0.29	NA	0.17 J	0.13 J	0.13 J
Cadmium	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.50	<1	<1	<1	<1	<1	0.002 J	<1	<1	<1	<1	<0.50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.50	NS	<1	<1	<1	<1	<1	<1	<1	<1	<0.50
Cobalt	NA	NA	<2	0.081 J	0.13 J	1.27	1.04 J	<2	1.13	<4	<4	0.25	0.16 J	0.26	0.87	<2	<2	<2	<2	<2	<4	<4	0.08 J	0.098 J	0.078 J	0.13 J	<2	<4	<2	<2	0.51 J	<4	0.24	0.3	0.17 J	0.21	0.2	NS	<2	<2	0.65 J	<4	0.83	0.26	0.7	0.58	0.75
Chromium	50	100	0.5 J	0.58 J	3.1	<20	5.73	<20	<20	<10	<10	0.44 J	0.58 J	4.4	<1.0	<20	<20	20.7	<20	<20	<10	0.83 J	0.53 J	0.56 J		0.70 J	<20	<10	<20	<20	<20	<10	1.6	0.53 J	0.49 J	0.60 J	1.2	NS	<20	<20	<20	<10	5.5	0.16 J	0.51 J	0.24 J	0.20 J
Copper	1000	1000	0.9 J	0.53 J	<0.50	<20	<20	7	<20	<20	0.69 J	1.7	1.7	1.6	0.49 J	3.66J	<20	7.37 J	6	<20	5 J	0.36 J	0.59 J	<20	0.46 J	0.67 J	6	<20	<20	<20	<20	<20	0.81 J	0.92 J	<20	0.96 J	2	NS	5.33 J	5 J	<20	5.2 J	3.7	0.57 J	<20	2.3	0.59 J
Iron	300	NA	150	<1	<1	<1	<1	<1	<1	<1	<1	<1	360	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	150	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	43 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	110	<1	<1
Lead	15	15	0.23 J	0.44	0.46	<1	2.16	1.19	<1	0.76	0.71	0.21 J	0.11 J	0.55	<0.30	0.559J	0.643J	5.28	2.62	<1	<1	<1	0.099	0.26 J	<1	<0.16 J	4.21	<1	4.42	<1	<1	<1	0.22 J	0.14 J	0.10 J	0.11 J	0.3	NS	<1	<1	<1	1.08	0.89	<1	0.08 J	0.16 J	0.48
Manganese	50	NA	1.5 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	13	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.1 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.3J	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.6 J	<1	<1
Nickel	100	730*	0.53 J	0.60 J	2.5	1.15J	<50	<50	1.51 J	<6	0.55 J	0.97 J	<50	0.44 J	0.67 J	1.80J	1.03J	<50	<50	<50	<6	0.72	0.66	0.97 J	<50	0.65 J	<50	<6	<50	<50	2.39	3.2 J	2.2	1.6 J	0.84 J	1.9	1.8	NS	<50	<50	1.12 J	<6	3	0.8 J	1	0.98 J	0.93 J
Selenium	50	50	<2	<2	0.49 J	4.56	4.53	<2	<2	<4	<4	<2	<2	0.26 J	0.38 J	<2	<2	<2	2.20 J	<2	<4	<4	<2	<2	0.31 J	<0.50	2.50 J	<4	<2	<2	<2	<4	<4	<2	<2	<2	<0.50	NS	<2	<2	<2	<4	0.24 J	<2	<2	<2	0.32 J
Silver	17.5	180	<10	<10	<0.20	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.20	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.20	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.20	NS	<10	<10	<10	<10	<10	<10	<10	<10	<0.10
Thallium	NA	2	<2	0.13 J	<0.20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.20	<2	<2	<2	<2	<2	<2	<2	0.17 J	<2	<2	<0.20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.20
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	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vanadium	NA	260*	1.8 J	2.3 J	2.6 J	<20	5.99	<20	<20	<8	2.5 J	<20	<20	6.2	<5.0	<20	<20	41.9	69	<20	<8	<8	<20	<20	<20	2.7 J	26	<8	2.30 J	<20	<20	<8	<8	<20	<20	<20	<5.0	NS	<20	<20	<20	<8	7.5	<20	<20	<20	<5
Zinc	2100	5000	5.6	5.1 J	13	<60	<60	<60	32.2	<50	3.5 J	15 B	3.5 J	3.6 J	<10	14.0	<60	16.5 J	<60	15.8	<50	<50	9.3 J	7.9 J	5.4 J	5.1 J	<60	<50	15.4 J	<60	18.2	<50	6.3 J	26 B	4.9 J	4.5 J	10	NS	<60	<60	39.3	<50	6.5 J	9.1 J	6.6 J	8.3 J	8.6 J
Other Analyses																																														
Nitrate/Nitrite as N (SM 4500)	10,000	10,000	580 J	97 J	130 J	0.19	1,000	147	<40	132	NA	770 J	600 J	210 J	<250	4.78	0.0520	166	1020	380	33 J	NA	<40	< 40	72	180 J	1010	< 40	326	143	370	960	NA	<40	<40	72	350	2260	1,400	1620	<40	1460	NA	7,300 H	**21000**	1600	68,000 J

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: 6/27/2011 TIME: 1305
SAMPLED BY: Cooper and Hill
WEATHER CONDITIONS: 84°, Sunny

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

PRESERVATIVE: HNO3,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☒ YES ☐ NO

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

3. **WELL EVACUATION DATA**
Well Depth (wd): 96.10 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 82.70 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 2.2 (gallons)
Flow Rate : 500 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 55 (minutes) Purge time: 1210
Amount Purged= 7.3 (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	1220	1230	1240	1250	1255	1300
pH	4.87	5.17	5.17	5.13	5.23	5.26
Sp. Cond	0.282	0.296	0.299	0.301	0.308	0.314
Temp. °C	22.37	22.43	22.40	21.19	20.85	21.04
Turbidity	19.5	15.9	15.4	3.83	5.95	4.48
DO	28.1	14.8	8.4	3.7	7.9	7.4
ORP	185.9	181.5	182.5	189.2	185.7	184.8

5. COMMENTS:
MS/MSD taken; LMW-DUP1-6-11 taken at 1400

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

1. CLIENT:Ft. Bragg, NC
DATE: 6/27/2011 TIME: 1426
SAMPLED BY: Cooper and Hill
WEATHER CONDITIONS: 91°, Sunny

Location: Lamont Landfill	**Sample ID:LMW-9s-6-11**

PRESERVATIVE: HNO3,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☐ YES ☒ NO

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

3. **WELL EVACUATION DATA**
Well Depth (wd): 61.26 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 55.05 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 1.0 (gallons)
Flow Rate : 482 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 40 (minutes) Purge time: 1346
Amount Purged= 5.1 (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	1356	1406	1416	1426		
pH	5.91	5.94	5.93	5.94		
Sp. Cond	0.319	0.321	0.323	0.322		
Temp. °C	23.49	23.41	24.39	24.38		
Turbidity	13.01	8.24	3.12	4.14		
DO	45	3.0	2.8	2.7		
ORP	115.4	114.3	114.3	112.8		

5. COMMENTS:

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

1. CLIENT:Ft. Bragg, NC
DATE: 6/27/2011 TIME: 1525
SAMPLED BY: Cooper and Hill
WEATHER CONDITIONS: 91°, Sunny

Location: Lamont Landfill	**Sample ID:LMW-9D-6-11**

PRESERVATIVE: HNO3,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☐ YES ☒ NO

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

3. **WELL EVACUATION DATA**
Well Depth (wd): 88.59 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 79.73 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 1.5 (gallons)
Flow Rate : 250 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 51 (minutes) Purge time: 1434
Amount Purged= 3.4 (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	1444	1500	1510	1520	1525	
pH	6.97	6.75	6.74	6.74	6.74	
Sp. Cond	0.049	0.049	0.049	0.047	0.047	
Temp. °C	33.04	28.3	24.3	24.1	24.1	
Turbidity	68.9	65.1	43.6	30.3	9.83	
DO	51.0	68.4	68.8	67.9	67.3	
ORP	62.9	77.9	80.8	81.3	81.2	

5. COMMENTS:

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

1. CLIENT:Ft. Bragg, NC
DATE: 6/28/2011 TIME: 0845
SAMPLED BY: Cooper and Hill
WEATHER CONDITIONS: Partly Cloudly

Location: Lamont Landfill	**Sample ID:LMW-9-6-11**

PRESERVATIVE: HNO3,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☐ YES ☒ NO

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

3. **WELL EVACUATION DATA**
Well Depth (wd): 138.19 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 85.00 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 8.7 (gallons)
Flow Rate : 500 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 70 (minutes) Purge time: 1645
Amount Purged= 9.2 (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	1705	1715	1725	0810	0830	0840
pH	5.56	4.95	4.83	5.29	5.28	5.27
Sp. Cond	0.016	0.014	0.014	0.026	0.026	0.026
Temp. °C	25.38	25.43	24.34	21.6	21.6	21.6
Turbidity	20.6	20.8	65.2	16.1	14.6	9.94
DO	84.5	83.8	67.1	622	63.5	63.4
ORP	175.7	199.9	210.5	267.0	267.1	229.1

5. COMMENTS:
Began puging 6-27-2011 at 1645 and resumed 6-28-2011 at 0750

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

1. CLIENT:Ft. Bragg, NC
DATE: 6/28/2011 TIME: 1050
SAMPLED BY: Cooper and Hill
WEATHER CONDITIONS: 81°, Partly Cloudly

Location: Lamont Landfill	**Sample ID:LMW-8-6-11**

PRESERVATIVE: HNO3,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☐ YES ☒ NO

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

3. **WELL EVACUATION DATA**
Well Depth (wd): 63.00 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 51.02 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 2.0 (gallons)
Flow Rate : 400 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 60 (minutes) Purge time: 935
Amount Purged= 6.3 (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	0955	1005	1025	1035	1045	
pH	5.47	5.87	5.90	5.50	5.87	
Sp. Cond	0.488	0.457	0.441	0.433	0.420	
Temp. °C	19.95	19.94	20.20	19.49	19.83	
Turbidity	40.6	18	9.73	4.02	10.0	
DO	15.5	14.0	6.1	3.0	6.4	
ORP	-47.7	-44.2	-7.7	18.0	3.2	

5. COMMENTS:
Purged 5 times volume

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

1. CLIENT:Ft. Bragg, NC
DATE: 6/28/2011 TIME: 1235
SAMPLED BY: Cooper and Hill
WEATHER CONDITIONS: 90°, sunny

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

PRESERVATIVE: HNO3,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☐ YES ☒ NO

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

3. **WELL EVACUATION DATA**
Well Depth (wd): 83.24 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 78.84 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 0.7 (gallons)
Flow Rate : 480 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 60 (minutes) Purge time: 1130
Amount Purged= 7.6 (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	1145	1200	1215	1230		
pH	4.63	4.53	4.54	4.59		
Sp. Cond	0.047	0.045	0.045	0.044		
Temp. °C	28.45	28.91	29.16	29.16		
Turbidity	193	25.9	37.3	9.88		
DO	120	10.7	7.9	7.5		
ORP	194.7	207.2	216.9	208.9		

5. COMMENTS:

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

1. CLIENT:Ft. Bragg, NC
DATE: 6/28/2011 TIME: 1515
SAMPLED BY: Cooper and Hill
WEATHER CONDITIONS: 93°, partly cloudly

Location: Lamont Landfill	**Sample ID:LMW-16-6-11**

PRESERVATIVE: HNO3,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☐ YES ☒ NO

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

3. **WELL EVACUATION DATA**
Well Depth (wd): 43.90 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 36.80 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 1.2 (gallons)
Flow Rate : 250 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 97 (minutes) Purge time: 1333
Amount Purged= 6.4 (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	1355	1415	1430	1445	1500	1510
pH	6.31	6.52	6.32	6.07	5.99	6.36
Sp. Cond	0.321	0.320	0.321	0.320	0.323	0.321
Temp. °C	23.22	23.87	22.61	25.46	28.37	25.92
Turbidity	492	308	18.2	12.5	21.7	24.7
DO	5.6	2.6	1.3	1.9	4.4	0.8
ORP	89.1	62.3	64.9	78.5	75.9	57.7

5. COMMENTS:

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

1. CLIENT:Ft. Bragg, NC
DATE: 6/28/2011 TIME: 1705
SAMPLED BY: Cooper and Hill
WEATHER CONDITIONS: 93°, partly cloudly

Location: Lamont Landfill	**Sample ID:LMW-4-6-11**

PRESERVATIVE: HNO3,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☐ YES ☒ NO

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

3. **WELL EVACUATION DATA**
Well Depth (wd): 83.00 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 75.81 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 1.2 (gallons)
Flow Rate : 120 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 65 (minutes) Purge time: 1600
Amount Purged= 2.1 (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	1610	1625	1645	1700		
pH	4.25	4.27	4.21	4.23		
Sp. Cond	0.023	0.023	0.023	0.023		
Temp. °C	31.71	32.75	33.71	33.08		
Turbidity	26	32	48	63.2		
DO	6.3	5.6	9.9	16.9		
ORP	169.5	167.8	173.8	181.5		

5. COMMENTS:

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

1. CLIENT:Ft. Bragg, NC
DATE: 6/29/2011 TIME: 0800
SAMPLED BY: Cooper and Hill
WEATHER CONDITIONS:

Location: Lamont Landfill	**Sample ID:LMW-7-6-11**

PRESERVATIVE: HNO3,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☐ YES ☒ NO

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

3. **WELL EVACUATION DATA**
Well Depth (wd): 133.00 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 125.00 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 1.3 (gallons)
Flow Rate : 45 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 15 (minutes) Purge time: 1600
Amount Purged= 0.2 (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	0800					
pH	5.65					
Sp. Cond	0.025					
Temp. °C	21.4					
Turbidity	247					
DO	16.8					
ORP	170.8					

5. COMMENTS:
Unable to collect additional field measurement from well

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

1. CLIENT:Ft. Bragg, NC
DATE: 6/29/2011 TIME: 1030
SAMPLED BY: Cooper and Hill
WEATHER CONDITIONS: 73°, partly cloudly

Location: Lamont Landfill	**Sample ID:LMW-3s-6-11**

PRESERVATIVE: HNO3,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☐ YES ☒ NO

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

3. **WELL EVACUATION DATA**
Well Depth (wd): 69.68 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 61.26 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 1.4 (gallons)
Flow Rate : 260 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 37 (minutes) Purge time: 948
Amount Purged= 2.5 (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	0905	0920	0935	0955	1005	1025
pH	5.24	5.12	5.19	5.11	4.82	4.67
Sp. Cond	0.025	0.024	0.023	0.023	0.023	0.022
Temp. °C	20.05	21.88	21.67	21.74	21.37	20.9
Turbidity	167	106	99.8	106.0	129.0	127.0
DO	7.2	10.0	7.7	5.1	8.5	7.5
ORP	208.3	198.2	185.0	170.0	169.7	167.8

5. COMMENTS:
Purged 5 times volume; Flow rate was lowered during purging to prevent well from being purged dry. Rate of 260mL/min was measured at time samples were taken and was not consistent during entire purge time

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

1. CLIENT:Ft. Bragg, NC
DATE: 6/29/2011 TIME: 1135
SAMPLED BY: Cooper and Hill
WEATHER CONDITIONS: partly cloudly

Location: Lamont Landfill	**Sample ID:LMW-3-6-11**

PRESERVATIVE: HNO3,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☐ YES ☒ NO

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

3. **WELL EVACUATION DATA**
Well Depth (wd): 125.00 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 104.00 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 3.4 (gallons)
Flow Rate : 250 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 58 (minutes) Purge time: 1037
Amount Purged= 3.8 (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	1055	1105	1115	1135		
pH	4.5	4.56	4.64	4.48		
Sp. Cond	0.016	0.015	0.015	0.015		
Temp. °C	20.69	21.04	21.54	21.39		
Turbidity	2.89	1.66	1.32	0.91		
DO	40.6	32.7	27.1	29.0		
ORP	180.6	174.1	175.5	180.1		

5. COMMENTS:

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

1. CLIENT:Ft. Bragg, NC
DATE: 6/29/2011 TIME: 1304
SAMPLED BY: Cooper and Hill
WEATHER CONDITIONS: 82°, partly cloudly

Location: Lamont Landfill	**Sample ID:LMW-14R-6-11**

PRESERVATIVE: HNO3,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☐ YES ☒ NO

2. WATER LEVEL DATA

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

3. WELL EVACUATION DATA

Well Depth (wd): 57.00 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 51.53 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 0.9 (gallons)
Flow Rate : 230 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 60 (minutes) Purge time: 1203
Amount Purged= 3.6 (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	1228	1242	1253	1302		
pH	4.51	4.94	4.94	4.93		
Sp. Cond	0.015	0.015	0.014	0.014		
Temp. °C	28.13	27.86	27.76	27.7		
Turbidity	20.5	7.96	4.39	3.77		
DO	78.3	71.4	71.2	72.3		
ORP	190.6	176.4	176.4	176.3		

5. COMMENTS:

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

1. CLIENT:Ft. Bragg, NC
DATE: 6/29/2011 TIME: 1405
SAMPLED BY: Cooper and Hill
WEATHER CONDITIONS: 85°, partly cloudly

Location: Lamont Landfill	**Sample ID:LMW-15R-6-11**

PRESERVATIVE: HNO3,ICE
ANALYSES REQUESTED: VOC 8260, Appendix I Metals, Nitrates
OF CONTAINERS: 5
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☐ YES ☒ NO

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

3. **WELL EVACUATION DATA**
Well Depth (wd): 46.30 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 41.68 (ft) Diameter (d): 0.167 (ft)
Well Volume = ($5.904 \times d^2$ (wd-dw)) = 0.8 (gallons)
Flow Rate : 125 (ml/min) Purge vol: na (gallons)
Length of Time Purged: 35 (minutes) Purge time: 1325
Amount Purged= 1.2 (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	1340	1350	1400			
pH	5.57	5.57	5.45			
Sp. Cond	0.041	0.040	0.040			
Temp. °C	23.76	23.68	22.39			
Turbidity	18.1	10.9	7.12			
DO	64.3	61.9	59.0			
ORP	164.1	151.	149.4			

5. COMMENTS:

APPENDIX B

DATA VALIDATION REPORTS

QA LEVEL II - DATA EVALUATION CHECKLIST

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

Project Manager: Z. Kidwai
Project Number: 680-69874-1
Validation Date: 8-15-2011

Laboratory: TEST AMERICA
SDG #:
Analytical Method (type and no.): 8260B, 6020A, 300B
Matrix: ☐ Air ☐ Soil/Sed. ☐ Water ☐ Waste ☐
Sample Names LMW-6-6-11, LMW-9S-6-11, LMW-9D-6-11, LMW-8-6-11, LMW-9-6-11, LMW-10-6-11, LMW-16-6-11, LMW-4-6-11

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,
c) Sample location noted?	☒	☐	☐	Turbidity
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?	☒	☐	☐	5.0x dilution noted
b) Were hold times met for sample analysis?	☒	☐	☐	for Nitrate analysis
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)?	☒	☐	☐	Methylene Chloride detected in Method Blank below Reporting Limit
b) Were analytes detected in the field blank(s)?	☐	☒	☐	
c) Were analytes detected in the equipment blank(s)?	☐	☒	☐	
d) Were analytes detected in the trip blank(s)?	☐	☒	☐	

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

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

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

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

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

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

Comments/Notes:

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: _____ Date: _____

QA LEVEL II - DATA EVALUATION CHECKLIST

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

Project Manager: Z. Kidwai
Project Number:
Validation Date: 8/11/2011

Laboratory: TestAmerica
SDG #: 680-69845-2

Analytical Method (type and no.):
Matrix: ☐ Air ☐ Soil/Sed. ☐ Water ☐ Waste ☐ 6020A, 300.0
Sample Names
LMW-6-6-11, LMW-DUPL-6-11, LMW-95-6-11, LMW-9D-6-11

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,
c) Sample location noted?	☒	☐	☐	Turbidity
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: COC requested Lab analyze for 300 + 9034 when it should have been 300 + 6020A

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?	☒	☐	☐	– Method 300 LMW-DUPL-6-11
b) Were hold times met for sample analysis?	☐	☒	☐	was over calibration range & required
c) Were the correct preservatives used?	☒	☐	☐	dilution, which caused delay in
d) Was the correct method used?	☒	☐	☐	analysis,
e) Were appropriate reporting limits achieved?	☒	☐	☐	– 5.0 dilution for Method 300
f) Were any sample dilutions noted?	☒	☐	☐	analysis
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)?	☒	☐	☐	
b) Were field dup. precision criteria met (note RPD)?	☒	☐	☐	
c) Were lab duplicates analyzed (note original and duplicate samples)?	☒	☐	☐	
d) Were lab dup. precision criteria met (note RPD)?	☒	☐	☐	

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

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

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

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

Comments/Notes:

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: _____ Date: _____

QA LEVEL II - DATA EVALUATION CHECKLIST

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

Project Manager: Z. Kidwai
Project Number: 680-69931-1
Validation Date: 8/11/2011

Laboratory: Test America
SDG #:
Analytical Method (type and no.):
Matrix: ☐ Air ☐ Soil/Sed. ☐ Water ☐ Waste ☐ 8260B, 6020A, 300
Sample Names LMW-Blank-6-11, LMW-15R-6-11, LMW-14R-6-11, LMWR-6-11, LMW-35-6-11, LMW-7-6-11, TRIP BLANK

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

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	☒	☐	☐	pH, Conductivity, Temperature,
b) Sampling team indicated?	☐	☒	☐	dissolved Oxygen, ORP,
c) Sample location noted?	☒	☐	☐	Temperature
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?	☒	☐	☐	- 5.0 x dilution for Nitrate-N
b) Were hold times met for sample analysis?	☒	☐	☐	analysis
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)?	☒	☐	☐	Methylene chloride detected
b) Were analytes detected in the field blank(s)?	☒	☐	☐	in all blanks. Noted as a
c) Were analytes detected in the equipment blank(s)?	☐	☐	☐	common laboratory contaminant
d) Were analytes detected in the trip blank(s)?	☒	☐	☐	

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

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	☒	☐	☐	LMW-DUP1-6-11 ≈ LMW-6-6-11
b) Were field dup. precision criteria met (note RPD)?	☒	☐	☐	
c) Were lab duplicates analyzed (note original and duplicate samples)?	☒	☐	☐	
d) Were lab dup. precision criteria met (note RPD)?	☒	☐	☐	

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

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

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

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

Comments/Notes:

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: _____ Date: _____

APPENDIX C

CHAIN OF CUSTODY AND LABORATORY ANALYTICAL REPORTS

(Electronic Only)

ANALYTICAL REPORT

Job Number: 680-69874-1

Job Description: Ft. Bragg Lamont Landfill

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

Attention: Mr. Kevin Haborak

Approved for release.
Kathryn Smith
Project Manager I
7/13/2011 4:13 PM

Kathryn Smith
Project Manager I
kathye.smith@testamericainc.com
07/13/2011

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 method blank for batch 207925 contained Methylene Chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

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: 680-69874-1

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
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: 680-69874-1

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

SAMPLE SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-69874-1TB	Trip Blank	Water	06/27/2011 0000	06/29/2011 0930
680-69874-2	LMW-6-6-11	Water	06/27/2011 1305	06/29/2011 0930
680-69874-2MS	LMW-6-6-11	Water	06/27/2011 1305	06/29/2011 0930
680-69874-2MSD	LMW-6-6-11	Water	06/27/2011 1305	06/29/2011 0930
680-69874-3FD	LMW-DUP1-6-11	Water	06/27/2011 1400	06/29/2011 0930
680-69874-4	LMW-9S-6-11	Water	06/27/2011 1426	06/29/2011 0930
680-69874-5	LMW-9D-6-11	Water	06/27/2011 1525	06/29/2011 0930
680-69874-6	LMW-8-6-11	Water	06/28/2011 1050	06/29/2011 0930
680-69874-7	LMW-9-6-11	Water	06/28/2011 0845	06/29/2011 0930
680-69874-8	LMW-10-6-11	Water	06/28/2011 1235	06/29/2011 0930
680-69874-9	LMW-16-6-11	Water	06/28/2011 1515	06/29/2011 0930
680-69874-10	LMW-4-6-11	Water	06/28/2011 1705	06/29/2011 0930

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-69874-1TB

Client Matrix: Water

Date Sampled: 06/27/2011 0000

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207907	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o0973.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 1347			Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 1347				

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: 680-69874-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-69874-1TB

Client Matrix: Water

Date Sampled: 06/27/2011 0000

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207907	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o0973.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 1347			Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 1347				

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	97		70 - 130
Dibromofluoromethane	116		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

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

Lab Sample ID: 680-69874-2

Client Matrix: Water

Date Sampled: 06/27/2011 1305

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207907	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o0975.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 1415			Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 1415				

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 J	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	0.70	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: 680-69874-1

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

Lab Sample ID: 680-69874-2

Client Matrix: Water

Date Sampled: 06/27/2011 1305

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207907	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o0975.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 1415			Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 1415				

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	117		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Client Sample ID: **LMW-DUP1-6-11**

Lab Sample ID: 680-69874-3FD

Client Matrix: Water

Date Sampled: 06/27/2011 1400

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207925	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1007.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/03/2011 1710			Final Weight/Volume:	5 mL
Prep Date:	07/03/2011 1710				

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	3.6	J B	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	0.70	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: 680-69874-1

Client Sample ID: **LMW-DUP1-6-11**

Lab Sample ID: 680-69874-3FD

Client Matrix: Water

Date Sampled: 06/27/2011 1400

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207925	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1007.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/03/2011 1710			Final Weight/Volume:	5 mL
Prep Date:	07/03/2011 1710				

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	96		70 - 130
Dibromofluoromethane	121		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Client Sample ID: **LMW-9S-6-11**

Lab Sample ID: 680-69874-4

Client Matrix: Water

Date Sampled: 06/27/2011 1426

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207907	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o0977.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 1444			Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 1444				

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: 680-69874-1

Client Sample ID: **LMW-9S-6-11**

Lab Sample ID: 680-69874-4

Client Matrix: Water

Date Sampled: 06/27/2011 1426

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207907	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o0977.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 1444			Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 1444				

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	97		70 - 130
Dibromofluoromethane	116		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Client Sample ID: **LMW-9D-6-11**

Lab Sample ID: 680-69874-5

Client Matrix: Water

Date Sampled: 06/27/2011 1525

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207925	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1009.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/03/2011 1739			Final Weight/Volume:	5 mL
Prep Date:	07/03/2011 1739				

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	3.4	J B	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	0.43	J	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	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: 680-69874-1

Client Sample ID: **LMW-9D-6-11**

Lab Sample ID: 680-69874-5

Client Matrix: Water

Date Sampled: 06/27/2011 1525

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207925	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1009.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/03/2011 1739			Final Weight/Volume:	5 mL
Prep Date:	07/03/2011 1739				

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	120		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Client Sample ID: **LMW-8-6-11**

Lab Sample ID: 680-69874-6

Client Matrix: Water

Date Sampled: 06/28/2011 1050

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207907	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o0981.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 1711			Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 1711				

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: 680-69874-1

Client Sample ID: **LMW-8-6-11**

Lab Sample ID: 680-69874-6

Client Matrix: Water

Date Sampled: 06/28/2011 1050

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207907	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o0981.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 1711			Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 1711				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl methacrylate	0.48	U	0.48	1.0
Acrolein	7.4	U	7.4	20
Acrylonitrile	7.2	U	7.2	20
Ethyl methacrylate	0.25	U	0.25	1.0
Isobutyl alcohol	11	U	11	40
Chlorobromomethane	0.14	U	0.14	1.0
cis-1,2-Dichloroethene	1.5		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	98		70 - 130
Dibromofluoromethane	117		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Client Sample ID: **LMW-9-6-11**

Lab Sample ID: 680-69874-7

Client Matrix: Water

Date Sampled: 06/28/2011 0845

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207907	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o0983.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 1740			Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 1740				

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	0.39	J	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	0.16	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: 680-69874-1

Client Sample ID: **LMW-9-6-11**

Lab Sample ID: 680-69874-7

Client Matrix: Water

Date Sampled: 06/28/2011 0845

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207907	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o0983.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 1740			Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 1740				

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	97		70 - 130
Dibromofluoromethane	116		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

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

Lab Sample ID: 680-69874-8

Client Matrix: Water

Date Sampled: 06/28/2011 1235

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207907	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o0985.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 1809			Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 1809				

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	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	2.4	J	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	0.38	J	0.33	1.0
Bromoform	0.50	U	0.50	1.0
1,1,2-Trichloroethane	0.13	U	0.13	1.0
1,1,1-Trichloroethane	0.50	U	0.50	1.0
Trichloroethene	1.4		0.13	1.0
Trichlorofluoromethane	3.7		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: 680-69874-1

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

Lab Sample ID: 680-69874-8

Client Matrix: Water

Date Sampled: 06/28/2011 1235

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207907	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o0985.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 1809			Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 1809				

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	98		70 - 130
Dibromofluoromethane	117		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Client Sample ID: **LMW-16-6-11**

Lab Sample ID: 680-69874-9

Client Matrix: Water

Date Sampled: 06/28/2011 1515

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207907	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o0987.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 1837			Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 1837				

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: 680-69874-1

Client Sample ID: **LMW-16-6-11**

Lab Sample ID: 680-69874-9

Client Matrix: Water

Date Sampled: 06/28/2011 1515

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207907	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o0987.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 1837			Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 1837				

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	116		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Client Sample ID: **LMW-4-6-11**

Lab Sample ID: 680-69874-10

Client Matrix: Water

Date Sampled: 06/28/2011 1705

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207925	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1011.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/03/2011 1807			Final Weight/Volume:	5 mL
Prep Date:	07/03/2011 1807				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetonitrile	10	U	10	40
Acetone	5.7	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	3.7	J B	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	1.2		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	0.31	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	0.24	J	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: 680-69874-1

Client Sample ID: **LMW-4-6-11**

Lab Sample ID: 680-69874-10

Client Matrix: Water

Date Sampled: 06/28/2011 1705

Date Received: 06/29/2011 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-207925	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1011.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/03/2011 1807			Final Weight/Volume:	5 mL
Prep Date:	07/03/2011 1807				

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	97		70 - 130
Dibromofluoromethane	119		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Client Sample ID: **LMW-8-6-11**

Lab Sample ID: 680-69874-6

Client Matrix: Water

Date Sampled: 06/28/2011 1050

Date Received: 06/29/2011 0930

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Prep Method:	3030C	Prep Batch:	680-207528	Lab File ID:	053SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2213			Final Weight/Volume:	50 mL
Prep Date:	06/29/2011 1523				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Silver	0.10	U	0.10	0.20
Arsenic	0.81	J	0.40	1.0
Chromium	0.18	J	0.16	1.0
Copper	0.48	J	0.21	1.0
Cadmium	0.20	U	0.20	0.50
Cobalt	1.5		0.078	0.20
Barium	32		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Nickel	0.95	J	0.40	1.0
Lead	0.080	U	0.080	0.30
Antimony	0.99	U	0.99	2.0
Selenium	0.21	U	0.21	0.50
Thallium	0.11	J	0.10	0.20
Vanadium	1.4	U	1.4	5.0
Zinc	11	J	2.6	10

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Client Sample ID: **LMW-9-6-11**

Lab Sample ID: 680-69874-7

Client Matrix: Water

Date Sampled: 06/28/2011 0845

Date Received: 06/29/2011 0930

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Prep Method:	3030C	Prep Batch:	680-207528	Lab File ID:	058SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2249			Final Weight/Volume:	50 mL
Prep Date:	06/29/2011 1523				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Silver	0.10	U	0.10	0.20
Arsenic	0.40	U	0.40	1.0
Chromium	0.56	J	0.16	1.0
Copper	0.65	J	0.21	1.0
Cadmium	0.20	U	0.20	0.50
Cobalt	0.13	J	0.078	0.20
Barium	3.3		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Nickel	0.98	J	0.40	1.0
Lead	0.080	U	0.080	0.30
Antimony	0.99	U	0.99	2.0
Selenium	0.21	U	0.21	0.50
Thallium	0.10	U	0.10	0.20
Vanadium	1.4	U	1.4	5.0
Zinc	3.7	J	2.6	10

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

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

Lab Sample ID: 680-69874-8

Client Matrix: Water

Date Sampled: 06/28/2011 1235

Date Received: 06/29/2011 0930

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Prep Method:	3030C	Prep Batch:	680-207528	Lab File ID:	059SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2257			Final Weight/Volume:	50 mL
Prep Date:	06/29/2011 1523				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Silver	0.10	U	0.10	0.20
Arsenic	0.40	U	0.40	1.0
Chromium	0.61	J	0.16	1.0
Copper	0.35	J	0.21	1.0
Cadmium	0.20	U	0.20	0.50
Cobalt	0.23		0.078	0.20
Barium	21		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Nickel	0.70	J	0.40	1.0
Lead	0.080	U	0.080	0.30
Antimony	0.99	U	0.99	2.0
Selenium	2.8		0.21	0.50
Thallium	0.10	U	0.10	0.20
Vanadium	1.4	U	1.4	5.0
Zinc	4.2	J	2.6	10

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Client Sample ID: **LMW-16-6-11**

Lab Sample ID: 680-69874-9

Client Matrix: Water

Date Sampled: 06/28/2011 1515

Date Received: 06/29/2011 0930

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Prep Method:	3030C	Prep Batch:	680-207528	Lab File ID:	060SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2304			Final Weight/Volume:	50 mL
Prep Date:	06/29/2011 1523				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Silver	0.10	U	0.10	0.20
Arsenic	1.0		0.40	1.0
Chromium	0.70	J	0.16	1.0
Copper	0.67	J	0.21	1.0
Cadmium	0.20	U	0.20	0.50
Cobalt	0.13	J	0.078	0.20
Barium	11		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Nickel	0.65	J	0.40	1.0
Lead	0.16	J	0.080	0.30
Antimony	0.99	U	0.99	2.0
Selenium	0.21	U	0.21	0.50
Thallium	0.10	U	0.10	0.20
Vanadium	2.7	J	1.4	5.0
Zinc	5.1	J	2.6	10

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Client Sample ID: **LMW-4-6-11**

Lab Sample ID: 680-69874-10

Client Matrix: Water

Date Sampled: 06/28/2011 1705

Date Received: 06/29/2011 0930

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Prep Method:	3030C	Prep Batch:	680-207528	Lab File ID:	063SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2327			Final Weight/Volume:	50 mL
Prep Date:	06/29/2011 1524				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Silver	0.10	U	0.10	0.20
Arsenic	0.40	U	0.40	1.0
Chromium	1.7		0.16	1.0
Copper	1.1		0.21	1.0
Cadmium	0.20	U	0.20	0.50
Cobalt	0.27		0.078	0.20
Barium	14		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Nickel	1.2		0.40	1.0
Lead	0.26	J	0.080	0.30
Antimony	0.99	U	0.99	2.0
Selenium	0.21	U	0.21	0.50
Thallium	0.10	U	0.10	0.20
Vanadium	1.4	U	1.4	5.0
Zinc	20		2.6	10

General Chemistry

Client Sample ID: **LMW-8-6-11**

Lab Sample ID: 680-69874-6

Client Matrix: Water

Date Sampled: 06/28/2011 1050

Date Received: 06/29/2011 0930

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as N	0.26		mg/L	0.075	0.25	5.0	300.0

Analysis Batch: 680-207638 Analysis Date: 06/30/2011 0329

General Chemistry

Client Sample ID: **LMW-9-6-11**

Lab Sample ID: 680-69874-7

Client Matrix: Water

Date Sampled: 06/28/2011 0845

Date Received: 06/29/2011 0930

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as N	0.11	J	mg/L	0.075	0.25	5.0	300.0

Analysis Batch: 680-207638 Analysis Date: 06/30/2011 0413

General Chemistry

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

Lab Sample ID: 680-69874-8

Client Matrix: Water

Date Sampled: 06/28/2011 1235

Date Received: 06/29/2011 0930

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as N	0.58		mg/L	0.075	0.25	5.0	300.0

Analysis Batch: 680-207638 Analysis Date: 06/30/2011 0456

General Chemistry

Client Sample ID: **LMW-16-6-11**

Lab Sample ID: 680-69874-9

Client Matrix: Water

Date Sampled: 06/28/2011 1515

Date Received: 06/29/2011 0930

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as N	0.18	J	mg/L	0.075	0.25	5.0	300.0

Analysis Batch: 680-207638 Analysis Date: 06/30/2011 0525

General Chemistry

Client Sample ID: **LMW-4-6-11**

Lab Sample ID: 680-69874-10

Client Matrix: Water

Date Sampled: 06/28/2011 1705

Date Received: 06/29/2011 0930

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as N	0.075	U	mg/L	0.075	0.25	5.0	300.0

Analysis Batch: 680-207638 Analysis Date: 06/30/2011 0539

DATA REPORTING QUALIFIERS

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Lab Section	Qualifier	Description
GC/MS VOA		
	B	Blank contamination: The analyte was detected above one-half the reporting limit in an associated blank.
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
	U	Undetected at the Limit of Detection.
Metals		
	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.
	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: 680-69874-1

Method Blank - Batch: 680-207907

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-207907/11	Analysis Batch:	680-207907	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq547.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 1109	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 1109				
Leach Date:	N/A				

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
Xylenes, Total	0.20	U	0.20	2.0
2-Hexanone	1.0	U	1.0	10

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Method Blank - Batch: 680-207907

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-207907/11	Analysis Batch:	680-207907	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq547.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 1109	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 1109				
Leach Date:	N/A				

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

Surrogate	% Rec	Acceptance Limits
Toluene-d8 (Surr)	102	70 - 130
4-Bromofluorobenzene	97	70 - 130
Dibromofluoromethane	118	70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-207907

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-207907/8	Analysis Batch:	680-207907	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq539.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 0914	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 0914				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 680-207907/9	Analysis Batch:	680-207907	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq541.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 0943	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 0943				
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Acetone	92	90	26 - 180	2	50		
Benzene	96	95	70 - 130	1	30		
Dichlorobromomethane	96	95	70 - 130	1	30		
Bromomethane	89	94	23 - 165	6	50		
Carbon disulfide	109	111	54 - 132	1	30		
Chlorobenzene	110	111	70 - 130	1	30		
Chlorodibromomethane	110	108	70 - 130	2	50		
Chloroethane	75	74	56 - 152	1	40		
Chloromethane	96	97	70 - 130	1	30		
Chloroform	115	113	70 - 130	2	30		
1,2-Dibromo-3-Chloropropane	109	108	70 - 130	1	50		
Ethylene Dibromide	99	96	70 - 130	3	30		
Dichlorodifluoromethane	102	102	44 - 146	0	50		
1,1-Dichloroethane	110	111	70 - 130	0	30		
1,2-Dichloroethane	93	91	70 - 130	2	30		
trans-1,2-Dichloroethene	111	111	70 - 130	0	30		
1,1-Dichloroethene	123	121	66 - 131	1	30		
Methylene Chloride	114	112	67 - 130	2	30		
1,2-Dichloropropane	95	93	70 - 130	2	30		
cis-1,3-Dichloropropene	94	93	70 - 130	1	30		
trans-1,3-Dichloropropene	94	92	70 - 130	3	50		
Ethylbenzene	103	104	70 - 130	1	30		
2-Butanone (MEK)	91	91	49 - 172	1	30		
4-Methyl-2-pentanone (MIBK)	80	78	70 - 130	3	30		
Styrene	99	99	70 - 130	0	30		
1,1,1,2-Tetrachloroethane	104	104	70 - 130	0	30		
1,1,2,2-Tetrachloroethane	103	102	70 - 130	1	30		
Tetrachloroethene	111	109	70 - 130	2	30		
Carbon tetrachloride	87	87	70 - 130	0	30		
Toluene	98	98	70 - 130	0	30		
Bromoform	103	101	70 - 130	3	30		
1,1,2-Trichloroethane	96	95	70 - 130	1	30		
1,1,1-Trichloroethane	96	96	70 - 130	0	30		
Trichloroethene	106	106	70 - 130	0	30		
Trichlorofluoromethane	84	83	55 - 156	0	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-207907

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-207907/8	Analysis Batch:	680-207907	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq539.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 0914	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 0914				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 680-207907/9	Analysis Batch:	680-207907	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq541.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/02/2011 0943	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/02/2011 0943				
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,2,3-Trichloropropane	97	98	70 - 130	1	30		
Vinyl acetate	158	155	60 - 176	2	30		
Vinyl chloride	89	89	67 - 134	0	30		
Xylenes, Total	99	99	70 - 130	1	30		
2-Hexanone	86	83	42 - 185	3	30		
Chlorobromomethane	108	107	70 - 130	1	30		
cis-1,2-Dichloroethene	122	120	70 - 130	1	30		
1,3-Dichloropropane	92	92	70 - 130	1	30		
2,2-Dichloropropane	120	119	70 - 135	0	30		
1,1-Dichloropropene	97	99	70 - 130	1	30		
1,2-Dichlorobenzene	101	101	70 - 130	0	30		
1,3-Dichlorobenzene	102	101	70 - 130	1	30		
1,4-Dichlorobenzene	108	106	70 - 130	1	30		
1,2,4-Trichlorobenzene	107	107	65 - 130	0	30		
Dibromomethane	94	93	70 - 130	1	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	102	103	70 - 130
4-Bromofluorobenzene	103	104	70 - 130
Dibromofluoromethane	123	123	70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Method Blank - Batch: 680-207925

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-207925/24	Analysis Batch:	680-207925	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq573.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/03/2011 1441	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/03/2011 1441				
Leach Date:	N/A				

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	3.40	J	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

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Method Blank - Batch: 680-207925

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-207925/24	Analysis Batch:	680-207925	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq573.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/03/2011 1441	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/03/2011 1441				
Leach Date:	N/A				

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

Surrogate	% Rec	Acceptance Limits
Toluene-d8 (Surr)	102	70 - 130
4-Bromofluorobenzene	99	70 - 130
Dibromofluoromethane	120	70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-207925

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-207925/21	Analysis Batch:	680-207925	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq565.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/03/2011 1246	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/03/2011 1246				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 680-207925/22	Analysis Batch:	680-207925	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq567.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/03/2011 1315	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/03/2011 1315				
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Acetone	104	102	26 - 180	1	50		
Benzene	92	93	70 - 130	0	30		
Dichlorobromomethane	90	88	70 - 130	2	30		
Bromomethane	112	107	23 - 165	4	50		
Carbon disulfide	131	131	54 - 132	0	30		
Chlorobenzene	107	105	70 - 130	2	30		
Chlorodibromomethane	104	103	70 - 130	1	50		
Chloroethane	79	74	56 - 152	7	40		
Chloromethane	100	96	70 - 130	4	30		
Chloroform	107	106	70 - 130	1	30		
1,2-Dibromo-3-Chloropropane	107	105	70 - 130	2	50		
Ethylene Dibromide	94	94	70 - 130	1	30		
Dichlorodifluoromethane	112	116	44 - 146	3	50		
1,1-Dichloroethane	106	105	70 - 130	1	30		
1,2-Dichloroethane	87	87	70 - 130	0	30		
trans-1,2-Dichloroethene	109	108	70 - 130	1	30		
1,1-Dichloroethene	117	118	66 - 131	1	30		
Methylene Chloride	112	109	67 - 130	3	30		
1,2-Dichloropropane	90	89	70 - 130	1	30		
cis-1,3-Dichloropropene	89	89	70 - 130	0	30		
trans-1,3-Dichloropropene	88	86	70 - 130	3	50		
Ethylbenzene	98	98	70 - 130	0	30		
2-Butanone (MEK)	105	102	49 - 172	3	30		
4-Methyl-2-pentanone (MIBK)	88	88	70 - 130	1	30		
Styrene	96	94	70 - 130	1	30		
1,1,1,2-Tetrachloroethane	98	97	70 - 130	1	30		
1,1,2,2-Tetrachloroethane	96	94	70 - 130	3	30		
Tetrachloroethene	109	110	70 - 130	1	30		
Carbon tetrachloride	84	86	70 - 130	2	30		
Toluene	94	93	70 - 130	1	30		
Bromoform	95	95	70 - 130	0	30		
1,1,2-Trichloroethane	92	91	70 - 130	1	30		
1,1,1-Trichloroethane	91	93	70 - 130	2	30		
Trichloroethene	104	104	70 - 130	0	30		
Trichlorofluoromethane	83	81	55 - 156	3	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-207925

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-207925/21	Analysis Batch:	680-207925	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq565.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/03/2011 1246	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/03/2011 1246				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 680-207925/22	Analysis Batch:	680-207925	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq567.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/03/2011 1315	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/03/2011 1315				
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,2,3-Trichloropropane	94	94	70 - 130	1	30		
Vinyl acetate	132	127	60 - 176	3	30		
Vinyl chloride	92	89	67 - 134	4	30		
Xylenes, Total	95	95	70 - 130	1	30		
2-Hexanone	95	94	42 - 185	1	30		
Chlorobromomethane	100	101	70 - 130	0	30		
cis-1,2-Dichloroethene	118	117	70 - 130	1	30		
1,3-Dichloropropane	88	87	70 - 130	1	30		
2,2-Dichloropropane	116	114	70 - 135	1	30		
1,1-Dichloropropene	93	95	70 - 130	2	30		
1,2-Dichlorobenzene	97	94	70 - 130	3	30		
1,3-Dichlorobenzene	99	97	70 - 130	2	30		
1,4-Dichlorobenzene	103	101	70 - 130	2	30		
1,2,4-Trichlorobenzene	106	105	65 - 130	2	30		
Dibromomethane	91	90	70 - 130	1	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	97	98	70 - 130
4-Bromofluorobenzene	99	97	70 - 130
Dibromofluoromethane	117	116	70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-207925

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	680-69874-2	Analysis Batch:	680-207925	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	o1029.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/03/2011 2226			Final Weight/Volume:	5 mL
Prep Date:	07/03/2011 2226				
Leach Date:	N/A				

MSD Lab Sample ID:	680-69874-2	Analysis Batch:	680-207925	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	o1031.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/03/2011 2255			Final Weight/Volume:	5 mL
Prep Date:	07/03/2011 2255				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Acetone	104	107	26 - 180	2	50		
Benzene	97	96	70 - 130	0	30		
Dichlorobromomethane	94	96	70 - 130	2	30		
Bromomethane	138	150	23 - 165	9	50		
Carbon disulfide	116	120	54 - 132	4	30		
Chlorobenzene	110	112	70 - 130	2	30		
Chlorodibromomethane	109	114	70 - 130	4	50		
Chloroethane	99	99	56 - 152	0	40		
Chloromethane	99	105	70 - 130	5	30		
Chloroform	114	119	70 - 130	4	30		
1,2-Dibromo-3-Chloropropane	106	110	70 - 130	4	50		
Ethylene Dibromide	96	95	70 - 130	1	30		
Dichlorodifluoromethane	110	118	44 - 146	8	50		
1,1-Dichloroethane	114	118	70 - 130	4	30		
1,2-Dichloroethane	90	88	70 - 130	2	30		
trans-1,2-Dichloroethene	114	119	70 - 130	4	30		
1,1-Dichloroethene	124	133	66 - 131	7	30		J
Methylene Chloride	115	120	67 - 130	4	30		
1,2-Dichloropropane	95	95	70 - 130	0	30		
cis-1,3-Dichloropropene	86	86	70 - 130	0	30		
trans-1,3-Dichloropropene	83	85	70 - 130	3	50		
Ethylbenzene	105	106	70 - 130	1	30		
2-Butanone (MEK)	90	94	49 - 172	5	30		
4-Methyl-2-pentanone (MIBK)	75	76	70 - 130	0	30		
Styrene	99	101	70 - 130	2	30		
1,1,1,2-Tetrachloroethane	103	106	70 - 130	3	30		
1,1,2,2-Tetrachloroethane	101	104	70 - 130	3	30		
Tetrachloroethene	113	116	70 - 130	3	30		
Carbon tetrachloride	92	92	70 - 130	0	30		
Toluene	99	100	70 - 130	1	30		
Bromoform	99	105	70 - 130	5	30		
1,1,2-Trichloroethane	94	95	70 - 130	1	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-207925

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	680-69874-2	Analysis Batch:	680-207925	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	o1029.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/03/2011 2226			Final Weight/Volume:	5 mL
Prep Date:	07/03/2011 2226				
Leach Date:	N/A				

MSD Lab Sample ID:	680-69874-2	Analysis Batch:	680-207925	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	o1031.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/03/2011 2255			Final Weight/Volume:	5 mL
Prep Date:	07/03/2011 2255				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1,1-Trichloroethane	97	98	70 - 130	1	30		
Trichloroethene	107	107	70 - 130	0	30		
Trichlorofluoromethane	101	101	55 - 156	0	30		
1,2,3-Trichloropropane	96	99	70 - 130	3	30		
Vinyl acetate	111	117	60 - 176	6	30		
Vinyl chloride	98	100	67 - 134	2	30		
Xylenes, Total	100	102	70 - 130	2	30		
2-Hexanone	80	83	42 - 185	4	30		
Chlorobromomethane	106	112	70 - 130	5	30		
cis-1,2-Dichloroethene	122	128	70 - 130	4	30		
1,3-Dichloropropane	91	91	70 - 130	1	30		
2,2-Dichloropropane	78	81	70 - 135	4	30		
1,1-Dichloropropene	99	100	70 - 130	1	30		
1,2-Dichlorobenzene	100	102	70 - 130	3	30		
1,3-Dichlorobenzene	101	104	70 - 130	3	30		
1,4-Dichlorobenzene	105	107	70 - 130	1	30		
1,2,4-Trichlorobenzene	103	106	65 - 130	3	30		
Dibromomethane	92	92	70 - 130	0	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	104	103	70 - 130
4-Bromofluorobenzene	102	104	70 - 130
Dibromofluoromethane	123	130	70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Method Blank - Batch: 680-207528

Method: 6020A
Preparation: 3030C

Lab Sample ID:	MB 680-207528/1-A	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Client Matrix:	Water	Prep Batch:	680-207528	Lab File ID:	051SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2158	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	06/29/2011 1523				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Silver	0.10	U	0.10	0.20
Arsenic	0.40	U	0.40	1.0
Chromium	0.184	J	0.16	1.0
Copper	0.21	U	0.21	1.0
Cadmium	0.20	U	0.20	0.50
Cobalt	0.078	U	0.078	0.20
Barium	0.15	U	0.15	1.0
Beryllium	0.070	U	0.070	0.20
Nickel	0.491	J	0.40	1.0
Lead	0.080	U	0.080	0.30
Antimony	0.99	U	0.99	2.0
Selenium	0.21	U	0.21	0.50
Thallium	0.10	U	0.10	0.20
Vanadium	1.4	U	1.4	5.0
Zinc	2.6	U	2.6	10

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Lab Control Sample - Batch: 680-207528

Method: 6020A
Preparation: 3030C

Lab Sample ID:	LCS 680-207528/2-A	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Client Matrix:	Water	Prep Batch:	680-207528	Lab File ID:	052SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2205	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	06/29/2011 1523				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Silver	10.0	10.4	104	75 - 125	
Arsenic	20.0	19.7	98	75 - 125	
Chromium	20.0	19.2	96	75 - 125	
Copper	20.0	19.9	99	75 - 125	
Cadmium	10.0	10.1	101	75 - 125	
Cobalt	10.0	9.24	92	75 - 125	
Barium	20.0	19.7	98	75 - 125	
Beryllium	10.0	10.0	100	75 - 125	
Nickel	20.0	20.2	101	75 - 125	
Lead	10.0	9.96	100	75 - 125	
Antimony	10.0	10.5	105	75 - 125	
Selenium	20.0	21.2	106	75 - 125	
Thallium	8.00	7.73	97	75 - 125	
Vanadium	20.0	19.0	95	75 - 125	
Zinc	20.0	21.0	105	75 - 125	

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-207528

Method: 6020A
Preparation: 3030C

MS Lab Sample ID:	680-69874-6	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Client Matrix:	Water	Prep Batch:	680-207528	Lab File ID:	056SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2235			Final Weight/Volume:	50 mL
Prep Date:	06/29/2011 1523				
Leach Date:	N/A				

MSD Lab Sample ID:	680-69874-6	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Client Matrix:	Water	Prep Batch:	680-207528	Lab File ID:	057SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2242			Final Weight/Volume:	50 mL
Prep Date:	06/29/2011 1523				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Silver	98	101	75 - 125	2	20		
Arsenic	96	97	75 - 125	0	20		
Chromium	94	93	75 - 125	2	20		
Cadmium	97	99	75 - 125	2	20		
Cobalt	85	87	75 - 125	2	20		
Barium	88	95	75 - 125	3	20		
Beryllium	99	104	75 - 125	5	20		
Nickel	96	95	75 - 125	1	20		
Antimony	102	106	75 - 125	3	20		
Selenium	95	107	75 - 125	12	20		
Vanadium	96	94	75 - 125	2	20		

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Method Blank - Batch: 680-207638

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 680-207638/2	Analysis Batch:	680-207638	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0071.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/30/2011 0051	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Nitrate as N	0.075	U	0.075	0.25

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-207638

Method: 300.0
Preparation: N/A

LCS Lab Sample ID:	LCS 680-207638/3	Analysis Batch:	680-207638	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0072.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/30/2011 0105	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 680-207638/4	Analysis Batch:	680-207638	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0073.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/30/2011 0120	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Nitrate as N	103	103	90 - 110	0	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-207638

Method: 300.0
Preparation: N/A

MS Lab Sample ID:	680-69874-7	Analysis Batch:	680-207638	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0086.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/30/2011 0427			Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	680-69874-7	Analysis Batch:	680-207638	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0087.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/30/2011 0441			Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrate as N	106	106	90 - 110	0	30		

Duplicate - Batch: 680-207638

Method: 300.0
Preparation: N/A

Lab Sample ID:	680-69874-8	Analysis Batch:	680-207638	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0089.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/30/2011 0510	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate as N	0.58	0.578	0.4	30	

Serial Number 041226

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

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

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: Ft Bragg Lamont LF	PROJECT NO.	PROJECT LOCATION (STATE): NC
TAL (LAB) PROJECT MANAGER: Kathy Smith	P.O. NUMBER	CONTRACT NO.
CLIENT (SITE) PM: Kevin Haborak	CLIENT PHONE: 912-652-6083	CLIENT FAX: 912-652-5311
CLIENT NAME: USACE	CLIENT E-MAIL: Kevin.Haborak@USACE.army.mil	
CLIENT ADDRESS: 100 W Oglethorpe Ave, Savannah Ga 31402		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE ___ OF ___

STANDARD REPORT DELIVERY ◯

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSIS / PRESERVATIVE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	8260B, 300 (ICE)	9034 (HNO3)									REMARKS
—	—	TRIP BLANK																
6-27-11	1305	LMW-6-6-11 (MS/MSD)	G	X				6										(MS/MSD taken)
6-27-11	1400	LMW-DUP1-6-11	G	X				3										
6-27-11	1426	LMW-9S-6-11	G	X				3										
6-27-11	1525	LMW-9D-6-11	G	X				3										
6-28-11	1050	LMW-8-6-11	G	X				4	1									
6-28-11	0845	LMW-9-6-11	G	X				4	1									samples date say 6-27-11 but sample date 6-28-11
6-28-11	1235	LMW-10-6-11	G	X				4	1									
6-28-11	1515	LMW-16-6-11	G	X				4	1									
6-28-11	1705	LMW-4-6-11	G	X				4	1									

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	6-28-11	1800	Fedex shipped					
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	6/29/11	0930	YES ◯ NO ◯		680-69874	4.1°C

Page 52 of 53

TAL 8240-680 (1008)

Login Sample Receipt Checklist

Client: U.S. Army Corps of Engineers

Job Number: 680-69874-1

Login Number: 69874

List Source: TestAmerica Savannah

List Number: 1

Creator: Conner, Keaton

Question	Answer	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?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	False	COC requests 9034/containers are 6020 APP 1 Metals
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	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Job Number: 680-69845-2

Job Description: Ft. Bragg Lamont Landfill

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

Attention: Mr. Kevin Haborak

Approved for release.
Kathryn Smith
Project Manager I
7/21/2011 10:26 AM

Kathryn Smith
Project Manager I
kathye.smith@testamericainc.com
07/21/2011

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

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

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

Job Narrative
680-69845-2

Comments
The Chain of Custody is requesting methods 300 and 9034. We received bottles for Methods 300 and 6020 which is what was provided in the report.

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

Metals
No analytical or quality issues were noted.

General Chemistry
Method(s) 300.0: The following sample was over the calibration range and required a dilution, which was performed outside of the analytical holding time in analytical batch 207638: LMW-DUP1-6-11 (680-69845-13). Both sets of data have been reported

No other analytical or quality issues were noted.

METHOD SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-69845-2

Description	Lab Location	Method	Preparation Method
Matrix Water			
Metals (ICP/MS)	TAL SAV	SW846 6020A	
Preparation, Extractable Metals	TAL SAV		SM 3030C
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: 680-69845-2

Method	Analyst	Analyst ID
SW846 6020A	Boyuk, Brian	BB
SW846 6020A	Robertson, Bryn	BR
MCAWW 300.0	Brazell, Connie	CB

SAMPLE SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-69845-2

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-69845-12	LMW-6-6-11	Water	06/27/2011 1305	06/28/2011 1000
680-69845-12MS	LMW-6-6-11	Water	06/27/2011 1305	06/28/2011 1000
680-69845-12MSD	LMW-6-6-11	Water	06/27/2011 1305	06/28/2011 1000
680-69845-13	LMW-DUP1-6-11	Water	06/27/2011 1400	06/28/2011 1000
680-69845-14	LMW-9S-6-11	Water	06/27/2011 1426	06/28/2011 1000
680-69845-15	LMW-9D-6-11	Water	06/27/2011 1525	06/28/2011 1000

Client: U.S. Army Corps of Engineers

Job Number: 680-69845-2

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

Lab Sample ID: 680-69845-12

Client Matrix: Water

Date Sampled: 06/27/2011 1305

Date Received: 06/28/2011 1000

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	680-208424	Instrument ID:	ICPMSC
Prep Method:	3030C	Prep Batch:	680-207342	Lab File ID:	035SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/08/2011 1552			Final Weight/Volume:	50 mL
Prep Date:	06/28/2011 1435				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Silver	0.10	U	0.10	0.20
Arsenic	0.40	U	0.40	1.0
Chromium	0.18	J	0.16	1.0
Copper	1.1		0.21	1.0
Cadmium	0.20	U	0.20	0.50
Cobalt	0.72		0.078	0.20
Barium	55		0.15	1.0
Beryllium	0.085	J	0.070	0.20
Nickel	1.1		0.40	1.0
Lead	0.099	J	0.080	0.30
Selenium	5.6		0.21	0.50
Thallium	0.10	U	0.10	0.20
Vanadium	1.4	U	1.4	5.0
Zinc	8.7	J	2.6	10

Analysis Method:	6020A	Analysis Batch:	680-208517	Instrument ID:	ICPMSB
Prep Method:	3030C	Prep Batch:	680-207342	Lab File ID:	140SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/10/2011 0001			Final Weight/Volume:	50 mL
Prep Date:	06/28/2011 1435				

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

Client: U.S. Army Corps of Engineers

Job Number: 680-69845-2

Client Sample ID: **LMW-DUP1-6-11**

Lab Sample ID: 680-69845-13

Client Matrix: Water

Date Sampled: 06/27/2011 1400

Date Received: 06/28/2011 1000

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	680-208424	Instrument ID:	ICPMSC
Prep Method:	3030C	Prep Batch:	680-207342	Lab File ID:	054SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/08/2011 1703			Final Weight/Volume:	50 mL
Prep Date:	06/28/2011 1435				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Silver	0.10	U	0.10	0.20
Arsenic	0.40	U	0.40	1.0
Chromium	0.20	J	0.16	1.0
Copper	1.4		0.21	1.0
Cadmium	0.20	U	0.20	0.50
Cobalt	0.69		0.078	0.20
Barium	53		0.15	1.0
Beryllium	0.12	J	0.070	0.20
Nickel	1.1		0.40	1.0
Lead	1.4		0.080	0.30
Selenium	5.5		0.21	0.50
Thallium	0.10	U	0.10	0.20
Vanadium	1.4	U	1.4	5.0
Zinc	8.9	J	2.6	10

Analysis Method:	6020A	Analysis Batch:	680-208517	Instrument ID:	ICPMSB
Prep Method:	3030C	Prep Batch:	680-207342	Lab File ID:	154SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/10/2011 0110			Final Weight/Volume:	50 mL
Prep Date:	06/28/2011 1435				

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

Client: U.S. Army Corps of Engineers

Job Number: 680-69845-2

Client Sample ID: **LMW-9S-6-11**

Lab Sample ID: 680-69845-14

Client Matrix: Water

Date Sampled: 06/27/2011 1426

Date Received: 06/28/2011 1000

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	680-208424	Instrument ID:	ICPMSC
Prep Method:	3030C	Prep Batch:	680-207342	Lab File ID:	055SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/08/2011 1706			Final Weight/Volume:	50 mL
Prep Date:	06/28/2011 1435				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Silver	0.10	U	0.10	0.20
Arsenic	0.46	J	0.40	1.0
Chromium	0.16	U	0.16	1.0
Copper	0.49	J	0.21	1.0
Cadmium	0.20	U	0.20	0.50
Cobalt	0.87		0.078	0.20
Barium	59		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Nickel	0.67	J	0.40	1.0
Lead	0.080	U	0.080	0.30
Selenium	0.38	J	0.21	0.50
Thallium	0.10	U	0.10	0.20
Vanadium	1.4	U	1.4	5.0
Zinc	2.6	U	2.6	10

Analysis Method:	6020A	Analysis Batch:	680-208517	Instrument ID:	ICPMSB
Prep Method:	3030C	Prep Batch:	680-207342	Lab File ID:	155SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/10/2011 0115			Final Weight/Volume:	50 mL
Prep Date:	06/28/2011 1435				

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

Client: U.S. Army Corps of Engineers

Job Number: 680-69845-2

Client Sample ID: **LMW-9D-6-11**

Lab Sample ID: 680-69845-15

Client Matrix: Water

Date Sampled: 06/27/2011 1525

Date Received: 06/28/2011 1000

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	680-208424	Instrument ID:	ICPMSC
Prep Method:	3030C	Prep Batch:	680-207342	Lab File ID:	056SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/08/2011 1710			Final Weight/Volume:	50 mL
Prep Date:	06/28/2011 1435				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Silver	0.10	U	0.10	0.20
Arsenic	3.2		0.40	1.0
Chromium	3.1		0.16	1.0
Copper	2.0		0.21	1.0
Cadmium	0.20	U	0.20	0.50
Cobalt	0.13	J	0.078	0.20
Barium	3.8		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Nickel	2.5		0.40	1.0
Lead	0.46		0.080	0.30
Selenium	0.49	J	0.21	0.50
Thallium	0.10	U	0.10	0.20
Vanadium	2.6	J	1.4	5.0
Zinc	13		2.6	10

Analysis Method:	6020A	Analysis Batch:	680-208517	Instrument ID:	ICPMSB
Prep Method:	3030C	Prep Batch:	680-207342	Lab File ID:	156SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/10/2011 0120			Final Weight/Volume:	50 mL
Prep Date:	06/28/2011 1435				

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

General Chemistry

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

Lab Sample ID: 680-69845-12

Client Matrix: Water

Date Sampled: 06/27/2011 1305

Date Received: 06/28/2011 1000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as N	1.7		mg/L	0.075	0.25	5.0	300.0

Analysis Batch: 680-207568 Analysis Date: 06/29/2011 0027

General Chemistry

Client Sample ID: **LMW-DUP1-6-11**

Lab Sample ID: 680-69845-13

Client Matrix: Water

Date Sampled: 06/27/2011 1400

Date Received: 06/28/2011 1000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as N	10	J	mg/L	0.075	0.25	5.0	300.0
Analysis Batch: 680-207568	Analysis Date: 06/29/2011 0111						
Nitrate as N	10	H	mg/L	0.15	0.50	10	300.0
Run Type: DL	Analysis Batch: 680-207638	Analysis Date: 06/30/2011 0800					

General Chemistry

Client Sample ID: **LMW-9S-6-11**

Lab Sample ID: 680-69845-14

Client Matrix: Water

Date Sampled: 06/27/2011 1426

Date Received: 06/28/2011 1000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as N	0.075	U	mg/L	0.075	0.25	5.0	300.0

Analysis Batch: 680-207568 Analysis Date: 06/29/2011 0125

General Chemistry

Client Sample ID: **LMW-9D-6-11**

Lab Sample ID: 680-69845-15

Client Matrix: Water

Date Sampled: 06/27/2011 1525

Date Received: 06/28/2011 1000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as N	0.13	J	mg/L	0.075	0.25	5.0	300.0

Analysis Batch: 680-207568 Analysis Date: 06/29/2011 0139

DATA REPORTING QUALIFIERS

Client: U.S. Army Corps of Engineers

Job Number: 680-69845-2

Lab Section	Qualifier	Description
Metals		
	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.
	U	Undetected at the Limit of Detection.
General Chemistry		
	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.
	H	Sample was prepped or analyzed beyond the specified holding time
	U	Undetected at the Limit of Detection.

Client: U.S. Army Corps of Engineers

Job Number: 680-69845-2

Method Blank - Batch: 680-207342

Method: 6020A
Preparation: 3030C

Lab Sample ID:	MB 680-207342/1-A	Analysis Batch:	680-208424	Instrument ID:	ICPMSC
Client Matrix:	Water	Prep Batch:	680-207342	Lab File ID:	033SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/08/2011 1544	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	06/28/2011 1432				
Leach Date:	N/A				

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

Method Blank - Batch: 680-207342

Method: 6020A
Preparation: 3030C

Lab Sample ID:	MB 680-207342/1-A	Analysis Batch:	680-208517	Instrument ID:	ICPMSB
Client Matrix:	Water	Prep Batch:	680-207342	Lab File ID:	137SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/09/2011 2347	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	06/28/2011 1432				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Antimony	0.99	U	0.99	2.0

Client: U.S. Army Corps of Engineers

Job Number: 680-69845-2

Lab Control Sample - Batch: 680-207342

Method: 6020A
Preparation: 3030C

Lab Sample ID:	LCS 680-207342/2-A	Analysis Batch:	680-208424	Instrument ID:	ICPMSC
Client Matrix:	Water	Prep Batch:	680-207342	Lab File ID:	034SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/08/2011 1548	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	06/28/2011 1432				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Silver	10.0	11.1	111	75 - 125	
Arsenic	20.0	18.5	92	75 - 125	
Chromium	20.0	20.2	101	75 - 125	
Copper	20.0	21.3	107	75 - 125	
Cadmium	10.0	10.9	109	75 - 125	
Cobalt	10.0	10.5	105	75 - 125	
Barium	20.0	20.5	103	75 - 125	
Beryllium	10.0	11.6	116	75 - 125	
Nickel	20.0	20.8	104	75 - 125	
Lead	10.0	10.7	107	75 - 125	
Selenium	20.0	22.0	110	75 - 125	
Thallium	8.00	8.63	108	75 - 125	
Vanadium	20.0	20.0	100	75 - 125	
Zinc	20.0	22.1	111	75 - 125	

Lab Control Sample - Batch: 680-207342

Method: 6020A
Preparation: 3030C

Lab Sample ID:	LCS 680-207342/2-A	Analysis Batch:	680-208517	Instrument ID:	ICPMSB
Client Matrix:	Water	Prep Batch:	680-207342	Lab File ID:	138SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/09/2011 2352	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	06/28/2011 1432				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	10.0	10.5	105	75 - 125	

Client: U.S. Army Corps of Engineers

Job Number: 680-69845-2

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-207342

Method: 6020A
Preparation: 3030C

MS Lab Sample ID:	680-69845-12	Analysis Batch:	680-208424	Instrument ID:	ICPMSC
Client Matrix:	Water	Prep Batch:	680-207342	Lab File ID:	038SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/08/2011 1603			Final Weight/Volume:	50 mL
Prep Date:	06/28/2011 1435				
Leach Date:	N/A				

MSD Lab Sample ID:	680-69845-12	Analysis Batch:	680-208424	Instrument ID:	ICPMSC
Client Matrix:	Water	Prep Batch:	680-207342	Lab File ID:	039SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/08/2011 1606			Final Weight/Volume:	50 mL
Prep Date:	06/28/2011 1435				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Silver	92	94	75 - 125	2	20		
Arsenic	89	92	75 - 125	4	20		
Chromium	85	86	75 - 125	2	20		
Copper	87	88	75 - 125	1	20		
Cadmium	93	93	75 - 125	0	20		
Cobalt	87	89	75 - 125	1	20		
Barium	92	107	75 - 125	4	20		
Beryllium	114	108	75 - 125	5	20		
Nickel	87	86	75 - 125	1	20		
Lead	97	99	75 - 125	2	20		
Selenium	93	98	75 - 125	4	20		
Thallium	100	100	75 - 125	0	20		
Vanadium	89	87	75 - 125	1	20		
Zinc	71	64	75 - 125	6	20	J	J

Client: U.S. Army Corps of Engineers

Job Number: 680-69845-2

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-207342

Method: 6020A
Preparation: 3030C

MS Lab Sample ID:	680-69845-12	Analysis Batch:	680-208517	Instrument ID:	ICPMSB
Client Matrix:	Water	Prep Batch:	680-207342	Lab File ID:	143SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/10/2011 0016			Final Weight/Volume:	50 mL
Prep Date:	06/28/2011 1435				
Leach Date:	N/A				

MSD Lab Sample ID:	680-69845-12	Analysis Batch:	680-208517	Instrument ID:	ICPMSB
Client Matrix:	Water	Prep Batch:	680-207342	Lab File ID:	144SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/10/2011 0021			Final Weight/Volume:	50 mL
Prep Date:	06/28/2011 1435				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Antimony	113	113	75 - 125	0	20		

Client: U.S. Army Corps of Engineers

Job Number: 680-69845-2

Method Blank - Batch: 680-207568

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 680-207568/8	Analysis Batch:	680-207568	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0011.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/28/2011 1954	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Nitrate as N	0.075	U	0.075	0.25

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-207568

Method: 300.0
Preparation: N/A

LCS Lab Sample ID:	LCS 680-207568/9	Analysis Batch:	680-207568	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0012.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/28/2011 2008	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 680-207568/10	Analysis Batch:	680-207568	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0013.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/28/2011 2023	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

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

Client: U.S. Army Corps of Engineers

Job Number: 680-69845-2

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-207568

Method: 300.0
Preparation: N/A

MS Lab Sample ID:	680-69845-12	Analysis Batch:	680-207568	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0031.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/29/2011 0042			Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	680-69845-12	Analysis Batch:	680-207568	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0032.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/29/2011 0056			Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrate as N	109	108	90 - 110	1	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-69845-2

Method Blank - Batch: 680-207638

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 680-207638/2	Analysis Batch:	680-207638	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0071.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/30/2011 0051	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Nitrate as N	0.075	U	0.075	0.25

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-207638

Method: 300.0
Preparation: N/A

LCS Lab Sample ID:	LCS 680-207638/3	Analysis Batch:	680-207638	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0072.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/30/2011 0105	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 680-207638/4	Analysis Batch:	680-207638	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0073.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/30/2011 0120	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Nitrate as N	103	103	90 - 110	0	30		

Duplicate - Batch: 680-207638

Method: 300.0
Preparation: N/A

Lab Sample ID:	680-69845-13	Analysis Batch:	680-207638	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0098.d
Dilution:	10	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/30/2011 0815	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate as N	10	9.91	4	30	

Serial Number 043530

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

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

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: Ft Bragg Lemont LF	PROJECT NO.	PROJECT LOCATION (STATE): NC
TAL (LAB) PROJECT MANAGER: Kathy Smith	P.O. NUMBER	CONTRACT NO.
CLIENT (SITE) PM: Kevin Haborak	CLIENT PHONE: 912-652-6083	CLIENT FAX: 912-652-5311
CLIENT NAME: USACE	CLIENT E-MAIL: Kevin.Haborak@usace.army.mil	
CLIENT ADDRESS: 100 W Oglethorpe Ave Savannah Ga 31402		
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 / PRESERVATIVE

ANALYTICAL REPORT

Job Number: 680-69931-1

Job Description: Ft. Bragg Lamont Landfill

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

Attention: Mr. Kevin Haborak

Approved for release.
Kathryn Smith
Project Manager I
7/25/2011 2:22 PM

Kathryn Smith
Project Manager I
kathye.smith@testamericainc.com
07/25/2011

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

Job Narrative
680-69931-1

Comments
No additional comments.

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

GC/MS VOA
Method(s) 8260B: The trip blank associated with these samples contained a detection above 1/2 reporting limit (RL), the method detection limit (MDL) for the following analyte: Methylene Chloride. This compound is a common lab contaminate and was also present in the method blank.

Method(s) 8260B: The method blank for batch 208144 contained Methylene Chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

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: 680-69931-1

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
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: 680-69931-1

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

SAMPLE SUMMARY

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-69931-1	LMW-BLANK-6-11	Water	06/29/2011 1500	06/30/2011 0920
680-69931-2	LMW-15R-6-11	Water	06/29/2011 1405	06/30/2011 0920
680-69931-3	LMW-14R-6-11	Water	06/29/2011 1203	06/30/2011 0920
680-69931-4	LMW-3-6-11	Water	06/29/2011 1135	06/30/2011 0920
680-69931-5	LMW-3S-6-11	Water	06/29/2011 1030	06/30/2011 0920
680-69931-6	LMW-7-6-11	Water	06/29/2011 0800	06/30/2011 0920
680-69931-7TB	Trip Blank	Water	06/29/2011 0000	06/30/2011 0920

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

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

Lab Sample ID: 680-69931-1

Client Matrix: Water

Date Sampled: 06/29/2011 1500

Date Received: 06/30/2011 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-208144	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1023.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 1207			Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 1207				

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	3.2	J B	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	1.0		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: 680-69931-1

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

Lab Sample ID: 680-69931-1

Client Matrix: Water

Date Sampled: 06/29/2011 1500

Date Received: 06/30/2011 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-208144	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1023.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 1207			Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 1207				

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	97		70 - 130
Dibromofluoromethane	104		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Client Sample ID: **LMW-15R-6-11**

Lab Sample ID: 680-69931-2

Client Matrix: Water

Date Sampled: 06/29/2011 1405

Date Received: 06/30/2011 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-208144	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1025.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 1236			Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 1236				

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	3.1	J B	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: 680-69931-1

Client Sample ID: **LMW-15R-6-11**

Lab Sample ID: 680-69931-2

Client Matrix: Water

Date Sampled: 06/29/2011 1405

Date Received: 06/30/2011 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-208144	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1025.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 1236			Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 1236				

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	104		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Client Sample ID: **LMW-14R-6-11**

Lab Sample ID: 680-69931-3

Client Matrix: Water

Date Sampled: 06/29/2011 1203

Date Received: 06/30/2011 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-208144	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1027.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 1305			Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 1305				

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	3.1	J B	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	0.61	J	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: 680-69931-1

Client Sample ID: **LMW-14R-6-11**

Lab Sample ID: 680-69931-3

Client Matrix: Water

Date Sampled: 06/29/2011 1203

Date Received: 06/30/2011 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-208144	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1027.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 1305			Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 1305				

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	96		70 - 130
Dibromofluoromethane	104		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Client Sample ID: **LMW-3-6-11**

Lab Sample ID: 680-69931-4

Client Matrix: Water

Date Sampled: 06/29/2011 1135

Date Received: 06/30/2011 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-208144	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1029.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 1333			Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 1333				

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	0.40	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	3.1	J B	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	0.38	J	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	0.51	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: 680-69931-1

Client Sample ID: **LMW-3-6-11**

Lab Sample ID: 680-69931-4

Client Matrix: Water

Date Sampled: 06/29/2011 1135

Date Received: 06/30/2011 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-208144	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1029.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 1333			Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 1333				

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	98		70 - 130
Dibromofluoromethane	102		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Client Sample ID: **LMW-3S-6-11**

Lab Sample ID: 680-69931-5

Client Matrix: Water

Date Sampled: 06/29/2011 1030

Date Received: 06/30/2011 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-208144	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1031.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 1402			Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 1402				

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	0.76	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	3.2	J B	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	0.36	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: 680-69931-1

Client Sample ID: **LMW-3S-6-11**

Lab Sample ID: 680-69931-5

Client Matrix: Water

Date Sampled: 06/29/2011 1030

Date Received: 06/30/2011 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-208144	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1031.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 1402			Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 1402				

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: 680-69931-1

Client Sample ID: **LMW-7-6-11**

Lab Sample ID: 680-69931-6

Client Matrix: Water

Date Sampled: 06/29/2011 0800

Date Received: 06/30/2011 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-208144	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1033.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 1431			Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 1431				

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	3.0	J B	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	1.3		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	0.22	J	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: 680-69931-1

Client Sample ID: **LMW-7-6-11**

Lab Sample ID: 680-69931-6

Client Matrix: Water

Date Sampled: 06/29/2011 0800

Date Received: 06/30/2011 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-208144	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1033.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 1431			Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 1431				

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	96		70 - 130
Dibromofluoromethane	103		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-69931-7TB

Client Matrix: Water

Date Sampled: 06/29/2011 0000

Date Received: 06/30/2011 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-208144	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1021.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 1138			Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 1138				

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	3.2	J B	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: 680-69931-1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-69931-7TB

Client Matrix: Water

Date Sampled: 06/29/2011 0000

Date Received: 06/30/2011 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	680-208144	Instrument ID:	MSO
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	o1021.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 1138			Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 1138				

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	95		70 - 130
Dibromofluoromethane	104		70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

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

Lab Sample ID: 680-69931-1

Client Matrix: Water

Date Sampled: 06/29/2011 1500

Date Received: 06/30/2011 0920

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Prep Method:	3030C	Prep Batch:	680-207771	Lab File ID:	037SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2014			Final Weight/Volume:	50 mL
Prep Date:	07/01/2011 1029				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	0.40	U	0.40	1.0
Chromium	0.16	U	0.16	1.0
Copper	0.52	J	0.21	1.0
Cadmium	0.20	U	0.20	0.50
Cobalt	0.078	U	0.078	0.20
Barium	0.56	J	0.15	1.0
Beryllium	0.070	U	0.070	0.20
Nickel	0.46	J	0.40	1.0
Lead	0.13	J	0.080	0.30
Antimony	0.99	U	0.99	2.0
Selenium	0.21	U	0.21	0.50
Thallium	0.10	U	0.10	0.20
Vanadium	1.4	U	1.4	5.0
Zinc	9.1	J	2.6	10

Analysis Method:	6020A	Analysis Batch:	680-208625	Instrument ID:	ICPMSB
Prep Method:	3030C	Prep Batch:	680-208214	Lab File ID:	065SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/11/2011 2250			Final Weight/Volume:	50 mL
Prep Date:	07/07/2011 1350				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Silver	0.10	U H	0.10	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Client Sample ID: **LMW-15R-6-11**

Lab Sample ID: 680-69931-2

Client Matrix: Water

Date Sampled: 06/29/2011 1405

Date Received: 06/30/2011 0920

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Prep Method:	3030C	Prep Batch:	680-207771	Lab File ID:	042SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2051			Final Weight/Volume:	50 mL
Prep Date:	07/01/2011 1029				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	0.40	U	0.40	1.0
Chromium	0.20	J	0.16	1.0
Copper	0.59	J	0.21	1.0
Cadmium	0.20	U	0.20	0.50
Cobalt	0.75		0.078	0.20
Barium	25		0.15	1.0
Beryllium	0.13	J	0.070	0.20
Nickel	0.93	J	0.40	1.0
Lead	0.48		0.080	0.30
Antimony	0.99	U	0.99	2.0
Selenium	0.32	J	0.21	0.50
Thallium	0.10	U	0.10	0.20
Vanadium	1.4	U	1.4	5.0
Zinc	8.6	J	2.6	10

Analysis Method:	6020A	Analysis Batch:	680-208625	Instrument ID:	ICPMSB
Prep Method:	3030C	Prep Batch:	680-208214	Lab File ID:	066SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/11/2011 2255			Final Weight/Volume:	50 mL
Prep Date:	07/07/2011 1350				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Silver	0.10	U H	0.10	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Client Sample ID: **LMW-14R-6-11**

Lab Sample ID: 680-69931-3

Client Matrix: Water

Date Sampled: 06/29/2011 1203

Date Received: 06/30/2011 0920

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Prep Method:	3030C	Prep Batch:	680-207771	Lab File ID:	043SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2058			Final Weight/Volume:	50 mL
Prep Date:	07/01/2011 1029				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	0.40	U	0.40	1.0
Chromium	1.2		0.16	1.0
Copper	2.0		0.21	1.0
Cadmium	0.20	U	0.20	0.50
Cobalt	0.20		0.078	0.20
Barium	11		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Nickel	1.8		0.40	1.0
Lead	0.30		0.080	0.30
Antimony	0.99	U	0.99	2.0
Selenium	0.21	U	0.21	0.50
Thallium	0.10	U	0.10	0.20
Vanadium	1.4	U	1.4	5.0
Zinc	10		2.6	10

Analysis Method:	6020A	Analysis Batch:	680-208625	Instrument ID:	ICPMSB
Prep Method:	3030C	Prep Batch:	680-208214	Lab File ID:	069SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/11/2011 2310			Final Weight/Volume:	50 mL
Prep Date:	07/07/2011 1350				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Silver	0.10	U H	0.10	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Client Sample ID: **LMW-3-6-11**

Lab Sample ID: 680-69931-4

Client Matrix: Water

Date Sampled: 06/29/2011 1135

Date Received: 06/30/2011 0920

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Prep Method:	3030C	Prep Batch:	680-207771	Lab File ID:	044SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2106			Final Weight/Volume:	50 mL
Prep Date:	07/01/2011 1029				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	0.40	U	0.40	1.0
Chromium	0.16	U	0.16	1.0
Copper	1.0		0.21	1.0
Cadmium	0.20	U	0.20	0.50
Cobalt	0.16	J	0.078	0.20
Barium	3.5		0.15	1.0
Beryllium	0.070	U	0.070	0.20
Nickel	0.85	J	0.40	1.0
Lead	0.12	J	0.080	0.30
Antimony	0.99	U	0.99	2.0
Selenium	0.21	U	0.21	0.50
Thallium	0.10	U	0.10	0.20
Vanadium	1.4	U	1.4	5.0
Zinc	7.6	J	2.6	10

Analysis Method:	6020A	Analysis Batch:	680-208625	Instrument ID:	ICPMSB
Prep Method:	3030C	Prep Batch:	680-208214	Lab File ID:	072SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/11/2011 2325			Final Weight/Volume:	50 mL
Prep Date:	07/07/2011 1350				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Silver	0.10	U H	0.10	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Client Sample ID: **LMW-3S-6-11**

Lab Sample ID: 680-69931-5

Client Matrix: Water

Date Sampled: 06/29/2011 1030

Date Received: 06/30/2011 0920

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Prep Method:	3030C	Prep Batch:	680-207771	Lab File ID:	047SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2128			Final Weight/Volume:	50 mL
Prep Date:	07/01/2011 1029				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	0.84	J	0.40	1.0
Chromium	3.3		0.16	1.0
Copper	1.3		0.21	1.0
Cadmium	0.20	U	0.20	0.50
Cobalt	0.45		0.078	0.20
Barium	14		0.15	1.0
Beryllium	0.10	J	0.070	0.20
Nickel	3.1		0.40	1.0
Lead	1.7		0.080	0.30
Antimony	0.99	U	0.99	2.0
Selenium	0.21	U	0.21	0.50
Thallium	0.10	U	0.10	0.20
Vanadium	3.2	J	1.4	5.0
Zinc	7.6	J	2.6	10

Analysis Method:	6020A	Analysis Batch:	680-208625	Instrument ID:	ICPMSB
Prep Method:	3030C	Prep Batch:	680-208214	Lab File ID:	075SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/11/2011 2340			Final Weight/Volume:	50 mL
Prep Date:	07/07/2011 1350				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Silver	0.10	U H	0.10	0.20

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Client Sample ID: **LMW-7-6-11**

Lab Sample ID: 680-69931-6

Client Matrix: Water

Date Sampled: 06/29/2011 0800

Date Received: 06/30/2011 0920

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Prep Method:	3030C	Prep Batch:	680-207771	Lab File ID:	048SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2135			Final Weight/Volume:	50 mL
Prep Date:	07/01/2011 1029				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	1.8		0.40	1.0
Chromium	12		0.16	1.0
Copper	13		0.21	1.0
Cadmium	4.9		0.20	0.50
Cobalt	2.7		0.078	0.20
Barium	13		0.15	1.0
Beryllium	0.34		0.070	0.20
Nickel	7.5		0.40	1.0
Lead	2.5		0.080	0.30
Antimony	0.99	U	0.99	2.0
Selenium	0.30	J	0.21	0.50
Thallium	0.10	U	0.10	0.20
Vanadium	7.0		1.4	5.0
Zinc	59		2.6	10

Analysis Method:	6020A	Analysis Batch:	680-208625	Instrument ID:	ICPMSB
Prep Method:	3030C	Prep Batch:	680-208214	Lab File ID:	076SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/11/2011 2344			Final Weight/Volume:	50 mL
Prep Date:	07/07/2011 1350				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Silver	0.10	U H	0.10	0.20

General Chemistry

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

Lab Sample ID: 680-69931-1

Client Matrix: Water

Date Sampled: 06/29/2011 1500

Date Received: 06/30/2011 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as N	3.6	J	mg/L	0.075	0.25	5.0	300.0

Analysis Batch: 680-208808 Analysis Date: 06/30/2011 1853

General Chemistry

Client Sample ID: **LMW-15R-6-11**

Lab Sample ID: 680-69931-2

Client Matrix: Water

Date Sampled: 06/29/2011 1405

Date Received: 06/30/2011 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as N	68	J	mg/L	0.75	2.5	50	300.0

Analysis Batch: 680-208806 Analysis Date: 07/01/2011 0924

General Chemistry

Client Sample ID: **LMW-14R-6-11**

Lab Sample ID: 680-69931-3

Client Matrix: Water

Date Sampled: 06/29/2011 1203

Date Received: 06/30/2011 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as N	0.35		mg/L	0.075	0.25	5.0	300.0

Analysis Batch: 680-208808 Analysis Date: 06/30/2011 1950

General Chemistry

Client Sample ID: **LMW-3-6-11**

Lab Sample ID: 680-69931-4

Client Matrix: Water

Date Sampled: 06/29/2011 1135

Date Received: 06/30/2011 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as N	0.73		mg/L	0.075	0.25	5.0	300.0

Analysis Batch: 680-208808 Analysis Date: 06/30/2011 2005

General Chemistry

Client Sample ID: **LMW-3S-6-11**

Lab Sample ID: 680-69931-5

Client Matrix: Water

Date Sampled: 06/29/2011 1030

Date Received: 06/30/2011 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as N	0.15	J	mg/L	0.075	0.25	5.0	300.0

Analysis Batch: 680-208808 Analysis Date: 06/30/2011 2019

General Chemistry

Client Sample ID: **LMW-7-6-11**

Lab Sample ID: 680-69931-6

Client Matrix: Water

Date Sampled: 06/29/2011 0800

Date Received: 06/30/2011 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate as N	0.086	J	mg/L	0.075	0.25	5.0	300.0

Analysis Batch: 680-208808 Analysis Date: 06/30/2011 2034

DATA REPORTING QUALIFIERS

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Lab Section	Qualifier	Description
GC/MS VOA		
	B	Blank contamination: The analyte was detected above one-half the reporting limit in an associated blank.
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	U	Undetected at the Limit of Detection.
Metals		
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	H	Sample was prepped or analyzed beyond the specified holding time
	U	Undetected at the Limit of Detection.
General Chemistry		
	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.
	U	Undetected at the Limit of Detection.

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Method Blank - Batch: 680-208144

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-208144/9	Analysis Batch:	680-208144	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq643.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 1110	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 1110				
Leach Date:	N/A				

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	3.11	J	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

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Method Blank - Batch: 680-208144

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-208144/9	Analysis Batch:	680-208144	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq643.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 1110	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 1110				
Leach Date:	N/A				

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

Surrogate	% Rec	Acceptance Limits
Toluene-d8 (Surr)	102	70 - 130
4-Bromofluorobenzene	97	70 - 130
Dibromofluoromethane	104	70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-208144

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-208144/6	Analysis Batch:	680-208144	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq635.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 0914	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 0914				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 680-208144/7	Analysis Batch:	680-208144	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq637.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 0943	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 0943				
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Acetone	96	98	26 - 180	2	50		
Benzene	97	95	70 - 130	2	30		
Dichlorobromomethane	106	104	70 - 130	2	30		
Bromomethane	104	98	23 - 165	6	50		
Carbon disulfide	103	101	54 - 132	2	30		
Chlorobenzene	97	97	70 - 130	0	30		
Chlorodibromomethane	89	89	70 - 130	1	50		
Chloroethane	95	90	56 - 152	5	40		
Chloromethane	96	94	70 - 130	2	30		
Chloroform	102	101	70 - 130	0	30		
1,2-Dibromo-3-Chloropropane	96	100	70 - 130	4	50		
Ethylene Dibromide	97	97	70 - 130	0	30		
Dichlorodifluoromethane	99	99	44 - 146	1	50		
1,1-Dichloroethane	101	101	70 - 130	0	30		
1,2-Dichloroethane	97	95	70 - 130	1	30		
trans-1,2-Dichloroethene	101	98	70 - 130	3	30		
1,1-Dichloroethene	99	97	66 - 131	1	30		
Methylene Chloride	100	100	67 - 130	1	30		
1,2-Dichloropropane	97	98	70 - 130	1	30		
cis-1,3-Dichloropropene	106	103	70 - 130	2	30		
trans-1,3-Dichloropropene	91	89	70 - 130	2	50		
Ethylbenzene	100	99	70 - 130	1	30		
2-Butanone (MEK)	99	100	49 - 172	1	30		
4-Methyl-2-pentanone (MIBK)	99	98	70 - 130	0	30		
Styrene	100	99	70 - 130	1	30		
1,1,1,2-Tetrachloroethane	99	100	70 - 130	0	30		
1,1,2,2-Tetrachloroethane	97	96	70 - 130	0	30		
Tetrachloroethene	99	99	70 - 130	0	30		
Carbon tetrachloride	102	101	70 - 130	2	30		
Toluene	99	96	70 - 130	2	30		
Bromoform	102	100	70 - 130	1	30		
1,1,2-Trichloroethane	98	96	70 - 130	1	30		
1,1,1-Trichloroethane	105	102	70 - 130	2	30		
Trichloroethene	99	98	70 - 130	1	30		
Trichlorofluoromethane	101	97	55 - 156	3	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-208144

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-208144/6	Analysis Batch:	680-208144	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq635.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 0914	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 0914				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 680-208144/7	Analysis Batch:	680-208144	Instrument ID:	MSO
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq637.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/06/2011 0943	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/06/2011 0943				
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,2,3-Trichloropropane	95	95	70 - 130	0	30		
Vinyl acetate	108	107	60 - 176	1	30		
Vinyl chloride	99	95	67 - 134	4	30		
Xylenes, Total	101	99	70 - 130	1	30		
2-Hexanone	100	102	42 - 185	2	30		
Chlorobromomethane	99	100	70 - 130	2	30		
cis-1,2-Dichloroethene	100	99	70 - 130	1	30		
1,3-Dichloropropane	97	94	70 - 130	2	30		
2,2-Dichloropropane	111	109	70 - 135	2	30		
1,1-Dichloropropene	101	98	70 - 130	3	30		
1,2-Dichlorobenzene	96	95	70 - 130	1	30		
1,3-Dichlorobenzene	99	97	70 - 130	2	30		
1,4-Dichlorobenzene	99	97	70 - 130	2	30		
1,2,4-Trichlorobenzene	98	99	65 - 130	1	30		
Dibromomethane	96	95	70 - 130	1	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	99	97	70 - 130
4-Bromofluorobenzene	95	96	70 - 130
Dibromofluoromethane	103	103	70 - 130

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Method Blank - Batch: 680-207771

Method: 6020A
Preparation: 3030C

Lab Sample ID:	MB 680-207771/1-A	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Client Matrix:	Water	Prep Batch:	680-207771	Lab File ID:	035SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 1959	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	07/01/2011 1029				
Leach Date:	N/A				

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

Lab Control Sample - Batch: 680-207771

Method: 6020A
Preparation: 3030C

Lab Sample ID:	LCS 680-207771/2-A	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Client Matrix:	Water	Prep Batch:	680-207771	Lab File ID:	036SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2006	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	07/01/2011 1029				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	20.0	19.1	96	75 - 125	
Chromium	20.0	18.3	92	75 - 125	
Cadmium	10.0	9.93	99	75 - 125	
Cobalt	10.0	8.96	90	75 - 125	
Barium	20.0	19.0	95	75 - 125	
Beryllium	10.0	9.98	100	75 - 125	
Nickel	20.0	19.4	97	75 - 125	
Antimony	10.0	10.4	104	75 - 125	
Selenium	20.0	22.5	113	75 - 125	
Vanadium	20.0	18.1	91	75 - 125	

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-207771

Method: 6020A
Preparation: 3030C

MS Lab Sample ID:	680-69931-1	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Client Matrix:	Water	Prep Batch:	680-207771	Lab File ID:	040SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2036			Final Weight/Volume:	50 mL
Prep Date:	07/01/2011 1029				
Leach Date:	N/A				

MSD Lab Sample ID:	680-69931-1	Analysis Batch:	680-208192	Instrument ID:	ICPMSA
Client Matrix:	Water	Prep Batch:	680-207771	Lab File ID:	041SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/06/2011 2043			Final Weight/Volume:	50 mL
Prep Date:	07/01/2011 1029				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Arsenic	96	99	75 - 125	3	20		
Chromium	91	92	75 - 125	2	20		
Copper	93	96	75 - 125	3	20		
Cadmium	100	100	75 - 125	0	20		
Cobalt	83	87	75 - 125	5	20		
Barium	92	92	75 - 125	0	20		
Beryllium	100	101	75 - 125	1	20		
Nickel	94	96	75 - 125	2	20		
Lead	93	94	75 - 125	2	20		
Antimony	103	102	75 - 125	0	20		
Selenium	112	113	75 - 125	1	20		
Thallium	92	95	75 - 125	3	20		
Vanadium	89	92	75 - 125	3	20		
Zinc	93	101	75 - 125	6	20		

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Method Blank - Batch: 680-208214

Method: 6020A
Preparation: 3030C

Lab Sample ID:	MB 680-208214/1-A	Analysis Batch:	680-208625	Instrument ID:	ICPMSB
Client Matrix:	Water	Prep Batch:	680-208214	Lab File ID:	063SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/11/2011 2240	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	07/07/2011 1350				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Silver	0.10	U	0.10	0.20

Lab Control Sample - Batch: 680-208214

Method: 6020A
Preparation: 3030C

Lab Sample ID:	LCS 680-208214/2-A	Analysis Batch:	680-208625	Instrument ID:	ICPMSB
Client Matrix:	Water	Prep Batch:	680-208214	Lab File ID:	064SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/11/2011 2245	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	07/07/2011 1350				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Silver	10.0	9.97	100	75 - 125	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-208214

Method: 6020A
Preparation: 3030C

MS Lab Sample ID:	680-69931-2	Analysis Batch:	680-208625	Instrument ID:	ICPMSB
Client Matrix:	Water	Prep Batch:	680-208214	Lab File ID:	067SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/11/2011 2300			Final Weight/Volume:	50 mL
Prep Date:	07/07/2011 1350				
Leach Date:	N/A				

MSD Lab Sample ID:	680-69931-2	Analysis Batch:	680-208625	Instrument ID:	ICPMSB
Client Matrix:	Water	Prep Batch:	680-208214	Lab File ID:	068SMPL.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/11/2011 2305			Final Weight/Volume:	50 mL
Prep Date:	07/07/2011 1350				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Silver	92	95	75 - 125	3	20	H	H

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Method Blank - Batch: 680-208806

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 680-208806/2	Analysis Batch:	680-208806	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0005.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	07/01/2011 0841	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Nitrate as N	0.075	U	0.075	0.25

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-208806

Method: 300.0
Preparation: N/A

LCS Lab Sample ID:	LCS 680-208806/3	Analysis Batch:	680-208806	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0006.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	07/01/2011 0855	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 680-208806/4	Analysis Batch:	680-208806	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0007.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	07/01/2011 0910	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Nitrate as N	104	104	90 - 110	0	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-208806

Method: 300.0
Preparation: N/A

MS Lab Sample ID:	680-69931-2	Analysis Batch:	680-208806	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0009.d
Dilution:	50	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	07/01/2011 0938			Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	680-69931-2	Analysis Batch:	680-208806	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0010.d
Dilution:	50	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	07/01/2011 0953			Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrate as N	113	109	90 - 110	2	30	J	J

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Method Blank - Batch: 680-208808

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 680-208808/2	Analysis Batch:	680-208808	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0134.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/30/2011 1810	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Nitrate as N	0.075	U	0.075	0.25

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-208808

Method: 300.0
Preparation: N/A

LCS Lab Sample ID:	LCS 680-208808/3	Analysis Batch:	680-208808	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0135.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/30/2011 1824	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 680-208808/4	Analysis Batch:	680-208808	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0136.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/30/2011 1838	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Nitrate as N	104	104	90 - 110	0	30		

Client: U.S. Army Corps of Engineers

Job Number: 680-69931-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-208808

Method: 300.0
Preparation: N/A

MS Lab Sample ID:	680-69931-1	Analysis Batch:	680-208808	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0138.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/30/2011 1907			Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	680-69931-1	Analysis Batch:	680-208808	Instrument ID:	ICG
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0139.d
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	1 mL
Analysis Date:	06/30/2011 1922			Final Weight/Volume:	5 mL
Prep Date:	N/A				1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrate as N	113	114	90 - 110	1	30	J	J

Serial Number 64631

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: H-H Bagghamont LF	PROJECT NO.	PROJECT LOCATION (STATE): NC
TAL (LAB) PROJECT MANAGER: Kathy Smith	P.O. NUMBER	CONTRACT NO.
CLIENT (SITE) PM: Kevin Hebrock	CLIENT PHONE: 912-652-6083	CLIENT FAX: 912-652-5311
CLIENT NAME: USACE	CLIENT E-MAIL: Kevin.Hebrock@USACE.army.mil	
CLIENT ADDRESS: 100 West Oglethorpe Ave Savannah GA 31402		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF

STANDARD REPORT DELIVERY ◯

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSIS

PRESERVATIVE: ICE; HNO3

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT...)	8260B 300	HNO3 6010 Appt	REMARKS
6-29-11	1500	LMW-BLANK-6-11	G	X				4	1	
6-29-11	1405	LMW-15R-6-11	G	X				4	1	
6-29-11	1203	LMW-14R-6-11	G	X				4	1	
6-29-11	~~1037~~ 1135	LMW-3-6-11	G	X				4	1	Sample time 1135
6-29-11	1030	LMW-35-6-11	G	X				4	1	
6-29-11	0800	LMW-7-6-11	G	X				4	1	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	6-29-11	1600	Shipped by FedEx					
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	6/30/11	0920	YES ◯ NO ◯		630-69931	1.6°C

TALX 10 680 (1008)

APPENDIX D

STATISTICAL REPORTS
(Electronic Only)

US Army Corps
of Engineers
Savannah District

DIRECTORATE OF PUBLIC
WORKS and ENVIRONMENT
Fort Bragg, North Carolina

Statistical Analysis of Ground-Water Data
Lamont Road Land Clearing and Inert Debris Landfill
Fort Bragg, North Carolina
Rounds N1 through N22

Permit No. 26G and 26-08

OCTOBER 2011

Prepared by
U.S. Army Corps of Engineers, Savannah District
100 West Oglethorpe Ave.
Savannah, Georgia 31401

Statistical Analysis of Ground-Water Data
Lamont Road Land Clearing and Inert Debris Landfill
Fort Bragg, North Carolina
Rounds N1 through N22

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 July 2011. The background and compliance wells sampled are listed on Table 1. The monitoring well network was originally comprised of 11 wells, 4 of the original wells have been abandoned and 6 additional wells have been installed. Therefore, the current monitoring well network consists of 13 wells. Ground-water data were statistically analyzed to determine if the mean concentration for each analyte deviated significantly from the mean concentration from the background well data. All ground-water samples were analyzed for Appendix I Organics by EPA method 8260B and Appendix I Inorganics by EPA methods 6010B and 6020A. Any analyte with a detection during this event was tested to determine if the detection was a statistically significant increase over background levels.

Analysis of the 1,2-cis-dichloroethene data using the Non-Parametric Prediction Limit test indicated a possible SSI in monitoring well LMW-8. 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 chromium 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 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 lead data using the Kruskal-Wallis test indicated a possible SSI at the group level, no single well was indicated to have an SSI. Therefore, the Non-Parametric Prediction Limit was used to test if the data contained SSIs. The Non-Parametric Prediction Limit did not indicate that the data contained SSIs for any of the wells.

Analysis of the nickel data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-3S. The SSI was not confirmed by either the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the nickel data in monitoring well LMW-3S are not SSIs.

Analysis of the selenium data using the Kruskal-Wallis test indicated a possible SSI in monitoring 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 toluene 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 or the Shewhart-CUSUM Control Chart. The fluctuations in the LMW-7 data are not SSIs.

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

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

Analysis of the vanadium data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-9D. The SSI was not confirmed by either the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the vanadium data in monitoring well LMW-9D are not SSIs.

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

The results of the statistical analysis indicate that the compliance well concentrations do not vary significantly from background concentrations for any of the other parameters analyzed. Future analytical results will be evaluated using the same procedures.

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

TABLE OF CONTENTS

SECTION Page

EXECUTIVE SUMMARY i

1.0 BACKGROUND 1

2.0 DETERMINATION OF APPROPRIATE DISTRIBUTIONAL MODEL 1

3.0 SELECTION OF STATISTICAL METHOD 2

4.0 FIELD ACTIVITIES 4

5.0 RESULTS 5

6.0 CONCLUSIONS 7

7.0 REFERENCES 7

LIST OF TABLES

Table 1 Ground-Water Monitoring Network 2

FIGURES

Figure 1: Flowchart of the Statistical Tests Performed for Each Analyte Detected in Compliance Wells

LIST OF SUPPLEMENTAL MATERIAL

Lamont Road Land Clearing and Inert Debris Landfill N=18 Statistical Data on CD Format

1.0 BACKGROUND

Fort Bragg authorized the U.S. Army Corps of Engineers, Savannah District to perform the required sampling of the Lamont LCID Landfill. Sampling activities for the twenty-second round of sampling (N=22) 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.

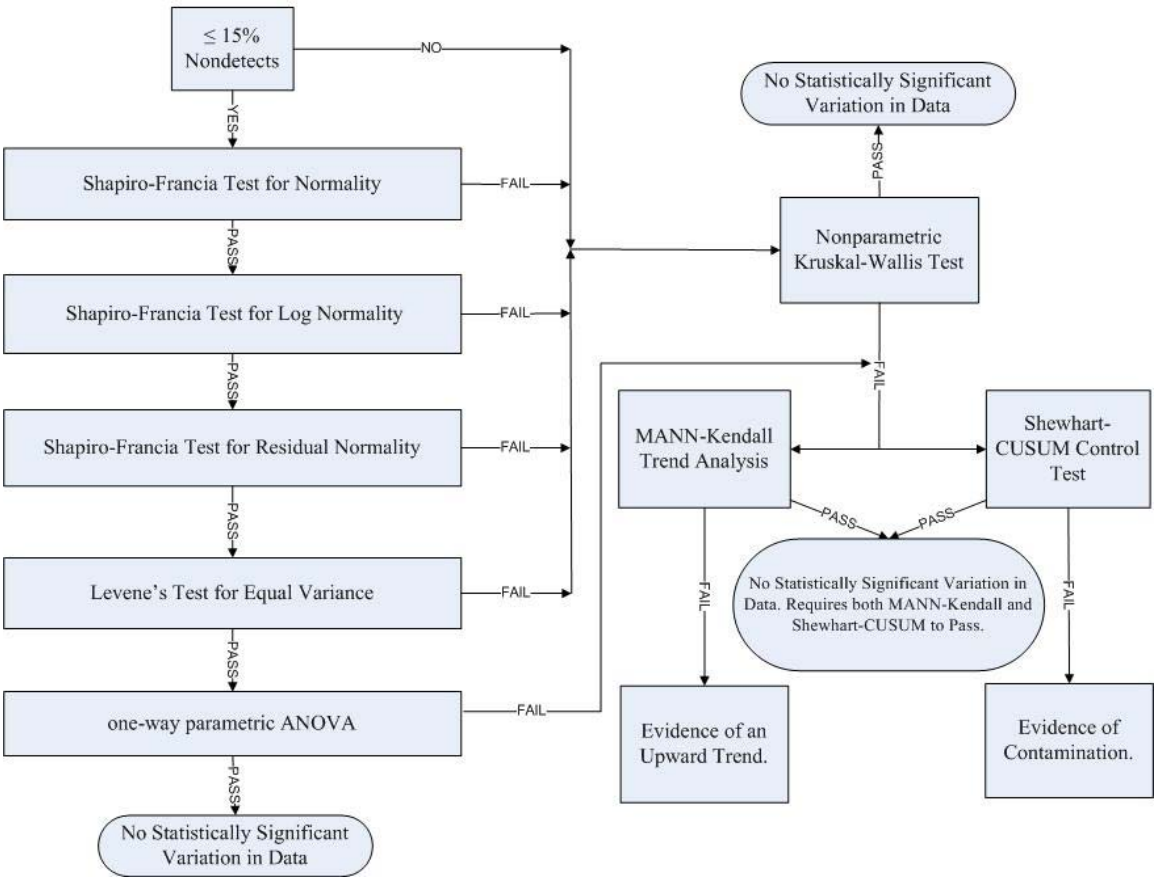
In this case, the Kruskal-Wallis Test performs post-hoc comparisons between background and compliance well data to determine which wells, if any, show evidence of contamination. If the difference between the average ranks and the mean background rank of any individual well exceeds the critical difference 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 July 2011. The background and compliance wells sampled are listed on Table 1. Ground-water data were statistically analyzed to determine if the mean concentration for each sample analyte deviates significantly from the mean concentration from the background well. All ground-water samples were analyzed for Appendix I Organics by EPA method 8260B and Appendix I Inorganics by EPA methods 6010B and 6020A.

Analysis of the 1,2-cis-dichloroethene data using the Non-Parametric Prediction Limit test indicated a possible SSI in monitoring well LMW-8. 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 chromium 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 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 lead data using the Kruskal-Wallis test indicated a possible SSI at the group level, no single well was indicated to have an SSI. Therefore, the Non-Parametric Prediction Limit was used to test if the data contained SSIs. The Non-Parametric Prediction Limit did not indicate that the data contained SSIs for any of the wells.

Analysis of the nickel data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-3S. The SSI was not confirmed by either the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the nickel data in monitoring well LMW-3S are not SSIs.

Analysis of the selenium data using the Kruskal-Wallis test indicated a possible SSI in monitoring 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 toluene 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 or the Shewhart-CUSUM Control Chart. The fluctuations in the LMW-7 data are not SSIs.

Analysis of the trichloroethene data using the Non-Parametric Prediction Limit test indicated a possible SSI in monitoring well LMW-10. The SSI was not confirmed by the

Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the LMW-10 data are not SSIs.

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

Analysis of the vanadium data using the Kruskal-Wallis test indicated a possible SSI in monitoring well LMW-9D. The SSI was not confirmed by either the Mann-Kendall Trend Analysis or the Shewhart-CUSUM Control Chart. The fluctuations in the vanadium data in monitoring well LMW-9D are not SSIs.

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

The results of the statistical analysis indicate that the compliance well concentrations do not vary significantly from background concentrations for any of the other parameters analyzed. Future analytical results will be evaluated using the same procedures.

6.0 CONCLUSIONS

The 1,2-cis-dichloroethene, arsenic, barium, 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 (ppb)

Parameter: 1,1-Dichloroethylene

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 244
Percent Non-Detects: 99.5918%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	20 (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<0.11 U	ND<0.11 U
			11/16/2009	ND<0.11 U	ND<0.11 U
			6/30/2010	ND<0.11 U	ND<0.11 U
			11/17/2010	ND<0.11 U	ND<0.11 U
			7/6/2011	ND<0.11 U	ND<0.11 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-3S	10	10 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.11 U	ND<0.11 U
			11/16/2009	ND<0.11 U	ND<0.11 U
			6/30/2010	ND<0.11 U	ND<0.11 U
			11/17/2010	ND<0.11 U	ND<0.11 U
			7/6/2011	ND<0.11 U	ND<0.11 U
LMW-3	22	22 (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<0.11 U	ND<0.11 U	
			11/16/2009	ND<0.11 U	ND<0.11 U	
			6/30/2010	ND<0.11 U	ND<0.11 U	
			11/17/2010	ND<0.11 U	ND<0.11 U	
			7/6/2011	ND<0.11 U	ND<0.11 U	
LMW-16	10	10 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.11 U	ND<0.11 U	
			11/16/2009	ND<0.11 U	ND<0.11 U	
			6/30/2010	ND<0.11 U	ND<0.11 U	
			11/17/2010	ND<0.11 U	ND<0.11 U	
			7/6/2011	ND<0.11 U	ND<0.11 U	
LMW-15R	12	12 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.11 U	ND<0.11 U	
			6/30/2010	ND<0.11 U	ND<0.11 U	
			11/17/2010	ND<0.11 U	ND<0.11 U	
			7/6/2011	ND<0.11 U	ND<0.11 U	
LMW-14R	11	11 (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<0.11 U	ND<0.11 U	
			11/16/2009	ND<0.11 U	ND<0.11 U	
			11/16/2009	ND<0.11 U	ND<0.11 U	
			11/16/2009	ND<0.11 U	ND<0.11 U	
			6/30/2010	ND<0.11 U	ND<0.11 U	
			11/17/2010	ND<0.11 U	ND<0.11 U	
			7/6/2011	ND<0.11 U	ND<0.11 U	
LMW-10	17	17 (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<0.11 U	ND<0.11 U
			11/16/2009	ND<0.11 U	ND<0.11 U
			6/30/2010	ND<0.11 U	ND<0.11 U
			11/17/2010	ND<0.11 U	ND<0.11 U
			7/6/2011	ND<0.11 U	ND<0.11 U
LMW-9D	10	10 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.11 U	ND<0.11 U
			11/16/2009	ND<0.11 U	ND<0.11 U
			6/30/2010	ND<0.11 U	ND<0.11 U
			11/17/2010	ND<0.11 U	ND<0.11 U
			7/6/2011	ND<0.11 U	ND<0.11 U
LMW-7	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<0.11 U	ND<0.11 U
			11/17/2010	ND<0.11 U	ND<0.11 U
			7/6/2011	ND<0.11 U	ND<0.11 U
LMW-8	20	20 (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<0.11 U	ND<0.11 U
			11/16/2009	ND<0.11 U	ND<0.11 U
			6/30/2010	ND<0.11 U	ND<0.11 U
			11/17/2010	ND<0.11 U	ND<0.11 U
			7/6/2011	ND<0.11 U	ND<0.11 U
LMW-9	20	20 (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<0.11 U	ND<0.11 U
			11/16/2009	ND<0.11 U	ND<0.11 U
			6/30/2010	ND<0.11 U	ND<0.11 U
			11/17/2010	ND<0.11 U	ND<0.11 U
			7/6/2011	ND<0.11 U	ND<0.11 U
LMW-9S	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<0.11 U	ND<0.11 U
			6/30/2010	ND<0.11 U	ND<0.11 U
			11/17/2010	ND<0.11 U	ND<0.11 U
			7/6/2011	ND<0.11 U	ND<0.11 U
LMW-6	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<0.11 U	ND<0.11 U
			11/16/2009	ND<0.11 U	ND<0.11 U
			6/30/2010	ND<0.11 U	ND<0.11 U
			11/17/2010	ND<0.11 U	ND<0.11 U
			7/6/2011	0.11 U J	0.11 U J
LMW-12	11	11 (100%)	3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
LMW-13	11	11 (100%)	3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1

			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
LMW-11	11	11 (100%)	3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
MW-5	13	13 (100%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/15/2007	ND<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: 1,1-Dichloroethylene

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 245

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.055	-2.65209	7.03356	-0.145865
2	0.055	-2.40892	12.8365	-0.278356
3	0.055	-2.25713	17.9311	-0.402498
4	0.055	-2.14441	22.5296	-0.52044
5	0.055	-2.05375	26.7475	-0.633396
6	0.055	-1.97737	30.6575	-0.742151
7	0.055	-1.91103	34.3095	-0.847258
8	0.055	-1.85218	37.7401	-0.949128
9	0.055	-1.79912	40.9769	-1.04808
10	0.055	-1.75069	44.0418	-1.14437
11	0.055	-1.70604	46.9524	-1.2382
12	0.055	-1.66456	49.7231	-1.32975
13	0.055	-1.62576	52.3662	-1.41917
14	0.055	-1.58927	54.892	-1.50658
15	0.055	-1.55477	57.3093	-1.59209
16	0.055	-1.5141	59.6018	-1.67537
17	0.055	-1.48328	61.802	-1.75695
18	0.055	-1.4538	63.9155	-1.83691
19	0.055	-1.42554	65.9477	-1.91531
20	0.055	-1.39838	67.9031	-1.99222
21	0.055	-1.3722	69.7861	-2.06769
22	0.055	-1.34694	71.6003	-2.14177
23	0.055	-1.32251	73.3494	-2.21451
24	0.055	-1.29884	75.0363	-2.28595
25	0.055	-1.27588	76.6642	-2.35612
26	0.055	-1.25357	78.2356	-2.42507
27	0.055	-1.23187	79.7531	-2.49282
28	0.055	-1.21073	81.219	-2.55941
29	0.055	-1.19012	82.6353	-2.62487
30	0.055	-1.17	84.0043	-2.68922
31	0.055	-1.1455	85.3164	-2.75222
32	0.055	-1.12639	86.5852	-2.81417
33	0.055	-1.10768	87.8121	-2.87509
34	0.055	-1.08935	88.9988	-2.93501
35	0.055	-1.07138	90.1467	-2.99393
36	0.055	-1.05375	91.2571	-3.05189
37	0.055	-1.03643	92.3312	-3.10889
38	0.055	-1.01943	93.3705	-3.16496
39	0.055	-1.00271	94.3759	-3.22011
40	0.055	-0.986272	95.3486	-3.27435
41	0.055	-0.970094	96.2897	-3.32771
42	0.055	-0.954165	97.2002	-3.38019
43	0.055	-0.938476	98.0809	-3.43181
44	0.055	-0.923014	98.9328	-3.48257
45	0.055	-0.907769	99.7569	-3.5325
46	0.055	-0.892733	100.554	-3.5816
47	0.055	-0.874218	101.318	-3.62968
48	0.055	-0.859618	102.057	-3.67696
49	0.055	-0.845198	102.771	-3.72345

50	0.055	-0.830953	103.462	-3.76915
51	0.055	-0.816874	104.129	-3.81408
52	0.055	-0.802956	104.774	-3.85824
53	0.055	-0.789191	105.397	-3.90164
54	0.055	-0.775574	105.998	-3.9443
55	0.055	-0.7621	106.579	-3.98622
56	0.055	-0.748762	107.14	-4.0274
57	0.055	-0.735557	107.681	-4.06785
58	0.055	-0.722479	108.203	-4.10759
59	0.055	-0.709522	108.706	-4.14661
60	0.055	-0.696684	109.192	-4.18493
61	0.055	-0.68396	109.659	-4.22255
62	0.055	-0.668209	110.106	-4.2593
63	0.11	-0.655726	110.536	-4.33143
64	0.5	-0.643345	110.95	-4.6531
65	0.5	-0.631062	111.348	-4.96863
66	0.5	-0.618872	111.731	-5.27807
67	0.5	-0.606775	112.099	-5.58146
68	0.5	-0.594766	112.453	-5.87884
69	0.5	-0.582841	112.793	-6.17026
70	0.5	-0.570999	113.119	-6.45576
71	0.5	-0.559237	113.431	-6.73538
72	0.5	-0.547551	113.731	-7.00915
73	0.5	-0.53594	114.018	-7.27712
74	0.5	-0.524401	114.293	-7.53933
75	0.5	-0.51293	114.556	-7.79579
76	0.5	-0.501527	114.808	-8.04655
77	0.5	-0.487364	115.046	-8.29024
78	0.5	-0.476105	115.272	-8.52829
79	0.5	-0.464904	115.488	-8.76074
80	0.5	-0.453763	115.694	-8.98762
81	0.5	-0.442676	115.89	-9.20896
82	0.5	-0.431644	116.077	-9.42478
83	0.5	-0.420664	116.253	-9.63511
84	0.5	-0.409735	116.421	-9.83998
85	0.5	-0.398855	116.58	-10.0394
86	0.5	-0.388022	116.731	-10.2334
87	0.5	-0.377233	116.873	-10.422
88	0.5	-0.36649	117.008	-10.6053
89	0.5	-0.355788	117.134	-10.7832
90	0.5	-0.345126	117.253	-10.9557
91	0.5	-0.334503	117.365	-11.123
92	0.5	-0.323919	117.47	-11.2849
93	0.5	-0.310738	117.567	-11.4403
94	0.5	-0.300232	117.657	-11.5904
95	0.5	-0.28976	117.741	-11.7353
96	0.5	-0.279319	117.819	-11.875
97	0.5	-0.268908	117.891	-12.0094
98	0.5	-0.258527	117.958	-12.1387
99	0.5	-0.248174	118.02	-12.2628
100	0.5	-0.237847	118.076	-12.3817
101	0.5	-0.227545	118.128	-12.4955
102	0.5	-0.217267	118.175	-12.6041
103	0.5	-0.207012	118.218	-12.7076
104	0.5	-0.196779	118.257	-12.806
105	0.5	-0.186567	118.292	-12.8993
106	0.5	-0.176374	118.323	-12.9875
107	0.5	-0.166199	118.35	-13.0706
108	0.5	-0.153505	118.374	-13.1473
109	0.5	-0.143367	118.394	-13.219
110	0.5	-0.133244	118.412	-13.2856
111	0.5	-0.123135	118.427	-13.3472

112	0.5	-0.113039	118.44	-13.4037
113	0.5	-0.102953	118.451	-13.4552
114	0.5	-0.0928787	118.459	-13.5016
115	0.5	-0.0828129	118.466	-13.543
116	0.5	-0.0727562	118.471	-13.5794
117	0.5	-0.0627062	118.475	-13.6108
118	0.5	-0.0526632	118.478	-13.6371
119	0.5	-0.0426257	118.48	-13.6584
120	0.5	-0.0325917	118.481	-13.6747
121	0.5	-0.0225612	118.482	-13.686
122	0.5	-0.0125328	118.482	-13.6923
123	0.5	0	118.482	-13.6923
124	0.5	0.0125328	118.482	-13.686
125	0.5	0.0225612	118.482	-13.6747
126	0.5	0.0325917	118.483	-13.6584
127	0.5	0.0426257	118.485	-13.6371
128	0.5	0.0526632	118.488	-13.6108
129	0.5	0.0627062	118.492	-13.5794
130	0.5	0.0727562	118.497	-13.543
131	0.5	0.0828129	118.504	-13.5016
132	0.5	0.0928787	118.513	-13.4552
133	0.5	0.102953	118.523	-13.4037
134	0.5	0.113039	118.536	-13.3472
135	0.5	0.123135	118.551	-13.2856
136	0.5	0.133244	118.569	-13.219
137	0.5	0.143367	118.59	-13.1473
138	0.5	0.153505	118.613	-13.0706
139	0.5	0.166199	118.641	-12.9875
140	0.5	0.176374	118.672	-12.8993
141	0.5	0.186567	118.707	-12.806
142	0.5	0.196779	118.745	-12.7076
143	0.5	0.207012	118.788	-12.6041
144	0.5	0.217267	118.835	-12.4955
145	0.5	0.227545	118.887	-12.3817
146	0.5	0.237847	118.944	-12.2628
147	0.5	0.248174	119.005	-12.1387
148	0.5	0.258527	119.072	-12.0094
149	0.5	0.268908	119.145	-11.875
150	0.5	0.279319	119.223	-11.7353
151	0.5	0.28976	119.306	-11.5904
152	0.5	0.300232	119.397	-11.4403
153	0.5	0.310738	119.493	-11.2849
154	0.5	0.323919	119.598	-11.123
155	0.5	0.334503	119.71	-10.9557
156	0.5	0.345126	119.829	-10.7832
157	0.5	0.355788	119.956	-10.6053
158	0.5	0.36649	120.09	-10.422
159	0.5	0.377233	120.232	-10.2334
160	0.5	0.388022	120.383	-10.0394
161	0.5	0.398855	120.542	-9.83998
162	0.5	0.409735	120.71	-9.63511
163	0.5	0.420664	120.887	-9.42478
164	0.5	0.431644	121.073	-9.20896
165	0.5	0.442676	121.269	-8.98762
166	0.5	0.453763	121.475	-8.76074
167	0.5	0.464904	121.691	-8.52829
168	0.5	0.476105	121.918	-8.29024
169	0.5	0.487364	122.155	-8.04655
170	0.5	0.501527	122.407	-7.79579
171	0.5	0.51293	122.67	-7.53933
172	0.5	0.524401	122.945	-7.27712
173	0.5	0.53594	123.232	-7.00915

174	0.5	0.547551		123.532	-6.73538
175	0.5	0.559237		123.845	-6.45576
176	0.5	0.570999		124.171	-6.17026
177	0.5	0.582841		124.51	-5.87884
178	0.5	0.594766		124.864	-5.58146
179	0.5	0.606775		125.232	-5.27807
180	0.5	0.618872		125.615	-4.96863
181	0.5	0.631062		126.014	-4.6531
182	0.5	0.643345		126.428	-4.33143
183	0.5	0.655726		126.858	-4.00357
184	0.5	0.668209		127.304	-3.66946
185	0.5	0.68396	127.772	-3.32748	
186	0.5	0.696684		128.257	-2.97914
187	0.5	0.709522		128.761	-2.62438
188	0.5	0.722479		129.283	-2.26314
189	0.5	0.735557		129.824	-1.89536
190	0.5	0.748762		130.384	-1.52098
191	0.5	0.7621	130.965	-1.13993	
192	0.5	0.775574		131.567	-0.752144
193	0.5	0.789191		132.189	-0.357548
194	0.5	0.802956		132.834	0.0439301
195	0.5	0.816874		133.501	0.452367
196	0.5	0.830953		134.192	0.867844
197	0.5	0.845198		134.906	1.29044
198	0.5	0.859618		135.645	1.72025
199	0.5	0.874218		136.409	2.15736
200	0.5	0.892733		137.206	2.60373
201	0.5	0.907769		138.03	3.05761
202	0.5	0.923014		138.882	3.51912
203	0.5	0.938476		139.763	3.98836
204	0.5	0.954165		140.674	4.46544
205	0.5	0.970094		141.615	4.95049
206	0.5	0.986272		142.587	5.44362
207	0.5	1.00271	143.593	5.94498	
208	0.5	1.01943	144.632	6.45469	
209	0.5	1.03643	145.706	6.97291	
210	0.5	1.05375	146.817	7.49978	
211	0.5	1.07138	147.965	8.03547	
212	0.5	1.08935	149.151	8.58014	
213	0.5	1.10768	150.378	9.13398	
214	0.5	1.12639	151.647	9.69718	
215	0.5	1.1455	152.959	10.2699	
216	0.5	1.17	154.328	10.8549	
217	0.5	1.19012	155.744	11.45	
218	0.5	1.21073	157.21	12.0554	
219	0.5	1.23187	158.728	12.6713	
220	0.5	1.25357	160.299	13.2981	
221	0.5	1.27588	161.927	13.936	
222	0.5	1.29884	163.614	14.5854	
223	0.5	1.32251	165.363	15.2467	
224	0.5	1.34694	167.177	15.9201	
225	0.5	1.3722	169.06	16.6063	
226	0.5	1.39838	171.016	17.3054	
227	0.5	1.42554	173.048	18.0182	
228	0.5	1.4538	175.161	18.7451	
229	0.5	1.48328	177.362	19.4868	
230	0.5	1.5141	179.654	20.2438	
231	0.5	1.55477	182.071	21.0212	
232	0.5	1.58927	184.597	21.8158	
233	0.5	1.62576	187.24	22.6287	
234	0.5	1.66456	190.011	23.461	
235	0.5	1.70604	192.922	24.314	

236	0.5	1.75069	195.986	25.1894
237	0.5	1.79912	199.223	26.0889
238	0.5	1.85218	202.654	27.015
239	0.5	1.91103	206.306	27.9705
240	0.5	1.97737	210.216	28.9592
241	0.5	2.05375	214.434	29.9861
242	0.5	2.14441	219.032	31.0583
243	0.5	2.25713	224.127	32.1868
244	0.5	2.40892	229.93	33.3913
245	0.5	2.65209	236.963	34.7173

Data Set Standard Deviation = 0.194538
Numerator = 1205.29
Denominator = 2188.17
W Statistic = 0.550823 = 1205.29 / 2188.17

5% Critical value of 0.976 exceeds 0.550823
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.550823
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: 1,1-Dichloroethylene

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 245

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-2.90042	-2.65209	7.03356	7.69217
2	-2.90042	-2.40892	12.8365	14.6791
3	-2.90042	-2.25713	17.9311	21.2257
4	-2.90042	-2.14441	22.5296	27.4454
5	-2.90042	-2.05375	26.7475	33.4021
6	-2.90042	-1.97737	30.6575	39.1373
7	-2.90042	-1.91103	34.3095	44.6801
8	-2.90042	-1.85218	37.7401	50.0522
9	-2.90042	-1.79912	40.9769	55.2704
10	-2.90042	-1.75069	44.0418	60.3481
11	-2.90042	-1.70604	46.9524	65.2964
12	-2.90042	-1.66456	49.7231	70.1243
13	-2.90042	-1.62576	52.3662	74.8397
14	-2.90042	-1.58927	54.892	79.4493
15	-2.90042	-1.55477	57.3093	83.9588
16	-2.90042	-1.5141	59.6018	88.3503
17	-2.90042	-1.48328	61.802	92.6524
18	-2.90042	-1.4538	63.9155	96.8691
19	-2.90042	-1.42554	65.9477	101.004
20	-2.90042	-1.39838	67.9031	105.06
21	-2.90042	-1.3722	69.7861	109.04
22	-2.90042	-1.34694	71.6003	112.946
23	-2.90042	-1.32251	73.3494	116.782
24	-2.90042	-1.29884	75.0363	120.549
25	-2.90042	-1.27588	76.6642	124.25
26	-2.90042	-1.25357	78.2356	127.886
27	-2.90042	-1.23187	79.7531	131.459
28	-2.90042	-1.21073	81.219	134.97
29	-2.90042	-1.19012	82.6353	138.422
30	-2.90042	-1.17	84.0043	141.816
31	-2.90042	-1.1455	85.3164	145.138
32	-2.90042	-1.12639	86.5852	148.405
33	-2.90042	-1.10768	87.8121	151.618
34	-2.90042	-1.08935	88.9988	154.777
35	-2.90042	-1.07138	90.1467	157.885
36	-2.90042	-1.05375	91.2571	160.941
37	-2.90042	-1.03643	92.3312	163.947
38	-2.90042	-1.01943	93.3705	166.904
39	-2.90042	-1.00271	94.3759	169.812
40	-2.90042	-0.986272	95.3486	172.673
41	-2.90042	-0.970094	96.2897	175.487
42	-2.90042	-0.954165	97.2002	178.254
43	-2.90042	-0.938476	98.0809	180.976
44	-2.90042	-0.923014	98.9328	183.653
45	-2.90042	-0.907769	99.7569	186.286
46	-2.90042	-0.892733	100.554	188.875
47	-2.90042	-0.874218	101.318	191.411
48	-2.90042	-0.859618	102.057	193.904
49	-2.90042	-0.845198	102.771	196.356

50	-2.90042	-0.830953	103.462	198.766
51	-2.90042	-0.816874	104.129	201.135
52	-2.90042	-0.802956	104.774	203.464
53	-2.90042	-0.789191	105.397	205.753
54	-2.90042	-0.775574	105.998	208.002
55	-2.90042	-0.7621	106.579	210.213
56	-2.90042	-0.748762	107.14	212.385
57	-2.90042	-0.735557	107.681	214.518
58	-2.90042	-0.722479	108.203	216.614
59	-2.90042	-0.709522	108.706	218.671
60	-2.90042	-0.696684	109.192	220.692
61	-2.90042	-0.68396	109.659	222.676
62	-2.90042	-0.668209	110.106	224.614
63	-2.20727	-0.655726	110.536	226.061
64	-0.693147	-0.643345	110.95	226.507
65	-0.693147	-0.631062	111.348	226.945
66	-0.693147	-0.618872	111.731	227.374
67	-0.693147	-0.606775	112.099	227.794
68	-0.693147	-0.594766	112.453	228.207
69	-0.693147	-0.582841	112.793	228.611
70	-0.693147	-0.570999	113.119	229.006
71	-0.693147	-0.559237	113.431	229.394
72	-0.693147	-0.547551	113.731	229.773
73	-0.693147	-0.53594	114.018	230.145
74	-0.693147	-0.524401	114.293	230.508
75	-0.693147	-0.51293	114.556	230.864
76	-0.693147	-0.501527	114.808	231.212
77	-0.693147	-0.487364	115.046	231.549
78	-0.693147	-0.476105	115.272	231.879
79	-0.693147	-0.464904	115.488	232.202
80	-0.693147	-0.453763	115.694	232.516
81	-0.693147	-0.442676	115.89	232.823
82	-0.693147	-0.431644	116.077	233.122
83	-0.693147	-0.420664	116.253	233.414
84	-0.693147	-0.409735	116.421	233.698
85	-0.693147	-0.398855	116.58	233.974
86	-0.693147	-0.388022	116.731	234.243
87	-0.693147	-0.377233	116.873	234.505
88	-0.693147	-0.36649	117.008	234.759
89	-0.693147	-0.355788	117.134	235.005
90	-0.693147	-0.345126	117.253	235.245
91	-0.693147	-0.334503	117.365	235.476
92	-0.693147	-0.323919	117.47	235.701
93	-0.693147	-0.310738	117.567	235.916
94	-0.693147	-0.300232	117.657	236.124
95	-0.693147	-0.28976	117.741	236.325
96	-0.693147	-0.279319	117.819	236.519
97	-0.693147	-0.268908	117.891	236.705
98	-0.693147	-0.258527	117.958	236.885
99	-0.693147	-0.248174	118.02	237.057
100	-0.693147	-0.237847	118.076	237.221
101	-0.693147	-0.227545	118.128	237.379
102	-0.693147	-0.217267	118.175	237.53
103	-0.693147	-0.207012	118.218	237.673
104	-0.693147	-0.196779	118.257	237.81
105	-0.693147	-0.186567	118.292	237.939
106	-0.693147	-0.176374	118.323	238.061
107	-0.693147	-0.166199	118.35	238.176
108	-0.693147	-0.153505	118.374	238.283
109	-0.693147	-0.143367	118.394	238.382
110	-0.693147	-0.133244	118.412	238.475
111	-0.693147	-0.123135	118.427	238.56

112	-0.693147	-0.113039	118.44	238.638
113	-0.693147	-0.102953	118.451	238.71
114	-0.693147	-0.0928787	118.459	238.774
115	-0.693147	-0.0828129	118.466	238.831
116	-0.693147	-0.0727562	118.471	238.882
117	-0.693147	-0.0627062	118.475	238.925
118	-0.693147	-0.0526632	118.478	238.962
119	-0.693147	-0.0426257	118.48	238.991
120	-0.693147	-0.0325917	118.481	239.014
121	-0.693147	-0.0225612	118.482	239.03
122	-0.693147	-0.0125328	118.482	239.038
123	-0.693147	0	118.482	239.038
124	-0.693147	0.0125328	118.482	239.03
125	-0.693147	0.0225612	118.482	239.014
126	-0.693147	0.0325917	118.483	238.991
127	-0.693147	0.0426257	118.485	238.962
128	-0.693147	0.0526632	118.488	238.925
129	-0.693147	0.0627062	118.492	238.882
130	-0.693147	0.0727562	118.497	238.831
131	-0.693147	0.0828129	118.504	238.774
132	-0.693147	0.0928787	118.513	238.71
133	-0.693147	0.102953	118.523	238.638
134	-0.693147	0.113039	118.536	238.56
135	-0.693147	0.123135	118.551	238.475
136	-0.693147	0.133244	118.569	238.382
137	-0.693147	0.143367	118.59	238.283
138	-0.693147	0.153505	118.613	238.176
139	-0.693147	0.166199	118.641	238.061
140	-0.693147	0.176374	118.672	237.939
141	-0.693147	0.186567	118.707	237.81
142	-0.693147	0.196779	118.745	237.673
143	-0.693147	0.207012	118.788	237.53
144	-0.693147	0.217267	118.835	237.379
145	-0.693147	0.227545	118.887	237.221
146	-0.693147	0.237847	118.944	237.057
147	-0.693147	0.248174	119.005	236.885
148	-0.693147	0.258527	119.072	236.705
149	-0.693147	0.268908	119.145	236.519
150	-0.693147	0.279319	119.223	236.325
151	-0.693147	0.28976	119.306	236.124
152	-0.693147	0.300232	119.397	235.916
153	-0.693147	0.310738	119.493	235.701
154	-0.693147	0.323919	119.598	235.476
155	-0.693147	0.334503	119.71	235.245
156	-0.693147	0.345126	119.829	235.005
157	-0.693147	0.355788	119.956	234.759
158	-0.693147	0.36649	120.09	234.505
159	-0.693147	0.377233	120.232	234.243
160	-0.693147	0.388022	120.383	233.974
161	-0.693147	0.398855	120.542	233.698
162	-0.693147	0.409735	120.71	233.414
163	-0.693147	0.420664	120.887	233.122
164	-0.693147	0.431644	121.073	232.823
165	-0.693147	0.442676	121.269	232.516
166	-0.693147	0.453763	121.475	232.202
167	-0.693147	0.464904	121.691	231.879
168	-0.693147	0.476105	121.918	231.549
169	-0.693147	0.487364	122.155	231.212
170	-0.693147	0.501527	122.407	230.864
171	-0.693147	0.51293	122.67	230.508
172	-0.693147	0.524401	122.945	230.145
173	-0.693147	0.53594	123.232	229.773

174	-0.693147	0.547551	123.532	229.394
175	-0.693147	0.559237	123.845	229.006
176	-0.693147	0.570999	124.171	228.611
177	-0.693147	0.582841	124.51	228.207
178	-0.693147	0.594766	124.864	227.794
179	-0.693147	0.606775	125.232	227.374
180	-0.693147	0.618872	125.615	226.945
181	-0.693147	0.631062	126.014	226.507
182	-0.693147	0.643345	126.428	226.061
183	-0.693147	0.655726	126.858	225.607
184	-0.693147	0.668209	127.304	225.144
185	-0.693147	0.68396	127.772	224.67
186	-0.693147	0.696684	128.257	224.187
187	-0.693147	0.709522	128.761	223.695
188	-0.693147	0.722479	129.283	223.194
189	-0.693147	0.735557	129.824	222.684
190	-0.693147	0.748762	130.384	222.165
191	-0.693147	0.7621	130.965	221.637
192	-0.693147	0.775574	131.567	221.099
193	-0.693147	0.789191	132.189	220.552
194	-0.693147	0.802956	132.834	219.996
195	-0.693147	0.816874	133.501	219.43
196	-0.693147	0.830953	134.192	218.854
197	-0.693147	0.845198	134.906	218.268
198	-0.693147	0.859618	135.645	217.672
199	-0.693147	0.874218	136.409	217.066
200	-0.693147	0.892733	137.206	216.447
201	-0.693147	0.907769	138.03	215.818
202	-0.693147	0.923014	138.882	215.178
203	-0.693147	0.938476	139.763	214.528
204	-0.693147	0.954165	140.674	213.866
205	-0.693147	0.970094	141.615	213.194
206	-0.693147	0.986272	142.587	212.51
207	-0.693147	1.00271	143.593	211.815
208	-0.693147	1.01943	144.632	211.109
209	-0.693147	1.03643	145.706	210.39
210	-0.693147	1.05375	146.817	209.66
211	-0.693147	1.07138	147.965	208.917
212	-0.693147	1.08935	149.151	208.162
213	-0.693147	1.10768	150.378	207.394
214	-0.693147	1.12639	151.647	206.614
215	-0.693147	1.1455	152.959	205.82
216	-0.693147	1.17	154.328	205.009
217	-0.693147	1.19012	155.744	204.184
218	-0.693147	1.21073	157.21	203.344
219	-0.693147	1.23187	158.728	202.491
220	-0.693147	1.25357	160.299	201.622
221	-0.693147	1.27588	161.927	200.737
222	-0.693147	1.29884	163.614	199.837
223	-0.693147	1.32251	165.363	198.92
224	-0.693147	1.34694	167.177	197.987
225	-0.693147	1.3722	169.06	197.036
226	-0.693147	1.39838	171.016	196.066
227	-0.693147	1.42554	173.048	195.078
228	-0.693147	1.4538	175.161	194.07
229	-0.693147	1.48328	177.362	193.042
230	-0.693147	1.5141	179.654	191.993
231	-0.693147	1.55477	182.071	190.915
232	-0.693147	1.58927	184.597	189.814
233	-0.693147	1.62576	187.24	188.687
234	-0.693147	1.66456	190.011	187.533
235	-0.693147	1.70604	192.922	186.35

236	-0.693147	1.75069	195.986	185.137
237	-0.693147	1.79912	199.223	183.89
238	-0.693147	1.85218	202.654	182.606
239	-0.693147	1.91103	206.306	181.281
240	-0.693147	1.97737	210.216	179.911
241	-0.693147	2.05375	214.434	178.487
242	-0.693147	2.14441	219.032	177.001
243	-0.693147	2.25713	224.127	175.436
244	-0.693147	2.40892	229.93	173.767
245	-0.693147	2.65209	236.963	171.928

Data Set Standard Deviation = 0.962872
Numerator = 29559.3
Denominator = 53605.4
W Statistic = 0.551425 = 29559.3 / 53605.4

5% Critical value of 0.976 exceeds 0.551425
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.551425
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: 1,1-Dichloroethylene

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

Total Percent Non-Detects = 99.5918%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 20
Maximum Background Concentration = 0
Confidence Level = 71.4%
False Positive Rate = 28.6%

Location	Date	Samples	Mean	Significant
LMW-3S	7/6/2011	1	-2.90042	FALSE
LMW-3	7/6/2011	1	-2.90042	FALSE
LMW-16	7/6/2011	1	-2.90042	FALSE
LMW-15R	7/6/2011	1	-2.90042	FALSE
LMW-14R	7/6/2011	1	-2.90042	FALSE
LMW-10	7/6/2011	1	-2.90042	FALSE
LMW-9D	7/6/2011	1	-2.90042	FALSE
LMW-7	7/6/2011	1	-2.90042	FALSE
LMW-8	7/6/2011	1	-2.90042	FALSE
LMW-9	7/6/2011	1	-2.90042	FALSE
LMW-9S	7/6/2011	1	-2.90042	FALSE
LMW-6	7/6/2011	1	-2.20727	FALSE
LMW-12	11/20/2008	1	-0.693147	FALSE
LMW-13	11/20/2008	1	-0.693147	FALSE
LMW-11	11/20/2008	1	-0.693147	FALSE
MW-5	11/20/2008	1	-0.693147	FALSE

Concentrations (ppb)

Parameter: 1,2-cis-Dichloroethylene

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 233
Total Non-Detect: 229
Percent Non-Detects: 98.2833%
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
			6/30/2010	ND<0.15 U	ND<0.15 U
			11/17/2010	ND<0.15 U	ND<0.15 U
			7/6/2011	ND<0.15 U	ND<0.15 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
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
			6/30/2010	ND<0.15 U	ND<0.15 U
			11/17/2010	ND<0.15 U	ND<0.15 U
			7/6/2011	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
			6/30/2010	ND<0.15 U	ND<0.15 U
			11/17/2010	ND<0.15 U	ND<0.15 U
			7/6/2011	ND<0.15 U	ND<0.15 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<0.15 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
			7/6/2011	ND<0.15 U	ND<0.15 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<0.15 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
			7/6/2011	ND<0.15 U	ND<0.15 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<0.15 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
			7/6/2011	ND<0.15 U	ND<0.15 U
LMW-14R	8	8 (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
			7/6/2011	ND<0.15 U	ND<0.15 U
LMW-15R	12	12 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			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
			7/6/2011	ND<0.15 U	ND<0.15 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<0.15 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
			7/6/2011	ND<0.15 U	ND<0.15 U
LMW-9S	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
			6/30/2010	ND<0.15 U	ND<0.15 U
			11/17/2010	ND<0.15 U	ND<0.15 U
			7/6/2011	ND<0.15 U	ND<0.15 U
LMW-7	18	18 (100%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1

			6/11/2009	ND<0.15 U	ND<0.15 U
			11/17/2010	ND<0.15 U	ND<0.15 U
			7/6/2011	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<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
			7/6/2011	1.5	1.5
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
			6/30/2010	ND<0.15 U	ND<0.15 U
			11/17/2010	ND<0.15 U	ND<0.15 U
			7/6/2011	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: 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 = 233

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	-1.8957	33.9961	-0.441688
8	0.075	-1.82501	37.3268	-0.578564
9	0.075	-1.77438	40.4752	-0.711642
10	0.075	-1.72793	43.4609	-0.841237
11	0.075	-1.67466	46.2654	-0.966837
12	0.075	-1.63524	48.9394	-1.08948
13	0.075	-1.59819	51.4936	-1.20934
14	0.075	-1.56322	53.9373	-1.32659
15	0.075	-1.52203	56.2539	-1.44074
16	0.075	-1.49085	58.4765	-1.55255
17	0.075	-1.46106	60.6112	-1.66213
18	0.075	-1.4325	62.6633	-1.76957
19	0.075	-1.39838	64.6187	-1.87445
20	0.075	-1.3722	66.5017	-1.97736
21	0.075	-1.34694	68.3159	-2.07838
22	0.075	-1.31652	70.0492	-2.17712
23	0.075	-1.29303	71.7211	-2.2741
24	0.075	-1.27024	73.3346	-2.36937
25	0.075	-1.24809	74.8923	-2.46297
26	0.075	-1.22123	76.3837	-2.55457
27	0.075	-1.20036	77.8246	-2.64459
28	0.075	-1.18	79.217	-2.73309
29	0.075	-1.16012	80.5629	-2.8201
30	0.075	-1.1359	81.8531	-2.90529
31	0.075	-1.11699	83.1008	-2.98907
32	0.075	-1.09847	84.3074	-3.07145
33	0.075	-1.07584	85.4648	-3.15214
34	0.075	-1.05812	86.5845	-3.2315
35	0.075	-1.04073	87.6676	-3.30956
36	0.075	-1.02365	88.7154	-3.38633
37	0.075	-1.00271	89.7209	-3.46153
38	0.075	-0.986272	90.6936	-3.5355
39	0.075	-0.970094	91.6347	-3.60826
40	0.075	-0.954165	92.5451	-3.67982
41	0.075	-0.93459	93.4186	-3.74992
42	0.075	-0.919183	94.2635	-3.81886
43	0.075	-0.903992	95.0807	-3.88665
44	0.075	-0.885291	95.8644	-3.95305
45	0.075	-0.87055	96.6223	-4.01834
46	0.075	-0.855996	97.355	-4.08254
47	0.075	-0.841621	98.0633	-4.14566
48	0.075	-0.823893	98.7421	-4.20746
49	0.075	-0.809896	99.3981	-4.2682

50	0.075	-0.796056	100.032	-4.3279
51	0.075	-0.782366	100.644	-4.38658
52	0.5	-0.765456	101.23	-4.76931
53	0.5	-0.752084	101.795	-5.14535
54	0.5	-0.738846	102.341	-5.51477
55	0.5	-0.722479	102.863	-5.87601
56	0.5	-0.709522	103.367	-6.23077
57	0.5	-0.696684	103.852	-6.57911
58	0.5	-0.68396	104.32	-6.9211
59	0.5	-0.668209	104.766	-7.2552
60	0.5	-0.655726	105.196	-7.58306
61	0.5	-0.643345	105.61	-7.90474
62	0.5	-0.631062	106.008	-8.22027
63	0.5	-0.615839	106.388	-8.52819
64	0.5	-0.603765	106.752	-8.83007
65	0.5	-0.591776	107.102	-9.12596
66	0.5	-0.576911	107.435	-9.41441
67	0.5	-0.565108	107.755	-9.69697
68	0.5	-0.553384	108.061	-9.97366
69	0.5	-0.541736	108.354	-10.2445
70	0.5	-0.52728	108.632	-10.5082
71	0.5	-0.515791	108.898	-10.7661
72	0.5	-0.504372	109.153	-11.0182
73	0.5	-0.493018	109.396	-11.2648
74	0.5	-0.478914	109.625	-11.5042
75	0.5	-0.467699	109.844	-11.7381
76	0.5	-0.456542	110.052	-11.9663
77	0.5	-0.442676	110.248	-12.1877
78	0.5	-0.431644	110.435	-12.4035
79	0.5	-0.420664	110.612	-12.6138
80	0.5	-0.409735	110.78	-12.8187
81	0.5	-0.396142	110.936	-13.0168
82	0.5	-0.385321	111.085	-13.2094
83	0.5	-0.374544	111.225	-13.3967
84	0.5	-0.363809	111.358	-13.5786
85	0.5	-0.350451	111.48	-13.7538
86	0.5	-0.33981	111.596	-13.9237
87	0.5	-0.329206	111.704	-14.0883
88	0.5	-0.316004	111.804	-14.2463
89	0.5	-0.305481	111.897	-14.3991
90	0.5	-0.294992	111.984	-14.5466
91	0.5	-0.284535	112.065	-14.6888
92	0.5	-0.271509	112.139	-14.8246
93	0.5	-0.26112	112.207	-14.9552
94	0.5	-0.250759	112.27	-15.0805
95	0.5	-0.240426	112.328	-15.2007
96	0.5	-0.227545	112.38	-15.3145
97	0.5	-0.217267	112.427	-15.4232
98	0.5	-0.207012	112.47	-15.5267
99	0.5	-0.194225	112.508	-15.6238
100	0.5	-0.184017	112.541	-15.7158
101	0.5	-0.173829	112.572	-15.8027
102	0.5	-0.163659	112.598	-15.8845
103	0.5	-0.150969	112.621	-15.96
104	0.5	-0.140835	112.641	-16.0304
105	0.5	-0.130716	112.658	-16.0958
106	0.5	-0.12061	112.673	-16.1561
107	0.5	-0.107995	112.684	-16.2101
108	0.5	-0.0979139	112.694	-16.259
109	0.5	-0.0878447	112.702	-16.303
110	0.5	-0.0752698	112.707	-16.3406
111	0.5	-0.0652187	112.712	-16.3732

112	0.5	-0.0551734	112.715	-16.4008
113	0.5	-0.0451348	112.717	-16.4234
114	0.5	-0.0325917	112.718	-16.4397
115	0.5	-0.0225612	112.718	-16.4509
116	0.5	-0.0125328	112.718	-16.4572
117	0.5	0	112.718	-16.4572
118	0.5	0.0125328	112.719	-16.4509
119	0.5	0.0225612	112.719	-16.4397
120	0.5	0.0325917	112.72	-16.4234
121	0.5	0.0451348	112.722	-16.4008
122	0.5	0.0551734	112.725	-16.3732
123	0.5	0.0652187	112.729	-16.3406
124	0.5	0.0752698	112.735	-16.303
125	0.5	0.0878447	112.743	-16.259
126	0.5	0.0979139	112.752	-16.2101
127	0.5	0.107995	112.764	-16.1561
128	0.5	0.12061	112.779	-16.0958
129	0.5	0.130716	112.796	-16.0304
130	0.5	0.140835	112.816	-15.96
131	0.5	0.150969	112.838	-15.8845
132	0.5	0.163659	112.865	-15.8027
133	0.5	0.173829	112.895	-15.7158
134	0.5	0.184017	112.929	-15.6238
135	0.5	0.194225	112.967	-15.5267
136	0.5	0.207012	113.01	-15.4232
137	0.5	0.217267	113.057	-15.3145
138	0.5	0.227545	113.109	-15.2007
139	0.5	0.240426	113.167	-15.0805
140	0.5	0.250759	113.229	-14.9552
141	0.5	0.26112	113.298	-14.8246
142	0.5	0.271509	113.371	-14.6888
143	0.5	0.284535	113.452	-14.5466
144	0.5	0.294992	113.539	-14.3991
145	0.5	0.305481	113.633	-14.2463
146	0.5	0.316004	113.732	-14.0883
147	0.5	0.329206	113.841	-13.9237
148	0.5	0.33981	113.956	-13.7538
149	0.5	0.350451	114.079	-13.5786
150	0.5	0.363809	114.211	-13.3967
151	0.5	0.374544	114.352	-13.2094
152	0.5	0.385321	114.5	-13.0168
153	0.5	0.396142	114.657	-12.8187
154	0.5	0.409735	114.825	-12.6138
155	0.5	0.420664	115.002	-12.4035
156	0.5	0.431644	115.188	-12.1877
157	0.5	0.442676	115.384	-11.9663
158	0.5	0.456542	115.593	-11.7381
159	0.5	0.467699	115.811	-11.5042
160	0.5	0.478914	116.041	-11.2648
161	0.5	0.493018	116.284	-11.0182
162	0.5	0.504372	116.538	-10.7661
163	0.5	0.515791	116.804	-10.5082
164	0.5	0.52728	117.082	-10.2445
165	0.5	0.541736	117.376	-9.97366
166	0.5	0.553384	117.682	-9.69697
167	0.5	0.565108	118.001	-9.41441
168	0.5	0.576911	118.334	-9.12596
169	0.5	0.591776	118.684	-8.83007
170	0.5	0.603765	119.049	-8.52819
171	0.5	0.615839	119.428	-8.22027
172	0.5	0.631062	119.826	-7.90474
173	0.5	0.643345	120.24	-7.58306

174	0.5	0.655726	120.67	-7.2552
175	0.5	0.668209	121.117	-6.9211
176	0.5	0.68396	121.585	-6.57911
177	0.5	0.696684	122.07	-6.23077
178	0.5	0.709522	122.573	-5.87601
179	0.5	0.722479	123.095	-5.51477
180	0.5	0.738846	123.641	-5.14535
181	0.5	0.752084	124.207	-4.76931
182	0.5	0.765456	124.793	-4.38658
183	0.5	0.782366	125.405	-3.9954
184	0.5	0.796056	126.039	-3.59737
185	0.5	0.809896	126.695	-3.19242
186	0.5	0.823893	127.373	-2.78047
187	0.5	0.841621	128.082	-2.35966
188	0.5	0.855996	128.814	-1.93167
189	0.5	0.87055	129.572	-1.49639
190	0.5	0.885291	130.356	-1.05375
191	0.5	0.903992	131.173	-0.601749
192	0.5	0.919183	132.018	-0.142158
193	0.5	0.93459	132.892	0.325137
194	0.5	0.954165	133.802	0.80222
195	0.5	0.970094	134.743	1.28727
196	0.5	0.986272	135.716	1.7804
197	0.5	1.00271	136.721	2.28176
198	0.5	1.02365	137.769	2.79358
199	0.5	1.04073	138.852	3.31395
200	0.5	1.05812	139.972	3.84301
201	0.5	1.07584	141.129	4.38093
202	0.5	1.09847	142.336	4.93016
203	0.5	1.11699	143.584	5.48866
204	0.5	1.1359	144.874	6.05661
205	0.5	1.16012	146.22	6.63667
206	0.5	1.18	147.612	7.22667
207	0.5	1.20036	149.053	7.82685
208	0.5	1.22123	150.544	8.43746
209	0.5	1.24809	152.102	9.0615
210	0.5	1.27024	153.716	9.69662
211	0.5	1.29303	155.388	10.3431
212	0.5	1.31652	157.121	11.0014
213	0.5	1.34694	158.935	11.6749
214	0.5	1.3722	160.818	12.361
215	0.5	1.39838	162.773	13.0602
216	0.5	1.4325	164.825	13.7764
217	0.5	1.46106	166.96	14.5069
218	0.5	1.49085	169.183	15.2524
219	0.5	1.52203	171.499	16.0134
220	0.5	1.56322	173.943	16.795
221	0.5	1.59819	176.497	17.5941
222	0.5	1.63524	179.171	18.4117
223	0.5	1.67466	181.976	19.249
224	0.5	1.72793	184.962	20.113
225	0.5	1.77438	188.11	21.0002
226	0.5	1.82501	191.441	21.9127
227	0.5	1.8957	195.034	22.8605
228	0.5	1.95996	198.876	23.8405
229	0.5	2.03352	203.011	24.8573
230	0.67	2.12007	207.506	26.2777
231	1.1	2.25713	212.6	28.7606
232	1.5	2.40892	218.403	32.374
233	2.4	2.65209	225.437	38.739

Data Set Standard Deviation = 0.237173
Numerator = 1500.71
Denominator = 2941.99
W Statistic = 0.510099 = 1500.71 / 2941.99

5% Critical value of 0.976 exceeds 0.510099
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.510099
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 = 233

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	-1.8957	33.9961	39.702
8	-2.59027	-1.82501	37.3268	44.4293
9	-2.59027	-1.77438	40.4752	49.0254
10	-2.59027	-1.72793	43.4609	53.5012
11	-2.59027	-1.67466	46.2654	57.839
12	-2.59027	-1.63524	48.9394	62.0747
13	-2.59027	-1.59819	51.4936	66.2145
14	-2.59027	-1.56322	53.9373	70.2636
15	-2.59027	-1.52203	56.2539	74.2061
16	-2.59027	-1.49085	58.4765	78.0678
17	-2.59027	-1.46106	60.6112	81.8523
18	-2.59027	-1.4325	62.6633	85.5629
19	-2.59027	-1.39838	64.6187	89.1851
20	-2.59027	-1.3722	66.5017	92.7394
21	-2.59027	-1.34694	68.3159	96.2284
22	-2.59027	-1.31652	70.0492	99.6385
23	-2.59027	-1.29303	71.7211	102.988
24	-2.59027	-1.27024	73.3346	106.278
25	-2.59027	-1.24809	74.8923	109.511
26	-2.59027	-1.22123	76.3837	112.674
27	-2.59027	-1.20036	77.8246	115.784
28	-2.59027	-1.18	79.217	118.84
29	-2.59027	-1.16012	80.5629	121.845
30	-2.59027	-1.1359	81.8531	124.787
31	-2.59027	-1.11699	83.1008	127.681
32	-2.59027	-1.09847	84.3074	130.526
33	-2.59027	-1.07584	85.4648	133.313
34	-2.59027	-1.05812	86.5845	136.053
35	-2.59027	-1.04073	87.6676	138.749
36	-2.59027	-1.02365	88.7154	141.401
37	-2.59027	-1.00271	89.7209	143.998
38	-2.59027	-0.986272	90.6936	146.553
39	-2.59027	-0.970094	91.6347	149.066
40	-2.59027	-0.954165	92.5451	151.537
41	-2.59027	-0.93459	93.4186	153.958
42	-2.59027	-0.919183	94.2635	156.339
43	-2.59027	-0.903992	95.0807	158.68
44	-2.59027	-0.885291	95.8644	160.974
45	-2.59027	-0.87055	96.6223	163.229
46	-2.59027	-0.855996	97.355	165.446
47	-2.59027	-0.841621	98.0633	167.626
48	-0.693147	-0.823893	98.7421	168.197
49	-0.693147	-0.809896	99.3981	168.758

50	-0.693147	-0.796056	100.032	169.31
51	-0.693147	-0.782366	100.644	169.852
52	-0.693147	-0.765456	101.23	170.383
53	-0.693147	-0.752084	101.795	170.904
54	-0.693147	-0.738846	102.341	171.416
55	-0.693147	-0.722479	102.863	171.917
56	-0.693147	-0.709522	103.367	172.409
57	-0.693147	-0.696684	103.852	172.892
58	-0.693147	-0.68396	104.32	173.366
59	-0.693147	-0.668209	104.766	173.829
60	-0.693147	-0.655726	105.196	174.284
61	-0.693147	-0.643345	105.61	174.73
62	-0.693147	-0.631062	106.008	175.167
63	-0.693147	-0.615839	106.388	175.594
64	-0.693147	-0.603765	106.752	176.012
65	-0.693147	-0.591776	107.102	176.423
66	-0.693147	-0.576911	107.435	176.822
67	-0.693147	-0.565108	107.755	177.214
68	-0.693147	-0.553384	108.061	177.598
69	-0.693147	-0.541736	108.354	177.973
70	-0.693147	-0.52728	108.632	178.339
71	-0.693147	-0.515791	108.898	178.696
72	-0.693147	-0.504372	109.153	179.046
73	-0.693147	-0.493018	109.396	179.388
74	-0.693147	-0.478914	109.625	179.72
75	-0.693147	-0.467699	109.844	180.044
76	-0.693147	-0.456542	110.052	180.36
77	-0.693147	-0.442676	110.248	180.667
78	-0.693147	-0.431644	110.435	180.966
79	-0.693147	-0.420664	110.612	181.258
80	-0.693147	-0.409735	110.78	181.542
81	-0.693147	-0.396142	110.936	181.816
82	-0.693147	-0.385321	111.085	182.083
83	-0.693147	-0.374544	111.225	182.343
84	-0.693147	-0.363809	111.358	182.595
85	-0.693147	-0.350451	111.48	182.838
86	-0.693147	-0.33981	111.596	183.074
87	-0.693147	-0.329206	111.704	183.302
88	-0.693147	-0.316004	111.804	183.521
89	-0.693147	-0.305481	111.897	183.733
90	-0.693147	-0.294992	111.984	183.937
91	-0.693147	-0.284535	112.065	184.134
92	-0.693147	-0.271509	112.139	184.323
93	-0.693147	-0.26112	112.207	184.504
94	-0.693147	-0.250759	112.27	184.677
95	-0.693147	-0.240426	112.328	184.844
96	-0.693147	-0.227545	112.38	185.002
97	-0.693147	-0.217267	112.427	185.152
98	-0.693147	-0.207012	112.47	185.296
99	-0.693147	-0.194225	112.508	185.43
100	-0.693147	-0.184017	112.541	185.558
101	-0.693147	-0.173829	112.572	185.678
102	-0.693147	-0.163659	112.598	185.792
103	-0.693147	-0.150969	112.621	185.897
104	-0.693147	-0.140835	112.641	185.994
105	-0.693147	-0.130716	112.658	186.085
106	-0.693147	-0.12061	112.673	186.168
107	-0.693147	-0.107995	112.684	186.243
108	-0.693147	-0.0979139	112.694	186.311
109	-0.693147	-0.0878447	112.702	186.372
110	-0.693147	-0.0752698	112.707	186.424
111	-0.693147	-0.0652187	112.712	186.469

112	-0.693147	-0.0551734	112.715	186.508
113	-0.693147	-0.0451348	112.717	186.539
114	-0.693147	-0.0325917	112.718	186.561
115	-0.693147	-0.0225612	112.718	186.577
116	-0.693147	-0.0125328	112.718	186.586
117	-0.693147	0	112.718	186.586
118	-0.693147	0.0125328	112.719	186.577
119	-0.693147	0.0225612	112.719	186.561
120	-0.693147	0.0325917	112.72	186.539
121	-0.693147	0.0451348	112.722	186.508
122	-0.693147	0.0551734	112.725	186.469
123	-0.693147	0.0652187	112.729	186.424
124	-0.693147	0.0752698	112.735	186.372
125	-0.693147	0.0878447	112.743	186.311
126	-0.693147	0.0979139	112.752	186.243
127	-0.693147	0.107995	112.764	186.168
128	-0.693147	0.12061	112.779	186.085
129	-0.693147	0.130716	112.796	185.994
130	-0.693147	0.140835	112.816	185.897
131	-0.693147	0.150969	112.838	185.792
132	-0.693147	0.163659	112.865	185.678
133	-0.693147	0.173829	112.895	185.558
134	-0.693147	0.184017	112.929	185.43
135	-0.693147	0.194225	112.967	185.296
136	-0.693147	0.207012	113.01	185.152
137	-0.693147	0.217267	113.057	185.002
138	-0.693147	0.227545	113.109	184.844
139	-0.693147	0.240426	113.167	184.677
140	-0.693147	0.250759	113.229	184.504
141	-0.693147	0.26112	113.298	184.323
142	-0.693147	0.271509	113.371	184.134
143	-0.693147	0.284535	113.452	183.937
144	-0.693147	0.294992	113.539	183.733
145	-0.693147	0.305481	113.633	183.521
146	-0.693147	0.316004	113.732	183.302
147	-0.693147	0.329206	113.841	183.074
148	-0.693147	0.33981	113.956	182.838
149	-0.693147	0.350451	114.079	182.595
150	-0.693147	0.363809	114.211	182.343
151	-0.693147	0.374544	114.352	182.083
152	-0.693147	0.385321	114.5	181.816
153	-0.693147	0.396142	114.657	181.542
154	-0.693147	0.409735	114.825	181.258
155	-0.693147	0.420664	115.002	180.966
156	-0.693147	0.431644	115.188	180.667
157	-0.693147	0.442676	115.384	180.36
158	-0.693147	0.456542	115.593	180.044
159	-0.693147	0.467699	115.811	179.72
160	-0.693147	0.478914	116.041	179.388
161	-0.693147	0.493018	116.284	179.046
162	-0.693147	0.504372	116.538	178.696
163	-0.693147	0.515791	116.804	178.339
164	-0.693147	0.52728	117.082	177.973
165	-0.693147	0.541736	117.376	177.598
166	-0.693147	0.553384	117.682	177.214
167	-0.693147	0.565108	118.001	176.822
168	-0.693147	0.576911	118.334	176.423
169	-0.693147	0.591776	118.684	176.012
170	-0.693147	0.603765	119.049	175.594
171	-0.693147	0.615839	119.428	175.167
172	-0.693147	0.631062	119.826	174.73
173	-0.693147	0.643345	120.24	174.284

174	-0.693147		0.655726	120.67	173.829
175	-0.693147		0.668209	121.117	173.366
176	-0.693147		0.68396	121.585	172.892
177	-0.693147		0.696684	122.07	172.409
178	-0.693147		0.709522	122.573	171.917
179	-0.693147		0.722479	123.095	171.416
180	-0.693147		0.738846	123.641	170.904
181	-0.693147		0.752084	124.207	170.383
182	-0.693147		0.765456	124.793	169.852
183	-0.693147		0.782366	125.405	169.31
184	-0.693147		0.796056	126.039	168.758
185	-0.693147		0.809896	126.695	168.197
186	-0.693147		0.823893	127.373	167.626
187	-0.693147		0.841621	128.082	167.042
188	-0.693147		0.855996	128.814	166.449
189	-0.693147		0.87055	129.572	165.846
190	-0.693147		0.885291	130.356	165.232
191	-0.693147		0.903992	131.173	164.605
192	-0.693147		0.919183	132.018	163.968
193	-0.693147		0.93459	132.892	163.321
194	-0.693147		0.954165	133.802	162.659
195	-0.693147		0.970094	134.743	161.987
196	-0.693147		0.986272	135.716	161.303
197	-0.693147		1.00271	136.721	160.608
198	-0.693147		1.02365	137.769	159.899
199	-0.693147		1.04073	138.852	159.177
200	-0.693147		1.05812	139.972	158.444
201	-0.693147		1.07584	141.129	157.698
202	-0.693147		1.09847	142.336	156.937
203	-0.693147		1.11699	143.584	156.162
204	-0.693147		1.1359	144.874	155.375
205	-0.693147		1.16012	146.22	154.571
206	-0.693147		1.18	147.612	153.753
207	-0.693147		1.20036	149.053	152.921
208	-0.693147		1.22123	150.544	152.074
209	-0.693147		1.24809	152.102	151.209
210	-0.693147		1.27024	153.716	150.329
211	-0.693147		1.29303	155.388	149.433
212	-0.693147		1.31652	157.121	148.52
213	-0.693147		1.34694	158.935	147.586
214	-0.693147		1.3722	160.818	146.635
215	-0.693147		1.39838	162.773	145.666
216	-0.693147		1.4325	164.825	144.673
217	-0.693147		1.46106	166.96	143.66
218	-0.693147		1.49085	169.183	142.627
219	-0.693147		1.52203	171.499	141.572
220	-0.693147		1.56322	173.943	140.488
221	-0.693147		1.59819	176.497	139.381
222	-0.693147		1.63524	179.171	138.247
223	-0.693147		1.67466	181.976	137.086
224	-0.693147		1.72793	184.962	135.889
225	-0.693147		1.77438	188.11	134.659
226	-0.400478		1.82501	191.441	133.928
227	0	1.8957	195.034	133.928	
228	0	1.95996	198.876	133.928	
229	0	2.03352	203.011	133.928	
230	0	2.12007	207.506	133.928	
231	0.0953102		2.25713	212.6	134.143
232	0.405465		2.40892	218.403	135.12
233	0.875469		2.65209	225.437	137.442

Data Set Standard Deviation = 0.79367
Numerator = 18890.2
Denominator = 32945.2
W Statistic = 0.573383 = 18890.2 / 32945.2

5% Critical value of 0.976 exceeds 0.573383
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.573383
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 = 98.2833%
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-9	7/6/2011	1	-2.59027	FALSE
LMW-3S	7/6/2011	1	-2.59027	FALSE
LMW-3	7/6/2011	1	-2.59027	FALSE
LMW-6	7/6/2011	1	-2.59027	FALSE
LMW-16	7/6/2011	1	-2.59027	FALSE
LMW-14R	7/6/2011	1	-2.59027	FALSE
LMW-15R	7/6/2011	1	-2.59027	FALSE
LMW-10	7/6/2011	1	-2.59027	FALSE
LMW-9S	7/6/2011	1	-2.59027	FALSE
LMW-7	7/6/2011	1	-2.59027	FALSE
LMW-8	7/6/2011	1	0.405465	TRUE
LMW-9D	7/6/2011	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

Mann-Kendall Trend Analysis

Parameter: 1,2-cis-Dichloroethylene

Location: LMW-8

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

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
ND<-0.693147	ND<-0.693147	0	0	0
ND<-0.693147	ND<-0.693147	0	0	0
ND<-0.693147	ND<-0.693147	0	0	0
ND<-0.693147	ND<-0.693147	0	0	0
ND<-0.693147	ND<-0.693147	0	0	0
ND<-0.693147	ND<-0.693147	0	0	0
ND<-0.693147	ND<-0.693147	0	0	0
ND<0 J	ND<-0.693147	0.693147	1	0
ND<0 J	ND<-0.693147	0.693147	2	0
ND<0 J	ND<-0.693147	0.693147	3	0
ND<-0.693147	ND<-0.693147	0	3	0
ND<0 J	ND<-0.693147	0.693147	4	0
ND<-0.693147	ND<-0.693147	0	4	0
ND<-0.693147	ND<-0.693147	0	4	0
0.875469	ND<-0.693147	1.56862	5	0
0.0953102	ND<-0.693147	0.788457	6	0
-0.400478 J	ND<-0.693147	0.29267	7	0
0.405465	ND<-0.693147	1.09861	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 J	ND<-0.693147	0.693147	9	0
ND<0 J	ND<-0.693147	0.693147	10	0
ND<0 J	ND<-0.693147	0.693147	11	0
ND<-0.693147	ND<-0.693147	0	11	0
ND<0 J	ND<-0.693147	0.693147	12	0
ND<-0.693147	ND<-0.693147	0	12	0
ND<-0.693147	ND<-0.693147	0	12	0
0.875469	ND<-0.693147	1.56862	13	0
0.0953102	ND<-0.693147	0.788457	14	0
-0.400478 J	ND<-0.693147	0.29267	15	0
0.405465	ND<-0.693147	1.09861	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 J	ND<-0.693147	0.693147	17	0
ND<0 J	ND<-0.693147	0.693147	18	0
ND<0 J	ND<-0.693147	0.693147	19	0
ND<-0.693147	ND<-0.693147	0	19	0
ND<0 J	ND<-0.693147	0.693147	20	0
ND<-0.693147	ND<-0.693147	0	20	0

ND<-0.693147	ND<-0.693147	0	20	0	
0.875469	ND<-0.693147	1.56862	21	0	
0.0953102	ND<-0.693147	0.788457	22	0	
-0.400478 J	ND<-0.693147	0.29267	23	0	
0.405465	ND<-0.693147	1.09861	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 J	ND<-0.693147	0.693147	25	0	
ND<0 J	ND<-0.693147	0.693147	26	0	
ND<0 J	ND<-0.693147	0.693147	27	0	
ND<-0.693147	ND<-0.693147	0	27	0	
ND<0 J	ND<-0.693147	0.693147	28	0	
ND<-0.693147	ND<-0.693147	0	28	0	
ND<-0.693147	ND<-0.693147	0	28	0	
0.875469	ND<-0.693147	1.56862	29	0	
0.0953102	ND<-0.693147	0.788457	30	0	
-0.400478 J	ND<-0.693147	0.29267	31	0	
0.405465	ND<-0.693147	1.09861	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 J	ND<-0.693147	0.693147	33	0	
ND<0 J	ND<-0.693147	0.693147	34	0	
ND<0 J	ND<-0.693147	0.693147	35	0	
ND<-0.693147	ND<-0.693147	0	35	0	
ND<0 J	ND<-0.693147	0.693147	36	0	
ND<-0.693147	ND<-0.693147	0	36	0	
ND<-0.693147	ND<-0.693147	0	36	0	
0.875469	ND<-0.693147	1.56862	37	0	
0.0953102	ND<-0.693147	0.788457	38	0	
-0.400478 J	ND<-0.693147	0.29267	39	0	
0.405465	ND<-0.693147	1.09861	40	0	
ND<-0.693147	ND<-0.693147	0	40	0	
ND<-0.693147	ND<-0.693147	0	40	0	
ND<0 J	ND<-0.693147	0.693147	41	0	
ND<0 J	ND<-0.693147	0.693147	42	0	
ND<0 J	ND<-0.693147	0.693147	43	0	
ND<-0.693147	ND<-0.693147	0	43	0	
ND<0 J	ND<-0.693147	0.693147	44	0	
ND<-0.693147	ND<-0.693147	0	44	0	
ND<-0.693147	ND<-0.693147	0	44	0	
0.875469	ND<-0.693147	1.56862	45	0	
0.0953102	ND<-0.693147	0.788457	46	0	
-0.400478 J	ND<-0.693147	0.29267	47	0	
0.405465	ND<-0.693147	1.09861	48	0	
ND<-0.693147	ND<-0.693147	0	48	0	
ND<0 J	ND<-0.693147	0.693147	49	0	
ND<0 J	ND<-0.693147	0.693147	50	0	
ND<0 J	ND<-0.693147	0.693147	51	0	
ND<-0.693147	ND<-0.693147	0	51	0	
ND<0 J	ND<-0.693147	0.693147	52	0	
ND<-0.693147	ND<-0.693147	0	52	0	
ND<-0.693147	ND<-0.693147	0	52	0	
0.875469	ND<-0.693147	1.56862	53	0	
0.0953102	ND<-0.693147	0.788457	54	0	
-0.400478 J	ND<-0.693147	0.29267	55	0	

0.405465	ND<-0.693147	1.09861	56	0	
ND<0 J	ND<-0.693147	0.693147	57	0	
ND<0 J	ND<-0.693147	0.693147	58	0	
ND<0 J	ND<-0.693147	0.693147	59	0	
ND<-0.693147	ND<-0.693147	0	59	0	
ND<0 J	ND<-0.693147	0.693147	60	0	
ND<-0.693147	ND<-0.693147	0	60	0	
ND<-0.693147	ND<-0.693147	0	60	0	
0.875469	ND<-0.693147	1.56862	61	0	
0.0953102	ND<-0.693147	0.788457	62	0	0
-0.400478 J	ND<-0.693147	0.29267	63	0	
0.405465	ND<-0.693147	1.09861	64	0	
ND<0 J	ND<0 J	0	64	0	
ND<0 J	ND<0 J	0	64	0	
ND<-0.693147	ND<0 J	-0.693147	64	1	
ND<0 J	ND<0 J	0	64	1	
ND<-0.693147	ND<0 J	-0.693147	64	2	
ND<-0.693147	ND<0 J	-0.693147	64	3	
0.875469	ND<0 J	0.875469	65	3	
0.0953102	ND<0 J	0.0953102	66	3	
-0.400478 J	ND<0 J	-0.400478	66	4	
0.405465	ND<0 J	0.405465	67	4	
ND<0 J	ND<0 J	0	67	4	
ND<-0.693147	ND<0 J	-0.693147	67	5	
ND<0 J	ND<0 J	0	67	5	
ND<-0.693147	ND<0 J	-0.693147	67	6	
ND<-0.693147	ND<0 J	-0.693147	67	7	
0.875469	ND<0 J	0.875469	68	7	
0.0953102	ND<0 J	0.0953102	69	7	
-0.400478 J	ND<0 J	-0.400478	69	8	
0.405465	ND<0 J	0.405465	70	8	
ND<-0.693147	ND<0 J	-0.693147	70	9	
ND<0 J	ND<0 J	0	70	9	
ND<-0.693147	ND<0 J	-0.693147	70	10	
ND<-0.693147	ND<0 J	-0.693147	70	11	
0.875469	ND<0 J	0.875469	71	11	
0.0953102	ND<0 J	0.0953102	72	11	
-0.400478 J	ND<0 J	-0.400478	72	12	
0.405465	ND<0 J	0.405465	73	12	
ND<0 J	ND<-0.693147	0.693147	74	12	
ND<-0.693147	ND<-0.693147	0	74	12	
ND<-0.693147	ND<-0.693147	0	74	12	
0.875469	ND<-0.693147	1.56862	75	12	
0.0953102	ND<-0.693147	0.788457	76	12	12
-0.400478 J	ND<-0.693147	0.29267	77	12	
0.405465	ND<-0.693147	1.09861	78	12	
ND<-0.693147	ND<0 J	-0.693147	78	13	
ND<-0.693147	ND<0 J	-0.693147	78	14	
0.875469	ND<0 J	0.875469	79	14	
0.0953102	ND<0 J	0.0953102	80	14	
-0.400478 J	ND<0 J	-0.400478	80	15	
0.405465	ND<0 J	0.405465	81	15	
ND<-0.693147	ND<-0.693147	0	81	15	
0.875469	ND<-0.693147	1.56862	82	15	

0.0953102	ND<-0.693147	0.788457	83	15
-0.400478 J	ND<-0.693147	0.29267 84	15	
0.405465	ND<-0.693147	1.09861 85	15	
0.875469	ND<-0.693147	1.56862 86	15	
0.0953102	ND<-0.693147	0.788457	87	15
-0.400478 J	ND<-0.693147	0.29267 88	15	
0.405465	ND<-0.693147	1.09861 89	15	
0.0953102	0.875469	-0.780159	89	16
-0.400478 J	0.875469	-1.2759589	17	
0.405465	0.875469	-0.470004	89	18
-0.400478 J	0.0953102	-0.495788	89	19
0.405465	0.0953102	0.310155	90	19
0.405465	-0.400478 J	0.805943	91	19

S Statistic = 91 - 19 = 72

Tied Group	Value	Members
1	-0.693147	11
2	0	4

Time Period	Observations
1/16/1998	1
3/16/1999	1
9/23/1999	1
3/14/2000	1
9/23/2003	1
3/10/2004	1
10/12/2004	1
4/1/2005	1
10/26/2005	1
6/19/2006	1
11/18/2006	1
6/2/2007	1
11/15/2007	1
5/20/2008	1
11/20/2008	1
6/11/2009	1
6/30/2010	1
11/17/2010	1
7/6/2011	1

There are 0 time periods with multiple data

A = 3126
B = 0
C = 1014
D = 0
E = 122
F = 0
a = 14706
b = 52326
c = 684
Group Variance = 643.333
Z-Score = 2.79924
Comparison Level at 1.0 - (0.05 / 2) = 97.5% confidence level = 1.97737 (two-tailed)
|2.79924| > 1.97737 indicating a trend

Concentrations (ppb)

Parameter: Acetone

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 240
Percent Non-Detects: 97.9592%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	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<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
			7/6/2011	5.7 J	5.7 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9	20	20 (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
			7/6/2011	ND<5 U	ND<5 U

LMW-10	17	17 (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	
			7/6/2011	ND<5 U	ND<5 U	
LMW-14R	11	11 (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	
			7/6/2011	ND<5 U	ND<5 U	
LMW-15R	12	12 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			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	
			7/6/2011	ND<5 U	ND<5 U	
LMW-16	10	10 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<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	
			7/6/2011	ND<5 U	ND<5 U	
LMW-3	22	22 (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
			7/6/2011	ND<5 U	ND<5 U
LMW-3S	10	10 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<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
			7/6/2011	ND<5 U	ND<5 U
LMW-6	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	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
			7/6/2011	ND<5 U	ND<5 U
LMW-8	20	20 (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
			7/6/2011	ND<5 U	ND<5 U
LMW-9D	10	10 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<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
			7/6/2011	ND<5 U	ND<5 U
LMW-9S	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
			6/30/2010	ND<5 U	ND<5 U
			11/17/2010	ND<5 U	ND<5 U
			7/6/2011	ND<5 U	ND<5 U
LMW-7	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<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
			7/6/2011	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 = 245

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	-2.14441	22.5296	-4.73127
5	0.5	-2.05375	26.7475	-5.75815
6	0.5	-1.97737	30.6575	-6.74683
7	0.5	-1.91103	34.3095	-7.70235
8	0.5	-1.85218	37.7401	-8.62844
9	0.5	-1.79912	40.9769	-9.52799
10	0.5	-1.75069	44.0418	-10.4033
11	0.5	-1.70604	46.9524	-11.2564
12	0.5	-1.66456	49.7231	-12.0886
13	0.5	-1.62576	52.3662	-12.9015
14	0.5	-1.58927	54.892	-13.6962
15	0.5	-1.55477	57.3093	-14.4735
16	0.5	-1.5141	59.6018	-15.2306
17	0.5	-1.48328	61.802	-15.9722
18	0.5	-1.4538	63.9155	-16.6991
19	0.5	-1.42554	65.9477	-17.4119
20	0.5	-1.39838	67.9031	-18.1111
21	0.5	-1.3722	69.7861	-18.7972
22	0.5	-1.34694	71.6003	-19.4707
23	0.5	-1.32251	73.3494	-20.1319
24	0.5	-1.29884	75.0363	-20.7813
25	0.5	-1.27588	76.6642	-21.4193
26	0.5	-1.25357	78.2356	-22.0461
27	0.5	-1.23187	79.7531	-22.662
28	0.5	-1.21073	81.219	-23.2674
29	0.5	-1.19012	82.6353	-23.8624
30	0.5	-1.17	84.0043	-24.4474
31	0.5	-1.1455	85.3164	-25.0202
32	0.5	-1.12639	86.5852	-25.5834
33	0.5	-1.10768	87.8121	-26.1372
34	0.5	-1.08935	88.9988	-26.6819
35	0.5	-1.07138	90.1467	-27.2176
36	0.5	-1.05375	91.2571	-27.7444
37	0.5	-1.03643	92.3312	-28.2627
38	0.5	-1.01943	93.3705	-28.7724
39	0.5	-1.00271	94.3759	-29.2737
40	0.5	-0.986272	95.3486	-29.7669
41	0.5	-0.970094	96.2897	-30.2519
42	0.5	-0.954165	97.2002	-30.729
43	0.5	-0.938476	98.0809	-31.1982
44	0.5	-0.923014	98.9328	-31.6597
45	0.5	-0.907769	99.7569	-32.1136
46	0.5	-0.892733	100.554	-32.56
47	0.5	-0.874218	101.318	-32.9971
48	0.5	-0.859618	102.057	-33.4269
49	0.5	-0.845198	102.771	-33.8495

50	0.5	-0.830953	103.462	-34.265
51	0.5	-0.816874	104.129	-34.6734
52	0.5	-0.802956	104.774	-35.0749
53	0.5	-0.789191	105.397	-35.4695
54	0.5	-0.775574	105.998	-35.8573
55	0.5	-0.7621	106.579	-36.2383
56	0.5	-0.748762	107.14	-36.6127
57	0.5	-0.735557	107.681	-36.9805
58	0.5	-0.722479	108.203	-37.3417
59	0.5	-0.709522	108.706	-37.6965
60	0.5	-0.696684	109.192	-38.0448
61	0.5	-0.68396	109.659	-38.3868
62	0.5	-0.668209	110.106	-38.7209
63	0.5	-0.655726	110.536	-39.0488
64	0.5	-0.643345	110.95	-39.3705
65	0.5	-0.631062	111.348	-39.686
66	0.5	-0.618872	111.731	-39.9954
67	0.5	-0.606775	112.099	-40.2988
68	0.5	-0.594766	112.453	-40.5962
69	0.5	-0.582841	112.793	-40.8876
70	0.5	-0.570999	113.119	-41.1731
71	0.5	-0.559237	113.431	-41.4527
72	0.5	-0.547551	113.731	-41.7265
73	0.5	-0.53594	114.018	-41.9945
74	0.5	-0.524401	114.293	-42.2567
75	0.5	-0.51293	114.556	-42.5131
76	0.5	-0.501527	114.808	-42.7639
77	0.5	-0.487364	115.046	-43.0076
78	0.5	-0.476105	115.272	-43.2456
79	0.5	-0.464904	115.488	-43.4781
80	0.5	-0.453763	115.694	-43.705
81	0.5	-0.442676	115.89	-43.9263
82	0.5	-0.431644	116.077	-44.1421
83	0.5	-0.420664	116.253	-44.3525
84	0.5	-0.409735	116.421	-44.5573
85	0.5	-0.398855	116.58	-44.7568
86	0.5	-0.388022	116.731	-44.9508
87	0.5	-0.377233	116.873	-45.1394
88	0.5	-0.36649	117.008	-45.3226
89	0.5	-0.355788	117.134	-45.5005
90	0.5	-0.345126	117.253	-45.6731
91	0.5	-0.334503	117.365	-45.8403
92	0.5	-0.323919	117.47	-46.0023
93	0.5	-0.310738	117.567	-46.1577
94	0.5	-0.300232	117.657	-46.3078
95	0.5	-0.28976	117.741	-46.4527
96	0.5	-0.279319	117.819	-46.5923
97	0.5	-0.268908	117.891	-46.7268
98	0.5	-0.258527	117.958	-46.856
99	0.5	-0.248174	118.02	-46.9801
100	0.5	-0.237847	118.076	-47.0991
101	0.5	-0.227545	118.128	-47.2128
102	0.5	-0.217267	118.175	-47.3215
103	0.5	-0.207012	118.218	-47.425
104	0.5	-0.196779	118.257	-47.5234
105	0.5	-0.186567	118.292	-47.6166
106	0.5	-0.176374	118.323	-47.7048
107	0.5	-0.166199	118.35	-47.7879
108	0.5	-0.153505	118.374	-47.8647
109	0.5	-0.143367	118.394	-47.9364
110	0.5	-0.133244	118.412	-48.003
111	0.5	-0.123135	118.427	-48.0645

112	0.5	-0.113039	118.44	-48.1211
113	0.5	-0.102953	118.451	-48.1725
114	0.5	-0.0928787	118.459	-48.219
115	0.5	-0.0828129	118.466	-48.2604
116	0.5	-0.0727562	118.471	-48.2968
117	0.5	-0.0627062	118.475	-48.3281
118	0.5	-0.0526632	118.478	-48.3545
119	0.5	-0.0426257	118.48	-48.3758
120	0.5	-0.0325917	118.481	-48.3921
121	0.5	-0.0225612	118.482	-48.4033
122	0.5	-0.0125328	118.482	-48.4096
123	0.5	0	118.482	-48.4096
124	0.5	0.0125328	118.482	-48.4033
125	0.5	0.0225612	118.482	-48.3921
126	0.5	0.0325917	118.483	-48.3758
127	0.5	0.0426257	118.485	-48.3545
128	0.5	0.0526632	118.488	-48.3281
129	0.5	0.0627062	118.492	-48.2968
130	0.5	0.0727562	118.497	-48.2604
131	0.5	0.0828129	118.504	-48.219
132	0.5	0.0928787	118.513	-48.1725
133	0.5	0.102953	118.523	-48.1211
134	0.5	0.113039	118.536	-48.0645
135	0.5	0.123135	118.551	-48.003
136	0.5	0.133244	118.569	-47.9364
137	0.5	0.143367	118.59	-47.8647
138	0.5	0.153505	118.613	-47.7879
139	0.5	0.166199	118.641	-47.7048
140	0.5	0.176374	118.672	-47.6166
141	0.5	0.186567	118.707	-47.5234
142	0.5	0.196779	118.745	-47.425
143	0.5	0.207012	118.788	-47.3215
144	0.5	0.217267	118.835	-47.2128
145	0.5	0.227545	118.887	-47.0991
146	0.5	0.237847	118.944	-46.9801
147	0.5	0.248174	119.005	-46.856
148	0.5	0.258527	119.072	-46.7268
149	0.5	0.268908	119.145	-46.5923
150	0.5	0.279319	119.223	-46.4527
151	0.5	0.28976	119.306	-46.3078
152	0.5	0.300232	119.397	-46.1577
153	0.5	0.310738	119.493	-46.0023
154	0.5	0.323919	119.598	-45.8403
155	0.5	0.334503	119.71	-45.6731
156	0.5	0.345126	119.829	-45.5005
157	0.5	0.355788	119.956	-45.3226
158	0.5	0.36649	120.09	-45.1394
159	0.5	0.377233	120.232	-44.9508
160	0.5	0.388022	120.383	-44.7568
161	0.5	0.398855	120.542	-44.5573
162	0.5	0.409735	120.71	-44.3525
163	0.5	0.420664	120.887	-44.1421
164	0.5	0.431644	121.073	-43.9263
165	0.5	0.442676	121.269	-43.705
166	0.5	0.453763	121.475	-43.4781
167	0.5	0.464904	121.691	-43.2456
168	0.5	0.476105	121.918	-43.0076
169	0.5	0.487364	122.155	-42.7639
170	0.5	0.501527	122.407	-42.5131
171	0.5	0.51293	122.67	-42.2567
172	0.5	0.524401	122.945	-41.9945
173	0.5	0.53594	123.232	-41.7265

174	0.5	0.547551		123.532	-41.4527
175	0.5	0.559237		123.845	-41.1731
176	0.5	0.570999		124.171	-40.8876
177	0.5	0.582841		124.51	-40.5962
178	0.5	0.594766		124.864	-40.2988
179	0.5	0.606775		125.232	-39.9954
180	2.5	0.618872		125.615	-38.4482
181	2.5	0.631062		126.014	-36.8706
182	2.5	0.643345		126.428	-35.2622
183	2.5	0.655726		126.858	-33.6229
184	2.5	0.668209		127.304	-31.9524
185	2.5	0.68396	127.772	-30.2425	
186	2.5	0.696684		128.257	-28.5008
187	2.5	0.709522		128.761	-26.727
188	2.5	0.722479		129.283	-24.9208
189	2.5	0.735557		129.824	-23.0819
190	2.5	0.748762		130.384	-21.21
191	2.5	0.7621	130.965	-19.3047	
192	2.5	0.775574		131.567	-17.3658
193	2.5	0.789191		132.189	-15.3928
194	2.5	0.802956		132.834	-13.3854
195	2.5	0.816874		133.501	-11.3432
196	2.5	0.830953		134.192	-9.26585
197	2.5	0.845198		134.906	-7.15285
198	2.5	0.859618		135.645	-5.00381
199	2.5	0.874218		136.409	-2.81826
200	2.5	0.892733		137.206	-0.586433
201	2.5	0.907769		138.03	1.68299
202	2.5	0.923014		138.882	3.99053
203	2.5	0.938476		139.763	6.33671
204	2.5	0.954165		140.674	8.72213
205	2.5	0.970094		141.615	11.1474
206	2.5	0.986272		142.587	13.613
207	2.5	1.00271	143.593	16.1198	
208	2.5	1.01943	144.632	18.6684	
209	2.5	1.03643	145.706	21.2595	
210	2.5	1.05375	146.817	23.8938	
211	2.5	1.07138	147.965	26.5723	
212	2.5	1.08935	149.151	29.2957	
213	2.5	1.10768	150.378	32.0649	
214	2.5	1.12639	151.647	34.8808	
215	2.5	1.1455	152.959	37.7446	
216	2.5	1.17	154.328	40.6696	
217	2.5	1.19012	155.744	43.6449	
218	2.5	1.21073	157.21	46.6717	
219	2.5	1.23187	158.728	49.7514	
220	2.5	1.25357	160.299	52.8853	
221	2.5	1.27588	161.927	56.075	
222	2.5	1.29884	163.614	59.3221	
223	2.5	1.32251	165.363	62.6283	
224	2.5	1.34694	167.177	65.9957	
225	2.5	1.3722	169.06	69.4262	
226	2.5	1.39838	171.016	72.9221	
227	2.5	1.42554	173.048	76.486	
228	2.5	1.4538	175.161	80.1205	
229	2.5	1.48328	177.362	83.8287	
230	2.5	1.5141	179.654	87.614	
231	2.5	1.55477	182.071	91.5009	
232	2.5	1.58927	184.597	95.4741	
233	2.5	1.62576	187.24	99.5385	
234	2.5	1.66456	190.011	103.7	
235	2.5	1.70604	192.922	107.965	

236	2.5	1.75069	195.986	112.342
237	2.5	1.79912	199.223	116.839
238	2.5	1.85218	202.654	121.47
239	2.5	1.91103	206.306	126.248
240	2.5	1.97737	210.216	131.191
241	4	2.05375	214.434	139.406
242	4	2.14441	219.032	147.984
243	5.7	2.25713	224.127	160.849
244	7.5	2.40892	229.93	178.916
245	282	2.65209	236.963	926.805

Data Set Standard Deviation = 17.9774
Numerator = 858967
Denominator = 1.86863e+007
W Statistic = 0.0459676 = 858967 / 1.86863e+007

5% Critical value of 0.976 exceeds 0.0459676
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.0459676
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 = 245

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	-2.14441	22.5296	6.55894
5	-0.693147	-2.05375	26.7475	7.98249
6	-0.693147	-1.97737	30.6575	9.35309
7	-0.693147	-1.91103	34.3095	10.6777
8	-0.693147	-1.85218	37.7401	11.9616
9	-0.693147	-1.79912	40.9769	13.2086
10	-0.693147	-1.75069	44.0418	14.4221
11	-0.693147	-1.70604	46.9524	15.6046
12	-0.693147	-1.66456	49.7231	16.7584
13	-0.693147	-1.62576	52.3662	17.8853
14	-0.693147	-1.58927	54.892	18.9869
15	-0.693147	-1.55477	57.3093	20.0646
16	-0.693147	-1.5141	59.6018	21.1141
17	-0.693147	-1.48328	61.802	22.1422
18	-0.693147	-1.4538	63.9155	23.1499
19	-0.693147	-1.42554	65.9477	24.138
20	-0.693147	-1.39838	67.9031	25.1073
21	-0.693147	-1.3722	69.7861	26.0585
22	-0.693147	-1.34694	71.6003	26.9921
23	-0.693147	-1.32251	73.3494	27.9088
24	-0.693147	-1.29884	75.0363	28.8091
25	-0.693147	-1.27588	76.6642	29.6934
26	-0.693147	-1.25357	78.2356	30.5623
27	-0.693147	-1.23187	79.7531	31.4162
28	-0.693147	-1.21073	81.219	32.2554
29	-0.693147	-1.19012	82.6353	33.0803
30	-0.693147	-1.17	84.0043	33.8913
31	-0.693147	-1.1455	85.3164	34.6853
32	-0.693147	-1.12639	86.5852	35.4661
33	-0.693147	-1.10768	87.8121	36.2339
34	-0.693147	-1.08935	88.9988	36.9889
35	-0.693147	-1.07138	90.1467	37.7316
36	-0.693147	-1.05375	91.2571	38.462
37	-0.693147	-1.03643	92.3312	39.1804
38	-0.693147	-1.01943	93.3705	39.887
39	-0.693147	-1.00271	94.3759	40.582
40	-0.693147	-0.986272	95.3486	41.2656
41	-0.693147	-0.970094	96.2897	41.9381
42	-0.693147	-0.954165	97.2002	42.5994
43	-0.693147	-0.938476	98.0809	43.2499
44	-0.693147	-0.923014	98.9328	43.8897
45	-0.693147	-0.907769	99.7569	44.5189
46	-0.693147	-0.892733	100.554	45.1377
47	-0.693147	-0.874218	101.318	45.7437
48	-0.693147	-0.859618	102.057	46.3395
49	-0.693147	-0.845198	102.771	46.9254

50	-0.693147	-0.830953	103.462	47.5013
51	-0.693147	-0.816874	104.129	48.0676
52	-0.693147	-0.802956	104.774	48.6241
53	-0.693147	-0.789191	105.397	49.1712
54	-0.693147	-0.775574	105.998	49.7087
55	-0.693147	-0.7621	106.579	50.237
56	-0.693147	-0.748762	107.14	50.756
57	-0.693147	-0.735557	107.681	51.2658
58	-0.693147	-0.722479	108.203	51.7666
59	-0.693147	-0.709522	108.706	52.2584
60	-0.693147	-0.696684	109.192	52.7413
61	-0.693147	-0.68396	109.659	53.2154
62	-0.693147	-0.668209	110.106	53.6786
63	-0.693147	-0.655726	110.536	54.1331
64	-0.693147	-0.643345	110.95	54.579
65	-0.693147	-0.631062	111.348	55.0165
66	-0.693147	-0.618872	111.731	55.4454
67	-0.693147	-0.606775	112.099	55.866
68	-0.693147	-0.594766	112.453	56.2783
69	-0.693147	-0.582841	112.793	56.6823
70	-0.693147	-0.570999	113.119	57.078
71	-0.693147	-0.559237	113.431	57.4657
72	-0.693147	-0.547551	113.731	57.8452
73	-0.693147	-0.53594	114.018	58.2167
74	-0.693147	-0.524401	114.293	58.5802
75	-0.693147	-0.51293	114.556	58.9357
76	-0.693147	-0.501527	114.808	59.2834
77	-0.693147	-0.487364	115.046	59.6212
78	-0.693147	-0.476105	115.272	59.9512
79	-0.693147	-0.464904	115.488	60.2734
80	-0.693147	-0.453763	115.694	60.588
81	-0.693147	-0.442676	115.89	60.8948
82	-0.693147	-0.431644	116.077	61.194
83	-0.693147	-0.420664	116.253	61.4856
84	-0.693147	-0.409735	116.421	61.7696
85	-0.693147	-0.398855	116.58	62.046
86	-0.693147	-0.388022	116.731	62.315
87	-0.693147	-0.377233	116.873	62.5765
88	-0.693147	-0.36649	117.008	62.8305
89	-0.693147	-0.355788	117.134	63.0771
90	-0.693147	-0.345126	117.253	63.3163
91	-0.693147	-0.334503	117.365	63.5482
92	-0.693147	-0.323919	117.47	63.7727
93	-0.693147	-0.310738	117.567	63.9881
94	-0.693147	-0.300232	117.657	64.1962
95	-0.693147	-0.28976	117.741	64.3971
96	-0.693147	-0.279319	117.819	64.5907
97	-0.693147	-0.268908	117.891	64.7771
98	-0.693147	-0.258527	117.958	64.9563
99	-0.693147	-0.248174	118.02	65.1283
100	-0.693147	-0.237847	118.076	65.2931
101	-0.693147	-0.227545	118.128	65.4509
102	-0.693147	-0.217267	118.175	65.6015
103	-0.693147	-0.207012	118.218	65.745
104	-0.693147	-0.196779	118.257	65.8814
105	-0.693147	-0.186567	118.292	66.0107
106	-0.693147	-0.176374	118.323	66.1329
107	-0.693147	-0.166199	118.35	66.2481
108	-0.693147	-0.153505	118.374	66.3545
109	-0.693147	-0.143367	118.394	66.4539
110	-0.693147	-0.133244	118.412	66.5463
111	-0.693147	-0.123135	118.427	66.6316

112	-0.693147	-0.113039	118.44	66.71
113	-0.693147	-0.102953	118.451	66.7813
114	-0.693147	-0.0928787	118.459	66.8457
115	-0.693147	-0.0828129	118.466	66.9031
116	-0.693147	-0.0727562	118.471	66.9535
117	-0.693147	-0.0627062	118.475	66.997
118	-0.693147	-0.0526632	118.478	67.0335
119	-0.693147	-0.0426257	118.48	67.0631
120	-0.693147	-0.0325917	118.481	67.0856
121	-0.693147	-0.0225612	118.482	67.1013
122	-0.693147	-0.0125328	118.482	67.11
123	-0.693147	0	118.482	67.11
124	-0.693147	0.0125328	118.482	67.1013
125	-0.693147	0.0225612	118.482	67.0856
126	-0.693147	0.0325917	118.483	67.0631
127	-0.693147	0.0426257	118.485	67.0335
128	-0.693147	0.0526632	118.488	66.997
129	-0.693147	0.0627062	118.492	66.9535
130	-0.693147	0.0727562	118.497	66.9031
131	-0.693147	0.0828129	118.504	66.8457
132	-0.693147	0.0928787	118.513	66.7813
133	-0.693147	0.102953	118.523	66.71
134	-0.693147	0.113039	118.536	66.6316
135	-0.693147	0.123135	118.551	66.5463
136	-0.693147	0.133244	118.569	66.4539
137	-0.693147	0.143367	118.59	66.3545
138	-0.693147	0.153505	118.613	66.2481
139	-0.693147	0.166199	118.641	66.1329
140	-0.693147	0.176374	118.672	66.0107
141	-0.693147	0.186567	118.707	65.8814
142	-0.693147	0.196779	118.745	65.745
143	-0.693147	0.207012	118.788	65.6015
144	-0.693147	0.217267	118.835	65.4509
145	-0.693147	0.227545	118.887	65.2931
146	-0.693147	0.237847	118.944	65.1283
147	-0.693147	0.248174	119.005	64.9563
148	-0.693147	0.258527	119.072	64.7771
149	-0.693147	0.268908	119.145	64.5907
150	-0.693147	0.279319	119.223	64.3971
151	-0.693147	0.28976	119.306	64.1962
152	-0.693147	0.300232	119.397	63.9881
153	-0.693147	0.310738	119.493	63.7727
154	-0.693147	0.323919	119.598	63.5482
155	-0.693147	0.334503	119.71	63.3163
156	-0.693147	0.345126	119.829	63.0771
157	-0.693147	0.355788	119.956	62.8305
158	-0.693147	0.36649	120.09	62.5765
159	-0.693147	0.377233	120.232	62.315
160	-0.693147	0.388022	120.383	62.046
161	-0.693147	0.398855	120.542	61.7696
162	-0.693147	0.409735	120.71	61.4856
163	-0.693147	0.420664	120.887	61.194
164	-0.693147	0.431644	121.073	60.8948
165	-0.693147	0.442676	121.269	60.588
166	-0.693147	0.453763	121.475	60.2734
167	-0.693147	0.464904	121.691	59.9512
168	-0.693147	0.476105	121.918	59.6212
169	-0.693147	0.487364	122.155	59.2834
170	-0.693147	0.501527	122.407	58.9357
171	-0.693147	0.51293	122.67	58.5802
172	-0.693147	0.524401	122.945	58.2167
173	-0.693147	0.53594	123.232	57.8452

174	-0.693147	0.547551	123.532	57.4657
175	-0.693147	0.559237	123.845	57.078
176	-0.693147	0.570999	124.171	56.6823
177	-0.693147	0.582841	124.51	56.2783
178	-0.693147	0.594766	124.864	55.866
179	-0.693147	0.606775	125.232	55.4454
180	0.916291	0.618872	125.615	56.0125
181	0.916291	0.631062	126.014	56.5907
182	0.916291	0.643345	126.428	57.1802
183	0.916291	0.655726	126.858	57.7811
184	0.916291	0.668209	127.304	58.3933
185	0.916291	0.68396	127.772	59.02
186	0.916291	0.696684	128.257	59.6584
187	0.916291	0.709522	128.761	60.3085
188	0.916291	0.722479	129.283	60.9705
189	0.916291	0.735557	129.824	61.6445
190	0.916291	0.748762	130.384	62.3306
191	0.916291	0.7621	130.965	63.0289
192	0.916291	0.775574	131.567	63.7396
193	0.916291	0.789191	132.189	64.4627
194	0.916291	0.802956	132.834	65.1984
195	0.916291	0.816874	133.501	65.9469
196	0.916291	0.830953	134.192	66.7083
197	0.916291	0.845198	134.906	67.4828
198	0.916291	0.859618	135.645	68.2704
199	0.916291	0.874218	136.409	69.0715
200	0.916291	0.892733	137.206	69.8895
201	0.916291	0.907769	138.03	70.7212
202	0.916291	0.923014	138.882	71.567
203	0.916291	0.938476	139.763	72.4269
204	0.916291	0.954165	140.674	73.3012
205	0.916291	0.970094	141.615	74.1901
206	0.916291	0.986272	142.587	75.0938
207	0.916291	1.00271	143.593	76.0126
208	0.916291	1.01943	144.632	76.9467
209	0.916291	1.03643	145.706	77.8963
210	0.916291	1.05375	146.817	78.8619
211	0.916291	1.07138	147.965	79.8436
212	0.916291	1.08935	149.151	80.8417
213	0.916291	1.10768	150.378	81.8567
214	0.916291	1.12639	151.647	82.8888
215	0.916291	1.1455	152.959	83.9384
216	0.916291	1.17	154.328	85.0105
217	0.916291	1.19012	155.744	86.101
218	0.916291	1.21073	157.21	87.2103
219	0.916291	1.23187	158.728	88.3391
220	0.916291	1.25357	160.299	89.4877
221	0.916291	1.27588	161.927	90.6568
222	0.916291	1.29884	163.614	91.8469
223	0.916291	1.32251	165.363	93.0587
224	0.916291	1.34694	167.177	94.2929
225	0.916291	1.3722	169.06	95.5502
226	0.916291	1.39838	171.016	96.8315
227	0.916291	1.42554	173.048	98.1378
228	0.916291	1.4538	175.161	99.4699
229	0.916291	1.48328	177.362	100.829
230	0.916291	1.5141	179.654	102.216
231	0.916291	1.55477	182.071	103.641
232	0.916291	1.58927	184.597	105.097
233	0.916291	1.62576	187.24	106.587
234	0.916291	1.66456	190.011	108.112
235	0.916291	1.70604	192.922	109.675

236	0.916291		1.75069	195.986	111.279
237	0.916291		1.79912	199.223	112.928
238	0.916291		1.85218	202.654	114.625
239	0.916291		1.91103	206.306	116.376
240	0.916291		1.97737	210.216	118.188
241	1.38629	2.05375	214.434	121.035	
242	1.38629	2.14441	219.032	124.008	
243	1.74047	2.25713	224.127	127.936	
244	2.0149	2.40892	229.93	132.79	
245	5.64191	2.65209	236.963	147.753	

Data Set Standard Deviation = 0.827735
Numerator = 21830.9
Denominator = 39614.4
W Statistic = 0.551085 = 21830.9 / 39614.4

5% Critical value of 0.976 exceeds 0.551085
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.551085
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 = 97.9592%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 20
Maximum Background Concentration = 1.74047
Confidence Level = 71.4%
False Positive Rate = 28.6%

Location	Date	Samples	Mean	Significant
LMW-9	7/6/2011	1	0.916291	FALSE
LMW-10	7/6/2011	1	0.916291	FALSE
LMW-14R	7/6/2011	1	0.916291	FALSE
LMW-15R	7/6/2011	1	0.916291	FALSE
LMW-16	7/6/2011	1	0.916291	FALSE
LMW-3	7/6/2011	1	0.916291	FALSE
LMW-3S	7/6/2011	1	0.916291	FALSE
LMW-6	7/6/2011	1	0.916291	FALSE
LMW-8	7/6/2011	1	0.916291	FALSE
LMW-9D	7/6/2011	1	0.916291	FALSE
LMW-9S	7/6/2011	1	0.916291	FALSE
LMW-7	7/6/2011	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

Concentrations (ppb)

Parameter: Arsenic

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 180
Percent Non-Detects: 73.4694%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	18 (90%)	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
			7/6/2011	ND<0.4 U	ND<0.4 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9S	9	3 (33.3333%)	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
			7/6/2011	0.46 J	0.46 J
LMW-8	20	15 (75%)	1/16/1998	ND<2	ND<2
			3/16/1999	ND<2	ND<2
			9/23/1999	ND<2	ND<2
			3/14/2000	ND<2	ND<2
			9/23/2003	ND<2	ND<2
			3/10/2004	ND<2	ND<2
			10/12/2004	ND<2	ND<2
			4/1/2005	ND<2	ND<2
			10/26/2005	ND<2	ND<2
			6/19/2006	ND<2	ND<2
			11/18/2006	ND<2	ND<2

			6/2/2007	ND<2	ND<2	
			11/15/2007		ND<2	ND<2
			5/20/2008		ND<2	ND<2
			11/20/2008		ND<2	ND<2
			6/11/2009		0.49 J	0.49 J
			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
			7/6/2011	0.81 J	0.81 J	
LMW-7	18	13 (72.2222%)	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
			7/6/2011	1.8	1.8	
LMW-6	20	16 (80%)	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
			7/6/2011	ND<0.4 U	ND<0.4 U	
LMW-3S	10	7 (70%)	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
			7/6/2011	0.84 J	0.84 J	
LMW-3	22	20 (90.9091%)	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		
		7/6/2011	ND<0.4 U	ND<0.4 U		
LMW-16	10	3 (30%)	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		
		7/6/2011	1	1		
LMW-15R	12	11 (91.6667%)	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	
		7/6/2011	ND<0.4 U	ND<0.4 U		
LMW-14R	11	7 (63.6364%)	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	ND<0.4 U		ND<0.4 U	
		11/16/2009	0.47 J	0.47 J		
		6/30/2010	ND<0.4 U		ND<0.4 U	
		11/17/2010	ND<0.4 U		ND<0.4 U	
		7/6/2011	ND<0.4 U	ND<0.4 U		
LMW-10	17	14 (82.3529%)	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
			7/6/2011	ND<0.4 U	ND<0.4 U	
LMW-9D	10	1 (10%)	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	
			7/6/2011	3.2	3.2	
LMW-9	20	12 (60%)	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	
			7/6/2011	ND<0.4 U	ND<0.4 U	
LMW-12	11	10 (90.9091%)	3/14/2000		57	57
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	
			10/12/2004	ND<2	ND<2	
			4/1/2005	ND<2	ND<2	
			10/26/2005	ND<2	ND<2	
			6/19/2006	ND<2	ND<2	
			6/2/2007	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
LMW-13	11	10 (90.9091%)	3/14/2000		16	16
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	
			10/12/2004	ND<2	ND<2	

			4/1/2005	ND<2	ND<2	
			10/26/2005		ND<2	ND<2
			6/19/2006		ND<2	ND<2
			6/2/2007	ND<2	ND<2	
			11/15/2007		ND<2	ND<2
			5/20/2008		ND<2	ND<2
			11/20/2008		ND<2	ND<2
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
MW-5	13	11 (84.6154%)	1/16/1998		ND<2	ND<2
			3/16/1999		ND<2	ND<2
			9/23/1999		ND<2	ND<2
			3/14/2000		34	34
			9/23/2003		ND<2	ND<2
			3/10/2004		60	60
			10/12/2004		ND<2	ND<2
			4/1/2005	ND<2	ND<2	
			10/26/2005		ND<2	ND<2
			6/19/2006		ND<2	ND<2
			11/15/2007		ND<2	ND<2
			5/20/2008		ND<2	ND<2
			11/20/2008		ND<2	ND<2

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Arsenic

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 245

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	-2.14441	22.5296	-1.89251
5	0.2	-2.05375	26.7475	-2.30326
6	0.2	-1.97737	30.6575	-2.69873
7	0.2	-1.91103	34.3095	-3.08094
8	0.2	-1.85218	37.7401	-3.45137
9	0.2	-1.79912	40.9769	-3.8112
10	0.2	-1.75069	44.0418	-4.16133
11	0.2	-1.70604	46.9524	-4.50254
12	0.2	-1.66456	49.7231	-4.83546
13	0.2	-1.62576	52.3662	-5.16061
14	0.2	-1.58927	54.892	-5.47846
15	0.2	-1.55477	57.3093	-5.78942
16	0.2	-1.5141	59.6018	-6.09224
17	0.2	-1.48328	61.802	-6.38889
18	0.2	-1.4538	63.9155	-6.67965
19	0.2	-1.42554	65.9477	-6.96476
20	0.2	-1.39838	67.9031	-7.24444
21	0.2	-1.3722	69.7861	-7.51888
22	0.2	-1.34694	71.6003	-7.78827
23	0.2	-1.32251	73.3494	-8.05277
24	0.2	-1.29884	75.0363	-8.31254
25	0.2	-1.27588	76.6642	-8.56771
26	0.2	-1.25357	78.2356	-8.81842
27	0.2	-1.23187	79.7531	-9.0648
28	0.2	-1.21073	81.219	-9.30694
29	0.41	-1.19012	82.6353	-9.79489
30	0.42	-1.17	84.0043	-10.2863
31	0.43	-1.1455	85.3164	-10.7789
32	0.44	-1.12639	86.5852	-11.2745
33	0.46	-1.10768	87.8121	-11.784
34	0.46	-1.08935	88.9988	-12.2851
35	0.46	-1.07138	90.1467	-12.7779
36	0.47	-1.05375	91.2571	-13.2732
37	0.48	-1.03643	92.3312	-13.7707
38	0.49	-1.01943	93.3705	-14.2702
39	0.5	-1.00271	94.3759	-14.7716
40	0.52	-0.986272	95.3486	-15.2844
41	0.53	-0.970094	96.2897	-15.7986
42	0.54	-0.954165	97.2002	-16.3138
43	0.56	-0.938476	98.0809	-16.8394
44	0.57	-0.923014	98.9328	-17.3655
45	0.58	-0.907769	99.7569	-17.892
46	0.59	-0.892733	100.554	-18.4187
47	0.65	-0.874218	101.318	-18.9869
48	0.73	-0.859618	102.057	-19.6145
49	0.81	-0.845198	102.771	-20.2991

50	0.84	-0.830953	103.462	-20.9971
51	1	-0.816874	104.129	-21.814
52	1	-0.802956	104.774	-22.6169
53	1	-0.789191	105.397	-23.4061
54	1	-0.775574	105.998	-24.1817
55	1	-0.7621	106.579	-24.9438
56	1	-0.748762	107.14	-25.6925
57	1	-0.735557	107.681	-26.4281
58	1	-0.722479	108.203	-27.1506
59	1	-0.709522	108.706	-27.8601
60	1	-0.696684	109.192	-28.5568
61	1	-0.68396	109.659	-29.2407
62	1	-0.668209	110.106	-29.9089
63	1	-0.655726	110.536	-30.5647
64	1	-0.643345	110.95	-31.208
65	1	-0.631062	111.348	-31.8391
66	1	-0.618872	111.731	-32.458
67	1	-0.606775	112.099	-33.0647
68	1	-0.594766	112.453	-33.6595
69	1	-0.582841	112.793	-34.2423
70	1	-0.570999	113.119	-34.8133
71	1	-0.559237	113.431	-35.3726
72	1	-0.547551	113.731	-35.9201
73	1	-0.53594	114.018	-36.4561
74	1	-0.524401	114.293	-36.9805
75	1	-0.51293	114.556	-37.4934
76	1	-0.501527	114.808	-37.9949
77	1	-0.487364	115.046	-38.4823
78	1	-0.476105	115.272	-38.9584
79	1	-0.464904	115.488	-39.4233
80	1	-0.453763	115.694	-39.8771
81	1	-0.442676	115.89	-40.3197
82	1	-0.431644	116.077	-40.7514
83	1	-0.420664	116.253	-41.172
84	1	-0.409735	116.421	-41.5818
85	1	-0.398855	116.58	-41.9806
86	1	-0.388022	116.731	-42.3687
87	1	-0.377233	116.873	-42.7459
88	1	-0.36649	117.008	-43.1124
89	1	-0.355788	117.134	-43.4682
90	1	-0.345126	117.253	-43.8133
91	1	-0.334503	117.365	-44.1478
92	1	-0.323919	117.47	-44.4717
93	1	-0.310738	117.567	-44.7824
94	1	-0.300232	117.657	-45.0827
95	1	-0.28976	117.741	-45.3724
96	1	-0.279319	117.819	-45.6518
97	1	-0.268908	117.891	-45.9207
98	1	-0.258527	117.958	-46.1792
99	1	-0.248174	118.02	-46.4274
100	1	-0.237847	118.076	-46.6652
101	1	-0.227545	118.128	-46.8928
102	1	-0.217267	118.175	-47.11
103	1	-0.207012	118.218	-47.317
104	1	-0.196779	118.257	-47.5138
105	1	-0.186567	118.292	-47.7004
106	1	-0.176374	118.323	-47.8768
107	1	-0.166199	118.35	-48.043
108	1	-0.153505	118.374	-48.1965
109	1	-0.143367	118.394	-48.3398
110	1	-0.133244	118.412	-48.4731
111	1	-0.123135	118.427	-48.5962

112	1	-0.113039	118.44	-48.7093
113	1	-0.102953	118.451	-48.8122
114	1	-0.0928787	118.459	-48.9051
115	1	-0.0828129	118.466	-48.9879
116	1	-0.0727562	118.471	-49.0607
117	1	-0.0627062	118.475	-49.1234
118	1	-0.0526632	118.478	-49.176
119	1	-0.0426257	118.48	-49.2186
120	1	-0.0325917	118.481	-49.2512
121	1	-0.0225612	118.482	-49.2738
122	1	-0.0125328	118.482	-49.2863
123	1	0	118.482	-49.2863
124	1	0.0125328	118.482	-49.2738
125	1	0.0225612	118.482	-49.2512
126	1	0.0325917	118.483	-49.2186
127	1	0.0426257	118.485	-49.176
128	1	0.0526632	118.488	-49.1234
129	1	0.0627062	118.492	-49.0607
130	1	0.0727562	118.497	-48.9879
131	1	0.0828129	118.504	-48.9051
132	1	0.0928787	118.513	-48.8122
133	1	0.102953	118.523	-48.7093
134	1	0.113039	118.536	-48.5962
135	1	0.123135	118.551	-48.4731
136	1	0.133244	118.569	-48.3398
137	1	0.143367	118.59	-48.1965
138	1	0.153505	118.613	-48.043
139	1	0.166199	118.641	-47.8768
140	1	0.176374	118.672	-47.7004
141	1	0.186567	118.707	-47.5138
142	1	0.196779	118.745	-47.317
143	1	0.207012	118.788	-47.11
144	1	0.217267	118.835	-46.8928
145	1	0.227545	118.887	-46.6652
146	1	0.237847	118.944	-46.4274
147	1	0.248174	119.005	-46.1792
148	1	0.258527	119.072	-45.9207
149	1	0.268908	119.145	-45.6518
150	1	0.279319	119.223	-45.3724
151	1	0.28976	119.306	-45.0827
152	1	0.300232	119.397	-44.7824
153	1	0.310738	119.493	-44.4717
154	1	0.323919	119.598	-44.1478
155	1	0.334503	119.71	-43.8133
156	1	0.345126	119.829	-43.4682
157	1	0.355788	119.956	-43.1124
158	1	0.36649	120.09	-42.7459
159	1	0.377233	120.232	-42.3687
160	1	0.388022	120.383	-41.9806
161	1	0.398855	120.542	-41.5818
162	1	0.409735	120.71	-41.172
163	1	0.420664	120.887	-40.7514
164	1	0.431644	121.073	-40.3197
165	1	0.442676	121.269	-39.8771
166	1	0.453763	121.475	-39.4233
167	1	0.464904	121.691	-38.9584
168	1	0.476105	121.918	-38.4823
169	1	0.487364	122.155	-37.9949
170	1	0.501527	122.407	-37.4934
171	1	0.51293	122.67	-36.9805
172	1	0.524401	122.945	-36.4561
173	1	0.53594	123.232	-35.9201

174	1	0.547551	123.532	-35.3726
175	1	0.559237	123.845	-34.8133
176	1	0.570999	124.171	-34.2423
177	1	0.582841	124.51	-33.6595
178	1	0.594766	124.864	-33.0647
179	1	0.606775	125.232	-32.458
180	1	0.618872	125.615	-31.8391
181	1	0.631062	126.014	-31.208
182	1	0.643345	126.428	-30.5647
183	1	0.655726	126.858	-29.9089
184	1	0.668209	127.304	-29.2407
185	1	0.68396	127.772	-28.5568
186	1	0.696684	128.257	-27.8601
187	1	0.709522	128.761	-27.1506
188	1	0.722479	129.283	-26.4281
189	1	0.735557	129.824	-25.6925
190	1	0.748762	130.384	-24.9438
191	1	0.7621	130.965	-24.1817
192	1	0.775574	131.567	-23.4061
193	1	0.789191	132.189	-22.6169
194	1	0.802956	132.834	-21.814
195	1	0.816874	133.501	-20.9971
196	1	0.830953	134.192	-20.1661
197	1	0.845198	134.906	-19.3209
198	1	0.859618	135.645	-18.4613
199	1	0.874218	136.409	-17.5871
200	1	0.892733	137.206	-16.6944
201	1	0.907769	138.03	-15.7866
202	1	0.923014	138.882	-14.8636
203	1	0.938476	139.763	-13.9251
204	1	0.954165	140.674	-12.9709
205	1	0.970094	141.615	-12.0008
206	1	0.986272	142.587	-11.0146
207	1	1.00271	143.593	-10.0119
208	1	1.01943	144.632	-8.99243
209	1	1.03643	145.706	-7.956
210	1	1.05375	146.817	-6.90225
211	1	1.07138	147.965	-5.83087
212	1	1.08935	149.151	-4.74152
213	1	1.10768	150.378	-3.63384
214	1	1.12639	151.647	-2.50745
215	1.1	1.1455	152.959	-1.2474
216	1.1	1.17	154.328	0.0396026
217	1.2	1.19012	155.744	1.46775
218	1.6	1.21073	157.21	3.40491
219	1.8	1.23187	158.728	5.62227
220	1.8	1.25357	160.299	7.87869
221	2	1.27588	161.927	10.4304
222	2	1.29884	163.614	13.0281
223	2	1.32251	165.363	15.6731
224	2.1	1.34694	167.177	18.5017
225	2.5	1.3722	169.06	21.9322
226	3	1.39838	171.016	26.1273
227	3	1.42554	173.048	30.404
228	3	1.4538	175.161	34.7654
229	3.2	1.48328	177.362	39.5119
230	4	1.5141	179.654	45.5683
231	7	1.55477	182.071	56.4517
232	7	1.58927	184.597	67.5766
233	8	1.62576	187.24	80.5827
234	9	1.66456	190.011	95.5637
235	9	1.70604	192.922	110.918

236	10	1.75069	195.986	128.425
237	10	1.79912	199.223	146.416
238	12	1.85218	202.654	168.642
239	16	1.91103	206.306	199.219
240	18	1.97737	210.216	234.811
241	23	2.05375	214.434	282.048
242	25	2.14441	219.032	335.658
243	34	2.25713	224.127	412.4
244	57	2.40892	229.93	549.709
245	60	2.65209	236.963	708.834

Data Set Standard Deviation = 6.25804
Numerator = 502446
Denominator = 2.26437e+006
W Statistic = 0.221892 = 502446 / 2.26437e+006

5% Critical value of 0.976 exceeds 0.221892
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.221892
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 = 245

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	-2.14441	22.5296	15.2294
5	-1.60944	-2.05375	26.7475	18.5348
6	-1.60944	-1.97737	30.6575	21.7172
7	-1.60944	-1.91103	34.3095	24.7929
8	-1.60944	-1.85218	37.7401	27.7739
9	-1.60944	-1.79912	40.9769	30.6694
10	-1.60944	-1.75069	44.0418	33.487
11	-1.60944	-1.70604	46.9524	36.2328
12	-1.60944	-1.66456	49.7231	38.9118
13	-1.60944	-1.62576	52.3662	41.5284
14	-1.60944	-1.58927	54.892	44.0862
15	-1.60944	-1.55477	57.3093	46.5885
16	-1.60944	-1.5141	59.6018	49.0254
17	-1.60944	-1.48328	61.802	51.4126
18	-1.60944	-1.4538	63.9155	53.7524
19	-1.60944	-1.42554	65.9477	56.0468
20	-1.60944	-1.39838	67.9031	58.2974
21	-1.60944	-1.3722	69.7861	60.5058
22	-1.60944	-1.34694	71.6003	62.6737
23	-1.60944	-1.32251	73.3494	64.8022
24	-1.60944	-1.29884	75.0363	66.8925
25	-1.60944	-1.27588	76.6642	68.946
26	-1.60944	-1.25357	78.2356	70.9635
27	-1.60944	-1.23187	79.7531	72.9461
28	-1.60944	-1.21073	81.219	74.8947
29	-0.891598	-1.19012	82.6353	75.9558
30	-0.867501	-1.17	84.0043	76.9708
31	-0.84397	-1.1455	85.3164	77.9376
32	-0.820981	-1.12639	86.5852	78.8623
33	-0.776529	-1.10768	87.8121	79.7225
34	-0.776529	-1.08935	88.9988	80.5684
35	-0.776529	-1.07138	90.1467	81.4003
36	-0.755023	-1.05375	91.2571	82.1959
37	-0.733969	-1.03643	92.3312	82.9567
38	-0.71335	-1.01943	93.3705	83.6839
39	-0.693147	-1.00271	94.3759	84.3789
40	-0.653926	-0.986272	95.3486	85.0238
41	-0.634878	-0.970094	96.2897	85.6397
42	-0.616186	-0.954165	97.2002	86.2277
43	-0.579818	-0.938476	98.0809	86.7718
44	-0.562119	-0.923014	98.9328	87.2907
45	-0.544727	-0.907769	99.7569	87.7852
46	-0.527633	-0.892733	100.554	88.2562
47	-0.430783	-0.874218	101.318	88.6328
48	-0.314711	-0.859618	102.057	88.9033
49	-0.210721	-0.845198	102.771	89.0814

50	-0.174353	-0.830953	103.462	89.2263
51	0	-0.816874	104.129	89.2263
52	0	-0.802956	104.774	89.2263
53	0	-0.789191	105.397	89.2263
54	0	-0.775574	105.998	89.2263
55	0	-0.7621	106.579	89.2263
56	0	-0.748762	107.14	89.2263
57	0	-0.735557	107.681	89.2263
58	0	-0.722479	108.203	89.2263
59	0	-0.709522	108.706	89.2263
60	0	-0.696684	109.192	89.2263
61	0	-0.68396	109.659	89.2263
62	0	-0.668209	110.106	89.2263
63	0	-0.655726	110.536	89.2263
64	0	-0.643345	110.95	89.2263
65	0	-0.631062	111.348	89.2263
66	0	-0.618872	111.731	89.2263
67	0	-0.606775	112.099	89.2263
68	0	-0.594766	112.453	89.2263
69	0	-0.582841	112.793	89.2263
70	0	-0.570999	113.119	89.2263
71	0	-0.559237	113.431	89.2263
72	0	-0.547551	113.731	89.2263
73	0	-0.53594	114.018	89.2263
74	0	-0.524401	114.293	89.2263
75	0	-0.51293	114.556	89.2263
76	0	-0.501527	114.808	89.2263
77	0	-0.487364	115.046	89.2263
78	0	-0.476105	115.272	89.2263
79	0	-0.464904	115.488	89.2263
80	0	-0.453763	115.694	89.2263
81	0	-0.442676	115.89	89.2263
82	0	-0.431644	116.077	89.2263
83	0	-0.420664	116.253	89.2263
84	0	-0.409735	116.421	89.2263
85	0	-0.398855	116.58	89.2263
86	0	-0.388022	116.731	89.2263
87	0	-0.377233	116.873	89.2263
88	0	-0.36649	117.008	89.2263
89	0	-0.355788	117.134	89.2263
90	0	-0.345126	117.253	89.2263
91	0	-0.334503	117.365	89.2263
92	0	-0.323919	117.47	89.2263
93	0	-0.310738	117.567	89.2263
94	0	-0.300232	117.657	89.2263
95	0	-0.28976	117.741	89.2263
96	0	-0.279319	117.819	89.2263
97	0	-0.268908	117.891	89.2263
98	0	-0.258527	117.958	89.2263
99	0	-0.248174	118.02	89.2263
100	0	-0.237847	118.076	89.2263
101	0	-0.227545	118.128	89.2263
102	0	-0.217267	118.175	89.2263
103	0	-0.207012	118.218	89.2263
104	0	-0.196779	118.257	89.2263
105	0	-0.186567	118.292	89.2263
106	0	-0.176374	118.323	89.2263
107	0	-0.166199	118.35	89.2263
108	0	-0.153505	118.374	89.2263
109	0	-0.143367	118.394	89.2263
110	0	-0.133244	118.412	89.2263
111	0	-0.123135	118.427	89.2263

112	0	-0.113039	118.44	89.2263
113	0	-0.102953	118.451	89.2263
114	0	-0.0928787	118.459	89.2263
115	0	-0.0828129	118.466	89.2263
116	0	-0.0727562	118.471	89.2263
117	0	-0.0627062	118.475	89.2263
118	0	-0.0526632	118.478	89.2263
119	0	-0.0426257	118.48	89.2263
120	0	-0.0325917	118.481	89.2263
121	0	-0.0225612	118.482	89.2263
122	0	-0.0125328	118.482	89.2263
123	0	0	118.482	89.2263
124	0	0.0125328	118.482	89.2263
125	0	0.0225612	118.482	89.2263
126	0	0.0325917	118.483	89.2263
127	0	0.0426257	118.485	89.2263
128	0	0.0526632	118.488	89.2263
129	0	0.0627062	118.492	89.2263
130	0	0.0727562	118.497	89.2263
131	0	0.0828129	118.504	89.2263
132	0	0.0928787	118.513	89.2263
133	0	0.102953	118.523	89.2263
134	0	0.113039	118.536	89.2263
135	0	0.123135	118.551	89.2263
136	0	0.133244	118.569	89.2263
137	0	0.143367	118.59	89.2263
138	0	0.153505	118.613	89.2263
139	0	0.166199	118.641	89.2263
140	0	0.176374	118.672	89.2263
141	0	0.186567	118.707	89.2263
142	0	0.196779	118.745	89.2263
143	0	0.207012	118.788	89.2263
144	0	0.217267	118.835	89.2263
145	0	0.227545	118.887	89.2263
146	0	0.237847	118.944	89.2263
147	0	0.248174	119.005	89.2263
148	0	0.258527	119.072	89.2263
149	0	0.268908	119.145	89.2263
150	0	0.279319	119.223	89.2263
151	0	0.28976	119.306	89.2263
152	0	0.300232	119.397	89.2263
153	0	0.310738	119.493	89.2263
154	0	0.323919	119.598	89.2263
155	0	0.334503	119.71	89.2263
156	0	0.345126	119.829	89.2263
157	0	0.355788	119.956	89.2263
158	0	0.36649	120.09	89.2263
159	0	0.377233	120.232	89.2263
160	0	0.388022	120.383	89.2263
161	0	0.398855	120.542	89.2263
162	0	0.409735	120.71	89.2263
163	0	0.420664	120.887	89.2263
164	0	0.431644	121.073	89.2263
165	0	0.442676	121.269	89.2263
166	0	0.453763	121.475	89.2263
167	0	0.464904	121.691	89.2263
168	0	0.476105	121.918	89.2263
169	0	0.487364	122.155	89.2263
170	0	0.501527	122.407	89.2263
171	0	0.51293	122.67	89.2263
172	0	0.524401	122.945	89.2263
173	0	0.53594	123.232	89.2263

174	0	0.547551		123.532	89.2263
175	0	0.559237		123.845	89.2263
176	0	0.570999		124.171	89.2263
177	0	0.582841		124.51	89.2263
178	0	0.594766		124.864	89.2263
179	0	0.606775		125.232	89.2263
180	0	0.618872		125.615	89.2263
181	0	0.631062		126.014	89.2263
182	0	0.643345		126.428	89.2263
183	0	0.655726		126.858	89.2263
184	0	0.668209		127.304	89.2263
185	0	0.68396	127.772	89.2263	
186	0	0.696684		128.257	89.2263
187	0	0.709522		128.761	89.2263
188	0	0.722479		129.283	89.2263
189	0	0.735557		129.824	89.2263
190	0	0.748762		130.384	89.2263
191	0	0.7621	130.965	89.2263	
192	0	0.775574		131.567	89.2263
193	0	0.789191		132.189	89.2263
194	0	0.802956		132.834	89.2263
195	0	0.816874		133.501	89.2263
196	0	0.830953		134.192	89.2263
197	0	0.845198		134.906	89.2263
198	0	0.859618		135.645	89.2263
199	0	0.874218		136.409	89.2263
200	0	0.892733		137.206	89.2263
201	0	0.907769		138.03	89.2263
202	0	0.923014		138.882	89.2263
203	0	0.938476		139.763	89.2263
204	0	0.954165		140.674	89.2263
205	0	0.970094		141.615	89.2263
206	0	0.986272		142.587	89.2263
207	0	1.00271	143.593	89.2263	
208	0	1.01943	144.632	89.2263	
209	0	1.03643	145.706	89.2263	
210	0	1.05375	146.817	89.2263	
211	0	1.07138	147.965	89.2263	
212	0	1.08935	149.151	89.2263	
213	0	1.10768	150.378	89.2263	
214	0	1.12639	151.647	89.2263	
215	0.0953102		1.1455	152.959	89.3355
216	0.0953102		1.17	154.328	89.447
217	0.182322		1.19012	155.744	89.664
218	0.470004		1.21073	157.21	90.233
219	0.587787		1.23187	158.728	90.9571
220	0.587787		1.25357	160.299	91.6939
221	0.693147		1.27588	161.927	92.5783
222	0.693147		1.29884	163.614	93.4786
223	0.693147		1.32251	165.363	94.3953
224	0.741937		1.34694	167.177	95.3946
225	0.916291		1.3722	169.06	96.6519
226	1.09861	1.39838	171.016	98.1882	
227	1.09861	1.42554	173.048	99.7543	
228	1.09861	1.4538	175.161	101.352	
229	1.16315	1.48328	177.362	103.077	
230	1.38629	1.5141	179.654	105.176	
231	1.94591	1.55477	182.071	108.201	
232	1.94591	1.58927	184.597	111.294	
233	2.07944	1.62576	187.24	114.674	
234	2.19722	1.66456	190.011	118.332	
235	2.19722	1.70604	192.922	122.08	

236	2.30259	1.75069	195.986	126.112
237	2.30259	1.79912	199.223	130.254
238	2.48491	1.85218	202.654	134.857
239	2.77259	1.91103	206.306	140.155
240	2.89037	1.97737	210.216	145.871
241	3.13549	2.05375	214.434	152.31
242	3.21888	2.14441	219.032	159.213
243	3.52636	2.25713	224.127	167.172
244	4.04305	2.40892	229.93	176.911
245	4.09434	2.65209	236.963	187.77

Data Set Standard Deviation = 0.933899
Numerator = 35257.6
Denominator = 50427.9
W Statistic = 0.699169 = 35257.6 / 50427.9

5% Critical value of 0.976 exceeds 0.699169
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.699169
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	90.5
	3/16/1999	ND<0	90.5
	9/23/1999	ND<0	90.5
	3/14/2000	ND<0	90.5
	9/23/2003	ND<0	90.5
	3/10/2004	ND<0	90.5
	10/12/2004	ND<0	90.5
	4/1/2005	ND<0	90.5
	10/26/2005	ND<0	90.5
	6/19/2006	ND<0	90.5
	11/18/2006	ND<0	90.5
	6/2/2007	0 J	203
	11/15/2007	0 J	204
	5/20/2008	ND<0	90.5
	11/20/2008	ND<0	90.5
	6/11/2009	ND<-1.60944 U	90.5
	11/16/2009	ND<-1.60944 U	90.5
	6/30/2010	ND<-1.60944 U	90.5
	11/17/2010	ND<-1.60944 U	90.5
	7/6/2011	ND<-1.60944 U	90.5

Rank Sum = 2036
Rank Mean = 101.8

Background Rank Sum = 2036
Background Rank Mean = 101.8

Compliance Wells

Well ID	Date	Result	Rank
LMW-9S	11/18/2006	ND<0	90.5
	6/2/2007	0 J	205
	11/15/2007	1.38629	230
	5/20/2008	ND<0	90.5
	11/20/2008	ND<0	90.5
	6/11/2009	-0.776529 J	185
	6/30/2010	-0.562119 J	196
	11/17/2010	0.182322	217
	7/6/2011	-0.776529 J	186

Rank Sum = 1490.5
Rank Mean = 165.611

LMW-8	1/16/1998	ND<0	90.5
	3/16/1999	ND<0	90.5
	9/23/1999	ND<0	90.5
	3/14/2000	ND<0	90.5
	9/23/2003	ND<0	90.5

	3/10/2004	ND<0	90.5	
	10/12/2004	ND<0	90.5	
	4/1/2005	ND<0	90.5	
	10/26/2005	ND<0	90.5	
	6/19/2006	ND<0	90.5	
	11/18/2006	ND<0	90.5	
	6/2/2007	ND<0	90.5	
	11/15/2007	ND<0	90.5	
	5/20/2008	ND<0	90.5	
	11/20/2008	ND<0	90.5	
	6/11/2009	-0.71335 J		190
	11/16/2009	-0.634878 J		193
	6/30/2010	-0.84397 J		183
	11/17/2010	-0.733969 J		189
	7/6/2011	-0.210721 J	201	

Rank Sum = 2313.5
Rank Mean = 115.675

LMW-7	1/16/1998	ND<0	90.5	
	3/16/1999	ND<0	90.5	
	9/23/1999	ND<0	90.5	
	3/14/2000	2.30259		236
	9/23/2003	ND<0	90.5	
	3/10/2004	ND<0	90.5	
	10/12/2004	ND<0	90.5	
	4/1/2005	ND<0	90.5	
	10/26/2005	ND<0	90.5	
	6/19/2006	ND<0	90.5	
	11/18/2006	ND<0	90.5	
	6/2/2007	0 J	206	
	11/15/2007	ND<0	90.5	
	5/20/2008	ND<0	90.5	
	11/20/2008	2.30259		237
	6/11/2009	0.0953102 J B		215
	11/17/2010	ND<-1.60944 U		90.5
	7/6/2011	0.587787	219	

Rank Sum = 2289.5
Rank Mean = 127.194

LMW-6	1/16/1998	ND<0	90.5	
	3/16/1999	ND<0	90.5	
	9/23/1999	ND<0	90.5	
	3/14/2000	ND<0	90.5	
	9/23/2003	ND<0	90.5	
	3/10/2004	ND<0	90.5	
	10/12/2004	ND<0	90.5	
	4/1/2005	ND<0	90.5	
	10/26/2005	ND<0	90.5	
	6/19/2006	ND<0	90.5	
	11/18/2006	ND<0	90.5	
	6/2/2007	0 J	207	
	11/15/2007	ND<0	90.5	
	5/20/2008	ND<0	90.5	
	11/20/2008	ND<0	90.5	
	6/11/2009	-0.430783 J B		199
	11/16/2009	ND<-1.60944 U		90.5
	6/30/2010	-0.776529 J		187
	11/17/2010	-0.653926 J		192
	7/6/2011	ND<-1.60944 U	90.5	

Rank Sum = 2233
Rank Mean = 111.65

LMW-3S	11/18/2006	ND<0	90.5	
	6/2/2007	ND<0	90.5	
	11/15/2007	ND<0	90.5	
	5/20/2008	ND<0	90.5	
	11/20/2008	ND<0	90.5	
	6/11/2009	-0.314711 J B		200
	11/16/2009	ND<-1.60944 U		90.5
	6/30/2010	ND<-1.60944 U		90.5
	11/17/2010	0	208	
	7/6/2011	-0.174353 J	202	

Rank Sum = 1243.5
Rank Mean = 124.35

LMW-3	11/19/1996	ND<0	90.5	
	3/24/1997	ND<0	90.5	
	1/16/1998	ND<0	90.5	
	3/16/1999	ND<0	90.5	
	9/23/1999	ND<0	90.5	
	3/14/2000	ND<0	90.5	
	9/23/2003	ND<0	90.5	
	3/10/2004	ND<0	90.5	
	10/12/2004	ND<0	90.5	
	4/1/2005	ND<0	90.5	
	10/26/2005	ND<0	90.5	
	6/19/2006	ND<0	90.5	
	11/18/2006	ND<0	90.5	
	6/2/2007	ND<0	90.5	
	11/15/2007	ND<0	90.5	
	5/20/2008	ND<0	90.5	
	11/20/2008	ND<0	90.5	
	6/11/2009	-0.867501 J B		182
	11/16/2009	ND<-1.60944 U		90.5
	6/30/2010	ND<-1.60944 U		90.5
	11/17/2010	-0.820981 J		184
	7/6/2011	ND<-1.60944 U		90.5

Rank Sum = 2176
Rank Mean = 98.9091

LMW-16	11/18/2006	ND<0	90.5	
	6/2/2007	0.693147	221	
	11/15/2007	ND<0	90.5	
	5/20/2008	ND<0	90.5	
	11/20/2008	2.19722		234
	6/11/2009	-0.579818 J		195
	11/16/2009	-0.527633 J		198
	6/30/2010	-0.693147 J		191
	11/17/2010	-0.616186 J		194
	7/6/2011	0	209	

Rank Sum = 1713.5
Rank Mean = 171.35

LMW-15R	11/18/2006	ND<0	90.5	
	6/2/2007	ND<0	90.5	
	11/15/2007	ND<0	90.5	
	11/15/2007	ND<0	90.5	
	5/20/2008	ND<0	90.5	
	5/20/2008	ND<0	90.5	
	11/20/2008	ND<0	90.5	
	11/20/2008	ND<0	90.5	
	6/11/2009	0.916291		225
	6/30/2010	ND<-1.60944 U		90.5
	11/17/2010	ND<-1.60944 U		90.5

	7/6/2011	ND<-1.60944 U	90.5

Rank Sum = 1220.5
Rank Mean = 101.708

LMW-14R	6/2/2007	0 J	210
	11/15/2007	ND<0	90.5
	5/20/2008	ND<0	90.5
	11/20/2008	2.19722	235
	6/11/2009	-0.891598 J	181
	11/16/2009	ND<-1.60944 U	90.5
	11/16/2009	ND<-1.60944 U	90.5
	11/16/2009	-0.755023 J	188
	6/30/2010	ND<-1.60944 U	90.5
	11/17/2010	ND<-1.60944 U	90.5
	7/6/2011	ND<-1.60944 U	90.5

Rank Sum = 1447.5
Rank Mean = 131.591

LMW-10	3/14/2000	3.13549	241
	9/23/2003	ND<0	90.5
	3/10/2004	3.21888	242
	10/12/2004	ND<0	90.5
	4/1/2005	ND<0	90.5
	10/26/2005	ND<0	90.5
	6/19/2006	ND<0	90.5
	11/18/2006	ND<0	90.5
	6/2/2007	0 J	211
	11/15/2007	ND<0	90.5
	5/20/2008	ND<0	90.5
	11/20/2008	ND<0	90.5
	6/11/2009	ND<-1.60944 U	90.5
	11/16/2009	ND<-1.60944 U	90.5
	6/30/2010	ND<-1.60944 U	90.5
	11/17/2010	ND<-1.60944 U	90.5
	7/6/2011	ND<-1.60944 U	90.5

Rank Sum = 1961
Rank Mean = 115.353

LMW-9D	11/18/2006	1.94591	231
	6/2/2007	1.94591	232
	11/15/2007	ND<0	90.5
	5/20/2008	1.09861	226
	11/20/2008	1.09861	227
	6/11/2009	0.741937	224
	11/16/2009	0.693147	222
	6/30/2010	0.587787	220
	11/17/2010	0.693147	223
	7/6/2011	1.16315	229

Rank Sum = 2124.5
Rank Mean = 212.45

LMW-9	1/16/1998	ND<0	90.5
	3/16/1999	ND<0	90.5
	9/23/1999	1.09861	228
	3/14/2000	ND<0	90.5
	9/23/2003	ND<0	90.5
	3/10/2004	ND<0	90.5
	10/12/2004	ND<0	90.5
	4/1/2005	0 J	212
	10/26/2005	ND<0	90.5
	6/19/2006	0 J	213
	11/18/2006	ND<0	90.5

	6/2/2007	0 J	214	
	11/15/2007	ND<0	90.5	
	5/20/2008	ND<0	90.5	
	11/20/2008	2.07944		233
	6/11/2009	0.0953102 J		216
	11/16/2009	ND<-1.60944 U		90.5
	6/30/2010	-0.544727 J		197
	11/17/2010	0.470004		218
	7/6/2011	ND<-1.60944 U		90.5

Rank Sum = 2817
Rank Mean = 140.85

LMW-12	3/14/2000	4.04305		244
	9/23/2003	ND<0	90.5	
	3/10/2004	ND<0	90.5	
	10/12/2004	ND<0	90.5	
	4/1/2005	ND<0	90.5	
	10/26/2005	ND<0	90.5	
	6/19/2006	ND<0	90.5	
	6/2/2007	ND<0	90.5	
	11/15/2007	ND<0	90.5	
	5/20/2008	ND<0	90.5	
	11/20/2008	ND<0	90.5	

Rank Sum = 1149
Rank Mean = 104.455

LMW-13	3/14/2000	2.77259		239
	9/23/2003	ND<0	90.5	
	3/10/2004	ND<0	90.5	
	10/12/2004	ND<0	90.5	
	4/1/2005	ND<0	90.5	
	10/26/2005	ND<0	90.5	
	6/19/2006	ND<0	90.5	
	6/2/2007	ND<0	90.5	
	11/15/2007	ND<0	90.5	
	5/20/2008	ND<0	90.5	
	11/20/2008	ND<0	90.5	

Rank Sum = 1144
Rank Mean = 104

LMW-11	3/14/2000	2.48491		238
	9/23/2003	ND<0	90.5	
	3/10/2004	2.89037		240
	10/12/2004	ND<0	90.5	
	4/1/2005	ND<0	90.5	
	10/26/2005	ND<0	90.5	
	6/19/2006	ND<0	90.5	
	6/2/2007	ND<0	90.5	
	11/15/2007	ND<0	90.5	
	5/20/2008	ND<0	90.5	
	11/20/2008	ND<0	90.5	

Rank Sum = 1292.5
Rank Mean = 117.5

MW-5	1/16/1998	ND<0	90.5	
	3/16/1999	ND<0	90.5	
	9/23/1999	ND<0	90.5	
	3/14/2000	3.52636		243
	9/23/2003	ND<0	90.5	
	3/10/2004	4.09434		245
	10/12/2004	ND<0	90.5	
	4/1/2005	ND<0	90.5	

10/26/2005	ND<0	90.5
6/19/2006	ND<0	90.5
11/15/2007	ND<0	90.5
5/20/2008	ND<0	90.5
11/20/2008	ND<0	90.5

Rank Sum = 1483.5
Rank Mean = 114.115

Calculation Results:

Kruskal-Wallis H Statistic = 33.4902
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 55.4992
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
33.4902 > 26.2962 indicating a significant group difference at 5% significance level
55.4992 > 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 101.8

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9S	165.611	63.8111	66.1754
LMW-8	115.675	13.875	52.1355
LMW-7	127.194	25.3944	53.5641
LMW-6	111.65	9.85	52.1355
LMW-3S	124.35	22.55	63.8527
LMW-3	98.9091	-2.89091	50.9368
LMW-16	171.35	69.55	63.8527
LMW-15R	101.708	-0.0916667	60.2009
LMW-14R	131.591	29.7909	61.8875
LMW-10	115.353	13.5529	54.387
LMW-9D	212.45	110.65	63.8527
LMW-9	140.85	39.05	52.1355
LMW-12	104.455	2.65455	61.8875
LMW-13	104	2.2	61.8875
LMW-11	117.5	15.7	61.8875
MW-5	114.115	12.3154	58.7359

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 101.8

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9S	165.611	63.8111	78.1632
LMW-8	115.675	13.875	61.58
LMW-7	127.194	25.3944	63.2674
LMW-6	111.65	9.85	61.58
LMW-3S	124.35	22.55	75.4198
LMW-3	98.9091	-2.89091	60.1642
LMW-16	171.35	69.55	75.4198
LMW-15R	101.708	-0.0916667	71.1064
LMW-14R	131.591	29.7909	73.0986
LMW-10	115.353	13.5529	64.2393
LMW-9D	212.45	110.65	75.4198
LMW-9	140.85	39.05	61.58
LMW-12	104.455	2.65455	73.0986
LMW-13	104	2.2	73.0986
LMW-11	117.5	15.7	73.0986
MW-5	114.115	12.3154	69.3761

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		
1.16315	1.94591	-0.782759	0	8	
ND<0	1.94591	-1.94591	0	9	
1.09861	1.94591	-0.847298	0	10	
1.09861	1.94591	-0.847298	0	11	
0.741937	1.94591	-1.203970	12		
0.693147	1.94591	-1.252760	13		
0.587787	1.94591	-1.358120	14		
0.693147	1.94591	-1.252760	15		
1.16315	1.94591	-0.782759	0	16	
1.09861	ND<0	1.09861	1	16	
1.09861	ND<0	1.09861	2	16	
0.741937	ND<0	0.741937	3	16	
0.693147	ND<0	0.693147	4	16	
0.587787	ND<0	0.587787	5	16	
0.693147	ND<0	0.693147	6	16	
1.16315	ND<0	1.16315	7	16	
1.09861	1.09861	0	7	16	
0.741937	1.09861	-0.356675	7	17	
0.693147	1.09861	-0.405465	7	18	
0.587787	1.09861	-0.510826	7	19	
0.693147	1.09861	-0.405465	7	20	
1.16315	1.09861	0.0645385	8	20	
0.741937	1.09861	-0.356675	8	21	
0.693147	1.09861	-0.405465	8	22	
0.587787	1.09861	-0.510826	8	23	
0.693147	1.09861	-0.405465	8	24	
1.16315	1.09861	0.0645385	9	24	
0.693147	0.741937	-0.0487902	9	25	
0.587787	0.741937	-0.154151	9	26	
0.693147	0.741937	-0.0487902	9	27	
1.16315	0.741937	0.421213	10	27	
0.587787	0.693147	-0.105361	10	28	
0.693147	0.693147	0	10	28	

1.16315	0.693147	0.470004	11	28
0.693147	0.587787	0.105361	12	28
1.16315	0.587787	0.575364	13	28
1.16315	0.693147	0.470004	14	28

S Statistic = 14 - 28 = -14
Comparing at 1.0 - (0.05 / 2) = 97.5% confidence level (two-tailed)
Failed to calculate probability for S = -14
Table out of range

Concentrations (ppb)

Parameter: Barium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 88
Percent Non-Detects: 35.9184%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	5 (25%)	1/16/1998	ND<10	ND<10
			3/16/1999	20	20
			9/23/1999	8 J	8 J
			3/14/2000	ND<10	ND<10
			9/23/2003	ND<10	ND<10
			3/10/2004	ND<10	ND<10
			10/12/2004	ND<10	ND<10
			4/1/2005	14	14
			10/26/2005	12	12
			6/19/2006	10	10
			11/18/2006	13	13
			6/2/2007	24	24
			11/15/2007	13	13
			5/20/2008	11	11
			11/20/2008	14	14
			6/11/2009	13	13
			11/16/2009	13	13
			6/30/2010	15	15
			11/17/2010	14	14
			7/6/2011	14	14

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9S	9	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
			7/6/2011	59	59
LMW-14R	11	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	14	14
			11/16/2009	12	12
			11/16/2009	48	48
			6/30/2010	13	13
			11/17/2010	12	12
			7/6/2011	11	11

LMW-15R	12	3 (25%)	11/18/2006	37	37	
			6/2/2007	38	38	
			11/15/2007	ND<10	ND<10	
			11/15/2007	27	27	
			5/20/2008	24	24	
			5/20/2008	ND<10	ND<10	
			11/20/2008	38	38	
			11/20/2008	ND<10	ND<10	
			6/11/2009	42	42	
			6/30/2010	36	36	
			11/17/2010	30	30	
			7/6/2011	25	25	
LMW-16	10	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	
			7/6/2011	11	11	
LMW-3	22	9 (40.9091%)	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	
			7/6/2011	3.5	3.5	
LMW-3S	10	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	
			7/6/2011	14	14	
LMW-6	20	5 (25%)	1/16/1998	ND<10	ND<10	
			3/16/1999	8 J	8 J	
			9/23/1999	18	18	

			3/14/2000	ND<10	ND<10	
			9/23/2003	ND<10	ND<10	
			3/10/2004	ND<10	ND<10	
			10/12/2004	ND<10	ND<10	
			4/1/2005	9 J	9 J	
			10/26/2005	12	12	
			6/19/2006	20	20	
			11/18/2006	33	33	
			6/2/2007	52	52	
			11/15/2007	42	42	
			5/20/2008	49	49	
			11/20/2008	73	73	
			6/11/2009	92	92	
			11/16/2009	74	74	
			6/30/2010	77	77	
			11/17/2010	79	79	
			7/6/2011	55	55	
LMW-7	18	5 (27.7778%)	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	
			7/6/2011	13	13	
LMW-8	20	5 (25%)	1/16/1998	ND<10	ND<10	
			3/16/1999	10	10	
			9/23/1999	109	109	
			3/14/2000	ND<10	ND<10	
			9/23/2003	ND<10	ND<10	
			3/10/2004	ND<10	ND<10	
			10/12/2004	ND<10	ND<10	
			4/1/2005	48	48	
			10/26/2005	38	38	
			6/19/2006	40	40	
			11/18/2006	32	32	
			6/2/2007	34	34	
			11/15/2007	41	41	
			5/20/2008	34	34	
			11/20/2008	29	29	
			6/11/2009	40	40	
			11/16/2009	40	40	
			6/30/2010	30	30	
			11/17/2010	44	44	
			7/6/2011	32	32	
LMW-9	20	7 (35%)	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	
			7/6/2011	3.3	3.3	
LMW-10	17	6 (35.2941%)	3/14/2000	ND<10	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	
			7/6/2011	21	21	
LMW-9D	10	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	
			7/6/2011	3.8	3.8	
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-12	11	11 (100%)	3/14/2000	ND<10	ND<10	
			9/23/2003	ND<10	ND<10	

			3/10/2004	ND<10	ND<10
			10/12/2004	ND<10	ND<10
			4/1/2005 ND<10	ND<10	
			10/26/2005	ND<10	ND<10
			6/19/2006	ND<10	ND<10
			6/2/2007 ND<10	ND<10	
			11/15/2007	ND<10	ND<10
			5/20/2008	ND<10	ND<10
			11/20/2008	ND<10	ND<10
LMW-11	11	11 (100%)	3/14/2000	ND<10	ND<10
			9/23/2003	ND<10	ND<10
			3/10/2004	ND<10	ND<10
			10/12/2004	ND<10	ND<10
			4/1/2005 ND<10	ND<10	
			10/26/2005	ND<10	ND<10
			6/19/2006	ND<10	ND<10
			6/2/2007 ND<10	ND<10	
			11/15/2007	ND<10	ND<10
			5/20/2008	ND<10	ND<10
			11/20/2008	ND<10	ND<10
LMW-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

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 = 245

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	-2.14441	22.5296	-20.8663
5	2.8	-2.05375	26.7475	-26.6168
6	2.9	-1.97737	30.6575	-32.3512
7	2.9	-1.91103	34.3095	-37.8932
8	3	-1.85218	37.7401	-43.4497
9	3	-1.79912	40.9769	-48.8471
10	3	-1.75069	44.0418	-54.0991
11	3.1	-1.70604	46.9524	-59.3879
12	3.1	-1.66456	49.7231	-64.548
13	3.3	-1.62576	52.3662	-69.913
14	3.5	-1.58927	54.892	-75.4755
15	3.8	-1.55477	57.3093	-81.3836
16	4	-1.5141	59.6018	-87.44
17	4	-1.48328	61.802	-93.3731
18	5	-1.4538	63.9155	-100.642
19	5	-1.42554	65.9477	-107.77
20	5	-1.39838	67.9031	-114.762
21	5	-1.3722	69.7861	-121.623
22	5	-1.34694	71.6003	-128.357
23	5	-1.32251	73.3494	-134.97
24	5	-1.29884	75.0363	-141.464
25	5	-1.27588	76.6642	-147.844
26	5	-1.25357	78.2356	-154.111
27	5	-1.23187	79.7531	-160.271
28	5	-1.21073	81.219	-166.324
29	5	-1.19012	82.6353	-172.275
30	5	-1.17	84.0043	-178.125
31	5	-1.1455	85.3164	-183.852
32	5	-1.12639	86.5852	-189.484
33	5	-1.10768	87.8121	-195.023
34	5	-1.08935	88.9988	-200.47
35	5	-1.07138	90.1467	-205.826
36	5	-1.05375	91.2571	-211.095
37	5	-1.03643	92.3312	-216.277
38	5	-1.01943	93.3705	-221.374
39	5	-1.00271	94.3759	-226.388
40	5	-0.986272	95.3486	-231.319
41	5	-0.970094	96.2897	-236.17
42	5	-0.954165	97.2002	-240.941
43	5	-0.938476	98.0809	-245.633
44	5	-0.923014	98.9328	-250.248
45	5	-0.907769	99.7569	-254.787
46	5	-0.892733	100.554	-259.251
47	5	-0.874218	101.318	-263.622
48	5	-0.859618	102.057	-267.92
49	5	-0.845198	102.771	-272.146

50	5	-0.830953	103.462	-276.301
51	5	-0.816874	104.129	-280.385
52	5	-0.802956	104.774	-284.4
53	5	-0.789191	105.397	-288.346
54	5	-0.775574	105.998	-292.224
55	5	-0.7621	106.579	-296.034
56	5	-0.748762	107.14	-299.778
57	5	-0.735557	107.681	-303.456
58	5	-0.722479	108.203	-307.068
59	5	-0.709522	108.706	-310.616
60	5	-0.696684	109.192	-314.099
61	5	-0.68396	109.659	-317.519
62	5	-0.668209	110.106	-320.86
63	5	-0.655726	110.536	-324.139
64	5	-0.643345	110.95	-327.355
65	5	-0.631062	111.348	-330.511
66	5	-0.618872	111.731	-333.605
67	5	-0.606775	112.099	-336.639
68	5	-0.594766	112.453	-339.613
69	5	-0.582841	112.793	-342.527
70	5	-0.570999	113.119	-345.382
71	5	-0.559237	113.431	-348.178
72	5	-0.547551	113.731	-350.916
73	5	-0.53594	114.018	-353.596
74	5	-0.524401	114.293	-356.218
75	5	-0.51293	114.556	-358.782
76	5	-0.501527	114.808	-361.29
77	5	-0.487364	115.046	-363.727
78	5	-0.476105	115.272	-366.107
79	5	-0.464904	115.488	-368.432
80	5	-0.453763	115.694	-370.7
81	5	-0.442676	115.89	-372.914
82	5	-0.431644	116.077	-375.072
83	5	-0.420664	116.253	-377.175
84	5	-0.409735	116.421	-379.224
85	5	-0.398855	116.58	-381.218
86	5	-0.388022	116.731	-383.158
87	5	-0.377233	116.873	-385.045
88	5	-0.36649	117.008	-386.877
89	5	-0.355788	117.134	-388.656
90	5	-0.345126	117.253	-390.382
91	5	-0.334503	117.365	-392.054
92	5	-0.323919	117.47	-393.674
93	5	-0.310738	117.567	-395.227
94	5	-0.300232	117.657	-396.729
95	5	-0.28976	117.741	-398.177
96	5	-0.279319	117.819	-399.574
97	5	-0.268908	117.891	-400.919
98	5	-0.258527	117.958	-402.211
99	5	-0.248174	118.02	-403.452
100	5	-0.237847	118.076	-404.641
101	5	-0.227545	118.128	-405.779
102	5	-0.217267	118.175	-406.865
103	5	-0.207012	118.218	-407.9
104	5	-0.196779	118.257	-408.884
105	5	-0.186567	118.292	-409.817
106	5	-0.176374	118.323	-410.699
107	5	-0.166199	118.35	-411.53
108	5	-0.153505	118.374	-412.298
109	5	-0.143367	118.394	-413.014
110	5	-0.133244	118.412	-413.681
111	5	-0.123135	118.427	-414.296

112	5	-0.113039	118.44	-414.861
113	5	-0.102953	118.451	-415.376
114	5.2	-0.0928787	118.459	-415.859
115	6	-0.0828129	118.466	-416.356
116	6	-0.0727562	118.471	-416.793
117	6.4	-0.0627062	118.475	-417.194
118	7	-0.0526632	118.478	-417.563
119	7	-0.0426257	118.48	-417.861
120	7	-0.0325917	118.481	-418.089
121	7	-0.0225612	118.482	-418.247
122	7.2	-0.0125328	118.482	-418.337
123	8	0	118.482	-418.337
124	8	0.0125328	118.482	-418.237
125	8	0.0225612	118.482	-418.057
126	8	0.0325917	118.483	-417.796
127	8.8	0.0426257	118.485	-417.421
128	9	0.0526632	118.488	-416.947
129	9	0.0627062	118.492	-416.382
130	9	0.0727562	118.497	-415.728
131	10	0.0828129	118.504	-414.899
132	10	0.0928787	118.513	-413.971
133	10	0.102953	118.523	-412.941
134	10	0.113039	118.536	-411.811
135	10	0.123135	118.551	-410.579
136	10	0.133244	118.569	-409.247
137	10	0.143367	118.59	-407.813
138	11	0.153505	118.613	-406.125
139	11	0.166199	118.641	-404.297
140	11	0.176374	118.672	-402.356
141	11	0.186567	118.707	-400.304
142	11	0.196779	118.745	-398.14
143	12	0.207012	118.788	-395.655
144	12	0.217267	118.835	-393.048
145	12	0.227545	118.887	-390.318
146	12	0.237847	118.944	-387.464
147	12	0.248174	119.005	-384.485
148	12	0.258527	119.072	-381.383
149	12	0.268908	119.145	-378.156
150	12	0.279319	119.223	-374.804
151	12	0.28976	119.306	-371.327
152	12	0.300232	119.397	-367.724
153	12	0.310738	119.493	-363.996
154	12	0.323919	119.598	-360.109
155	13	0.334503	119.71	-355.76
156	13	0.345126	119.829	-351.273
157	13	0.355788	119.956	-346.648
158	13	0.36649	120.09	-341.884
159	13	0.377233	120.232	-336.98
160	13	0.388022	120.383	-331.935
161	13	0.398855	120.542	-326.75
162	13	0.409735	120.71	-321.424
163	13	0.420664	120.887	-315.955
164	13	0.431644	121.073	-310.344
165	13	0.442676	121.269	-304.589
166	13	0.453763	121.475	-298.69
167	13	0.464904	121.691	-292.646
168	13	0.476105	121.918	-286.457
169	13	0.487364	122.155	-280.121
170	14	0.501527	122.407	-273.1
171	14	0.51293	122.67	-265.919
172	14	0.524401	122.945	-258.577
173	14	0.53594	123.232	-251.074

174	14	0.547551		123.532	-243.408
175	14	0.559237		123.845	-235.579
176	14	0.570999		124.171	-227.585
177	14	0.582841		124.51	-219.425
178	14	0.594766		124.864	-211.099
179	15	0.606775		125.232	-201.997
180	16	0.618872		125.615	-192.095
181	17	0.631062		126.014	-181.367
182	18	0.643345		126.428	-169.787
183	18	0.655726		126.858	-157.984
184	20	0.668209		127.304	-144.619
185	20	0.68396	127.772	-130.94	
186	20	0.696684		128.257	-117.007
187	20	0.709522		128.761	-102.816
188	20	0.722479		129.283	-88.3665
189	20	0.735557		129.824	-73.6554
190	21	0.748762		130.384	-57.9314
191	21	0.7621	130.965	-41.9273	
192	22	0.775574		131.567	-24.8647
193	22	0.789191		132.189	-7.50247
194	22	0.802956		132.834	10.1626
195	23	0.816874		133.501	28.9507
196	23	0.830953		134.192	48.0626
197	24	0.845198		134.906	68.3473
198	24	0.859618		135.645	88.9782
199	25	0.874218		136.409	110.834
200	27	0.892733		137.206	134.937
201	27	0.907769		138.03	159.447
202	28	0.923014		138.882	185.292
203	29	0.938476		139.763	212.507
204	30	0.954165		140.674	241.132
205	30	0.970094		141.615	270.235
206	30	0.986272		142.587	299.823
207	31	1.00271	143.593	330.907	
208	32	1.01943	144.632	363.529	
209	32	1.03643	145.706	396.695	
210	33	1.05375	146.817	431.468	
211	34	1.07138	147.965	467.895	
212	34	1.08935	149.151	504.933	
213	35	1.10768	150.378	543.702	
214	36	1.12639	151.647	584.252	
215	37	1.1455	152.959	626.636	
216	38	1.17	154.328	671.096	
217	38	1.19012	155.744	716.32	
218	38	1.21073	157.21	762.328	
219	38	1.23187	158.728	809.139	
220	40	1.25357	160.299	859.281	
221	40	1.27588	161.927	910.317	
222	40	1.29884	163.614	962.27	
223	41	1.32251	165.363	1016.49	
224	41	1.34694	167.177	1071.72	
225	42	1.3722	169.06	1129.35	
226	42	1.39838	171.016	1188.08	
227	44	1.42554	173.048	1250.81	
228	48	1.4538	175.161	1320.59	
229	48	1.48328	177.362	1391.79	
230	49	1.5141	179.654	1465.98	
231	52	1.55477	182.071	1546.82	
232	53	1.58927	184.597	1631.06	
233	55	1.62576	187.24	1720.47	
234	59	1.66456	190.011	1818.68	
235	61	1.70604	192.922	1922.75	

236	73	1.75069	195.986	2050.55
237	74	1.79912	199.223	2183.69
238	75	1.85218	202.654	2322.6
239	77	1.91103	206.306	2469.75
240	77	1.97737	210.216	2622.01
241	79	2.05375	214.434	2784.25
242	80	2.14441	219.032	2955.8
243	92	2.25713	224.127	3163.46
244	109	2.40892	229.93	3426.03
245	120	2.65209	236.963	3744.28

Data Set Standard Deviation = 19.2235
Numerator = 1.40197e+007
Denominator = 2.13666e+007
W Statistic = 0.656149 = 1.40197e+007 / 2.13666e+007

5% Critical value of 0.976 exceeds 0.656149
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.656149
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 = 245

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	-2.14441	22.5296	-7.3906
5	1.02962	-2.05375	26.7475	-9.50518
6	1.06471	-1.97737	30.6575	-11.6105
7	1.06471	-1.91103	34.3095	-13.6452
8	1.09861	-1.85218	37.7401	-15.68
9	1.09861	-1.79912	40.9769	-17.6566
10	1.09861	-1.75069	44.0418	-19.5799
11	1.1314	-1.70604	46.9524	-21.5101
12	1.1314	-1.66456	49.7231	-23.3934
13	1.19392	-1.62576	52.3662	-25.3344
14	1.25276	-1.58927	54.892	-27.3254
15	1.335	-1.55477	57.3093	-29.401
16	1.38629	-1.5141	59.6018	-31.5
17	1.38629	-1.48328	61.802	-33.5563
18	1.60944	-1.4538	63.9155	-35.8961
19	1.60944	-1.42554	65.9477	-38.1904
20	1.60944	-1.39838	67.9031	-40.441
21	1.60944	-1.3722	69.7861	-42.6495
22	1.60944	-1.34694	71.6003	-44.8173
23	1.60944	-1.32251	73.3494	-46.9458
24	1.60944	-1.29884	75.0363	-49.0362
25	1.60944	-1.27588	76.6642	-51.0896
26	1.60944	-1.25357	78.2356	-53.1072
27	1.60944	-1.23187	79.7531	-55.0898
28	1.60944	-1.21073	81.219	-57.0384
29	1.60944	-1.19012	82.6353	-58.9538
30	1.60944	-1.17	84.0043	-60.8368
31	1.60944	-1.1455	85.3164	-62.6805
32	1.60944	-1.12639	86.5852	-64.4933
33	1.60944	-1.10768	87.8121	-66.2761
34	1.60944	-1.08935	88.9988	-68.0293
35	1.60944	-1.07138	90.1467	-69.7536
36	1.60944	-1.05375	91.2571	-71.4496
37	1.60944	-1.03643	92.3312	-73.1176
38	1.60944	-1.01943	93.3705	-74.7583
39	1.60944	-1.00271	94.3759	-76.3721
40	1.60944	-0.986272	95.3486	-77.9595
41	1.60944	-0.970094	96.2897	-79.5208
42	1.60944	-0.954165	97.2002	-81.0565
43	1.60944	-0.938476	98.0809	-82.5669
44	1.60944	-0.923014	98.9328	-84.0524
45	1.60944	-0.907769	99.7569	-85.5134
46	1.60944	-0.892733	100.554	-86.9502
47	1.60944	-0.874218	101.318	-88.3572
48	1.60944	-0.859618	102.057	-89.7407
49	1.60944	-0.845198	102.771	-91.101

50	1.60944	-0.830953	103.462	-92.4384
51	1.60944	-0.816874	104.129	-93.7531
52	1.60944	-0.802956	104.774	-95.0454
53	1.60944	-0.789191	105.397	-96.3155
54	1.60944	-0.775574	105.998	-97.5638
55	1.60944	-0.7621	106.579	-98.7903
56	1.60944	-0.748762	107.14	-99.9954
57	1.60944	-0.735557	107.681	-101.179
58	1.60944	-0.722479	108.203	-102.342
59	1.60944	-0.709522	108.706	-103.484
60	1.60944	-0.696684	109.192	-104.605
61	1.60944	-0.68396	109.659	-105.706
62	1.60944	-0.668209	110.106	-106.781
63	1.60944	-0.655726	110.536	-107.837
64	1.60944	-0.643345	110.95	-108.872
65	1.60944	-0.631062	111.348	-109.888
66	1.60944	-0.618872	111.731	-110.884
67	1.60944	-0.606775	112.099	-111.86
68	1.60944	-0.594766	112.453	-112.818
69	1.60944	-0.582841	112.793	-113.756
70	1.60944	-0.570999	113.119	-114.675
71	1.60944	-0.559237	113.431	-115.575
72	1.60944	-0.547551	113.731	-116.456
73	1.60944	-0.53594	114.018	-117.319
74	1.60944	-0.524401	114.293	-118.163
75	1.60944	-0.51293	114.556	-118.988
76	1.60944	-0.501527	114.808	-119.795
77	1.60944	-0.487364	115.046	-120.58
78	1.60944	-0.476105	115.272	-121.346
79	1.60944	-0.464904	115.488	-122.094
80	1.60944	-0.453763	115.694	-122.825
81	1.60944	-0.442676	115.89	-123.537
82	1.60944	-0.431644	116.077	-124.232
83	1.60944	-0.420664	116.253	-124.909
84	1.60944	-0.409735	116.421	-125.568
85	1.60944	-0.398855	116.58	-126.21
86	1.60944	-0.388022	116.731	-126.835
87	1.60944	-0.377233	116.873	-127.442
88	1.60944	-0.36649	117.008	-128.032
89	1.60944	-0.355788	117.134	-128.604
90	1.60944	-0.345126	117.253	-129.16
91	1.60944	-0.334503	117.365	-129.698
92	1.60944	-0.323919	117.47	-130.219
93	1.60944	-0.310738	117.567	-130.719
94	1.60944	-0.300232	117.657	-131.203
95	1.60944	-0.28976	117.741	-131.669
96	1.60944	-0.279319	117.819	-132.119
97	1.60944	-0.268908	117.891	-132.551
98	1.60944	-0.258527	117.958	-132.967
99	1.60944	-0.248174	118.02	-133.367
100	1.60944	-0.237847	118.076	-133.75
101	1.60944	-0.227545	118.128	-134.116
102	1.60944	-0.217267	118.175	-134.466
103	1.60944	-0.207012	118.218	-134.799
104	1.60944	-0.196779	118.257	-135.115
105	1.60944	-0.186567	118.292	-135.416
106	1.60944	-0.176374	118.323	-135.7
107	1.60944	-0.166199	118.35	-135.967
108	1.60944	-0.153505	118.374	-136.214
109	1.60944	-0.143367	118.394	-136.445
110	1.60944	-0.133244	118.412	-136.659
111	1.60944	-0.123135	118.427	-136.857

112	1.60944	-0.113039	118.44	-137.039
113	1.60944	-0.102953	118.451	-137.205
114	1.64866	-0.0928787	118.459	-137.358
115	1.79176	-0.0828129	118.466	-137.507
116	1.79176	-0.0727562	118.471	-137.637
117	1.8563	-0.0627062	118.475	-137.753
118	1.94591	-0.0526632	118.478	-137.856
119	1.94591	-0.0426257	118.48	-137.939
120	1.94591	-0.0325917	118.481	-138.002
121	1.94591	-0.0225612	118.482	-138.046
122	1.97408	-0.0125328	118.482	-138.071
123	2.07944	0	118.482	-138.071
124	2.07944	0.0125328	118.482	-138.045
125	2.07944	0.0225612	118.482	-137.998
126	2.07944	0.0325917	118.483	-137.93
127	2.17475	0.0426257	118.485	-137.837
128	2.19722	0.0526632	118.488	-137.722
129	2.19722	0.0627062	118.492	-137.584
130	2.19722	0.0727562	118.497	-137.424
131	2.30259	0.0828129	118.504	-137.233
132	2.30259	0.0928787	118.513	-137.019
133	2.30259	0.102953	118.523	-136.782
134	2.30259	0.113039	118.536	-136.522
135	2.30259	0.123135	118.551	-136.239
136	2.30259	0.133244	118.569	-135.932
137	2.30259	0.143367	118.59	-135.602
138	2.3979	0.153505	118.613	-135.234
139	2.3979	0.166199	118.641	-134.835
140	2.3979	0.176374	118.672	-134.412
141	2.3979	0.186567	118.707	-133.965
142	2.3979	0.196779	118.745	-133.493
143	2.48491	0.207012	118.788	-132.979
144	2.48491	0.217267	118.835	-132.439
145	2.48491	0.227545	118.887	-131.873
146	2.48491	0.237847	118.944	-131.282
147	2.48491	0.248174	119.005	-130.665
148	2.48491	0.258527	119.072	-130.023
149	2.48491	0.268908	119.145	-129.355
150	2.48491	0.279319	119.223	-128.661
151	2.48491	0.28976	119.306	-127.941
152	2.48491	0.300232	119.397	-127.195
153	2.48491	0.310738	119.493	-126.423
154	2.48491	0.323919	119.598	-125.618
155	2.56495	0.334503	119.71	-124.76
156	2.56495	0.345126	119.829	-123.874
157	2.56495	0.355788	119.956	-122.962
158	2.56495	0.36649	120.09	-122.022
159	2.56495	0.377233	120.232	-121.054
160	2.56495	0.388022	120.383	-120.059
161	2.56495	0.398855	120.542	-119.036
162	2.56495	0.409735	120.71	-117.985
163	2.56495	0.420664	120.887	-116.906
164	2.56495	0.431644	121.073	-115.799
165	2.56495	0.442676	121.269	-114.663
166	2.56495	0.453763	121.475	-113.5
167	2.56495	0.464904	121.691	-112.307
168	2.56495	0.476105	121.918	-111.086
169	2.56495	0.487364	122.155	-109.836
170	2.63906	0.501527	122.407	-108.512
171	2.63906	0.51293	122.67	-107.159
172	2.63906	0.524401	122.945	-105.775
173	2.63906	0.53594	123.232	-104.36

174	2.63906	0.547551		123.532	-102.915
175	2.63906	0.559237		123.845	-101.439
176	2.63906	0.570999		124.171	-99.9325
177	2.63906	0.582841		124.51	-98.3944
178	2.63906	0.594766		124.864	-96.8248
179	2.70805	0.606775		125.232	-95.1816
180	2.77259	0.618872		125.615	-93.4657
181	2.83321	0.631062		126.014	-91.6778
182	2.89037	0.643345		126.428	-89.8183
183	2.89037	0.655726		126.858	-87.923
184	2.99573	0.668209		127.304	-85.9212
185	2.99573	0.68396	127.772	-83.8723	
186	2.99573	0.696684		128.257	-81.7852
187	2.99573	0.709522		128.761	-79.6596
188	2.99573	0.722479		129.283	-77.4953
189	2.99573	0.735557		129.824	-75.2917
190	3.04452	0.748762		130.384	-73.0121
191	3.04452	0.7621	130.965	-70.6919	
192	3.09104	0.775574		131.567	-68.2946
193	3.09104	0.789191		132.189	-65.8551
194	3.09104	0.802956		132.834	-63.3732
195	3.13549	0.816874		133.501	-60.8119
196	3.13549	0.830953		134.192	-58.2064
197	3.17805	0.845198		134.906	-55.5203
198	3.17805	0.859618		135.645	-52.7884
199	3.21888	0.874218		136.409	-49.9744
200	3.29584	0.892733		137.206	-47.0321
201	3.29584	0.907769		138.03	-44.0403
202	3.3322	0.923014		138.882	-40.9646
203	3.3673	0.938476		139.763	-37.8045
204	3.4012	0.954165		140.674	-34.5592
205	3.4012	0.970094		141.615	-31.2597
206	3.4012	0.986272		142.587	-27.9052
207	3.43399	1.00271	143.593	-24.4619	
208	3.46574	1.01943	144.632	-20.9288	
209	3.46574	1.03643	145.706	-17.3368	
210	3.49651	1.05375	146.817	-13.6524	
211	3.52636	1.07138	147.965	-9.87431	
212	3.52636	1.08935	149.151	-6.03287	
213	3.55535	1.10768	150.378	-2.09468	
214	3.58352	1.12639	151.647	1.94176	
215	3.61092	1.1455	152.959	6.07808	
216	3.63759	1.17	154.328	10.3341	
217	3.63759	1.19012	155.744	14.6632	
218	3.63759	1.21073	157.21	19.0674	
219	3.63759	1.23187	158.728	23.5484	
220	3.68888	1.25357	160.299	28.1726	
221	3.68888	1.27588	161.927	32.8792	
222	3.68888	1.29884	163.614	37.6704	
223	3.71357	1.32251	165.363	42.5816	
224	3.71357	1.34694	167.177	47.5836	
225	3.73767	1.3722	169.06	52.7124	
226	3.73767	1.39838	171.016	57.9391	
227	3.78419	1.42554	173.048	63.3336	
228	3.8712	1.4538	175.161	68.9616	
229	3.8712	1.48328	177.362	74.7037	
230	3.89182	1.5141	179.654	80.5963	
231	3.95124	1.55477	182.071	86.7396	
232	3.97029	1.58927	184.597	93.0495	
233	4.00733	1.62576	187.24	99.5644	
234	4.07754	1.66456	190.011	106.352	
235	4.11087	1.70604	192.922	113.365	

236	4.29046	1.75069	195.986	120.876
237	4.30407	1.79912	199.223	128.62
238	4.31749	1.85218	202.654	136.617
239	4.34381	1.91103	206.306	144.918
240	4.34381	1.97737	210.216	153.507
241	4.36945	2.05375	214.434	162.481
242	4.38203	2.14441	219.032	171.878
243	4.52179	2.25713	224.127	182.084
244	4.69135	2.40892	229.93	193.385
245	4.78749	2.65209	236.963	206.082

Data Set Standard Deviation = 0.905085
Numerator = 42469.7
Denominator = 47364.1
W Statistic = 0.896664 = 42469.7 / 47364.1

5% Critical value of 0.976 exceeds 0.896664
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.896664
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	184
	9/23/1999	2.07944 J	123
	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	170
	10/26/2005	2.48491	143
	6/19/2006	2.30259	131
	11/18/2006	2.56495	155
	6/2/2007	3.17805	197
	11/15/2007	2.56495	156
	5/20/2008	2.3979	138
	11/20/2008	2.63906	171
	6/11/2009	2.56495	157
	11/16/2009	2.56495	158
	6/30/2010	2.70805	179
	11/17/2010	2.63906	172
	7/6/2011	2.63906	173

Rank Sum = 2629.5
Rank Mean = 131.475

Background Rank Sum = 2629.5
Background Rank Mean = 131.475

Compliance Wells

Well ID	Date	Result	Rank
LMW-9S	11/18/2006	4.34381	239
	6/2/2007	4.38203	242
	11/15/2007	0.693147 J	89
	5/20/2008	4.31749	238
	11/20/2008	4.11087	235
	6/11/2009	3.3322	202
	6/30/2010	3.63759	216
	11/17/2010	3.97029	232
	7/6/2011	4.07754	234

Rank Sum = 1927
Rank Mean = 214.111

LMW-14R	6/2/2007	2.63906	174
	11/15/2007	2.48491	144
	5/20/2008	2.19722 J	128
	11/20/2008	2.56495	159
	6/11/2009	2.56495	160

	11/16/2009	2.63906		175
	11/16/2009	2.48491		145
	11/16/2009	3.8712	228	
	6/30/2010	2.56495		161
	11/17/2010	2.48491		146
	7/6/2011	2.3979	139	

Rank Sum = 1759
Rank Mean = 159.909

LMW-15R	11/18/2006	3.61092		215
	6/2/2007	3.63759	217	
	11/15/2007	ND<1.60944		44.5
	11/15/2007	3.29584		200
	5/20/2008	3.17805		198
	5/20/2008	ND<1.60944		44.5
	11/20/2008	3.63759		218
	11/20/2008	ND<1.60944		44.5
	6/11/2009	3.73767		225
	6/30/2010	3.58352		214
	11/17/2010	3.4012	204	
	7/6/2011	3.21888	199	

Rank Sum = 2023.5
Rank Mean = 168.625

LMW-16	11/18/2006	3.13549		195
	6/2/2007	3.71357	223	
	11/15/2007	3.55535		213
	5/20/2008	3.09104		192
	11/20/2008	3.13549		196
	6/11/2009	2.63906		176
	11/16/2009	2.56495		162
	6/30/2010	2.17475		127
	11/17/2010	2.30259		132
	7/6/2011	2.3979	140	

Rank Sum = 1756
Rank Mean = 175.6

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	124
	9/23/1999	1.94591	J	118
	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	119
	6/19/2006	1.60944	J	106
	11/18/2006	1.94591	J	120
	6/2/2007	1.60944	107	
	11/15/2007	ND<1.60944		44.5
	5/20/2008	1.60944	J	108
	11/20/2008	1.60944	J	109
	6/11/2009	1.97408		122
	11/16/2009	1.8563	117	
	6/30/2010	1.60944		110
	11/17/2010	2.56495		163
	7/6/2011	1.25276	102	

Rank Sum = 1925.5
Rank Mean = 87.5227

LMW-3S	11/18/2006	1.60944	J	111
	6/2/2007	2.89037		182
	11/15/2007	2.56495		164
	5/20/2008	2.07944	J	125
	11/20/2008	2.56495		165
	6/11/2009	2.48491		147
	11/16/2009	2.30259		133
	6/30/2010	2.48491		148
	11/17/2010	2.77259		180
	7/6/2011	2.63906		177

Rank Sum = 1532
Rank Mean = 153.2

LMW-6	1/16/1998	ND<1.60944		44.5
	3/16/1999	2.07944	J	126
	9/23/1999	2.89037		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	2.19722	J	129
	10/26/2005	2.48491		149
	6/19/2006	2.99573		185
	11/18/2006	3.49651		210
	6/2/2007	3.95124		231
	11/15/2007	3.73767		226
	5/20/2008	3.89182		230
	11/20/2008	4.29046		236
	6/11/2009	4.52179		243
	11/16/2009	4.30407		237
	6/30/2010	4.34381		240
	11/17/2010	4.36945		241
	7/6/2011	4.00733		233

Rank Sum = 3321.5
Rank Mean = 166.075

LMW-7	1/16/1998	ND<1.60944		44.5
	3/16/1999	2.99573		186
	9/23/1999	3.09104		193
	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		207
	10/26/2005	3.4012		205
	6/19/2006	2.99573		187
	11/18/2006	2.3979		141
	6/2/2007	3.29584		201
	11/15/2007	1.79176	J	115
	5/20/2008	1.60944	J	112
	11/20/2008	1.94591	J	121
	6/11/2009	2.48491		150
	11/17/2010	1.64866		114
	7/6/2011	2.56495		166

Rank Sum = 2320.5
Rank Mean = 128.917

LMW-8	1/16/1998	ND<1.60944		44.5
	3/16/1999	2.30259		134
	9/23/1999	4.69135		244
	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	229	
	10/26/2005	3.63759		219
	6/19/2006	3.68888		220
	11/18/2006	3.46574		208
	6/2/2007	3.52636	211	
	11/15/2007	3.71357		224
	5/20/2008	3.52636		212
	11/20/2008	3.3673	203	
	6/11/2009	3.68888		221
	11/16/2009	3.68888		222
	6/30/2010	3.4012	206	
	11/17/2010	3.78419		227
	7/6/2011	3.46574	209	

Rank Sum = 3411.5
Rank Mean = 170.575

LMW-9	1/16/1998	ND<1.60944		44.5
	3/16/1999	2.30259		135
	9/23/1999	3.09104		194
	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		136
	11/18/2006	1.09861	J	96
	6/2/2007	1.79176	116	
	11/15/2007	1.09861	J	97
	5/20/2008	0.693147	J	90
	11/20/2008	1.38629	J	104
	6/11/2009	1.1314	99	
	11/16/2009	1.06471		94
	6/30/2010	1.02962		92
	11/17/2010	1.38629		105
	7/6/2011	1.19392	101	

Rank Sum = 1770.5
Rank Mean = 88.525

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	167	
	10/26/2005	ND<1.60944		44.5
	6/19/2006	2.99573		188
	11/18/2006	2.3979	142	
	6/2/2007	3.04452	190	
	11/15/2007	ND<1.60944		44.5
	5/20/2008	2.48491		151
	11/20/2008	2.48491		152
	6/11/2009	2.56495		168
	11/16/2009	2.48491		153
	6/30/2010	2.48491		154
	11/17/2010	2.63906		178
	7/6/2011	3.04452	191	

Rank Sum = 2101
Rank Mean = 123.588

LMW-9D	11/18/2006	2.56495		169

	6/2/2007	1.60944	113
	11/15/2007	4.78749	245
	5/20/2008	2.30259	137
	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
	7/6/2011	1.335	103

Rank Sum = 1244
Rank Mean = 124.4

MW-5	1/16/1998	ND<1.60944	44.5
	3/16/1999	2.99573	189
	9/23/1999	2.19722 J	130
	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	181
	5/20/2008	ND<1.60944	44.5
	11/20/2008	ND<1.60944	44.5

Rank Sum = 945
Rank Mean = 72.6923

LMW-12	3/14/2000	ND<1.60944	44.5
	9/23/2003	ND<1.60944	44.5
	3/10/2004	ND<1.60944	44.5
	10/12/2004	ND<1.60944	44.5
	4/1/2005	ND<1.60944	44.5
	10/26/2005	ND<1.60944	44.5
	6/19/2006	ND<1.60944	44.5
	6/2/2007	ND<1.60944	44.5
	11/15/2007	ND<1.60944	44.5
	5/20/2008	ND<1.60944	44.5
	11/20/2008	ND<1.60944	44.5

Rank Sum = 489.5
Rank Mean = 44.5

LMW-11	3/14/2000	ND<1.60944	44.5
	9/23/2003	ND<1.60944	44.5
	3/10/2004	ND<1.60944	44.5
	10/12/2004	ND<1.60944	44.5
	4/1/2005	ND<1.60944	44.5
	10/26/2005	ND<1.60944	44.5
	6/19/2006	ND<1.60944	44.5
	6/2/2007	ND<1.60944	44.5
	11/15/2007	ND<1.60944	44.5
	5/20/2008	ND<1.60944	44.5
	11/20/2008	ND<1.60944	44.5

Rank Sum = 489.5
Rank Mean = 44.5

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

Calculation Results:

Kruskal-Wallis H Statistic = 104.261
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 109.326
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
104.261 > 26.2962 indicating a significant group difference at 5% significance level
109.326 > 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 131.475

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9S	214.111	82.6361	66.1754
LMW-14R	159.909	28.4341	61.8875
LMW-15R	168.625	37.15	60.2009
LMW-16	175.6	44.125	63.8527
LMW-3	87.5227	-43.9523	50.9368
LMW-3S	153.2	21.725	63.8527
LMW-6	166.075	34.6	52.1355
LMW-7	128.917	-2.55833	53.5641
LMW-8	170.575	39.1	52.1355
LMW-9	88.525	-42.95	52.1355
LMW-10	123.588	-7.88676	54.387
LMW-9D	124.4	-7.075	63.8527
MW-5	72.6923	-58.7827	58.7359
LMW-12	44.5	-86.975	61.8875
LMW-11	44.5	-86.975	61.8875
LMW-13	44.5	-86.975	61.8875

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 131.475

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9S	214.111	82.6361	78.1632
LMW-14R	159.909	28.4341	73.0986
LMW-15R	168.625	37.15	71.1064
LMW-16	175.6	44.125	75.4198
LMW-3	87.5227	-43.9523	60.1642
LMW-3S	153.2	21.725	75.4198
LMW-6	166.075	34.6	61.58
LMW-7	128.917	-2.55833	63.2674
LMW-8	170.575	39.1	61.58
LMW-9	88.525	-42.95	61.58
LMW-10	123.588	-7.88676	64.2393
LMW-9D	124.4	-7.075	75.4198
MW-5	72.6923	-58.7827	69.3761
LMW-12	44.5	-86.975	73.0986
LMW-11	44.5	-86.975	73.0986
LMW-13	44.5	-86.975	73.0986

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
4.07754		4.34381	-0.266268	1	7
0.693147 J		4.38203	-3.688881	8	
4.31749		4.38203	-0.0645385	1	9
4.11087		4.38203	-0.271153	1	10
3.3322	4.38203	-1.049821	11		
3.63759		4.38203	-0.744441	12	
3.97029		4.38203	-0.411735	1	13
4.07754		4.38203	-0.304489	1	14
4.31749		0.693147 J	3.62434 2	14	
4.11087		0.693147 J	3.41773 3	14	
3.3322	0.693147 J	2.63906 4	14		
3.63759		0.693147 J	2.94444 5	14	
3.97029		0.693147 J	3.27714 6	14	
4.07754		0.693147 J	3.38439 7	14	
4.11087		4.31749	-0.206614	7	15
3.3322	4.31749	-0.985284	7	16	
3.63759		4.31749	-0.679902	7	17
3.97029		4.31749	-0.347196	7	18
4.07754		4.31749	-0.239951	7	19
3.3322	4.11087	-0.778669	7	20	
3.63759		4.11087	-0.473288	7	21
3.97029		4.11087	-0.140582	7	22
4.07754		4.11087	-0.0333364	7	23
3.63759		3.3322	0.305382 8	23	
3.97029		3.3322	0.638087 9	23	
4.07754		3.3322	0.745333 10	23	
3.97029		3.63759	0.332706	11	23
4.07754		3.63759	0.439951	12	23
4.07754		3.97029	0.107246	13	23

S Statistic = 13 - 23 = -10
Comparing at 1.0 - (0.05 / 2) = 97.5% confidence level (two-tailed)

Probability of obtaining S >= |-10| is 0.358
0.358 >= 0.025 indicating no evidence of a trend

Concentrations (ppb)

Parameter: Beryllium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 227
Percent Non-Detects: 92.6531%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	19 (95%)	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	0.071 J	0.071 J
			6/30/2010	ND<0.07 U	ND<0.07 U
			11/17/2010	ND<0.07 U	ND<0.07 U
			7/6/2011	ND<0.07 U	ND<0.07 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-3S	10	7 (70%)	11/18/2006	ND<10	ND<10
			6/2/2007	ND<10	ND<10
			11/15/2007	ND<10	ND<10
			5/20/2008	ND<10	ND<10
			11/20/2008	ND<10	ND<10
			6/11/2009	0.076 J	0.076 J
			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
			7/6/2011	0.1 J	0.1 J
LMW-14R	10	10 (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
			7/6/2011	ND<0.07 U	ND<0.07 U

LMW-10	17	17 (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	
			7/6/2011	ND<0.07 U	ND<0.07 U	
LMW-15R	13	9 (69.2308%)	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	
			7/6/2011	0.13 J	0.13 J	
LMW-16	10	10 (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	
			7/6/2011	ND<0.07 U	ND<0.07 U	
LMW-3	22	22 (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
			7/6/2011	ND<0.07 U	ND<0.07 U
LMW-6	20	15 (75%)	1/16/1998	ND<10	ND<10
			3/16/1999	ND<10	ND<10
			9/23/1999	ND<10	ND<10
			3/14/2000	ND<10	ND<10
			9/23/2003	ND<10	ND<10
			3/10/2004	ND<10	ND<10
			10/12/2004	ND<10	ND<10
			4/1/2005	ND<10	ND<10
			10/26/2005	ND<10	ND<10
			6/19/2006	ND<10	ND<10
			11/18/2006	ND<10	ND<10
			6/2/2007	ND<10	ND<10
			11/15/2007	ND<10	ND<10
			5/20/2008	ND<10	ND<10
			11/20/2008	ND<10	ND<10
			6/11/2009	0.15 J	0.15 J
			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
			7/6/2011	0.085 J	0.085 J
LMW-7	18	16 (88.8889%)	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
			7/6/2011	0.34	0.34
LMW-8	20	20 (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
			7/6/2011	ND<0.07 U	ND<0.07 U
LMW-9S	9	8 (88.8889%)	11/18/2006	ND<10	ND<10
			6/2/2007	ND<10	ND<10
			11/15/2007	ND<10	ND<10
			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	0.071 J	0.071 J
			7/6/2011	ND<0.07 U	ND<0.07 U
LMW-9D	10	10 (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
			7/6/2011	ND<0.07 U	ND<0.07 U
LMW-9	20	18 (90%)	1/16/1998	ND<10	ND<10
			3/16/1999	ND<10	ND<10
			9/23/1999	ND<10	ND<10
			3/14/2000	ND<10	ND<10
			9/23/2003	ND<10	ND<10
			3/10/2004	ND<10	ND<10
			10/12/2004	ND<10	ND<10
			4/1/2005	ND<10	ND<10
			10/26/2005	ND<10	ND<10
			6/19/2006	ND<10	ND<10
			11/18/2006	ND<10	ND<10
			6/2/2007	ND<10	ND<10
			11/15/2007	ND<10	ND<10
			5/20/2008	ND<10	ND<10
			11/20/2008	ND<10	ND<10
			6/11/2009	0.089 J	0.089 J
			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
			7/6/2011	ND<0.07 U	ND<0.07 U
MW-5	13	13 (100%)	1/16/1998	ND<10	ND<10
			3/16/1999	ND<10	ND<10
			9/23/1999	ND<10	ND<10
			3/14/2000	ND<10	ND<10
			9/23/2003	ND<10	ND<10
			3/10/2004	ND<10	ND<10
			10/12/2004	ND<10	ND<10
			4/1/2005	ND<10	ND<10
			10/26/2005	ND<10	ND<10
			6/19/2006	ND<10	ND<10
			11/15/2007	ND<10	ND<10
			5/20/2008	ND<10	ND<10
			11/20/2008	ND<10	ND<10
LMW-13	11	11 (100%)	3/14/2000	ND<10	ND<10
			9/23/2003	ND<10	ND<10

			3/10/2004	ND<10	ND<10
			10/12/2004	ND<10	ND<10
			4/1/2005 ND<10	ND<10	
			10/26/2005	ND<10	ND<10
			6/19/2006	ND<10	ND<10
			6/2/2007 ND<10	ND<10	
			11/15/2007	ND<10	ND<10
			5/20/2008	ND<10	ND<10
			11/20/2008	ND<10	ND<10
LMW-12	11	11 (100%)	3/14/2000	ND<10	ND<10
			9/23/2003	ND<10	ND<10
			3/10/2004	ND<10	ND<10
			10/12/2004	ND<10	ND<10
			4/1/2005 ND<10	ND<10	
			10/26/2005	ND<10	ND<10
			6/19/2006	ND<10	ND<10
			6/2/2007 ND<10	ND<10	
			11/15/2007	ND<10	ND<10
			5/20/2008	ND<10	ND<10
			11/20/2008	ND<10	ND<10
LMW-11	11	11 (100%)	3/14/2000	ND<10	ND<10
			9/23/2003	ND<10	ND<10
			3/10/2004	ND<10	ND<10
			10/12/2004	ND<10	ND<10
			4/1/2005 ND<10	ND<10	
			10/26/2005	ND<10	ND<10
			6/19/2006	ND<10	ND<10
			6/2/2007 ND<10	ND<10	
			11/15/2007	ND<10	ND<10
			5/20/2008	ND<10	ND<10
			11/20/2008	ND<10	ND<10

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Beryllium

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 245

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	-2.14441	22.5296	-0.331189
5	0.035	-2.05375	26.7475	-0.40307
6	0.035	-1.97737	30.6575	-0.472278
7	0.035	-1.91103	34.3095	-0.539164
8	0.035	-1.85218	37.7401	-0.60399
9	0.035	-1.79912	40.9769	-0.66696
10	0.035	-1.75069	44.0418	-0.728234
11	0.035	-1.70604	46.9524	-0.787945
12	0.035	-1.66456	49.7231	-0.846205
13	0.035	-1.62576	52.3662	-0.903106
14	0.035	-1.58927	54.892	-0.958731
15	0.035	-1.55477	57.3093	-1.01315
16	0.035	-1.5141	59.6018	-1.06614
17	0.035	-1.48328	61.802	-1.11806
18	0.035	-1.4538	63.9155	-1.16894
19	0.035	-1.42554	65.9477	-1.21883
20	0.035	-1.39838	67.9031	-1.26778
21	0.035	-1.3722	69.7861	-1.3158
22	0.035	-1.34694	71.6003	-1.36295
23	0.035	-1.32251	73.3494	-1.40923
24	0.035	-1.29884	75.0363	-1.45469
25	0.035	-1.27588	76.6642	-1.49935
26	0.035	-1.25357	78.2356	-1.54322
27	0.035	-1.23187	79.7531	-1.58634
28	0.035	-1.21073	81.219	-1.62871
29	0.035	-1.19012	82.6353	-1.67037
30	0.035	-1.17	84.0043	-1.71132
31	0.035	-1.1455	85.3164	-1.75141
32	0.035	-1.12639	86.5852	-1.79084
33	0.035	-1.10768	87.8121	-1.8296
34	0.035	-1.08935	88.9988	-1.86773
35	0.035	-1.07138	90.1467	-1.90523
36	0.035	-1.05375	91.2571	-1.94211
37	0.035	-1.03643	92.3312	-1.97839
38	0.035	-1.01943	93.3705	-2.01407
39	0.035	-1.00271	94.3759	-2.04916
40	0.035	-0.986272	95.3486	-2.08368
41	0.035	-0.970094	96.2897	-2.11763
42	0.035	-0.954165	97.2002	-2.15103
43	0.035	-0.938476	98.0809	-2.18388
44	0.035	-0.923014	98.9328	-2.21618
45	0.035	-0.907769	99.7569	-2.24795
46	0.071	-0.892733	100.554	-2.31134
47	0.071	-0.874218	101.318	-2.37341
48	0.076	-0.859618	102.057	-2.43874
49	0.085	-0.845198	102.771	-2.51058

50	0.089	-0.830953	103.462	-2.58453
51	0.1	-0.816874	104.129	-2.66622
52	0.12	-0.802956	104.774	-2.76258
53	0.12	-0.789191	105.397	-2.85728
54	0.13	-0.775574	105.998	-2.9581
55	0.13	-0.7621	106.579	-3.05718
56	0.13	-0.748762	107.14	-3.15452
57	0.15	-0.735557	107.681	-3.26485
58	0.15	-0.722479	108.203	-3.37322
59	0.16	-0.709522	108.706	-3.48675
60	0.17	-0.696684	109.192	-3.60518
61	0.19	-0.68396	109.659	-3.73513
62	0.29	-0.668209	110.106	-3.92891
63	0.34	-0.655726	110.536	-4.15186
64	5	-0.643345	110.95	-7.36859
65	5	-0.631062	111.348	-10.5239
66	5	-0.618872	111.731	-13.6183
67	5	-0.606775	112.099	-16.6521
68	5	-0.594766	112.453	-19.626
69	5	-0.582841	112.793	-22.5402
70	5	-0.570999	113.119	-25.3952
71	5	-0.559237	113.431	-28.1913
72	5	-0.547551	113.731	-30.9291
73	5	-0.53594	114.018	-33.6088
74	5	-0.524401	114.293	-36.2308
75	5	-0.51293	114.556	-38.7955
76	5	-0.501527	114.808	-41.3031
77	5	-0.487364	115.046	-43.7399
78	5	-0.476105	115.272	-46.1204
79	5	-0.464904	115.488	-48.445
80	5	-0.453763	115.694	-50.7138
81	5	-0.442676	115.89	-52.9272
82	5	-0.431644	116.077	-55.0854
83	5	-0.420664	116.253	-57.1887
84	5	-0.409735	116.421	-59.2374
85	5	-0.398855	116.58	-61.2316
86	5	-0.388022	116.731	-63.1718
87	5	-0.377233	116.873	-65.0579
88	5	-0.36649	117.008	-66.8904
89	5	-0.355788	117.134	-68.6693
90	5	-0.345126	117.253	-70.3949
91	5	-0.334503	117.365	-72.0675
92	5	-0.323919	117.47	-73.6871
93	5	-0.310738	117.567	-75.2407
94	5	-0.300232	117.657	-76.7419
95	5	-0.28976	117.741	-78.1907
96	5	-0.279319	117.819	-79.5873
97	5	-0.268908	117.891	-80.9318
98	5	-0.258527	117.958	-82.2245
99	5	-0.248174	118.02	-83.4653
100	5	-0.237847	118.076	-84.6546
101	5	-0.227545	118.128	-85.7923
102	5	-0.217267	118.175	-86.8786
103	5	-0.207012	118.218	-87.9137
104	5	-0.196779	118.257	-88.8976
105	5	-0.186567	118.292	-89.8304
106	5	-0.176374	118.323	-90.7123
107	5	-0.166199	118.35	-91.5433
108	5	-0.153505	118.374	-92.3108
109	5	-0.143367	118.394	-93.0277
110	5	-0.133244	118.412	-93.6939
111	5	-0.123135	118.427	-94.3096

112	5	-0.113039	118.44	-94.8747
113	5	-0.102953	118.451	-95.3895
114	5	-0.0928787	118.459	-95.8539
115	5	-0.0828129	118.466	-96.268
116	5	-0.0727562	118.471	-96.6317
117	5	-0.0627062	118.475	-96.9453
118	5	-0.0526632	118.478	-97.2086
119	5	-0.0426257	118.48	-97.4217
120	5	-0.0325917	118.481	-97.5847
121	5	-0.0225612	118.482	-97.6975
122	5	-0.0125328	118.482	-97.7602
123	5	0	118.482	-97.7602
124	5	0.0125328	118.482	-97.6975
125	5	0.0225612	118.482	-97.5847
126	5	0.0325917	118.483	-97.4217
127	5	0.0426257	118.485	-97.2086
128	5	0.0526632	118.488	-96.9453
129	5	0.0627062	118.492	-96.6317
130	5	0.0727562	118.497	-96.268
131	5	0.0828129	118.504	-95.8539
132	5	0.0928787	118.513	-95.3895
133	5	0.102953	118.523	-94.8747
134	5	0.113039	118.536	-94.3096
135	5	0.123135	118.551	-93.6939
136	5	0.133244	118.569	-93.0277
137	5	0.143367	118.59	-92.3108
138	5	0.153505	118.613	-91.5433
139	5	0.166199	118.641	-90.7123
140	5	0.176374	118.672	-89.8304
141	5	0.186567	118.707	-88.8976
142	5	0.196779	118.745	-87.9137
143	5	0.207012	118.788	-86.8786
144	5	0.217267	118.835	-85.7923
145	5	0.227545	118.887	-84.6546
146	5	0.237847	118.944	-83.4653
147	5	0.248174	119.005	-82.2245
148	5	0.258527	119.072	-80.9318
149	5	0.268908	119.145	-79.5873
150	5	0.279319	119.223	-78.1907
151	5	0.28976	119.306	-76.7419
152	5	0.300232	119.397	-75.2407
153	5	0.310738	119.493	-73.6871
154	5	0.323919	119.598	-72.0675
155	5	0.334503	119.71	-70.3949
156	5	0.345126	119.829	-68.6693
157	5	0.355788	119.956	-66.8904
158	5	0.36649	120.09	-65.0579
159	5	0.377233	120.232	-63.1718
160	5	0.388022	120.383	-61.2316
161	5	0.398855	120.542	-59.2374
162	5	0.409735	120.71	-57.1887
163	5	0.420664	120.887	-55.0854
164	5	0.431644	121.073	-52.9272
165	5	0.442676	121.269	-50.7138
166	5	0.453763	121.475	-48.445
167	5	0.464904	121.691	-46.1204
168	5	0.476105	121.918	-43.7399
169	5	0.487364	122.155	-41.3031
170	5	0.501527	122.407	-38.7955
171	5	0.51293	122.67	-36.2308
172	5	0.524401	122.945	-33.6088
173	5	0.53594	123.232	-30.9291

174	5	0.547551		123.532	-28.1913
175	5	0.559237		123.845	-25.3952
176	5	0.570999		124.171	-22.5402
177	5	0.582841		124.51	-19.626
178	5	0.594766		124.864	-16.6521
179	5	0.606775		125.232	-13.6183
180	5	0.618872		125.615	-10.5239
181	5	0.631062		126.014	-7.36859
182	5	0.643345		126.428	-4.15186
183	5	0.655726		126.858	-0.87323
184	5	0.668209		127.304	2.46782
185	5	0.68396	127.772	5.88762	
186	5	0.696684		128.257	9.37104
187	5	0.709522		128.761	12.9186
188	5	0.722479		129.283	16.531
189	5	0.735557		129.824	20.2088
190	5	0.748762		130.384	23.9526
191	5	0.7621	130.965	27.7631	
192	5	0.775574		131.567	31.641
193	5	0.789191		132.189	35.587
194	5	0.802956		132.834	39.6017
195	5	0.816874		133.501	43.6861
196	5	0.830953		134.192	47.8409
197	5	0.845198		134.906	52.0669
198	5	0.859618		135.645	56.365
199	5	0.874218		136.409	60.736
200	5	0.892733		137.206	65.1997
201	5	0.907769		138.03	69.7386
202	5	0.923014		138.882	74.3536
203	5	0.938476		139.763	79.046
204	5	0.954165		140.674	83.8168
205	5	0.970094		141.615	88.6673
206	5	0.986272		142.587	93.5987
207	5	1.00271	143.593	98.6122	
208	5	1.01943	144.632	103.709	
209	5	1.03643	145.706	108.892	
210	5	1.05375	146.817	114.16	
211	5	1.07138	147.965	119.517	
212	5	1.08935	149.151	124.964	
213	5	1.10768	150.378	130.502	
214	5	1.12639	151.647	136.134	
215	5	1.1455	152.959	141.862	
216	5	1.17	154.328	147.712	
217	5	1.19012	155.744	153.662	
218	5	1.21073	157.21	159.716	
219	5	1.23187	158.728	165.875	
220	5	1.25357	160.299	172.143	
221	5	1.27588	161.927	178.523	
222	5	1.29884	163.614	185.017	
223	5	1.32251	165.363	191.629	
224	5	1.34694	167.177	198.364	
225	5	1.3722	169.06	205.225	
226	5	1.39838	171.016	212.217	
227	5	1.42554	173.048	219.345	
228	5	1.4538	175.161	226.614	
229	5	1.48328	177.362	234.03	
230	5	1.5141	179.654	241.601	
231	5	1.55477	182.071	249.374	
232	5	1.58927	184.597	257.321	
233	5	1.62576	187.24	265.45	
234	5	1.66456	190.011	273.772	
235	5	1.70604	192.922	282.303	

236	5	1.75069	195.986	291.056
237	5	1.79912	199.223	300.052
238	5	1.85218	202.654	309.312
239	5	1.91103	206.306	318.868
240	5	1.97737	210.216	328.754
241	5	2.05375	214.434	339.023
242	5	2.14441	219.032	349.745
243	5	2.25713	224.127	361.031
244	5	2.40892	229.93	373.075
245	5	2.65209	236.963	386.336

Data Set Standard Deviation = 2.16116
Numerator = 149255
Denominator = 270052
W Statistic = 0.552692 = 149255 / 270052

5% Critical value of 0.976 exceeds 0.552692
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.552692
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 = 245

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	-2.14441	22.5296	31.7223
5	-3.35241	-2.05375	26.7475	38.6073
6	-3.35241	-1.97737	30.6575	45.2363
7	-3.35241	-1.91103	34.3095	51.6428
8	-3.35241	-1.85218	37.7401	57.8521
9	-3.35241	-1.79912	40.9769	63.8834
10	-3.35241	-1.75069	44.0418	69.7524
11	-3.35241	-1.70604	46.9524	75.4718
12	-3.35241	-1.66456	49.7231	81.0521
13	-3.35241	-1.62576	52.3662	86.5023
14	-3.35241	-1.58927	54.892	91.8302
15	-3.35241	-1.55477	57.3093	97.0424
16	-3.35241	-1.5141	59.6018	102.118
17	-3.35241	-1.48328	61.802	107.091
18	-3.35241	-1.4538	63.9155	111.965
19	-3.35241	-1.42554	65.9477	116.744
20	-3.35241	-1.39838	67.9031	121.432
21	-3.35241	-1.3722	69.7861	126.032
22	-3.35241	-1.34694	71.6003	130.547
23	-3.35241	-1.32251	73.3494	134.981
24	-3.35241	-1.29884	75.0363	139.335
25	-3.35241	-1.27588	76.6642	143.612
26	-3.35241	-1.25357	78.2356	147.815
27	-3.35241	-1.23187	79.7531	151.944
28	-3.35241	-1.21073	81.219	156.003
29	-3.35241	-1.19012	82.6353	159.993
30	-3.35241	-1.17	84.0043	163.915
31	-3.35241	-1.1455	85.3164	167.756
32	-3.35241	-1.12639	86.5852	171.532
33	-3.35241	-1.10768	87.8121	175.245
34	-3.35241	-1.08935	88.9988	178.897
35	-3.35241	-1.07138	90.1467	182.489
36	-3.35241	-1.05375	91.2571	186.021
37	-3.35241	-1.03643	92.3312	189.496
38	-3.35241	-1.01943	93.3705	192.913
39	-3.35241	-1.00271	94.3759	196.275
40	-3.35241	-0.986272	95.3486	199.581
41	-3.35241	-0.970094	96.2897	202.833
42	-3.35241	-0.954165	97.2002	206.032
43	-3.35241	-0.938476	98.0809	209.178
44	-3.35241	-0.923014	98.9328	212.273
45	-3.35241	-0.907769	99.7569	215.316
46	-2.64508	-0.892733	100.554	217.677
47	-2.64508	-0.874218	101.318	219.99
48	-2.57702	-0.859618	102.057	222.205
49	-2.4651	-0.845198	102.771	224.288

50	-2.41912	-0.830953	103.462	226.299
51	-2.30259	-0.816874	104.129	228.179
52	-2.12026	-0.802956	104.774	229.882
53	-2.12026	-0.789191	105.397	231.555
54	-2.04022	-0.775574	105.998	233.138
55	-2.04022	-0.7621	106.579	234.692
56	-2.04022	-0.748762	107.14	236.22
57	-1.89712	-0.735557	107.681	237.615
58	-1.89712	-0.722479	108.203	238.986
59	-1.83258	-0.709522	108.706	240.286
60	-1.77196	-0.696684	109.192	241.521
61	-1.66073	-0.68396	109.659	242.657
62	-1.23787	-0.668209	110.106	243.484
63	-1.07881	-0.655726	110.536	244.191
64	1.60944	-0.643345	110.95	243.156
65	1.60944	-0.631062	111.348	242.14
66	1.60944	-0.618872	111.731	241.144
67	1.60944	-0.606775	112.099	240.168
68	1.60944	-0.594766	112.453	239.21
69	1.60944	-0.582841	112.793	238.272
70	1.60944	-0.570999	113.119	237.353
71	1.60944	-0.559237	113.431	236.453
72	1.60944	-0.547551	113.731	235.572
73	1.60944	-0.53594	114.018	234.709
74	1.60944	-0.524401	114.293	233.865
75	1.60944	-0.51293	114.556	233.04
76	1.60944	-0.501527	114.808	232.233
77	1.60944	-0.487364	115.046	231.448
78	1.60944	-0.476105	115.272	230.682
79	1.60944	-0.464904	115.488	229.934
80	1.60944	-0.453763	115.694	229.204
81	1.60944	-0.442676	115.89	228.491
82	1.60944	-0.431644	116.077	227.796
83	1.60944	-0.420664	116.253	227.119
84	1.60944	-0.409735	116.421	226.46
85	1.60944	-0.398855	116.58	225.818
86	1.60944	-0.388022	116.731	225.194
87	1.60944	-0.377233	116.873	224.586
88	1.60944	-0.36649	117.008	223.997
89	1.60944	-0.355788	117.134	223.424
90	1.60944	-0.345126	117.253	222.868
91	1.60944	-0.334503	117.365	222.33
92	1.60944	-0.323919	117.47	221.809
93	1.60944	-0.310738	117.567	221.309
94	1.60944	-0.300232	117.657	220.825
95	1.60944	-0.28976	117.741	220.359
96	1.60944	-0.279319	117.819	219.91
97	1.60944	-0.268908	117.891	219.477
98	1.60944	-0.258527	117.958	219.061
99	1.60944	-0.248174	118.02	218.661
100	1.60944	-0.237847	118.076	218.278
101	1.60944	-0.227545	118.128	217.912
102	1.60944	-0.217267	118.175	217.563
103	1.60944	-0.207012	118.218	217.229
104	1.60944	-0.196779	118.257	216.913
105	1.60944	-0.186567	118.292	216.612
106	1.60944	-0.176374	118.323	216.329
107	1.60944	-0.166199	118.35	216.061
108	1.60944	-0.153505	118.374	215.814
109	1.60944	-0.143367	118.394	215.583
110	1.60944	-0.133244	118.412	215.369
111	1.60944	-0.123135	118.427	215.171

112	1.60944	-0.113039	118.44	214.989
113	1.60944	-0.102953	118.451	214.823
114	1.60944	-0.0928787	118.459	214.674
115	1.60944	-0.0828129	118.466	214.54
116	1.60944	-0.0727562	118.471	214.423
117	1.60944	-0.0627062	118.475	214.322
118	1.60944	-0.0526632	118.478	214.237
119	1.60944	-0.0426257	118.48	214.169
120	1.60944	-0.0325917	118.481	214.116
121	1.60944	-0.0225612	118.482	214.08
122	1.60944	-0.0125328	118.482	214.06
123	1.60944	0	118.482	214.06
124	1.60944	0.0125328	118.482	214.08
125	1.60944	0.0225612	118.482	214.116
126	1.60944	0.0325917	118.483	214.169
127	1.60944	0.0426257	118.485	214.237
128	1.60944	0.0526632	118.488	214.322
129	1.60944	0.0627062	118.492	214.423
130	1.60944	0.0727562	118.497	214.54
131	1.60944	0.0828129	118.504	214.674
132	1.60944	0.0928787	118.513	214.823
133	1.60944	0.102953	118.523	214.989
134	1.60944	0.113039	118.536	215.171
135	1.60944	0.123135	118.551	215.369
136	1.60944	0.133244	118.569	215.583
137	1.60944	0.143367	118.59	215.814
138	1.60944	0.153505	118.613	216.061
139	1.60944	0.166199	118.641	216.329
140	1.60944	0.176374	118.672	216.612
141	1.60944	0.186567	118.707	216.913
142	1.60944	0.196779	118.745	217.229
143	1.60944	0.207012	118.788	217.563
144	1.60944	0.217267	118.835	217.912
145	1.60944	0.227545	118.887	218.278
146	1.60944	0.237847	118.944	218.661
147	1.60944	0.248174	119.005	219.061
148	1.60944	0.258527	119.072	219.477
149	1.60944	0.268908	119.145	219.91
150	1.60944	0.279319	119.223	220.359
151	1.60944	0.28976	119.306	220.825
152	1.60944	0.300232	119.397	221.309
153	1.60944	0.310738	119.493	221.809
154	1.60944	0.323919	119.598	222.33
155	1.60944	0.334503	119.71	222.868
156	1.60944	0.345126	119.829	223.424
157	1.60944	0.355788	119.956	223.997
158	1.60944	0.36649	120.09	224.586
159	1.60944	0.377233	120.232	225.194
160	1.60944	0.388022	120.383	225.818
161	1.60944	0.398855	120.542	226.46
162	1.60944	0.409735	120.71	227.119
163	1.60944	0.420664	120.887	227.796
164	1.60944	0.431644	121.073	228.491
165	1.60944	0.442676	121.269	229.204
166	1.60944	0.453763	121.475	229.934
167	1.60944	0.464904	121.691	230.682
168	1.60944	0.476105	121.918	231.448
169	1.60944	0.487364	122.155	232.233
170	1.60944	0.501527	122.407	233.04
171	1.60944	0.51293	122.67	233.865
172	1.60944	0.524401	122.945	234.709
173	1.60944	0.53594	123.232	235.572

174	1.60944	0.547551		123.532	236.453
175	1.60944	0.559237		123.845	237.353
176	1.60944	0.570999		124.171	238.272
177	1.60944	0.582841		124.51	239.21
178	1.60944	0.594766		124.864	240.168
179	1.60944	0.606775		125.232	241.144
180	1.60944	0.618872		125.615	242.14
181	1.60944	0.631062		126.014	243.156
182	1.60944	0.643345		126.428	244.191
183	1.60944	0.655726		126.858	245.247
184	1.60944	0.668209		127.304	246.322
185	1.60944	0.68396	127.772	247.423	
186	1.60944	0.696684		128.257	248.544
187	1.60944	0.709522		128.761	249.686
188	1.60944	0.722479		129.283	250.849
189	1.60944	0.735557		129.824	252.033
190	1.60944	0.748762		130.384	253.238
191	1.60944	0.7621	130.965	254.464	
192	1.60944	0.775574		131.567	255.713
193	1.60944	0.789191		132.189	256.983
194	1.60944	0.802956		132.834	258.275
195	1.60944	0.816874		133.501	259.59
196	1.60944	0.830953		134.192	260.927
197	1.60944	0.845198		134.906	262.287
198	1.60944	0.859618		135.645	263.671
199	1.60944	0.874218		136.409	265.078
200	1.60944	0.892733		137.206	266.515
201	1.60944	0.907769		138.03	267.976
202	1.60944	0.923014		138.882	269.461
203	1.60944	0.938476		139.763	270.972
204	1.60944	0.954165		140.674	272.507
205	1.60944	0.970094		141.615	274.069
206	1.60944	0.986272		142.587	275.656
207	1.60944	1.00271	143.593	277.27	
208	1.60944	1.01943	144.632	278.91	
209	1.60944	1.03643	145.706	280.579	
210	1.60944	1.05375	146.817	282.275	
211	1.60944	1.07138	147.965	283.999	
212	1.60944	1.08935	149.151	285.752	
213	1.60944	1.10768	150.378	287.535	
214	1.60944	1.12639	151.647	289.348	
215	1.60944	1.1455	152.959	291.191	
216	1.60944	1.17	154.328	293.074	
217	1.60944	1.19012	155.744	294.99	
218	1.60944	1.21073	157.21	296.938	
219	1.60944	1.23187	158.728	298.921	
220	1.60944	1.25357	160.299	300.938	
221	1.60944	1.27588	161.927	302.992	
222	1.60944	1.29884	163.614	305.082	
223	1.60944	1.32251	165.363	307.211	
224	1.60944	1.34694	167.177	309.379	
225	1.60944	1.3722	169.06	311.587	
226	1.60944	1.39838	171.016	313.838	
227	1.60944	1.42554	173.048	316.132	
228	1.60944	1.4538	175.161	318.472	
229	1.60944	1.48328	177.362	320.859	
230	1.60944	1.5141	179.654	323.296	
231	1.60944	1.55477	182.071	325.798	
232	1.60944	1.58927	184.597	328.356	
233	1.60944	1.62576	187.24	330.973	
234	1.60944	1.66456	190.011	333.652	
235	1.60944	1.70604	192.922	336.397	

236	1.60944	1.75069	195.986	339.215
237	1.60944	1.79912	199.223	342.111
238	1.60944	1.85218	202.654	345.092
239	1.60944	1.91103	206.306	348.167
240	1.60944	1.97737	210.216	351.35
241	1.60944	2.05375	214.434	354.655
242	1.60944	2.14441	219.032	358.106
243	1.60944	2.25713	224.127	361.739
244	1.60944	2.40892	229.93	365.616
245	1.60944	2.65209	236.963	369.884

Data Set Standard Deviation = 2.03498
Numerator = 136815
Denominator = 239436
W Statistic = 0.571403 = 136815 / 239436

5% Critical value of 0.976 exceeds 0.571403
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.571403
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 = 92.6531%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 20
Maximum Background Concentration = 1.60944
Confidence Level = 71.4%
False Positive Rate = 28.6%

Location	Date	Samples	Mean	Significant
LMW-3S	7/6/2011	1	-2.30259	FALSE
LMW-14R	7/6/2011	1	-3.35241	FALSE
LMW-10	7/6/2011	1	-3.35241	FALSE
LMW-15R	7/6/2011	1	-2.04022	FALSE
LMW-16	7/6/2011	1	-3.35241	FALSE
LMW-3	7/6/2011	1	-3.35241	FALSE
LMW-6	7/6/2011	1	-2.4651	FALSE
LMW-7	7/6/2011	1	-1.07881	FALSE
LMW-8	7/6/2011	1	-3.35241	FALSE
LMW-9S	7/6/2011	1	-3.35241	FALSE
LMW-9D	7/6/2011	1	-3.35241	FALSE
LMW-9	7/6/2011	1	-3.35241	FALSE
MW-5	11/20/2008	1	1.60944	FALSE
LMW-13	11/20/2008	1	1.60944	FALSE
LMW-12	11/20/2008	1	1.60944	FALSE
LMW-11	11/20/2008	1	1.60944	FALSE

Concentrations (ppb)

Parameter: Cadmium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 227
Percent Non-Detects: 92.6531%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	18 (90%)	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
			7/6/2011	ND<0.2 U	ND<0.2 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-6	20	18 (90%)	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
			7/6/2011	ND<0.2 U	ND<0.2 U

LMW-14R	8	8 (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	
		7/6/2011	ND<0.2 U	ND<0.2 U	
LMW-15R	15	15 (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	
		7/6/2011	ND<0.2 U	ND<0.2 U	
LMW-9	20	20 (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	
		7/6/2011	ND<0.2 U	ND<0.2 U	
LMW-7	18	12 (66.6667%)	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
			7/6/2011	4.9	4.9
LMW-9D	10	10 (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
			7/6/2011	ND<0.2 U	ND<0.2 U
LMW-10	17	16 (94.1176%)	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
			7/6/2011	ND<0.2 U	ND<0.2 U
LMW-9S	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
			6/30/2010	ND<0.2 U	ND<0.2 U
			11/17/2010	ND<0.2 U	ND<0.2 U
			7/6/2011	ND<0.2 U	ND<0.2 U
LMW-3S	10	10 (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
			7/6/2011	ND<0.2 U	ND<0.2 U
LMW-3	22	21 (95.4545%)	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
			7/6/2011	ND<0.2 U	ND<0.2 U	
LMW-16	10	9 (90%)	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
			7/6/2011	ND<0.2 U	ND<0.2 U	
LMW-8	20	19 (95%)	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
			7/6/2011	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-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
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

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 = 245

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	-2.14441	22.5296	-0.214441
5	0.1	-2.05375	26.7475	-0.419815
6	0.1	-1.97737	30.6575	-0.617552
7	0.1	-1.91103	34.3095	-0.808655
8	0.1	-1.85218	37.7401	-0.993873
9	0.1	-1.79912	40.9769	-1.17378
10	0.1	-1.75069	44.0418	-1.34885
11	0.1	-1.70604	46.9524	-1.51946
12	0.1	-1.66456	49.7231	-1.68591
13	0.1	-1.62576	52.3662	-1.84849
14	0.1	-1.58927	54.892	-2.00742
15	0.1	-1.55477	57.3093	-2.16289
16	0.1	-1.5141	59.6018	-2.3143
17	0.1	-1.48328	61.802	-2.46263
18	0.1	-1.4538	63.9155	-2.60801
19	0.1	-1.42554	65.9477	-2.75057
20	0.1	-1.39838	67.9031	-2.89041
21	0.1	-1.3722	69.7861	-3.02763
22	0.1	-1.34694	71.6003	-3.16232
23	0.1	-1.32251	73.3494	-3.29457
24	0.1	-1.29884	75.0363	-3.42445
25	0.1	-1.27588	76.6642	-3.55204
26	0.1	-1.25357	78.2356	-3.6774
27	0.1	-1.23187	79.7531	-3.80058
28	0.1	-1.21073	81.219	-3.92166
29	0.1	-1.19012	82.6353	-4.04067
30	0.1	-1.17	84.0043	-4.15767
31	0.1	-1.1455	85.3164	-4.27222
32	0.1	-1.12639	86.5852	-4.38486
33	0.1	-1.10768	87.8121	-4.49563
34	0.1	-1.08935	88.9988	-4.60456
35	0.1	-1.07138	90.1467	-4.7117
36	0.1	-1.05375	91.2571	-4.81707
37	0.1	-1.03643	92.3312	-4.92072
38	0.1	-1.01943	93.3705	-5.02266
39	0.1	-1.00271	94.3759	-5.12293
40	0.1	-0.986272	95.3486	-5.22156
41	0.1	-0.970094	96.2897	-5.31857
42	0.1	-0.954165	97.2002	-5.41398
43	0.1	-0.938476	98.0809	-5.50783
44	0.1	-0.923014	98.9328	-5.60013
45	0.1	-0.907769	99.7569	-5.69091
46	0.1	-0.892733	100.554	-5.78018
47	0.1	-0.874218	101.318	-5.86761
48	0.1	-0.859618	102.057	-5.95357
49	0.1	-0.845198	102.771	-6.03809

50	0.1	-0.830953	103.462	-6.12118
51	0.1	-0.816874	104.129	-6.20287
52	0.1	-0.802956	104.774	-6.28317
53	0.1	-0.789191	105.397	-6.36208
54	0.1	-0.775574	105.998	-6.43964
55	0.1	-0.7621	106.579	-6.51585
56	0.1	-0.748762	107.14	-6.59073
57	0.1	-0.735557	107.681	-6.66428
58	0.1	-0.722479	108.203	-6.73653
59	0.1	-0.709522	108.706	-6.80748
60	0.1	-0.696684	109.192	-6.87715
61	0.1	-0.68396	109.659	-6.94555
62	0.1	-0.668209	110.106	-7.01237
63	0.1	-0.655726	110.536	-7.07794
64	0.6	-0.643345	110.95	-7.46395
65	1	-0.631062	111.348	-8.09501
66	1	-0.618872	111.731	-8.71388
67	1	-0.606775	112.099	-9.32066
68	1	-0.594766	112.453	-9.91542
69	1.2	-0.582841	112.793	-10.6148
70	2	-0.570999	113.119	-11.7568
71	2	-0.559237	113.431	-12.8753
72	2	-0.547551	113.731	-13.9704
73	2	-0.53594	114.018	-15.0423
74	3	-0.524401	114.293	-16.6155
75	3	-0.51293	114.556	-18.1543
76	3	-0.501527	114.808	-19.6589
77	4	-0.487364	115.046	-21.6083
78	4	-0.476105	115.272	-23.5127
79	4.9	-0.464904	115.488	-25.7908
80	10	-0.453763	115.694	-30.3284
81	10	-0.442676	115.89	-34.7552
82	10	-0.431644	116.077	-39.0716
83	10	-0.420664	116.253	-43.2782
84	10	-0.409735	116.421	-47.3756
85	10	-0.398855	116.58	-51.3641
86	10	-0.388022	116.731	-55.2444
87	10	-0.377233	116.873	-59.0167
88	10	-0.36649	117.008	-62.6816
89	10	-0.355788	117.134	-66.2395
90	10	-0.345126	117.253	-69.6907
91	10	-0.334503	117.365	-73.0358
92	10	-0.323919	117.47	-76.275
93	10	-0.310738	117.567	-79.3823
94	10	-0.300232	117.657	-82.3847
95	10	-0.28976	117.741	-85.2823
96	10	-0.279319	117.819	-88.0755
97	10	-0.268908	117.891	-90.7645
98	10	-0.258527	117.958	-93.3498
99	10	-0.248174	118.02	-95.8315
100	10	-0.237847	118.076	-98.21
101	10	-0.227545	118.128	-100.485
102	10	-0.217267	118.175	-102.658
103	10	-0.207012	118.218	-104.728
104	10	-0.196779	118.257	-106.696
105	10	-0.186567	118.292	-108.562
106	10	-0.176374	118.323	-110.325
107	10	-0.166199	118.35	-111.987
108	10	-0.153505	118.374	-113.522
109	10	-0.143367	118.394	-114.956
110	10	-0.133244	118.412	-116.289
111	10	-0.123135	118.427	-117.52

112	10	-0.113039	118.44	-118.65
113	10	-0.102953	118.451	-119.68
114	10	-0.0928787	118.459	-120.609
115	10	-0.0828129	118.466	-121.437
116	10	-0.0727562	118.471	-122.164
117	10	-0.0627062	118.475	-122.791
118	10	-0.0526632	118.478	-123.318
119	10	-0.0426257	118.48	-123.744
120	10	-0.0325917	118.481	-124.07
121	10	-0.0225612	118.482	-124.296
122	10	-0.0125328	118.482	-124.421
123	10	0	118.482	-124.421
124	10	0.0125328	118.482	-124.296
125	10	0.0225612	118.482	-124.07
126	10	0.0325917	118.483	-123.744
127	10	0.0426257	118.485	-123.318
128	10	0.0526632	118.488	-122.791
129	10	0.0627062	118.492	-122.164
130	10	0.0727562	118.497	-121.437
131	10	0.0828129	118.504	-120.609
132	10	0.0928787	118.513	-119.68
133	10	0.102953	118.523	-118.65
134	10	0.113039	118.536	-117.52
135	10	0.123135	118.551	-116.289
136	10	0.133244	118.569	-114.956
137	10	0.143367	118.59	-113.522
138	10	0.153505	118.613	-111.987
139	10	0.166199	118.641	-110.325
140	10	0.176374	118.672	-108.562
141	10	0.186567	118.707	-106.696
142	10	0.196779	118.745	-104.728
143	10	0.207012	118.788	-102.658
144	10	0.217267	118.835	-100.485
145	10	0.227545	118.887	-98.21
146	10	0.237847	118.944	-95.8315
147	10	0.248174	119.005	-93.3498
148	10	0.258527	119.072	-90.7645
149	10	0.268908	119.145	-88.0755
150	10	0.279319	119.223	-85.2823
151	10	0.28976	119.306	-82.3847
152	10	0.300232	119.397	-79.3823
153	10	0.310738	119.493	-76.275
154	10	0.323919	119.598	-73.0358
155	10	0.334503	119.71	-69.6907
156	10	0.345126	119.829	-66.2395
157	10	0.355788	119.956	-62.6816
158	10	0.36649	120.09	-59.0167
159	10	0.377233	120.232	-55.2444
160	10	0.388022	120.383	-51.3641
161	10	0.398855	120.542	-47.3756
162	10	0.409735	120.71	-43.2782
163	10	0.420664	120.887	-39.0716
164	10	0.431644	121.073	-34.7552
165	10	0.442676	121.269	-30.3284
166	10	0.453763	121.475	-25.7908
167	10	0.464904	121.691	-21.1417
168	10	0.476105	121.918	-16.3807
169	10	0.487364	122.155	-11.507
170	10	0.501527	122.407	-6.49177
171	10	0.51293	122.67	-1.36247
172	10	0.524401	122.945	3.88154
173	10	0.53594	123.232	9.24095

174	10	0.547551		123.532	14.7165
175	10	0.559237		123.845	20.3088
176	10	0.570999		124.171	26.0188
177	10	0.582841		124.51	31.8472
178	10	0.594766		124.864	37.7949
179	10	0.606775		125.232	43.8626
180	10	0.618872		125.615	50.0514
181	10	0.631062		126.014	56.362
182	10	0.643345		126.428	62.7954
183	10	0.655726		126.858	69.3527
184	10	0.668209		127.304	76.0348
185	10	0.68396	127.772	82.8744	
186	10	0.696684		128.257	89.8412
187	10	0.709522		128.761	96.9364
188	10	0.722479		129.283	104.161
189	10	0.735557		129.824	111.517
190	10	0.748762		130.384	119.004
191	10	0.7621	130.965	126.625	
192	10	0.775574		131.567	134.381
193	10	0.789191		132.189	142.273
194	10	0.802956		132.834	150.303
195	10	0.816874		133.501	158.471
196	10	0.830953		134.192	166.781
197	10	0.845198		134.906	175.233
198	10	0.859618		135.645	183.829
199	10	0.874218		136.409	192.571
200	10	0.892733		137.206	201.499
201	10	0.907769		138.03	210.576
202	10	0.923014		138.882	219.806
203	10	0.938476		139.763	229.191
204	10	0.954165		140.674	238.733
205	10	0.970094		141.615	248.434
206	10	0.986272		142.587	258.296
207	10	1.00271	143.593	268.324	
208	10	1.01943	144.632	278.518	
209	10	1.03643	145.706	288.882	
210	10	1.05375	146.817	299.42	
211	10	1.07138	147.965	310.133	
212	10	1.08935	149.151	321.027	
213	10	1.10768	150.378	332.104	
214	10	1.12639	151.647	343.368	
215	10	1.1455	152.959	354.823	
216	10	1.17	154.328	366.523	
217	10	1.19012	155.744	378.424	
218	10	1.21073	157.21	390.531	
219	10	1.23187	158.728	402.85	
220	10	1.25357	160.299	415.385	
221	10	1.27588	161.927	428.144	
222	10	1.29884	163.614	441.133	
223	10	1.32251	165.363	454.358	
224	10	1.34694	167.177	467.827	
225	10	1.3722	169.06	481.549	
226	10	1.39838	171.016	495.533	
227	10	1.42554	173.048	509.788	
228	10	1.4538	175.161	524.326	
229	10	1.48328	177.362	539.159	
230	10	1.5141	179.654	554.3	
231	10	1.55477	182.071	569.848	
232	10	1.58927	184.597	585.741	
233	10	1.62576	187.24	601.998	
234	10	1.66456	190.011	618.644	
235	10	1.70604	192.922	635.704	

236	10	1.75069	195.986	653.211
237	10	1.79912	199.223	671.202
238	10	1.85218	202.654	689.724
239	10	1.91103	206.306	708.834
240	10	1.97737	210.216	728.608
241	10	2.05375	214.434	749.146
242	10	2.14441	219.032	770.59
243	10	2.25713	224.127	793.161
244	31	2.40892	229.93	867.838
245	38	2.65209	236.963	968.617

Data Set Standard Deviation = 5.12164
Numerator = 938219
Denominator = 1.51666e+006
W Statistic = 0.618608 = 938219 / 1.51666e+006

5% Critical value of 0.976 exceeds 0.618608
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.618608
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 = 245

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	-2.14441	22.5296	21.7883
5	-2.30259	-2.05375	26.7475	26.5172
6	-2.30259	-1.97737	30.6575	31.0703
7	-2.30259	-1.91103	34.3095	35.4706
8	-2.30259	-1.85218	37.7401	39.7354
9	-2.30259	-1.79912	40.9769	43.878
10	-2.30259	-1.75069	44.0418	47.9091
11	-2.30259	-1.70604	46.9524	51.8374
12	-2.30259	-1.66456	49.7231	55.6702
13	-2.30259	-1.62576	52.3662	59.4137
14	-2.30259	-1.58927	54.892	63.0731
15	-2.30259	-1.55477	57.3093	66.6531
16	-2.30259	-1.5141	59.6018	70.1395
17	-2.30259	-1.48328	61.802	73.5549
18	-2.30259	-1.4538	63.9155	76.9024
19	-2.30259	-1.42554	65.9477	80.1848
20	-2.30259	-1.39838	67.9031	83.4047
21	-2.30259	-1.3722	69.7861	86.5643
22	-2.30259	-1.34694	71.6003	89.6657
23	-2.30259	-1.32251	73.3494	92.7109
24	-2.30259	-1.29884	75.0363	95.7016
25	-2.30259	-1.27588	76.6642	98.6394
26	-2.30259	-1.25357	78.2356	101.526
27	-2.30259	-1.23187	79.7531	104.362
28	-2.30259	-1.21073	81.219	107.15
29	-2.30259	-1.19012	82.6353	109.89
30	-2.30259	-1.17	84.0043	112.585
31	-2.30259	-1.1455	85.3164	115.222
32	-2.30259	-1.12639	86.5852	117.816
33	-2.30259	-1.10768	87.8121	120.366
34	-2.30259	-1.08935	88.9988	122.875
35	-2.30259	-1.07138	90.1467	125.342
36	-2.30259	-1.05375	91.2571	127.768
37	-2.30259	-1.03643	92.3312	130.154
38	-2.30259	-1.01943	93.3705	132.502
39	-2.30259	-1.00271	94.3759	134.81
40	-2.30259	-0.986272	95.3486	137.081
41	-2.30259	-0.970094	96.2897	139.315
42	-2.30259	-0.954165	97.2002	141.512
43	-2.30259	-0.938476	98.0809	143.673
44	-2.30259	-0.923014	98.9328	145.798
45	-2.30259	-0.907769	99.7569	147.889
46	-2.30259	-0.892733	100.554	149.944
47	-2.30259	-0.874218	101.318	151.957
48	-2.30259	-0.859618	102.057	153.937
49	-2.30259	-0.845198	102.771	155.883

50	-2.30259	-0.830953	103.462	157.796
51	-2.30259	-0.816874	104.129	159.677
52	-2.30259	-0.802956	104.774	161.526
53	-2.30259	-0.789191	105.397	163.343
54	-2.30259	-0.775574	105.998	165.129
55	-2.30259	-0.7621	106.579	166.884
56	-2.30259	-0.748762	107.14	168.608
57	-2.30259	-0.735557	107.681	170.301
58	-2.30259	-0.722479	108.203	171.965
59	-2.30259	-0.709522	108.706	173.599
60	-2.30259	-0.696684	109.192	175.203
61	-0.510826	-0.68396	109.659	175.552
62	0	-0.668209	110.106	175.552
63	0	-0.655726	110.536	175.552
64	0	-0.643345	110.95	175.552
65	0	-0.631062	111.348	175.552
66	0	-0.618872	111.731	175.552
67	0	-0.606775	112.099	175.552
68	0	-0.594766	112.453	175.552
69	0.182322	-0.582841	112.793	175.446
70	0.693147	-0.570999	113.119	175.05
71	0.693147	-0.559237	113.431	174.663
72	0.693147	-0.547551	113.731	174.283
73	0.693147	-0.53594	114.018	173.912
74	1.09861	-0.524401	114.293	173.335
75	1.09861	-0.51293	114.556	172.772
76	1.09861	-0.501527	114.808	172.221
77	1.38629	-0.487364	115.046	171.545
78	1.38629	-0.476105	115.272	170.885
79	1.58924	-0.464904	115.488	170.146
80	2.30259	-0.453763	115.694	169.102
81	2.30259	-0.442676	115.89	168.082
82	2.30259	-0.431644	116.077	167.088
83	2.30259	-0.420664	116.253	166.12
84	2.30259	-0.409735	116.421	165.176
85	2.30259	-0.398855	116.58	164.258
86	2.30259	-0.388022	116.731	163.365
87	2.30259	-0.377233	116.873	162.496
88	2.30259	-0.36649	117.008	161.652
89	2.30259	-0.355788	117.134	160.833
90	2.30259	-0.345126	117.253	160.038
91	2.30259	-0.334503	117.365	159.268
92	2.30259	-0.323919	117.47	158.522
93	2.30259	-0.310738	117.567	157.807
94	2.30259	-0.300232	117.657	157.115
95	2.30259	-0.28976	117.741	156.448
96	2.30259	-0.279319	117.819	155.805
97	2.30259	-0.268908	117.891	155.186
98	2.30259	-0.258527	117.958	154.59
99	2.30259	-0.248174	118.02	154.019
100	2.30259	-0.237847	118.076	153.471
101	2.30259	-0.227545	118.128	152.947
102	2.30259	-0.217267	118.175	152.447
103	2.30259	-0.207012	118.218	151.97
104	2.30259	-0.196779	118.257	151.517
105	2.30259	-0.186567	118.292	151.088
106	2.30259	-0.176374	118.323	150.682
107	2.30259	-0.166199	118.35	150.299
108	2.30259	-0.153505	118.374	149.946
109	2.30259	-0.143367	118.394	149.615
110	2.30259	-0.133244	118.412	149.309
111	2.30259	-0.123135	118.427	149.025

112	2.30259	-0.113039	118.44	148.765
113	2.30259	-0.102953	118.451	148.528
114	2.30259	-0.0928787	118.459	148.314
115	2.30259	-0.0828129	118.466	148.123
116	2.30259	-0.0727562	118.471	147.956
117	2.30259	-0.0627062	118.475	147.811
118	2.30259	-0.0526632	118.478	147.69
119	2.30259	-0.0426257	118.48	147.592
120	2.30259	-0.0325917	118.481	147.517
121	2.30259	-0.0225612	118.482	147.465
122	2.30259	-0.0125328	118.482	147.436
123	2.30259	0	118.482	147.436
124	2.30259	0.0125328	118.482	147.465
125	2.30259	0.0225612	118.482	147.517
126	2.30259	0.0325917	118.483	147.592
127	2.30259	0.0426257	118.485	147.69
128	2.30259	0.0526632	118.488	147.811
129	2.30259	0.0627062	118.492	147.956
130	2.30259	0.0727562	118.497	148.123
131	2.30259	0.0828129	118.504	148.314
132	2.30259	0.0928787	118.513	148.528
133	2.30259	0.102953	118.523	148.765
134	2.30259	0.113039	118.536	149.025
135	2.30259	0.123135	118.551	149.309
136	2.30259	0.133244	118.569	149.615
137	2.30259	0.143367	118.59	149.946
138	2.30259	0.153505	118.613	150.299
139	2.30259	0.166199	118.641	150.682
140	2.30259	0.176374	118.672	151.088
141	2.30259	0.186567	118.707	151.517
142	2.30259	0.196779	118.745	151.97
143	2.30259	0.207012	118.788	152.447
144	2.30259	0.217267	118.835	152.947
145	2.30259	0.227545	118.887	153.471
146	2.30259	0.237847	118.944	154.019
147	2.30259	0.248174	119.005	154.59
148	2.30259	0.258527	119.072	155.186
149	2.30259	0.268908	119.145	155.805
150	2.30259	0.279319	119.223	156.448
151	2.30259	0.28976	119.306	157.115
152	2.30259	0.300232	119.397	157.807
153	2.30259	0.310738	119.493	158.522
154	2.30259	0.323919	119.598	159.268
155	2.30259	0.334503	119.71	160.038
156	2.30259	0.345126	119.829	160.833
157	2.30259	0.355788	119.956	161.652
158	2.30259	0.36649	120.09	162.496
159	2.30259	0.377233	120.232	163.365
160	2.30259	0.388022	120.383	164.258
161	2.30259	0.398855	120.542	165.176
162	2.30259	0.409735	120.71	166.12
163	2.30259	0.420664	120.887	167.088
164	2.30259	0.431644	121.073	168.082
165	2.30259	0.442676	121.269	169.102
166	2.30259	0.453763	121.475	170.146
167	2.30259	0.464904	121.691	171.217
168	2.30259	0.476105	121.918	172.313
169	2.30259	0.487364	122.155	173.435
170	2.30259	0.501527	122.407	174.59
171	2.30259	0.51293	122.67	175.771
172	2.30259	0.524401	122.945	176.979
173	2.30259	0.53594	123.232	178.213

174	2.30259	0.547551		123.532	179.474
175	2.30259	0.559237		123.845	180.761
176	2.30259	0.570999		124.171	182.076
177	2.30259	0.582841		124.51	183.418
178	2.30259	0.594766		124.864	184.788
179	2.30259	0.606775		125.232	186.185
180	2.30259	0.618872		125.615	187.61
181	2.30259	0.631062		126.014	189.063
182	2.30259	0.643345		126.428	190.544
183	2.30259	0.655726		126.858	192.054
184	2.30259	0.668209		127.304	193.593
185	2.30259	0.68396	127.772	195.168	
186	2.30259	0.696684		128.257	196.772
187	2.30259	0.709522		128.761	198.405
188	2.30259	0.722479		129.283	200.069
189	2.30259	0.735557		129.824	201.763
190	2.30259	0.748762		130.384	203.487
191	2.30259	0.7621	130.965	205.242	
192	2.30259	0.775574		131.567	207.027
193	2.30259	0.789191		132.189	208.845
194	2.30259	0.802956		132.834	210.694
195	2.30259	0.816874		133.501	212.574
196	2.30259	0.830953		134.192	214.488
197	2.30259	0.845198		134.906	216.434
198	2.30259	0.859618		135.645	218.413
199	2.30259	0.874218		136.409	220.426
200	2.30259	0.892733		137.206	222.482
201	2.30259	0.907769		138.03	224.572
202	2.30259	0.923014		138.882	226.697
203	2.30259	0.938476		139.763	228.858
204	2.30259	0.954165		140.674	231.055
205	2.30259	0.970094		141.615	233.289
206	2.30259	0.986272		142.587	235.56
207	2.30259	1.00271	143.593	237.869	
208	2.30259	1.01943	144.632	240.216	
209	2.30259	1.03643	145.706	242.603	
210	2.30259	1.05375	146.817	245.029	
211	2.30259	1.07138	147.965	247.496	
212	2.30259	1.08935	149.151	250.004	
213	2.30259	1.10768	150.378	252.555	
214	2.30259	1.12639	151.647	255.148	
215	2.30259	1.1455	152.959	257.786	
216	2.30259	1.17	154.328	260.48	
217	2.30259	1.19012	155.744	263.22	
218	2.30259	1.21073	157.21	266.008	
219	2.30259	1.23187	158.728	268.845	
220	2.30259	1.25357	160.299	271.731	
221	2.30259	1.27588	161.927	274.669	
222	2.30259	1.29884	163.614	277.66	
223	2.30259	1.32251	165.363	280.705	
224	2.30259	1.34694	167.177	283.806	
225	2.30259	1.3722	169.06	286.966	
226	2.30259	1.39838	171.016	290.186	
227	2.30259	1.42554	173.048	293.468	
228	2.30259	1.4538	175.161	296.816	
229	2.30259	1.48328	177.362	300.231	
230	2.30259	1.5141	179.654	303.717	
231	2.30259	1.55477	182.071	307.297	
232	2.30259	1.58927	184.597	310.957	
233	2.30259	1.62576	187.24	314.7	
234	2.30259	1.66456	190.011	318.533	
235	2.30259	1.70604	192.922	322.461	

236	2.30259	1.75069	195.986	326.492
237	2.30259	1.79912	199.223	330.635
238	2.30259	1.85218	202.654	334.9
239	2.30259	1.91103	206.306	339.3
240	2.30259	1.97737	210.216	343.853
241	2.30259	2.05375	214.434	348.582
242	2.30259	2.14441	219.032	353.52
243	2.30259	2.25713	224.127	358.717
244	3.43399	2.40892	229.93	366.989
245	3.63759	2.65209	236.963	376.636

Data Set Standard Deviation = 1.97942
Numerator = 141855
Denominator = 226541
W Statistic = 0.626178 = 141855 / 226541

5% Critical value of 0.976 exceeds 0.626178
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.626178
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 = 92.6531%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 20
Maximum Background Concentration = 2.30259
Confidence Level = 71.4%
False Positive Rate = 28.6%

Location	Date	Samples	Mean	Significant
LMW-6	7/6/2011	1	-2.30259	FALSE
LMW-14R	7/6/2011	1	-2.30259	FALSE
LMW-15R	7/6/2011	1	-2.30259	FALSE
LMW-9	7/6/2011	1	-2.30259	FALSE
LMW-7	7/6/2011	1	1.58924	FALSE
LMW-9D	7/6/2011	1	-2.30259	FALSE
LMW-10	7/6/2011	1	-2.30259	FALSE
LMW-9S	7/6/2011	1	-2.30259	FALSE
LMW-3S	7/6/2011	1	-2.30259	FALSE
LMW-3	7/6/2011	1	-2.30259	FALSE
LMW-16	7/6/2011	1	-2.30259	FALSE
LMW-8	7/6/2011	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
LMW-11	11/20/2008	1	2.30259	FALSE

Concentrations (ppb)

Parameter: Chloroform

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 234
Percent Non-Detects: 95.5102%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	19 (95%)	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
			7/6/2011	ND<0.14 U	ND<0.14 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9S	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
			6/30/2010	ND<0.14 U	ND<0.14 U
			11/17/2010	ND<0.14 U	ND<0.14 U
			7/6/2011	ND<0.14 U	ND<0.14 U
LMW-9D	10	10 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.14 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
			7/6/2011	ND<0.14 U	ND<0.14 U

LMW-9	20	19 (95%)	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
			7/6/2011	ND<0.14 U	ND<0.14 U
LMW-8	20	20 (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
			7/6/2011	ND<0.14 U	ND<0.14 U
LMW-7	18	18 (100%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.14 U	ND<0.14 U
			11/17/2010	ND<0.14 U	ND<0.14 U
			7/6/2011	ND<0.14 U	ND<0.14 U
LMW-6	20	19 (95%)	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	
			7/6/2011	ND<0.14 U	ND<0.14 U	
LMW-3S	10	10 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.14 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	
			7/6/2011	ND<0.14 U	ND<0.14 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<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	
			7/6/2011	0.4 J	0.4 J	
LMW-16	10	10 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<0.14 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	
		7/6/2011	ND<0.14 U	ND<0.14 U	
LMW-15R	15	15 (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	
		7/6/2011	ND<0.14 U	ND<0.14 U	
LMW-14R	8	8 (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	
		7/6/2011	ND<0.14 U	ND<0.14 U	
LMW-10	17	15 (88.2353%)	3/14/2000	ND<1	ND<1
		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	
		7/6/2011	0.14 J	0.14 J	
LMW-13	11	11 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
LMW-12	11	11 (100%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	

			4/1/2005	ND<1	ND<1	
			10/26/2005		ND<1	ND<1
			6/19/2006		ND<1	ND<1
			6/2/2007	ND<1	ND<1	
			11/15/2007		ND<1	ND<1
			5/20/2008		ND<1	ND<1
			11/20/2008		ND<1	ND<1
LMW-11	11	11 (100%)	3/14/2000		ND<1	ND<1
			9/23/2003		ND<1	ND<1
			3/10/2004		ND<1	ND<1
			10/12/2004		ND<1	ND<1
			4/1/2005	ND<1	ND<1	
			10/26/2005		ND<1	ND<1
			6/19/2006		ND<1	ND<1
			6/2/2007	ND<1	ND<1	
			11/15/2007		ND<1	ND<1
			5/20/2008		ND<1	ND<1
			11/20/2008		ND<1	ND<1
MW-5	13	12 (92.3077%)	1/16/1998		8	8
			3/16/1999		ND<1	ND<1
			9/23/1999		ND<1	ND<1
			3/14/2000		ND<1	ND<1
			9/23/2003		ND<1	ND<1
			3/10/2004		ND<1	ND<1
			10/12/2004		ND<1	ND<1
			4/1/2005	ND<1	ND<1	
			10/26/2005		ND<1	ND<1
			6/19/2006		ND<1	ND<1
			11/15/2007		ND<1	ND<1
			5/20/2008		ND<1	ND<1
			11/20/2008		ND<1	ND<1

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Chloroform

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 245

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	-2.14441	22.5296	-0.308108
5	0.07	-2.05375	26.7475	-0.45187
6	0.07	-1.97737	30.6575	-0.590286
7	0.07	-1.91103	34.3095	-0.724058
8	0.07	-1.85218	37.7401	-0.85371
9	0.07	-1.79912	40.9769	-0.979648
10	0.07	-1.75069	44.0418	-1.1022
11	0.07	-1.70604	46.9524	-1.22162
12	0.07	-1.66456	49.7231	-1.33814
13	0.07	-1.62576	52.3662	-1.45194
14	0.07	-1.58927	54.892	-1.56319
15	0.07	-1.55477	57.3093	-1.67203
16	0.07	-1.5141	59.6018	-1.77801
17	0.07	-1.48328	61.802	-1.88184
18	0.07	-1.4538	63.9155	-1.98361
19	0.07	-1.42554	65.9477	-2.0834
20	0.07	-1.39838	67.9031	-2.18128
21	0.07	-1.3722	69.7861	-2.27734
22	0.07	-1.34694	71.6003	-2.37162
23	0.07	-1.32251	73.3494	-2.4642
24	0.07	-1.29884	75.0363	-2.55512
25	0.07	-1.27588	76.6642	-2.64443
26	0.07	-1.25357	78.2356	-2.73218
27	0.07	-1.23187	79.7531	-2.81841
28	0.07	-1.21073	81.219	-2.90316
29	0.07	-1.19012	82.6353	-2.98647
30	0.07	-1.17	84.0043	-3.06837
31	0.07	-1.1455	85.3164	-3.14855
32	0.07	-1.12639	86.5852	-3.2274
33	0.07	-1.10768	87.8121	-3.30494
34	0.07	-1.08935	88.9988	-3.38119
35	0.07	-1.07138	90.1467	-3.45619
36	0.07	-1.05375	91.2571	-3.52995
37	0.07	-1.03643	92.3312	-3.6025
38	0.07	-1.01943	93.3705	-3.67386
39	0.07	-1.00271	94.3759	-3.74405
40	0.07	-0.986272	95.3486	-3.81309
41	0.07	-0.970094	96.2897	-3.881
42	0.07	-0.954165	97.2002	-3.94779
43	0.07	-0.938476	98.0809	-4.01348
44	0.07	-0.923014	98.9328	-4.07809
45	0.07	-0.907769	99.7569	-4.14164
46	0.07	-0.892733	100.554	-4.20413
47	0.07	-0.874218	101.318	-4.26532
48	0.07	-0.859618	102.057	-4.3255
49	0.07	-0.845198	102.771	-4.38466

50	0.07	-0.830953	103.462	-4.44283
51	0.07	-0.816874	104.129	-4.50001
52	0.07	-0.802956	104.774	-4.55621
53	0.07	-0.789191	105.397	-4.61146
54	0.07	-0.775574	105.998	-4.66575
55	0.07	-0.7621	106.579	-4.7191
56	0.07	-0.748762	107.14	-4.77151
57	0.07	-0.735557	107.681	-4.823
58	0.07	-0.722479	108.203	-4.87357
59	0.14	-0.709522	108.706	-4.9729
60	0.2	-0.696684	109.192	-5.11224
61	0.31	-0.68396	109.659	-5.32427
62	0.33	-0.668209	110.106	-5.54478
63	0.4	-0.655726	110.536	-5.80707
64	0.42	-0.643345	110.95	-6.07727
65	0.5	-0.631062	111.348	-6.3928
66	0.5	-0.618872	111.731	-6.70224
67	0.5	-0.606775	112.099	-7.00563
68	0.5	-0.594766	112.453	-7.30301
69	0.5	-0.582841	112.793	-7.59443
70	0.5	-0.570999	113.119	-7.87993
71	0.5	-0.559237	113.431	-8.15955
72	0.5	-0.547551	113.731	-8.43332
73	0.5	-0.53594	114.018	-8.70129
74	0.5	-0.524401	114.293	-8.9635
75	0.5	-0.51293	114.556	-9.21996
76	0.5	-0.501527	114.808	-9.47072
77	0.5	-0.487364	115.046	-9.71441
78	0.5	-0.476105	115.272	-9.95246
79	0.5	-0.464904	115.488	-10.1849
80	0.5	-0.453763	115.694	-10.4118
81	0.5	-0.442676	115.89	-10.6331
82	0.5	-0.431644	116.077	-10.849
83	0.5	-0.420664	116.253	-11.0593
84	0.5	-0.409735	116.421	-11.2642
85	0.5	-0.398855	116.58	-11.4636
86	0.5	-0.388022	116.731	-11.6576
87	0.5	-0.377233	116.873	-11.8462
88	0.5	-0.36649	117.008	-12.0295
89	0.5	-0.355788	117.134	-12.2073
90	0.5	-0.345126	117.253	-12.3799
91	0.5	-0.334503	117.365	-12.5472
92	0.5	-0.323919	117.47	-12.7091
93	0.5	-0.310738	117.567	-12.8645
94	0.5	-0.300232	117.657	-13.0146
95	0.5	-0.28976	117.741	-13.1595
96	0.5	-0.279319	117.819	-13.2991
97	0.5	-0.268908	117.891	-13.4336
98	0.5	-0.258527	117.958	-13.5629
99	0.5	-0.248174	118.02	-13.6869
100	0.5	-0.237847	118.076	-13.8059
101	0.5	-0.227545	118.128	-13.9196
102	0.5	-0.217267	118.175	-14.0283
103	0.5	-0.207012	118.218	-14.1318
104	0.5	-0.196779	118.257	-14.2302
105	0.5	-0.186567	118.292	-14.3235
106	0.5	-0.176374	118.323	-14.4116
107	0.5	-0.166199	118.35	-14.4947
108	0.5	-0.153505	118.374	-14.5715
109	0.5	-0.143367	118.394	-14.6432
110	0.5	-0.133244	118.412	-14.7098
111	0.5	-0.123135	118.427	-14.7714

112	0.5	-0.113039	118.44	-14.8279
113	0.5	-0.102953	118.451	-14.8794
114	0.5	-0.0928787	118.459	-14.9258
115	0.5	-0.0828129	118.466	-14.9672
116	0.5	-0.0727562	118.471	-15.0036
117	0.5	-0.0627062	118.475	-15.0349
118	0.5	-0.0526632	118.478	-15.0613
119	0.5	-0.0426257	118.48	-15.0826
120	0.5	-0.0325917	118.481	-15.0989
121	0.5	-0.0225612	118.482	-15.1102
122	0.5	-0.0125328	118.482	-15.1164
123	0.5	0	118.482	-15.1164
124	0.5	0.0125328	118.482	-15.1102
125	0.5	0.0225612	118.482	-15.0989
126	0.5	0.0325917	118.483	-15.0826
127	0.5	0.0426257	118.485	-15.0613
128	0.5	0.0526632	118.488	-15.0349
129	0.5	0.0627062	118.492	-15.0036
130	0.5	0.0727562	118.497	-14.9672
131	0.5	0.0828129	118.504	-14.9258
132	0.5	0.0928787	118.513	-14.8794
133	0.5	0.102953	118.523	-14.8279
134	0.5	0.113039	118.536	-14.7714
135	0.5	0.123135	118.551	-14.7098
136	0.5	0.133244	118.569	-14.6432
137	0.5	0.143367	118.59	-14.5715
138	0.5	0.153505	118.613	-14.4947
139	0.5	0.166199	118.641	-14.4116
140	0.5	0.176374	118.672	-14.3235
141	0.5	0.186567	118.707	-14.2302
142	0.5	0.196779	118.745	-14.1318
143	0.5	0.207012	118.788	-14.0283
144	0.5	0.217267	118.835	-13.9196
145	0.5	0.227545	118.887	-13.8059
146	0.5	0.237847	118.944	-13.6869
147	0.5	0.248174	119.005	-13.5629
148	0.5	0.258527	119.072	-13.4336
149	0.5	0.268908	119.145	-13.2991
150	0.5	0.279319	119.223	-13.1595
151	0.5	0.28976	119.306	-13.0146
152	0.5	0.300232	119.397	-12.8645
153	0.5	0.310738	119.493	-12.7091
154	0.5	0.323919	119.598	-12.5472
155	0.5	0.334503	119.71	-12.3799
156	0.5	0.345126	119.829	-12.2073
157	0.5	0.355788	119.956	-12.0295
158	0.5	0.36649	120.09	-11.8462
159	0.5	0.377233	120.232	-11.6576
160	0.5	0.388022	120.383	-11.4636
161	0.5	0.398855	120.542	-11.2642
162	0.5	0.409735	120.71	-11.0593
163	0.5	0.420664	120.887	-10.849
164	0.5	0.431644	121.073	-10.6331
165	0.5	0.442676	121.269	-10.4118
166	0.5	0.453763	121.475	-10.1849
167	0.5	0.464904	121.691	-9.95246
168	0.5	0.476105	121.918	-9.71441
169	0.5	0.487364	122.155	-9.47072
170	0.5	0.501527	122.407	-9.21996
171	0.5	0.51293	122.67	-8.9635
172	0.5	0.524401	122.945	-8.70129
173	0.5	0.53594	123.232	-8.43332

174	0.5	0.547551		123.532	-8.15955
175	0.5	0.559237		123.845	-7.87993
176	0.5	0.570999		124.171	-7.59443
177	0.5	0.582841		124.51	-7.30301
178	0.5	0.594766		124.864	-7.00563
179	0.5	0.606775		125.232	-6.70224
180	0.5	0.618872		125.615	-6.3928
181	0.5	0.631062		126.014	-6.07727
182	0.5	0.643345		126.428	-5.7556
183	0.5	0.655726		126.858	-5.42774
184	0.5	0.668209		127.304	-5.09363
185	0.5	0.68396	127.772	-4.75165	
186	0.5	0.696684		128.257	-4.40331
187	0.5	0.709522		128.761	-4.04855
188	0.5	0.722479		129.283	-3.68731
189	0.5	0.735557		129.824	-3.31953
190	0.5	0.748762		130.384	-2.94515
191	0.5	0.7621	130.965	-2.5641	
192	0.5	0.775574		131.567	-2.17631
193	0.5	0.789191		132.189	-1.78172
194	0.5	0.802956		132.834	-1.38024
195	0.5	0.816874		133.501	-0.971803
196	0.5	0.830953		134.192	-0.556327
197	0.5	0.845198		134.906	-0.133728
198	0.5	0.859618		135.645	0.296081
199	0.5	0.874218		136.409	0.73319
200	0.5	0.892733		137.206	1.17956
201	0.5	0.907769		138.03	1.63344
202	0.5	0.923014		138.882	2.09495
203	0.5	0.938476		139.763	2.56419
204	0.5	0.954165		140.674	3.04127
205	0.5	0.970094		141.615	3.52632
206	0.5	0.986272		142.587	4.01945
207	0.5	1.00271	143.593	4.52081	
208	0.5	1.01943	144.632	5.03052	
209	0.5	1.03643	145.706	5.54874	
210	0.5	1.05375	146.817	6.07561	
211	0.5	1.07138	147.965	6.6113	
212	0.5	1.08935	149.151	7.15597	
213	0.5	1.10768	150.378	7.70981	
214	0.5	1.12639	151.647	8.27301	
215	0.5	1.1455	152.959	8.84576	
216	0.5	1.17	154.328	9.43076	
217	0.5	1.19012	155.744	10.0258	
218	0.5	1.21073	157.21	10.6312	
219	0.5	1.23187	158.728	11.2471	
220	0.5	1.25357	160.299	11.8739	
221	0.5	1.27588	161.927	12.5118	
222	0.5	1.29884	163.614	13.1613	
223	0.5	1.32251	165.363	13.8225	
224	0.5	1.34694	167.177	14.496	
225	0.5	1.3722	169.06	15.1821	
226	0.5	1.39838	171.016	15.8813	
227	0.5	1.42554	173.048	16.594	
228	0.5	1.4538	175.161	17.3209	
229	0.5	1.48328	177.362	18.0626	
230	0.5	1.5141	179.654	18.8196	
231	0.5	1.55477	182.071	19.597	
232	0.5	1.58927	184.597	20.3917	
233	0.5	1.62576	187.24	21.2045	
234	0.5	1.66456	190.011	22.0368	
235	0.5	1.70604	192.922	22.8898	

236	0.5	1.75069	195.986	23.7652
237	0.5	1.79912	199.223	24.6647
238	0.5	1.85218	202.654	25.5908
239	0.5	1.91103	206.306	26.5463
240	0.5	1.97737	210.216	27.535
241	0.5	2.05375	214.434	28.5619
242	3	2.14441	219.032	34.9951
243	6	2.25713	224.127	48.5379
244	8	2.40892	229.93	67.8093
245	78	2.65209	236.963	274.672

Data Set Standard Deviation = 4.99671
Numerator = 75444.7
Denominator = 1.44358e+006
W Statistic = 0.0522623 = 75444.7 / 1.44358e+006

5% Critical value of 0.976 exceeds 0.0522623
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.0522623
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 = 245

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	-2.14441	22.5296	25.1634
5	-2.65926	-2.05375	26.7475	30.6248
6	-2.65926	-1.97737	30.6575	35.8832
7	-2.65926	-1.91103	34.3095	40.9651
8	-2.65926	-1.85218	37.7401	45.8905
9	-2.65926	-1.79912	40.9769	50.6748
10	-2.65926	-1.75069	44.0418	55.3304
11	-2.65926	-1.70604	46.9524	59.8672
12	-2.65926	-1.66456	49.7231	64.2937
13	-2.65926	-1.62576	52.3662	68.617
14	-2.65926	-1.58927	54.892	72.8433
15	-2.65926	-1.55477	57.3093	76.9778
16	-2.65926	-1.5141	59.6018	81.0042
17	-2.65926	-1.48328	61.802	84.9486
18	-2.65926	-1.4538	63.9155	88.8147
19	-2.65926	-1.42554	65.9477	92.6056
20	-2.65926	-1.39838	67.9031	96.3242
21	-2.65926	-1.3722	69.7861	99.9733
22	-2.65926	-1.34694	71.6003	103.555
23	-2.65926	-1.32251	73.3494	107.072
24	-2.65926	-1.29884	75.0363	110.526
25	-2.65926	-1.27588	76.6642	113.919
26	-2.65926	-1.25357	78.2356	117.252
27	-2.65926	-1.23187	79.7531	120.528
28	-2.65926	-1.21073	81.219	123.748
29	-2.65926	-1.19012	82.6353	126.913
30	-2.65926	-1.17	84.0043	130.024
31	-2.65926	-1.1455	85.3164	133.07
32	-2.65926	-1.12639	86.5852	136.066
33	-2.65926	-1.10768	87.8121	139.011
34	-2.65926	-1.08935	88.9988	141.908
35	-2.65926	-1.07138	90.1467	144.757
36	-2.65926	-1.05375	91.2571	147.559
37	-2.65926	-1.03643	92.3312	150.316
38	-2.65926	-1.01943	93.3705	153.026
39	-2.65926	-1.00271	94.3759	155.693
40	-2.65926	-0.986272	95.3486	158.316
41	-2.65926	-0.970094	96.2897	160.895
42	-2.65926	-0.954165	97.2002	163.433
43	-2.65926	-0.938476	98.0809	165.928
44	-2.65926	-0.923014	98.9328	168.383
45	-2.65926	-0.907769	99.7569	170.797
46	-2.65926	-0.892733	100.554	173.171
47	-2.65926	-0.874218	101.318	175.496
48	-2.65926	-0.859618	102.057	177.782
49	-2.65926	-0.845198	102.771	180.029

50	-2.65926	-0.830953	103.462	182.239	
51	-2.65926	-0.816874	104.129	184.411	
52	-2.65926	-0.802956	104.774	186.547	
53	-2.65926	-0.789191	105.397	188.645	
54	-2.65926	-0.775574	105.998	190.708	
55	-2.65926	-0.7621	106.579	192.734	
56	-2.65926	-0.748762	107.14	194.725	
57	-1.96611	-0.735557	107.681	196.172	
58	-1.60944	-0.722479	108.203	197.334	
59	-1.17118	-0.709522	108.706	198.165	
60	-1.10866	-0.696684	109.192	198.938	
61	-0.916291	-0.68396	109.659	199.564	
62	-0.867501	-0.668209	110.106	200.144	
63	-0.693147	-0.655726	110.536	200.599	
64	-0.693147	-0.643345	110.95	201.045	
65	-0.693147	-0.631062	111.348	201.482	
66	-0.693147	-0.618872	111.731	201.911	
67	-0.693147	-0.606775	112.099	202.332	
68	-0.693147	-0.594766	112.453	202.744	
69	-0.693147	-0.582841	112.793	203.148	
70	-0.693147	-0.570999	113.119	203.544	
71	-0.693147	-0.559237	113.431	203.931	
72	-0.693147	-0.547551	113.731	204.311	
73	-0.693147	-0.53594	114.018	204.682	
74	-0.693147	-0.524401	114.293	205.046	
75	-0.693147	-0.51293	114.556	205.401	
76	-0.693147	-0.501527	114.808	205.749	
77	-0.693147	-0.487364	115.046	206.087	
78	-0.693147	-0.476105	115.272	206.417	
79	-0.693147	-0.464904	115.488	206.739	
80	-0.693147	-0.453763	115.694	207.054	
81	-0.693147	-0.442676	115.89	207.36	
82	-0.693147	-0.431644	116.077	207.66	
83	-0.693147	-0.420664	116.253	207.951	
84	-0.693147	-0.409735	116.421	208.235	
85	-0.693147	-0.398855	116.58	208.512	
86	-0.693147	-0.388022	116.731	208.781	
87	-0.693147	-0.377233	116.873	209.042	
88	-0.693147	-0.36649	117.008	209.296	
89	-0.693147	-0.355788	117.134	209.543	
90	-0.693147	-0.345126	117.253	209.782	
91	-0.693147	-0.334503	117.365	210.014	
92	-0.693147	-0.323919	117.47	210.238	
93	-0.693147	-0.310738	117.567	210.454	
94	-0.693147	-0.300232	117.657	210.662	
95	-0.693147	-0.28976	117.741	210.863	
96	-0.693147	-0.279319	117.819	211.056	
97	-0.693147	-0.268908	117.891	211.243	
98	-0.693147	-0.258527	117.958	211.422	
99	-0.693147	-0.248174	118.02	211.594	
100	-0.693147	-0.237847	118.076	211.759	
101	-0.693147	-0.227545	118.128	211.916	
102	-0.693147	-0.217267	118.175	212.067	
103	-0.693147	-0.207012	118.218	212.211	
104	-0.693147	-0.196779	118.257	212.347	
105	-0.693147	-0.186567	118.292	212.476	
106	-0.693147	-0.176374	118.323	212.598	
107	-0.693147	-0.166199	118.35	212.714	
108	-0.693147	-0.153505	118.374	212.82	
109	-0.693147	-0.143367	118.394	212.919	
110	-0.693147	-0.133244	118.412	213.012	
111	-0.693147	-0.123135	118.427	213.097	

112	-0.693147	-0.113039	118.44	213.176
113	-0.693147	-0.102953	118.451	213.247
114	-0.693147	-0.0928787	118.459	213.311
115	-0.693147	-0.0828129	118.466	213.369
116	-0.693147	-0.0727562	118.471	213.419
117	-0.693147	-0.0627062	118.475	213.463
118	-0.693147	-0.0526632	118.478	213.499
119	-0.693147	-0.0426257	118.48	213.529
120	-0.693147	-0.0325917	118.481	213.551
121	-0.693147	-0.0225612	118.482	213.567
122	-0.693147	-0.0125328	118.482	213.576
123	-0.693147	0	118.482	213.576
124	-0.693147	0.0125328	118.482	213.567
125	-0.693147	0.0225612	118.482	213.551
126	-0.693147	0.0325917	118.483	213.529
127	-0.693147	0.0426257	118.485	213.499
128	-0.693147	0.0526632	118.488	213.463
129	-0.693147	0.0627062	118.492	213.419
130	-0.693147	0.0727562	118.497	213.369
131	-0.693147	0.0828129	118.504	213.311
132	-0.693147	0.0928787	118.513	213.247
133	-0.693147	0.102953	118.523	213.176
134	-0.693147	0.113039	118.536	213.097
135	-0.693147	0.123135	118.551	213.012
136	-0.693147	0.133244	118.569	212.919
137	-0.693147	0.143367	118.59	212.82
138	-0.693147	0.153505	118.613	212.714
139	-0.693147	0.166199	118.641	212.598
140	-0.693147	0.176374	118.672	212.476
141	-0.693147	0.186567	118.707	212.347
142	-0.693147	0.196779	118.745	212.211
143	-0.693147	0.207012	118.788	212.067
144	-0.693147	0.217267	118.835	211.916
145	-0.693147	0.227545	118.887	211.759
146	-0.693147	0.237847	118.944	211.594
147	-0.693147	0.248174	119.005	211.422
148	-0.693147	0.258527	119.072	211.243
149	-0.693147	0.268908	119.145	211.056
150	-0.693147	0.279319	119.223	210.863
151	-0.693147	0.28976	119.306	210.662
152	-0.693147	0.300232	119.397	210.454
153	-0.693147	0.310738	119.493	210.238
154	-0.693147	0.323919	119.598	210.014
155	-0.693147	0.334503	119.71	209.782
156	-0.693147	0.345126	119.829	209.543
157	-0.693147	0.355788	119.956	209.296
158	-0.693147	0.36649	120.09	209.042
159	-0.693147	0.377233	120.232	208.781
160	-0.693147	0.388022	120.383	208.512
161	-0.693147	0.398855	120.542	208.235
162	-0.693147	0.409735	120.71	207.951
163	-0.693147	0.420664	120.887	207.66
164	-0.693147	0.431644	121.073	207.36
165	-0.693147	0.442676	121.269	207.054
166	-0.693147	0.453763	121.475	206.739
167	-0.693147	0.464904	121.691	206.417
168	-0.693147	0.476105	121.918	206.087
169	-0.693147	0.487364	122.155	205.749
170	-0.693147	0.501527	122.407	205.401
171	-0.693147	0.51293	122.67	205.046
172	-0.693147	0.524401	122.945	204.682
173	-0.693147	0.53594	123.232	204.311

174	-0.693147	0.547551		123.532	203.931
175	-0.693147	0.559237		123.845	203.544
176	-0.693147	0.570999		124.171	203.148
177	-0.693147	0.582841		124.51	202.744
178	-0.693147	0.594766		124.864	202.332
179	-0.693147	0.606775		125.232	201.911
180	-0.693147	0.618872		125.615	201.482
181	-0.693147	0.631062		126.014	201.045
182	-0.693147	0.643345		126.428	200.599
183	-0.693147	0.655726		126.858	200.144
184	-0.693147	0.668209		127.304	199.681
185	-0.693147	0.68396	127.772	199.207	
186	-0.693147	0.696684		128.257	198.724
187	-0.693147	0.709522		128.761	198.232
188	-0.693147	0.722479		129.283	197.731
189	-0.693147	0.735557		129.824	197.222
190	-0.693147	0.748762		130.384	196.703
191	-0.693147	0.7621	130.965	196.174	
192	-0.693147	0.775574		131.567	195.637
193	-0.693147	0.789191		132.189	195.09
194	-0.693147	0.802956		132.834	194.533
195	-0.693147	0.816874		133.501	193.967
196	-0.693147	0.830953		134.192	193.391
197	-0.693147	0.845198		134.906	192.805
198	-0.693147	0.859618		135.645	192.209
199	-0.693147	0.874218		136.409	191.603
200	-0.693147	0.892733		137.206	190.984
201	-0.693147	0.907769		138.03	190.355
202	-0.693147	0.923014		138.882	189.715
203	-0.693147	0.938476		139.763	189.065
204	-0.693147	0.954165		140.674	188.404
205	-0.693147	0.970094		141.615	187.731
206	-0.693147	0.986272		142.587	187.048
207	-0.693147	1.00271	143.593	186.353	
208	-0.693147	1.01943	144.632	185.646	
209	-0.693147	1.03643	145.706	184.928	
210	-0.693147	1.05375	146.817	184.197	
211	-0.693147	1.07138	147.965	183.455	
212	-0.693147	1.08935	149.151	182.699	
213	-0.693147	1.10768	150.378	181.932	
214	-0.693147	1.12639	151.647	181.151	
215	-0.693147	1.1455	152.959	180.357	
216	-0.693147	1.17	154.328	179.546	
217	-0.693147	1.19012	155.744	178.721	
218	-0.693147	1.21073	157.21	177.882	
219	-0.693147	1.23187	158.728	177.028	
220	-0.693147	1.25357	160.299	176.159	
221	-0.693147	1.27588	161.927	175.275	
222	-0.693147	1.29884	163.614	174.374	
223	-0.693147	1.32251	165.363	173.458	
224	-0.693147	1.34694	167.177	172.524	
225	-0.693147	1.3722	169.06	171.573	
226	-0.693147	1.39838	171.016	170.604	
227	-0.693147	1.42554	173.048	169.615	
228	-0.693147	1.4538	175.161	168.608	
229	-0.693147	1.48328	177.362	167.58	
230	-0.693147	1.5141	179.654	166.53	
231	-0.693147	1.55477	182.071	165.452	
232	-0.693147	1.58927	184.597	164.351	
233	-0.693147	1.62576	187.24	163.224	
234	-0.693147	1.66456	190.011	162.07	
235	-0.693147	1.70604	192.922	160.888	

236	-0.693147		1.75069	195.986	159.674
237	-0.693147		1.79912	199.223	158.427
238	-0.693147		1.85218	202.654	157.143
239	-0.693147		1.91103	206.306	155.819
240	0	1.97737	210.216	155.819	
241	0	2.05375	214.434	155.819	
242	1.09861	2.14441	219.032	158.175	
243	1.79176	2.25713	224.127	162.219	
244	2.07944	2.40892	229.93	167.228	
245	4.35671	2.65209	236.963	178.782	

Data Set Standard Deviation = 0.953968
Numerator = 31963.1
Denominator = 52618.6
W Statistic = 0.60745 = 31963.1 / 52618.6

5% Critical value of 0.976 exceeds 0.60745
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.60745
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 = 95.5102%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 20
Maximum Background Concentration = 4.35671
Confidence Level = 71.4%
False Positive Rate = 28.6%

Location	Date	Samples	Mean	Significant
LMW-9S	7/6/2011	1	-2.65926	FALSE
LMW-9D	7/6/2011	1	-2.65926	FALSE
LMW-9	7/6/2011	1	-2.65926	FALSE
LMW-8	7/6/2011	1	-2.65926	FALSE
LMW-7	7/6/2011	1	-2.65926	FALSE
LMW-6	7/6/2011	1	-2.65926	FALSE
LMW-3S	7/6/2011	1	-2.65926	FALSE
LMW-3	7/6/2011	1	-0.916291	FALSE
LMW-16	7/6/2011	1	-2.65926	FALSE
LMW-15R	7/6/2011	1	-2.65926	FALSE
LMW-14R	7/6/2011	1	-2.65926	FALSE
LMW-10	7/6/2011	1	-1.96611	FALSE
LMW-13	11/20/2008	1	-0.693147	FALSE
LMW-12	11/20/2008	1	-0.693147	FALSE
LMW-11	11/20/2008	1	-0.693147	FALSE
MW-5	11/20/2008	1	-0.693147	FALSE

Concentrations (ppb)

Parameter: Chromium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 145
Percent Non-Detects: 59.1837%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	10 (50%)	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
			7/6/2011	1.7	1.7

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-10	17	9 (52.9412%)	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
			7/6/2011	0.61 J	0.61 J
LMW-9D	10	3 (30%)	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	
			7/6/2011	3.1	3.1	
LMW-9	20	9 (45%)	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	
			7/6/2011	0.56 J	0.56 J	
LMW-8	20	12 (60%)	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	
			7/6/2011	0.18 J	0.18 J	
LMW-7	18	7 (38.8889%)	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	
			7/6/2011	12	12	
LMW-6	20	11 (55%)	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	
			7/6/2011	0.18 J	0.18 J	
LMW-3S	10	4 (40%)	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	
			7/6/2011	3.3	3.3	
LMW-3	22	18 (81.8182%)	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	
			7/6/2011	ND<0.16 U	ND<0.16 U	

LMW-16	10	5 (50%)	11/18/2006	ND<20	ND<20	
			6/2/2007	20	20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	0.83 J	0.83 J	
			11/16/2009	0.53 J B	0.53 J B	
			6/30/2010	0.56 J	0.56 J	
			11/17/2010	ND<0.16 U		ND<0.16 U
			7/6/2011	0.7 J	0.7 J	
LMW-15R	15	8 (53.3333%)	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	0.53 J B	0.53 J B	
			11/16/2009	0.16 J B	0.16 J B	
			6/30/2010	0.51 J	0.51 J	
			11/17/2010	0.24 J	0.24 J	
			7/6/2011	0.2 J	0.2 J	
LMW-14R	8	4 (50%)	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	
			7/6/2011	1.2	1.2	
LMW-9S	9	5 (55.5556%)	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	
			7/6/2011	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-12	11	10 (90.9091%)	3/14/2000	93	93
		9/23/2003	ND<20	ND<20	
		3/10/2004	ND<20	ND<20	
		10/12/2004	ND<20	ND<20	
		4/1/2005	ND<20	ND<20	
		10/26/2005	ND<20	ND<20	
		6/19/2006	ND<20	ND<20	
		6/2/2007	ND<20	ND<20	
		11/15/2007	ND<20	ND<20	
		5/20/2008	ND<20	ND<20	
		11/20/2008	ND<20	ND<20	
LMW-11	11	9 (81.8182%)	3/14/2000	20	20
		9/23/2003	ND<20	ND<20	
		3/10/2004	40	40	
		10/12/2004	ND<20	ND<20	
		4/1/2005	ND<20	ND<20	
		10/26/2005	ND<20	ND<20	
		6/19/2006	ND<20	ND<20	
		6/2/2007	ND<20	ND<20	
		11/15/2007	ND<20	ND<20	
		5/20/2008	ND<20	ND<20	
		11/20/2008	ND<20	ND<20	

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 = 245

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	0.08	-2.25713	17.9311	-0.585451
4	0.08	-2.14441	22.5296	-0.757004
5	0.16	-2.05375	26.7475	-1.0856
6	0.16	-1.97737	30.6575	-1.40198
7	0.18	-1.91103	34.3095	-1.74597
8	0.18	-1.85218	37.7401	-2.07936
9	0.2	-1.79912	40.9769	-2.43918
10	0.24	-1.75069	44.0418	-2.85935
11	0.24	-1.70604	46.9524	-3.2688
12	0.25	-1.66456	49.7231	-3.68494
13	0.26	-1.62576	52.3662	-4.10764
14	0.28	-1.58927	54.892	-4.55263
15	0.3	-1.55477	57.3093	-5.01906
16	0.32	-1.5141	59.6018	-5.50358
17	0.35	-1.48328	61.802	-6.02273
18	0.36	-1.4538	63.9155	-6.5461
19	0.36	-1.42554	65.9477	-7.05929
20	0.37	-1.39838	67.9031	-7.57669
21	0.44	-1.3722	69.7861	-8.18046
22	0.44	-1.34694	71.6003	-8.77311
23	0.48	-1.32251	73.3494	-9.40792
24	0.49	-1.29884	75.0363	-10.0443
25	0.5	-1.27588	76.6642	-10.6823
26	0.51	-1.25357	78.2356	-11.3216
27	0.53	-1.23187	79.7531	-11.9745
28	0.53	-1.21073	81.219	-12.6162
29	0.54	-1.19012	82.6353	-13.2588
30	0.56	-1.17	84.0043	-13.914
31	0.56	-1.1455	85.3164	-14.5555
32	0.57	-1.12639	86.5852	-15.1976
33	0.58	-1.10768	87.8121	-15.84
34	0.58	-1.08935	88.9988	-16.4718
35	0.6	-1.07138	90.1467	-17.1147
36	0.61	-1.05375	91.2571	-17.7575
37	0.62	-1.03643	92.3312	-18.4
38	0.69	-1.01943	93.3705	-19.1034
39	0.7	-1.00271	94.3759	-19.8053
40	0.72	-0.986272	95.3486	-20.5155
41	0.76	-0.970094	96.2897	-21.2527
42	0.83	-0.954165	97.2002	-22.0447
43	0.84	-0.938476	98.0809	-22.833
44	0.94	-0.923014	98.9328	-23.7006
45	1	-0.907769	99.7569	-24.6084
46	1	-0.892733	100.554	-25.5011
47	1	-0.874218	101.318	-26.3754
48	1	-0.859618	102.057	-27.235
49	1.1	-0.845198	102.771	-28.1647

50	1.1	-0.830953	103.462	-29.0787
51	1.2	-0.816874	104.129	-30.059
52	1.2	-0.802956	104.774	-31.0225
53	1.6	-0.789191	105.397	-32.2852
54	1.7	-0.775574	105.998	-33.6037
55	1.7	-0.7621	106.579	-34.8993
56	2	-0.748762	107.14	-36.3968
57	2.1	-0.735557	107.681	-37.9415
58	3	-0.722479	108.203	-40.1089
59	3.1	-0.709522	108.706	-42.3084
60	3.3	-0.696684	109.192	-44.6075
61	4	-0.68396	109.659	-47.3433
62	4.1	-0.668209	110.106	-50.083
63	4.4	-0.655726	110.536	-52.9682
64	5	-0.643345	110.95	-56.1849
65	5	-0.631062	111.348	-59.3402
66	5	-0.618872	111.731	-62.4346
67	5.5	-0.606775	112.099	-65.7719
68	5.8	-0.594766	112.453	-69.2215
69	6	-0.582841	112.793	-72.7185
70	6	-0.570999	113.119	-76.1445
71	6	-0.559237	113.431	-79.5
72	7	-0.547551	113.731	-83.3328
73	7	-0.53594	114.018	-87.0844
74	7	-0.524401	114.293	-90.7552
75	10	-0.51293	114.556	-95.8845
76	10	-0.501527	114.808	-100.9
77	10	-0.487364	115.046	-105.773
78	10	-0.476105	115.272	-110.534
79	10	-0.464904	115.488	-115.184
80	10	-0.453763	115.694	-119.721
81	10	-0.442676	115.89	-124.148
82	10	-0.431644	116.077	-128.464
83	10	-0.420664	116.253	-132.671
84	10	-0.409735	116.421	-136.768
85	10	-0.398855	116.58	-140.757
86	10	-0.388022	116.731	-144.637
87	10	-0.377233	116.873	-148.409
88	10	-0.36649	117.008	-152.074
89	10	-0.355788	117.134	-155.632
90	10	-0.345126	117.253	-159.083
91	10	-0.334503	117.365	-162.429
92	10	-0.323919	117.47	-165.668
93	10	-0.310738	117.567	-168.775
94	10	-0.300232	117.657	-171.777
95	10	-0.28976	117.741	-174.675
96	10	-0.279319	117.819	-177.468
97	10	-0.268908	117.891	-180.157
98	10	-0.258527	117.958	-182.743
99	10	-0.248174	118.02	-185.224
100	10	-0.237847	118.076	-187.603
101	10	-0.227545	118.128	-189.878
102	10	-0.217267	118.175	-192.051
103	10	-0.207012	118.218	-194.121
104	10	-0.196779	118.257	-196.089
105	10	-0.186567	118.292	-197.954
106	10	-0.176374	118.323	-199.718
107	10	-0.166199	118.35	-201.38
108	10	-0.153505	118.374	-202.915
109	10	-0.143367	118.394	-204.349
110	10	-0.133244	118.412	-205.681
111	10	-0.123135	118.427	-206.913

112	10	-0.113039	118.44	-208.043
113	10	-0.102953	118.451	-209.073
114	10	-0.0928787	118.459	-210.001
115	10	-0.0828129	118.466	-210.83
116	10	-0.0727562	118.471	-211.557
117	10	-0.0627062	118.475	-212.184
118	10	-0.0526632	118.478	-212.711
119	10	-0.0426257	118.48	-213.137
120	10	-0.0325917	118.481	-213.463
121	10	-0.0225612	118.482	-213.689
122	10	-0.0125328	118.482	-213.814
123	10	0	118.482	-213.814
124	10	0.0125328	118.482	-213.689
125	10	0.0225612	118.482	-213.463
126	10	0.0325917	118.483	-213.137
127	10	0.0426257	118.485	-212.711
128	10	0.0526632	118.488	-212.184
129	10	0.0627062	118.492	-211.557
130	10	0.0727562	118.497	-210.83
131	10	0.0828129	118.504	-210.001
132	10	0.0928787	118.513	-209.073
133	10	0.102953	118.523	-208.043
134	10	0.113039	118.536	-206.913
135	10	0.123135	118.551	-205.681
136	10	0.133244	118.569	-204.349
137	10	0.143367	118.59	-202.915
138	10	0.153505	118.613	-201.38
139	10	0.166199	118.641	-199.718
140	10	0.176374	118.672	-197.954
141	10	0.186567	118.707	-196.089
142	10	0.196779	118.745	-194.121
143	10	0.207012	118.788	-192.051
144	10	0.217267	118.835	-189.878
145	10	0.227545	118.887	-187.603
146	10	0.237847	118.944	-185.224
147	10	0.248174	119.005	-182.743
148	10	0.258527	119.072	-180.157
149	10	0.268908	119.145	-177.468
150	10	0.279319	119.223	-174.675
151	10	0.28976	119.306	-171.777
152	10	0.300232	119.397	-168.775
153	10	0.310738	119.493	-165.668
154	10	0.323919	119.598	-162.429
155	10	0.334503	119.71	-159.083
156	10	0.345126	119.829	-155.632
157	10	0.355788	119.956	-152.074
158	10	0.36649	120.09	-148.409
159	10	0.377233	120.232	-144.637
160	10	0.388022	120.383	-140.757
161	10	0.398855	120.542	-136.768
162	10	0.409735	120.71	-132.671
163	10	0.420664	120.887	-128.464
164	10	0.431644	121.073	-124.148
165	10	0.442676	121.269	-119.721
166	10	0.453763	121.475	-115.184
167	10	0.464904	121.691	-110.534
168	10	0.476105	121.918	-105.773
169	10	0.487364	122.155	-100.9
170	10	0.501527	122.407	-95.8845
171	10	0.51293	122.67	-90.7552
172	10	0.524401	122.945	-85.5112
173	10	0.53594	123.232	-80.1518

174	10	0.547551		123.532	-74.6763
175	10	0.559237		123.845	-69.0839
176	10	0.570999		124.171	-63.3739
177	10	0.582841		124.51	-57.5455
178	10	0.594766		124.864	-51.5979
179	10	0.606775		125.232	-45.5301
180	10	0.618872		125.615	-39.3414
181	10	0.631062		126.014	-33.0308
182	10	0.643345		126.428	-26.5973
183	10	0.655726		126.858	-20.04
184	10	0.668209		127.304	-13.358
185	10	0.68396	127.772	-6.51835	
186	10	0.696684		128.257	0.448492
187	10	0.709522		128.761	7.54371
188	10	0.722479		129.283	14.7685
189	10	0.735557		129.824	22.1241
190	10	0.748762		130.384	29.6117
191	10	0.7621	130.965	37.2327	
192	10	0.775574		131.567	44.9884
193	10	0.789191		132.189	52.8803
194	10	0.802956		132.834	60.9099
195	10	0.816874		133.501	69.0786
196	10	0.830953		134.192	77.3882
197	10	0.845198		134.906	85.8402
198	10	0.859618		135.645	94.4363
199	10	0.874218		136.409	103.179
200	10	0.892733		137.206	112.106
201	10	0.907769		138.03	121.184
202	10	0.923014		138.882	130.414
203	10	0.938476		139.763	139.798
204	10	0.954165		140.674	149.34
205	10	0.970094		141.615	159.041
206	10	0.986272		142.587	168.904
207	10	1.00271	143.593	178.931	
208	10	1.01943	144.632	189.125	
209	10	1.03643	145.706	199.489	
210	10	1.05375	146.817	210.027	
211	10	1.07138	147.965	220.741	
212	10	1.08935	149.151	231.634	
213	10	1.10768	150.378	242.711	
214	10	1.12639	151.647	253.975	
215	10	1.1455	152.959	265.43	
216	10	1.17	154.328	277.13	
217	10	1.19012	155.744	289.031	
218	10	1.21073	157.21	301.138	
219	11	1.23187	158.728	314.689	
220	12	1.25357	160.299	329.732	
221	13	1.27588	161.927	346.318	
222	13	1.29884	163.614	363.203	
223	17	1.32251	165.363	385.686	
224	19	1.34694	167.177	411.277	
225	19	1.3722	169.06	437.349	
226	20	1.39838	171.016	465.317	
227	20	1.42554	173.048	493.828	
228	21	1.4538	175.161	524.358	
229	21	1.48328	177.362	555.506	
230	22	1.5141	179.654	588.817	
231	23	1.55477	182.071	624.577	
232	23	1.58927	184.597	661.13	
233	24	1.62576	187.24	700.148	
234	27	1.66456	190.011	745.091	
235	28	1.70604	192.922	792.86	

236	34	1.75069	195.986	852.384
237	34	1.79912	199.223	913.554
238	36	1.85218	202.654	980.232
239	40	1.91103	206.306	1056.67
240	79	1.97737	210.216	1212.89
241	84	2.05375	214.434	1385.4
242	87	2.14441	219.032	1571.96
243	93	2.25713	224.127	1781.88
244	120	2.40892	229.93	2070.95
245	345	2.65209	236.963	2985.92

Data Set Standard Deviation = 25.3545
Numerator = 8.9157e+006
Denominator = 3.71692e+007
W Statistic = 0.239868 = 8.9157e+006 / 3.71692e+007

5% Critical value of 0.976 exceeds 0.239868
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.239868
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 = 245

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	-2.52573	-2.25713	17.9311	18.4836
4	-2.52573	-2.14441	22.5296	23.8998
5	-1.83258	-2.05375	26.7475	27.6635
6	-1.83258	-1.97737	30.6575	31.2872
7	-1.7148	-1.91103	34.3095	34.5642
8	-1.7148	-1.85218	37.7401	37.7403
9	-1.60944	-1.79912	40.9769	40.6359
10	-1.42712	-1.75069	44.0418	43.1343
11	-1.42712	-1.70604	46.9524	45.569
12	-1.38629	-1.66456	49.7231	47.8766
13	-1.34707	-1.62576	52.3662	50.0666
14	-1.27297	-1.58927	54.892	52.0897
15	-1.20397	-1.55477	57.3093	53.9616
16	-1.13943	-1.5141	59.6018	55.6868
17	-1.04982	-1.48328	61.802	57.244
18	-1.02165	-1.4538	63.9155	58.7293
19	-1.02165	-1.42554	65.9477	60.1857
20	-0.994252	-1.39838	67.9031	61.5761
21	-0.820981	-1.3722	69.7861	62.7026
22	-0.820981	-1.34694	71.6003	63.8084
23	-0.733969	-1.32251	73.3494	64.7791
24	-0.71335	-1.29884	75.0363	65.7056
25	-0.693147	-1.27588	76.6642	66.59
26	-0.673345	-1.25357	78.2356	67.4341
27	-0.634878	-1.23187	79.7531	68.2162
28	-0.634878	-1.21073	81.219	68.9848
29	-0.616186	-1.19012	82.6353	69.7182
30	-0.579818	-1.17	84.0043	70.3965
31	-0.579818	-1.1455	85.3164	71.0607
32	-0.562119	-1.12639	86.5852	71.6939
33	-0.544727	-1.10768	87.8121	72.2973
34	-0.544727	-1.08935	88.9988	72.8907
35	-0.510826	-1.07138	90.1467	73.438
36	-0.494296	-1.05375	91.2571	73.9588
37	-0.478036	-1.03643	92.3312	74.4543
38	-0.371064	-1.01943	93.3705	74.8326
39	-0.356675	-1.00271	94.3759	75.1902
40	-0.328504	-0.986272	95.3486	75.5142
41	-0.274437	-0.970094	96.2897	75.7804
42	-0.18633	-0.954165	97.2002	75.9582
43	-0.174353	-0.938476	98.0809	76.1218
44	-0.0618754	-0.923014	98.9328	76.1789
45	0	-0.907769	99.7569	76.1789
46	0	-0.892733	100.554	76.1789
47	0	-0.874218	101.318	76.1789
48	0	-0.859618	102.057	76.1789
49	0.0953102	-0.845198	102.771	76.0984

50	0.0953102	-0.830953	103.462	76.0192
51	0.182322	-0.816874	104.129	75.8703
52	0.182322	-0.802956	104.774	75.7239
53	0.470004	-0.789191	105.397	75.3529
54	0.530628	-0.775574	105.998	74.9414
55	0.530628	-0.7621	106.579	74.537
56	0.693147	-0.748762	107.14	74.018
57	0.741937	-0.735557	107.681	73.4723
58	1.09861	-0.722479	108.203	72.6785
59	1.1314	-0.709522	108.706	71.8758
60	1.19392	-0.696684	109.192	71.044
61	1.38629	-0.68396	109.659	70.0958
62	1.41099	-0.668209	110.106	69.153
63	1.4816	-0.655726	110.536	68.1815
64	1.60944	-0.643345	110.95	67.146
65	1.60944	-0.631062	111.348	66.1304
66	1.60944	-0.618872	111.731	65.1344
67	1.70475	-0.606775	112.099	64.1
68	1.75786	-0.594766	112.453	63.0544
69	1.79176	-0.582841	112.793	62.0101
70	1.79176	-0.570999	113.119	60.987
71	1.79176	-0.559237	113.431	59.985
72	1.94591	-0.547551	113.731	58.9195
73	1.94591	-0.53594	114.018	57.8766
74	1.94591	-0.524401	114.293	56.8562
75	2.30259	-0.51293	114.556	55.6751
76	2.30259	-0.501527	114.808	54.5203
77	2.30259	-0.487364	115.046	53.3981
78	2.30259	-0.476105	115.272	52.3019
79	2.30259	-0.464904	115.488	51.2314
80	2.30259	-0.453763	115.694	50.1866
81	2.30259	-0.442676	115.89	49.1673
82	2.30259	-0.431644	116.077	48.1734
83	2.30259	-0.420664	116.253	47.2047
84	2.30259	-0.409735	116.421	46.2613
85	2.30259	-0.398855	116.58	45.3429
86	2.30259	-0.388022	116.731	44.4494
87	2.30259	-0.377233	116.873	43.5808
88	2.30259	-0.36649	117.008	42.737
89	2.30259	-0.355788	117.134	41.9177
90	2.30259	-0.345126	117.253	41.123
91	2.30259	-0.334503	117.365	40.3528
92	2.30259	-0.323919	117.47	39.607
93	2.30259	-0.310738	117.567	38.8915
94	2.30259	-0.300232	117.657	38.2002
95	2.30259	-0.28976	117.741	37.533
96	2.30259	-0.279319	117.819	36.8898
97	2.30259	-0.268908	117.891	36.2706
98	2.30259	-0.258527	117.958	35.6753
99	2.30259	-0.248174	118.02	35.1039
100	2.30259	-0.237847	118.076	34.5562
101	2.30259	-0.227545	118.128	34.0323
102	2.30259	-0.217267	118.175	33.532
103	2.30259	-0.207012	118.218	33.0554
104	2.30259	-0.196779	118.257	32.6023
105	2.30259	-0.186567	118.292	32.1727
106	2.30259	-0.176374	118.323	31.7665
107	2.30259	-0.166199	118.35	31.3839
108	2.30259	-0.153505	118.374	31.0304
109	2.30259	-0.143367	118.394	30.7003
110	2.30259	-0.133244	118.412	30.3935
111	2.30259	-0.123135	118.427	30.11

112	2.30259	-0.113039	118.44	29.8497
113	2.30259	-0.102953	118.451	29.6126
114	2.30259	-0.0928787	118.459	29.3988
115	2.30259	-0.0828129	118.466	29.2081
116	2.30259	-0.0727562	118.471	29.0405
117	2.30259	-0.0627062	118.475	28.8962
118	2.30259	-0.0526632	118.478	28.7749
119	2.30259	-0.0426257	118.48	28.6767
120	2.30259	-0.0325917	118.481	28.6017
121	2.30259	-0.0225612	118.482	28.5498
122	2.30259	-0.0125328	118.482	28.5209
123	2.30259	0	118.482	28.5209
124	2.30259	0.0125328	118.482	28.5498
125	2.30259	0.0225612	118.482	28.6017
126	2.30259	0.0325917	118.483	28.6767
127	2.30259	0.0426257	118.485	28.7749
128	2.30259	0.0526632	118.488	28.8962
129	2.30259	0.0627062	118.492	29.0405
130	2.30259	0.0727562	118.497	29.2081
131	2.30259	0.0828129	118.504	29.3988
132	2.30259	0.0928787	118.513	29.6126
133	2.30259	0.102953	118.523	29.8497
134	2.30259	0.113039	118.536	30.11
135	2.30259	0.123135	118.551	30.3935
136	2.30259	0.133244	118.569	30.7003
137	2.30259	0.143367	118.59	31.0304
138	2.30259	0.153505	118.613	31.3839
139	2.30259	0.166199	118.641	31.7665
140	2.30259	0.176374	118.672	32.1727
141	2.30259	0.186567	118.707	32.6023
142	2.30259	0.196779	118.745	33.0554
143	2.30259	0.207012	118.788	33.532
144	2.30259	0.217267	118.835	34.0323
145	2.30259	0.227545	118.887	34.5562
146	2.30259	0.237847	118.944	35.1039
147	2.30259	0.248174	119.005	35.6753
148	2.30259	0.258527	119.072	36.2706
149	2.30259	0.268908	119.145	36.8898
150	2.30259	0.279319	119.223	37.533
151	2.30259	0.28976	119.306	38.2002
152	2.30259	0.300232	119.397	38.8915
153	2.30259	0.310738	119.493	39.607
154	2.30259	0.323919	119.598	40.3528
155	2.30259	0.334503	119.71	41.123
156	2.30259	0.345126	119.829	41.9177
157	2.30259	0.355788	119.956	42.737
158	2.30259	0.36649	120.09	43.5808
159	2.30259	0.377233	120.232	44.4494
160	2.30259	0.388022	120.383	45.3429
161	2.30259	0.398855	120.542	46.2613
162	2.30259	0.409735	120.71	47.2047
163	2.30259	0.420664	120.887	48.1734
164	2.30259	0.431644	121.073	49.1673
165	2.30259	0.442676	121.269	50.1866
166	2.30259	0.453763	121.475	51.2314
167	2.30259	0.464904	121.691	52.3019
168	2.30259	0.476105	121.918	53.3981
169	2.30259	0.487364	122.155	54.5203
170	2.30259	0.501527	122.407	55.6751
171	2.30259	0.51293	122.67	56.8562
172	2.30259	0.524401	122.945	58.0637
173	2.30259	0.53594	123.232	59.2977

174	2.30259	0.547551		123.532	60.5585
175	2.30259	0.559237		123.845	61.8462
176	2.30259	0.570999		124.171	63.161
177	2.30259	0.582841		124.51	64.503
178	2.30259	0.594766		124.864	65.8725
179	2.30259	0.606775		125.232	67.2697
180	2.30259	0.618872		125.615	68.6947
181	2.30259	0.631062		126.014	70.1477
182	2.30259	0.643345		126.428	71.6291
183	2.30259	0.655726		126.858	73.139
184	2.30259	0.668209		127.304	74.6776
185	2.30259	0.68396	127.772	76.2525	
186	2.30259	0.696684		128.257	77.8566
187	2.30259	0.709522		128.761	79.4904
188	2.30259	0.722479		129.283	81.1539
189	2.30259	0.735557		129.824	82.8476
190	2.30259	0.748762		130.384	84.5717
191	2.30259	0.7621	130.965	86.3265	
192	2.30259	0.775574		131.567	88.1123
193	2.30259	0.789191		132.189	89.9295
194	2.30259	0.802956		132.834	91.7784
195	2.30259	0.816874		133.501	93.6593
196	2.30259	0.830953		134.192	95.5726
197	2.30259	0.845198		134.906	97.5188
198	2.30259	0.859618		135.645	99.4981
199	2.30259	0.874218		136.409	101.511
200	2.30259	0.892733		137.206	103.567
201	2.30259	0.907769		138.03	105.657
202	2.30259	0.923014		138.882	107.782
203	2.30259	0.938476		139.763	109.943
204	2.30259	0.954165		140.674	112.14
205	2.30259	0.970094		141.615	114.374
206	2.30259	0.986272		142.587	116.645
207	2.30259	1.00271	143.593	118.954	
208	2.30259	1.01943	144.632	121.301	
209	2.30259	1.03643	145.706	123.688	
210	2.30259	1.05375	146.817	126.114	
211	2.30259	1.07138	147.965	128.581	
212	2.30259	1.08935	149.151	131.089	
213	2.30259	1.10768	150.378	133.64	
214	2.30259	1.12639	151.647	136.233	
215	2.30259	1.1455	152.959	138.871	
216	2.30259	1.17	154.328	141.565	
217	2.30259	1.19012	155.744	144.305	
218	2.30259	1.21073	157.21	147.093	
219	2.3979	1.23187	158.728	150.047	
220	2.48491	1.25357	160.299	153.162	
221	2.56495	1.27588	161.927	156.434	
222	2.56495	1.29884	163.614	159.766	
223	2.83321	1.32251	165.363	163.513	
224	2.94444	1.34694	167.177	167.479	
225	2.94444	1.3722	169.06	171.519	
226	2.99573	1.39838	171.016	175.708	
227	2.99573	1.42554	173.048	179.979	
228	3.04452	1.4538	175.161	184.405	
229	3.04452	1.48328	177.362	188.921	
230	3.09104	1.5141	179.654	193.601	
231	3.13549	1.55477	182.071	198.476	
232	3.13549	1.58927	184.597	203.459	
233	3.17805	1.62576	187.24	208.626	
234	3.29584	1.66456	190.011	214.112	
235	3.3322	1.70604	192.922	219.797	

236	3.52636	1.75069	195.986	225.971
237	3.52636	1.79912	199.223	232.315
238	3.58352	1.85218	202.654	238.952
239	3.68888	1.91103	206.306	246.002
240	4.36945	1.97737	210.216	254.642
241	4.43082	2.05375	214.434	263.742
242	4.46591	2.14441	219.032	273.318
243	4.5326	2.25713	224.127	283.549
244	4.78749	2.40892	229.93	295.082
245	5.84354	2.65209	236.963	310.579

Data Set Standard Deviation = 1.46323
Numerator = 96459.5
Denominator = 123792
W Statistic = 0.779203 = 96459.5 / 123792

5% Critical value of 0.976 exceeds 0.779203
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.779203
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	245
	3/16/1999	ND<2.30259	73
	9/23/1999	ND<2.30259	73
	3/14/2000	4.46591	242
	9/23/2003	ND<2.30259	73
	3/10/2004	4.78749	244
	10/12/2004	ND<2.30259	73
	4/1/2005	2.30259 J	216
	10/26/2005	ND<2.30259	73
	6/19/2006	ND<2.30259	73
	11/18/2006	ND<2.30259	73
	6/2/2007	3.04452	228
	11/15/2007	ND<2.30259	73
	5/20/2008	ND<2.30259	73
	11/20/2008	ND<2.30259	73
	6/11/2009	-0.174353 J	184
	11/16/2009	0 B	186
	6/30/2010	-0.328504 J	181
	11/17/2010	0	187
	7/6/2011	0.530628	195

Rank Sum = 2838
Rank Mean = 141.9

Background Rank Sum = 2838
Background Rank Mean = 141.9

Compliance Wells

Well ID	Date	Result	Rank
LMW-10	3/14/2000	3.3322	235
	9/23/2003	ND<2.30259	73
	3/10/2004	3.58352	238
	10/12/2004	ND<2.30259	73
	4/1/2005	ND<2.30259	73
	10/26/2005	ND<2.30259	73
	6/19/2006	ND<2.30259	73
	11/18/2006	ND<2.30259	73
	6/2/2007	0.693147	197
	11/15/2007	ND<2.30259	73
	5/20/2008	ND<2.30259	73
	11/20/2008	ND<2.30259	73
	6/11/2009	-1.02165 J	159
	11/16/2009	-1.34707 J	154
	6/30/2010	-1.02165 J	160
	11/17/2010	-1.20397 J	156
	7/6/2011	-0.494296 J	177

Rank Sum = 2133

Rank Mean = 125.471

LMW-9D	11/18/2006	1.79176 J	210
	6/2/2007	ND<2.30259	73
	11/15/2007	ND<2.30259	73
	5/20/2008	1.09861 J	199
	11/20/2008	ND<2.30259	73
	6/11/2009	0	188
	11/16/2009	0.0953102	190
	6/30/2010	-0.693147 J	166
	11/17/2010	-0.544727 J	174
	7/6/2011	1.1314	200

Rank Sum = 1546
Rank Mean = 154.6

LMW-9	1/16/1998	3.13549	231
	3/16/1999	ND<2.30259	73
	9/23/1999	3.09104	230
	3/14/2000	2.83321 J	223
	9/23/2003	ND<2.30259	73
	3/10/2004	2.94444 J	224
	10/12/2004	ND<2.30259	73
	4/1/2005	ND<2.30259	73
	10/26/2005	ND<2.30259	73
	6/19/2006	2.30259 J	217
	11/18/2006	ND<2.30259	73
	6/2/2007	1.94591	213
	11/15/2007	ND<2.30259	73
	5/20/2008	ND<2.30259	73
	11/20/2008	ND<2.30259	73
	6/11/2009	0.182322	192
	11/16/2009	-0.478036 J	178
	6/30/2010	-0.820981 J	162
	11/17/2010	0.741937	198
	7/6/2011	-0.579818 J	171

Rank Sum = 2896
Rank Mean = 144.8

LMW-8	1/16/1998	ND<2.30259	73
	3/16/1999	1.79176 J	211
	9/23/1999	2.56495 J	221
	3/14/2000	3.04452	229
	9/23/2003	ND<2.30259	73
	3/10/2004	ND<2.30259	73
	10/12/2004	ND<2.30259	73
	4/1/2005	ND<2.30259	73
	10/26/2005	ND<2.30259	73
	6/19/2006	ND<2.30259	73
	11/18/2006	ND<2.30259	73
	6/2/2007	ND<2.30259	73
	11/15/2007	ND<2.30259	73
	5/20/2008	ND<2.30259	73
	11/20/2008	ND<2.30259	73
	6/11/2009	-1.27297 J	155
	11/16/2009	-0.371064 J	179
	6/30/2010	-1.04982 J	158
	11/17/2010	-1.83258 J	146
	7/6/2011	-1.7148 J	148

Rank Sum = 2323
Rank Mean = 116.15

LMW-7	1/16/1998	2.30259 J	218

	3/16/1999	ND<2.30259	73
	9/23/1999	1.60944 J	205
	3/14/2000	3.52636	236
	9/23/2003	ND<2.30259	73
	3/10/2004	ND<2.30259	73
	10/12/2004	ND<2.30259	73
	4/1/2005	2.94444 J	225
	10/26/2005	3.13549	232
	6/19/2006	ND<2.30259	73
	11/18/2006	1.60944 J	206
	6/2/2007	3.17805	233
	11/15/2007	ND<2.30259	73
	5/20/2008	1.94591 J	214
	11/20/2008	ND<2.30259	73
	6/11/2009	1.75786	209
	11/17/2010	-1.38629 J	153
	7/6/2011	2.48491	220

Rank Sum = 2862
Rank Mean = 159

LMW-6	1/16/1998	2.56495 J	222
	3/16/1999	ND<2.30259	73
	9/23/1999	1.79176 J	212
	3/14/2000	3.52636	237
	9/23/2003	ND<2.30259	73
	3/10/2004	ND<2.30259	73
	10/12/2004	ND<2.30259	73
	4/1/2005	ND<2.30259	73
	10/26/2005	ND<2.30259	73
	6/19/2006	ND<2.30259	73
	11/18/2006	ND<2.30259	73
	6/2/2007	1.38629 J	202
	11/15/2007	ND<2.30259	73
	5/20/2008	1.94591 J	215
	11/20/2008	ND<2.30259	73
	6/11/2009	-0.733969 J	164
	11/16/2009	ND<-2.52573 U	73
	6/30/2010	-0.562119 J	173
	11/17/2010	-1.42712 J	151
	7/6/2011	-1.7148 J	149

Rank Sum = 2528
Rank Mean = 126.4

LMW-3S	11/18/2006	ND<2.30259	73
	6/2/2007	2.3979	219
	11/15/2007	ND<2.30259	73
	5/20/2008	ND<2.30259	73
	11/20/2008	ND<2.30259	73
	6/11/2009	0.530628	196
	11/16/2009	-0.616186 J	170
	6/30/2010	-0.994252 J	161
	11/17/2010	1.41099	203
	7/6/2011	1.19392	201

Rank Sum = 1442
Rank Mean = 144.2

LMW-3	11/19/1996	ND<2.30259	73
	3/24/1997	ND<2.30259	73
	1/16/1998	ND<2.30259	73
	3/16/1999	ND<2.30259	73
	9/23/1999	ND<2.30259	73
	3/14/2000	ND<2.30259	73

	9/23/2003	ND<2.30259	73
	3/10/2004	ND<2.30259	73
	10/12/2004	ND<2.30259	73
	4/1/2005	ND<2.30259	73
	10/26/2005	ND<2.30259	73
	6/19/2006	ND<2.30259	73
	11/18/2006	ND<2.30259	73
	6/2/2007	ND<2.30259	73
	11/15/2007	ND<2.30259	73
	5/20/2008	ND<2.30259	73
	11/20/2008	ND<2.30259	73
	6/11/2009	-1.13943 J	157
	11/16/2009	0.0953102 B	191
	6/30/2010	-0.274437 J	182
	11/17/2010	-0.0618754 J	185
	7/6/2011	ND<-2.52573 U	73

Rank Sum = 2029
Rank Mean = 92.2273

LMW-16	11/18/2006	ND<2.30259	73
	6/2/2007	2.99573	226
	11/15/2007	ND<2.30259	73
	5/20/2008	ND<2.30259	73
	11/20/2008	ND<2.30259	73
	6/11/2009	-0.18633 J	183
	11/16/2009	-0.634878 J B	168
	6/30/2010	-0.579818 J	172
	11/17/2010	ND<-2.52573 U	73
	7/6/2011	-0.356675 J	180

Rank Sum = 1294
Rank Mean = 129.4

LMW-15R	11/18/2006	ND<2.30259	73
	6/2/2007	ND<2.30259	73
	11/15/2007	ND<2.30259	73
	11/15/2007	ND<2.30259	73
	5/20/2008	ND<2.30259	73
	5/20/2008	ND<2.30259	73
	11/20/2008	ND<2.30259	73
	11/20/2008	ND<2.30259	73
	6/11/2009	1.70475	208
	11/16/2009	-0.820981 J B	163
	11/16/2009	-0.634878 J B	169
	11/16/2009	-1.83258 J B	147
	6/30/2010	-0.673345 J	167
	11/17/2010	-1.42712 J	152
	7/6/2011	-1.60944 J	150

Rank Sum = 1740
Rank Mean = 116

LMW-14R	6/2/2007	ND<2.30259	73
	11/15/2007	ND<2.30259	73
	5/20/2008	ND<2.30259	73
	11/20/2008	ND<2.30259	73
	6/11/2009	0.470004	194
	6/30/2010	-0.71335 J	165
	11/17/2010	-0.510826 J	176
	7/6/2011	0.182322	193

Rank Sum = 1020
Rank Mean = 127.5

LMW-9S	11/18/2006	ND<2.30259	73

	6/2/2007	1.60944	207
	11/15/2007	ND<2.30259	73
	5/20/2008	ND<2.30259	73
	11/20/2008	ND<2.30259	73
	6/11/2009	0	189
	6/30/2010	-0.544727 J	175
	11/17/2010	1.4816	204
	7/6/2011	ND<-2.52573 U	73

Rank Sum = 1140
Rank Mean = 126.667

LMW-13	3/14/2000	3.29584	234
	9/23/2003	ND<2.30259	73
	3/10/2004	ND<2.30259	73
	10/12/2004	ND<2.30259	73
	4/1/2005	ND<2.30259	73
	10/26/2005	ND<2.30259	73
	6/19/2006	ND<2.30259	73
	6/2/2007	ND<2.30259	73
	11/15/2007	ND<2.30259	73
	5/20/2008	ND<2.30259	73
	11/20/2008	ND<2.30259	73

Rank Sum = 964
Rank Mean = 87.6364

MW-5	1/16/1998	ND<2.30259	73
	3/16/1999	ND<2.30259	73
	9/23/1999	ND<2.30259	73
	3/14/2000	4.36945	240
	9/23/2003	ND<2.30259	73
	3/10/2004	4.43082	241
	10/12/2004	ND<2.30259	73
	4/1/2005	ND<2.30259	73
	10/26/2005	ND<2.30259	73
	6/19/2006	ND<2.30259	73
	11/15/2007	ND<2.30259	73
	5/20/2008	ND<2.30259	73
	11/20/2008	ND<2.30259	73

Rank Sum = 1284
Rank Mean = 98.7692

LMW-12	3/14/2000	4.5326	243
	9/23/2003	ND<2.30259	73
	3/10/2004	ND<2.30259	73
	10/12/2004	ND<2.30259	73
	4/1/2005	ND<2.30259	73
	10/26/2005	ND<2.30259	73
	6/19/2006	ND<2.30259	73
	6/2/2007	ND<2.30259	73
	11/15/2007	ND<2.30259	73
	5/20/2008	ND<2.30259	73
	11/20/2008	ND<2.30259	73

Rank Sum = 973
Rank Mean = 88.4545

LMW-11	3/14/2000	2.99573	227
	9/23/2003	ND<2.30259	73
	3/10/2004	3.68888	239
	10/12/2004	ND<2.30259	73
	4/1/2005	ND<2.30259	73
	10/26/2005	ND<2.30259	73
	6/19/2006	ND<2.30259	73

6/2/2007	ND<2.30259	73	
11/15/2007	ND<2.30259	73	
5/20/2008	ND<2.30259	73	
11/20/2008	ND<2.30259	73	

Rank Sum = 1123
Rank Mean = 102.091

Calculation Results:

Kruskal-Wallis H Statistic = 23.3582
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 29.4665
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
23.3582 < 26.2962 indicating no significant group difference at 5% significance level
29.4665 > 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 141.9

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-10	125.471	-16.4294	54.387
LMW-9D	154.6	12.7	63.8527
LMW-9	144.8	2.9	52.1355
LMW-8	116.15	-25.75	52.1355
LMW-7	159	17.1	53.5641
LMW-6	126.4	-15.5	52.1355
LMW-3S	144.2	2.3	63.8527
LMW-3	92.2273	-49.6727	50.9368
LMW-16	129.4	-12.5	63.8527
LMW-15R	116	-25.9	56.3128
LMW-14R	127.5	-14.4	68.9688
LMW-9S	126.667	-15.2333	66.1754
LMW-13	87.6364	-54.2636	61.8875
MW-5	98.7692	-43.1308	58.7359
LMW-12	88.4545	-53.4455	61.8875
LMW-11	102.091	-39.8091	61.8875

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 141.9

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-10	125.471	-16.4294	64.2393
LMW-9D	154.6	12.7	75.4198
LMW-9	144.8	2.9	61.58
LMW-8	116.15	-25.75	61.58
LMW-7	159	17.1	63.2674
LMW-6	126.4	-15.5	61.58
LMW-3S	144.2	2.3	75.4198
LMW-3	92.2273	-49.6727	60.1642
LMW-16	129.4	-12.5	75.4198
LMW-15R	116	-25.9	66.514
LMW-14R	127.5	-14.4	81.4627
LMW-9S	126.667	-15.2333	78.1632
LMW-13	87.6364	-54.2636	73.0986
MW-5	98.7692	-43.1308	69.3761
LMW-12	88.4545	-53.4455	73.0986
LMW-11	102.091	-39.8091	73.0986

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Chromium

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

Total Percent Non-Detects = 59.1837%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 20
Maximum Background Concentration = 5.84354
Confidence Level = 71.4%
False Positive Rate = 28.6%

Location	Date	Samples	Mean	Significant
LMW-10	7/6/2011	1	-0.494296	FALSE
LMW-9D	7/6/2011	1	1.1314	FALSE
LMW-9	7/6/2011	1	-0.579818	FALSE
LMW-8	7/6/2011	1	-1.7148	FALSE
LMW-7	7/6/2011	1	2.48491	FALSE
LMW-6	7/6/2011	1	-1.7148	FALSE
LMW-3S	7/6/2011	1	1.19392	FALSE
LMW-3	7/6/2011	1	-2.52573	FALSE
LMW-16	7/6/2011	1	-0.356675	FALSE
LMW-15R	7/6/2011	1	-1.60944	FALSE
LMW-14R	7/6/2011	1	0.182322	FALSE
LMW-9S	7/6/2011	1	-2.52573	FALSE
LMW-13	11/20/2008	1	2.30259	FALSE
MW-5	11/20/2008	1	2.30259	FALSE
LMW-12	11/20/2008	1	2.30259	FALSE
LMW-11	11/20/2008	1	2.30259	FALSE

Concentrations (ppb)

Parameter: Cobalt

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 179
Percent Non-Detects: 73.0612%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	15 (75%)	1/16/1998	ND<20	ND<20
			3/16/1999	ND<20	ND<20
			9/23/1999	ND<20	ND<20
			3/14/2000	ND<20	ND<20
			9/23/2003	ND<20	ND<20
			3/10/2004	ND<20	ND<20
			10/12/2004	ND<20	ND<20
			4/1/2005	ND<20	ND<20
			10/26/2005	ND<20	ND<20
			6/19/2006	ND<20	ND<20
			11/18/2006	ND<20	ND<20
			6/2/2007	ND<20	ND<20
			11/15/2007	ND<20	ND<20
			5/20/2008	ND<20	ND<20
			11/20/2008	ND<20	ND<20
			6/11/2009	0.24	0.24
			11/16/2009	0.24	0.24
			6/30/2010	0.27	0.27
			11/17/2010	0.29	0.29
			7/6/2011	0.27	0.27

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-6	20	14 (70%)	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
			7/6/2011	0.72	0.72

LMW-10	17	12 (70.5882%)	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	
			7/6/2011	0.23	0.23	
LMW-14R	8	4 (50%)	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	
			7/6/2011	0.2	0.2	
LMW-15R	15	8 (53.3333%)	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	0.26	0.26	
			11/16/2009	0.3	0.3	
			11/16/2009	0.25	0.25	
			6/30/2010	0.7	0.7	
			11/17/2010	0.58	0.58	
			7/6/2011	0.75	0.75	
LMW-16	10	6 (60%)	11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<0.078 U	ND<0.078 U	
			11/16/2009	0.08 J	0.08 J	
			6/30/2010	0.098 J	0.098 J	
			11/17/2010	0.078 J	0.078 J	
			7/6/2011	0.13 J	0.13 J	
LMW-3	22	17 (77.2727%)	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	
			7/6/2011	0.16 J	0.16 J	
LMW-7	18	14 (77.7778%)	1/16/1998	ND<20	ND<20	
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	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	
			7/6/2011	2.7	2.7	
LMW-8	20	15 (75%)	1/16/1998	ND<20	ND<20	
			3/16/1999	ND<20	ND<20	
			9/23/1999	ND<20	ND<20	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	
			10/12/2004	ND<20	ND<20	
			4/1/2005	ND<20	ND<20	
			10/26/2005	ND<20	ND<20	
			6/19/2006	ND<20	ND<20	
			11/18/2006	ND<20	ND<20	
			6/2/2007	ND<20	ND<20	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<0 J	ND<0 J	
			11/20/2008	ND<20	ND<20	
			6/11/2009	0.47	0.47	
			11/16/2009	0.71	0.71	
			6/30/2010	0.78	0.78	
			11/17/2010	0.71	0.71	
			7/6/2011	1.5	1.5	
LMW-9	20	14 (70%)	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
		7/6/2011	0.13 J	0.13 J	
LMW-9D	10	7 (70%)	11/18/2006	ND<20	ND<20
		6/2/2007	ND<20	ND<20	
		11/15/2007		3 J	3 J
		5/20/2008		ND<20	ND<20
		11/20/2008		ND<20	ND<20
		6/11/2009		ND<0.078 U	ND<0.078 U
		11/16/2009		ND<0.078 U	ND<0.078 U
		6/30/2010		ND<0.078 U	ND<0.078 U
		11/17/2010		0.081 J	0.081 J
		7/6/2011	0.13 J	0.13 J	
LMW-9S	9	2 (22.2222%)	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
		7/6/2011	0.87	0.87	
LMW-3S	10	5 (50%)	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
		7/6/2011	0.45	0.45	
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
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-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

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 = 245

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	0.039	-1.91103	34.3095	-0.0745302
8	0.039	-1.85218	37.7401	-0.146765
9	0.039	-1.79912	40.9769	-0.216931
10	0.039	-1.75069	44.0418	-0.285207
11	0.078	-1.70604	46.9524	-0.418279
12	0.08	-1.66456	49.7231	-0.551444
13	0.081	-1.62576	52.3662	-0.683131
14	0.098	-1.58927	54.892	-0.838879
15	0.13	-1.55477	57.3093	-1.041
16	0.13	-1.5141	59.6018	-1.23783
17	0.13	-1.48328	61.802	-1.43066
18	0.13	-1.4538	63.9155	-1.61965
19	0.13	-1.42554	65.9477	-1.80497
20	0.13	-1.39838	67.9031	-1.98676
21	0.13	-1.3722	69.7861	-2.16515
22	0.15	-1.34694	71.6003	-2.36719
23	0.15	-1.32251	73.3494	-2.56557
24	0.16	-1.29884	75.0363	-2.77338
25	0.16	-1.27588	76.6642	-2.97752
26	0.16	-1.25357	78.2356	-3.17809
27	0.16	-1.23187	79.7531	-3.37519
28	0.16	-1.21073	81.219	-3.56891
29	0.16	-1.19012	82.6353	-3.75933
30	0.17	-1.17	84.0043	-3.95823
31	0.17	-1.1455	85.3164	-4.15296
32	0.19	-1.12639	86.5852	-4.36698
33	0.2	-1.10768	87.8121	-4.58851
34	0.2	-1.08935	88.9988	-4.80638
35	0.21	-1.07138	90.1467	-5.03137
36	0.23	-1.05375	91.2571	-5.27373
37	0.24	-1.03643	92.3312	-5.52248
38	0.24	-1.01943	93.3705	-5.76714
39	0.24	-1.00271	94.3759	-6.00779
40	0.25	-0.986272	95.3486	-6.25436
41	0.26	-0.970094	96.2897	-6.50658
42	0.26	-0.954165	97.2002	-6.75466
43	0.27	-0.938476	98.0809	-7.00805
44	0.27	-0.923014	98.9328	-7.25727
45	0.29	-0.907769	99.7569	-7.52052
46	0.3	-0.892733	100.554	-7.78834
47	0.42	-0.874218	101.318	-8.15551
48	0.42	-0.859618	102.057	-8.51655
49	0.45	-0.845198	102.771	-8.89689

50	0.47	-0.830953	103.462	-9.28744
51	0.51	-0.816874	104.129	-9.70404
52	0.53	-0.802956	104.774	-10.1296
53	0.57	-0.789191	105.397	-10.5794
54	0.58	-0.775574	105.998	-11.0293
55	0.63	-0.7621	106.579	-11.5094
56	0.7	-0.748762	107.14	-12.0335
57	0.71	-0.735557	107.681	-12.5558
58	0.71	-0.722479	108.203	-13.0687
59	0.72	-0.709522	108.706	-13.5796
60	0.75	-0.696684	109.192	-14.1021
61	0.78	-0.68396	109.659	-14.6356
62	0.83	-0.668209	110.106	-15.1902
63	0.87	-0.655726	110.536	-15.7607
64	1	-0.643345	110.95	-16.404
65	1	-0.631062	111.348	-17.0351
66	1	-0.618872	111.731	-17.654
67	1	-0.606775	112.099	-18.2608
68	1.1	-0.594766	112.453	-18.915
69	1.2	-0.582841	112.793	-19.6144
70	1.2	-0.570999	113.119	-20.2996
71	1.4	-0.559237	113.431	-21.0825
72	1.5	-0.547551	113.731	-21.9039
73	2.7	-0.53594	114.018	-23.3509
74	3	-0.524401	114.293	-24.9241
75	10	-0.51293	114.556	-30.0534
76	10	-0.501527	114.808	-35.0687
77	10	-0.487364	115.046	-39.9423
78	10	-0.476105	115.272	-44.7034
79	10	-0.464904	115.488	-49.3524
80	10	-0.453763	115.694	-53.89
81	10	-0.442676	115.89	-58.3168
82	10	-0.431644	116.077	-62.6332
83	10	-0.420664	116.253	-66.8399
84	10	-0.409735	116.421	-70.9372
85	10	-0.398855	116.58	-74.9258
86	10	-0.388022	116.731	-78.806
87	10	-0.377233	116.873	-82.5783
88	10	-0.36649	117.008	-86.2432
89	10	-0.355788	117.134	-89.8011
90	10	-0.345126	117.253	-93.2524
91	10	-0.334503	117.365	-96.5974
92	10	-0.323919	117.47	-99.8366
93	10	-0.310738	117.567	-102.944
94	10	-0.300232	117.657	-105.946
95	10	-0.28976	117.741	-108.844
96	10	-0.279319	117.819	-111.637
97	10	-0.268908	117.891	-114.326
98	10	-0.258527	117.958	-116.911
99	10	-0.248174	118.02	-119.393
100	10	-0.237847	118.076	-121.772
101	10	-0.227545	118.128	-124.047
102	10	-0.217267	118.175	-126.22
103	10	-0.207012	118.218	-128.29
104	10	-0.196779	118.257	-130.258
105	10	-0.186567	118.292	-132.123
106	10	-0.176374	118.323	-133.887
107	10	-0.166199	118.35	-135.549
108	10	-0.153505	118.374	-137.084
109	10	-0.143367	118.394	-138.518
110	10	-0.133244	118.412	-139.85
111	10	-0.123135	118.427	-141.082

112	10	-0.113039	118.44	-142.212
113	10	-0.102953	118.451	-143.242
114	10	-0.0928787	118.459	-144.17
115	10	-0.0828129	118.466	-144.998
116	10	-0.0727562	118.471	-145.726
117	10	-0.0627062	118.475	-146.353
118	10	-0.0526632	118.478	-146.88
119	10	-0.0426257	118.48	-147.306
120	10	-0.0325917	118.481	-147.632
121	10	-0.0225612	118.482	-147.857
122	10	-0.0125328	118.482	-147.983
123	10	0	118.482	-147.983
124	10	0.0125328	118.482	-147.857
125	10	0.0225612	118.482	-147.632
126	10	0.0325917	118.483	-147.306
127	10	0.0426257	118.485	-146.88
128	10	0.0526632	118.488	-146.353
129	10	0.0627062	118.492	-145.726
130	10	0.0727562	118.497	-144.998
131	10	0.0828129	118.504	-144.17
132	10	0.0928787	118.513	-143.242
133	10	0.102953	118.523	-142.212
134	10	0.113039	118.536	-141.082
135	10	0.123135	118.551	-139.85
136	10	0.133244	118.569	-138.518
137	10	0.143367	118.59	-137.084
138	10	0.153505	118.613	-135.549
139	10	0.166199	118.641	-133.887
140	10	0.176374	118.672	-132.123
141	10	0.186567	118.707	-130.258
142	10	0.196779	118.745	-128.29
143	10	0.207012	118.788	-126.22
144	10	0.217267	118.835	-124.047
145	10	0.227545	118.887	-121.772
146	10	0.237847	118.944	-119.393
147	10	0.248174	119.005	-116.911
148	10	0.258527	119.072	-114.326
149	10	0.268908	119.145	-111.637
150	10	0.279319	119.223	-108.844
151	10	0.28976	119.306	-105.946
152	10	0.300232	119.397	-102.944
153	10	0.310738	119.493	-99.8366
154	10	0.323919	119.598	-96.5974
155	10	0.334503	119.71	-93.2524
156	10	0.345126	119.829	-89.8011
157	10	0.355788	119.956	-86.2432
158	10	0.36649	120.09	-82.5783
159	10	0.377233	120.232	-78.806
160	10	0.388022	120.383	-74.9258
161	10	0.398855	120.542	-70.9372
162	10	0.409735	120.71	-66.8399
163	10	0.420664	120.887	-62.6332
164	10	0.431644	121.073	-58.3168
165	10	0.442676	121.269	-53.89
166	10	0.453763	121.475	-49.3524
167	10	0.464904	121.691	-44.7034
168	10	0.476105	121.918	-39.9423
169	10	0.487364	122.155	-35.0687
170	10	0.501527	122.407	-30.0534
171	10	0.51293	122.67	-24.9241
172	10	0.524401	122.945	-19.6801
173	10	0.53594	123.232	-14.3207

174	10	0.547551		123.532	-8.84518
175	10	0.559237		123.845	-3.25281
176	10	0.570999		124.171	2.45718
177	10	0.582841		124.51	8.28559
178	10	0.594766		124.864	14.2332
179	10	0.606775		125.232	20.301
180	10	0.618872		125.615	26.4897
181	10	0.631062		126.014	32.8003
182	10	0.643345		126.428	39.2338
183	10	0.655726		126.858	45.7911
184	10	0.668209		127.304	52.4731
185	10	0.68396	127.772	59.3128	
186	10	0.696684		128.257	66.2796
187	10	0.709522		128.761	73.3748
188	10	0.722479		129.283	80.5996
189	10	0.735557		129.824	87.9552
190	10	0.748762		130.384	95.4428
191	10	0.7621	130.965	103.064	
192	10	0.775574		131.567	110.82
193	10	0.789191		132.189	118.711
194	10	0.802956		132.834	126.741
195	10	0.816874		133.501	134.91
196	10	0.830953		134.192	143.219
197	10	0.845198		134.906	151.671
198	10	0.859618		135.645	160.267
199	10	0.874218		136.409	169.01
200	10	0.892733		137.206	177.937
201	10	0.907769		138.03	187.015
202	10	0.923014		138.882	196.245
203	10	0.938476		139.763	205.63
204	10	0.954165		140.674	215.171
205	10	0.970094		141.615	224.872
206	10	0.986272		142.587	234.735
207	10	1.00271	143.593	244.762	
208	10	1.01943	144.632	254.956	
209	10	1.03643	145.706	265.321	
210	10	1.05375	146.817	275.858	
211	10	1.07138	147.965	286.572	
212	10	1.08935	149.151	297.465	
213	10	1.10768	150.378	308.542	
214	10	1.12639	151.647	319.806	
215	10	1.1455	152.959	331.261	
216	10	1.17	154.328	342.961	
217	10	1.19012	155.744	354.862	
218	10	1.21073	157.21	366.97	
219	10	1.23187	158.728	379.288	
220	10	1.25357	160.299	391.824	
221	10	1.27588	161.927	404.583	
222	10	1.29884	163.614	417.571	
223	10	1.32251	165.363	430.796	
224	10	1.34694	167.177	444.265	
225	10	1.3722	169.06	457.987	
226	10	1.39838	171.016	471.971	
227	10	1.42554	173.048	486.227	
228	10	1.4538	175.161	500.765	
229	10	1.48328	177.362	515.597	
230	10	1.5141	179.654	530.739	
231	10	1.55477	182.071	546.286	
232	10	1.58927	184.597	562.179	
233	10	1.62576	187.24	578.437	
234	10	1.66456	190.011	595.082	
235	10	1.70604	192.922	612.143	

236	10	1.75069	195.986	629.649
237	10	1.79912	199.223	647.641
238	10	1.85218	202.654	666.162
239	10	1.91103	206.306	685.273
240	10	1.97737	210.216	705.046
241	10	2.05375	214.434	725.584
242	10	2.14441	219.032	747.028
243	10	2.25713	224.127	769.599
244	10	2.40892	229.93	793.689
245	11	2.65209	236.963	822.861

Data Set Standard Deviation = 4.40647
Numerator = 677101
Denominator = 1.12267e+006
W Statistic = 0.603116 = 677101 / 1.12267e+006

5% Critical value of 0.976 exceeds 0.603116
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.603116
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 = 245

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-3.24419	-2.65209	7.03356	8.60388
2	-3.24419	-2.40892	12.8365	16.4189
3	-3.24419	-2.25713	17.9311	23.7415
4	-3.24419	-2.14441	22.5296	30.6983
5	-2.55105	-2.05375	26.7475	35.9375
6	-2.52573	-1.97737	30.6575	40.9318
7	-2.51331	-1.91103	34.3095	45.7348
8	-2.32279	-1.85218	37.7401	50.0371
9	-2.04022	-1.79912	40.9769	53.7077
10	-2.04022	-1.75069	44.0418	57.2794
11	-2.04022	-1.70604	46.9524	60.7601
12	-2.04022	-1.66456	49.7231	64.1562
13	-2.04022	-1.62576	52.3662	67.4731
14	-2.04022	-1.58927	54.892	70.7156
15	-2.04022	-1.55477	57.3093	73.8877
16	-1.89712	-1.5141	59.6018	76.7601
17	-1.89712	-1.48328	61.802	79.5741
18	-1.83258	-1.4538	63.9155	82.2383
19	-1.83258	-1.42554	65.9477	84.8507
20	-1.83258	-1.39838	67.9031	87.4133
21	-1.83258	-1.3722	69.7861	89.928
22	-1.83258	-1.34694	71.6003	92.3964
23	-1.83258	-1.32251	73.3494	94.82
24	-1.77196	-1.29884	75.0363	97.1215
25	-1.77196	-1.27588	76.6642	99.3823
26	-1.66073	-1.25357	78.2356	101.464
27	-1.60944	-1.23187	79.7531	103.447
28	-1.60944	-1.21073	81.219	105.395
29	-1.56065	-1.19012	82.6353	107.253
30	-1.46968	-1.17	84.0043	108.972
31	-1.42712	-1.1455	85.3164	110.607
32	-1.42712	-1.12639	86.5852	112.214
33	-1.42712	-1.10768	87.8121	113.795
34	-1.38629	-1.08935	88.9988	115.305
35	-1.34707	-1.07138	90.1467	116.749
36	-1.34707	-1.05375	91.2571	118.168
37	-1.30933	-1.03643	92.3312	119.525
38	-1.30933	-1.01943	93.3705	120.86
39	-1.23787	-1.00271	94.3759	122.101
40	-1.20397	-0.986272	95.3486	123.289
41	-0.867501	-0.970094	96.2897	124.13
42	-0.867501	-0.954165	97.2002	124.958
43	-0.798508	-0.938476	98.0809	125.707
44	-0.755023	-0.923014	98.9328	126.404
45	-0.673345	-0.907769	99.7569	127.015
46	-0.634878	-0.892733	100.554	127.582
47	-0.562119	-0.874218	101.318	128.074
48	-0.544727	-0.859618	102.057	128.542
49	-0.462035	-0.845198	102.771	128.932

50	-0.356675	-0.830953	103.462	129.229
51	-0.34249	-0.816874	104.129	129.509
52	-0.34249	-0.802956	104.774	129.784
53	-0.328504	-0.789191	105.397	130.043
54	-0.287682	-0.775574	105.998	130.266
55	-0.248461	-0.7621	106.579	130.455
56	-0.18633	-0.748762	107.14	130.595
57	-0.139262	-0.735557	107.681	130.697
58	0	-0.722479	108.203	130.697
59	0	-0.709522	108.706	130.697
60	0	-0.696684	109.192	130.697
61	0	-0.68396	109.659	130.697
62	0	-0.668209	110.106	130.697
63	0	-0.655726	110.536	130.697
64	0	-0.643345	110.95	130.697
65	0	-0.631062	111.348	130.697
66	0	-0.618872	111.731	130.697
67	0	-0.606775	112.099	130.697
68	0.0953102	-0.594766	112.453	130.64
69	0.182322	-0.582841	112.793	130.534
70	0.182322	-0.570999	113.119	130.43
71	0.336472	-0.559237	113.431	130.242
72	0.405465	-0.547551	113.731	130.02
73	0.993252	-0.53594	114.018	129.488
74	1.09861	-0.524401	114.293	128.912
75	2.30259	-0.51293	114.556	127.73
76	2.30259	-0.501527	114.808	126.576
77	2.30259	-0.487364	115.046	125.453
78	2.30259	-0.476105	115.272	124.357
79	2.30259	-0.464904	115.488	123.287
80	2.30259	-0.453763	115.694	122.242
81	2.30259	-0.442676	115.89	121.223
82	2.30259	-0.431644	116.077	120.229
83	2.30259	-0.420664	116.253	119.26
84	2.30259	-0.409735	116.421	118.317
85	2.30259	-0.398855	116.58	117.398
86	2.30259	-0.388022	116.731	116.505
87	2.30259	-0.377233	116.873	115.636
88	2.30259	-0.36649	117.008	114.792
89	2.30259	-0.355788	117.134	113.973
90	2.30259	-0.345126	117.253	113.178
91	2.30259	-0.334503	117.365	112.408
92	2.30259	-0.323919	117.47	111.662
93	2.30259	-0.310738	117.567	110.947
94	2.30259	-0.300232	117.657	110.255
95	2.30259	-0.28976	117.741	109.588
96	2.30259	-0.279319	117.819	108.945
97	2.30259	-0.268908	117.891	108.326
98	2.30259	-0.258527	117.958	107.731
99	2.30259	-0.248174	118.02	107.159
100	2.30259	-0.237847	118.076	106.612
101	2.30259	-0.227545	118.128	106.088
102	2.30259	-0.217267	118.175	105.587
103	2.30259	-0.207012	118.218	105.111
104	2.30259	-0.196779	118.257	104.658
105	2.30259	-0.186567	118.292	104.228
106	2.30259	-0.176374	118.323	103.822
107	2.30259	-0.166199	118.35	103.439
108	2.30259	-0.153505	118.374	103.086
109	2.30259	-0.143367	118.394	102.756
110	2.30259	-0.133244	118.412	102.449
111	2.30259	-0.123135	118.427	102.165

112	2.30259	-0.113039	118.44	101.905
113	2.30259	-0.102953	118.451	101.668
114	2.30259	-0.0928787	118.459	101.454
115	2.30259	-0.0828129	118.466	101.263
116	2.30259	-0.0727562	118.471	101.096
117	2.30259	-0.0627062	118.475	100.951
118	2.30259	-0.0526632	118.478	100.83
119	2.30259	-0.0426257	118.48	100.732
120	2.30259	-0.0325917	118.481	100.657
121	2.30259	-0.0225612	118.482	100.605
122	2.30259	-0.0125328	118.482	100.576
123	2.30259	0	118.482	100.576
124	2.30259	0.0125328	118.482	100.605
125	2.30259	0.0225612	118.482	100.657
126	2.30259	0.0325917	118.483	100.732
127	2.30259	0.0426257	118.485	100.83
128	2.30259	0.0526632	118.488	100.951
129	2.30259	0.0627062	118.492	101.096
130	2.30259	0.0727562	118.497	101.263
131	2.30259	0.0828129	118.504	101.454
132	2.30259	0.0928787	118.513	101.668
133	2.30259	0.102953	118.523	101.905
134	2.30259	0.113039	118.536	102.165
135	2.30259	0.123135	118.551	102.449
136	2.30259	0.133244	118.569	102.756
137	2.30259	0.143367	118.59	103.086
138	2.30259	0.153505	118.613	103.439
139	2.30259	0.166199	118.641	103.822
140	2.30259	0.176374	118.672	104.228
141	2.30259	0.186567	118.707	104.658
142	2.30259	0.196779	118.745	105.111
143	2.30259	0.207012	118.788	105.587
144	2.30259	0.217267	118.835	106.088
145	2.30259	0.227545	118.887	106.612
146	2.30259	0.237847	118.944	107.159
147	2.30259	0.248174	119.005	107.731
148	2.30259	0.258527	119.072	108.326
149	2.30259	0.268908	119.145	108.945
150	2.30259	0.279319	119.223	109.588
151	2.30259	0.28976	119.306	110.255
152	2.30259	0.300232	119.397	110.947
153	2.30259	0.310738	119.493	111.662
154	2.30259	0.323919	119.598	112.408
155	2.30259	0.334503	119.71	113.178
156	2.30259	0.345126	119.829	113.973
157	2.30259	0.355788	119.956	114.792
158	2.30259	0.36649	120.09	115.636
159	2.30259	0.377233	120.232	116.505
160	2.30259	0.388022	120.383	117.398
161	2.30259	0.398855	120.542	118.317
162	2.30259	0.409735	120.71	119.26
163	2.30259	0.420664	120.887	120.229
164	2.30259	0.431644	121.073	121.223
165	2.30259	0.442676	121.269	122.242
166	2.30259	0.453763	121.475	123.287
167	2.30259	0.464904	121.691	124.357
168	2.30259	0.476105	121.918	125.453
169	2.30259	0.487364	122.155	126.576
170	2.30259	0.501527	122.407	127.73
171	2.30259	0.51293	122.67	128.912
172	2.30259	0.524401	122.945	130.119
173	2.30259	0.53594	123.232	131.353

174	2.30259	0.547551		123.532	132.614
175	2.30259	0.559237		123.845	133.902
176	2.30259	0.570999		124.171	135.216
177	2.30259	0.582841		124.51	136.558
178	2.30259	0.594766		124.864	137.928
179	2.30259	0.606775		125.232	139.325
180	2.30259	0.618872		125.615	140.75
181	2.30259	0.631062		126.014	142.203
182	2.30259	0.643345		126.428	143.684
183	2.30259	0.655726		126.858	145.194
184	2.30259	0.668209		127.304	146.733
185	2.30259	0.68396	127.772	148.308	
186	2.30259	0.696684		128.257	149.912
187	2.30259	0.709522		128.761	151.546
188	2.30259	0.722479		129.283	153.209
189	2.30259	0.735557		129.824	154.903
190	2.30259	0.748762		130.384	156.627
191	2.30259	0.7621	130.965	158.382	
192	2.30259	0.775574		131.567	160.168
193	2.30259	0.789191		132.189	161.985
194	2.30259	0.802956		132.834	163.834
195	2.30259	0.816874		133.501	165.715
196	2.30259	0.830953		134.192	167.628
197	2.30259	0.845198		134.906	169.574
198	2.30259	0.859618		135.645	171.553
199	2.30259	0.874218		136.409	173.566
200	2.30259	0.892733		137.206	175.622
201	2.30259	0.907769		138.03	177.712
202	2.30259	0.923014		138.882	179.838
203	2.30259	0.938476		139.763	181.998
204	2.30259	0.954165		140.674	184.195
205	2.30259	0.970094		141.615	186.429
206	2.30259	0.986272		142.587	188.7
207	2.30259	1.00271	143.593	191.009	
208	2.30259	1.01943	144.632	193.356	
209	2.30259	1.03643	145.706	195.743	
210	2.30259	1.05375	146.817	198.169	
211	2.30259	1.07138	147.965	200.636	
212	2.30259	1.08935	149.151	203.144	
213	2.30259	1.10768	150.378	205.695	
214	2.30259	1.12639	151.647	208.289	
215	2.30259	1.1455	152.959	210.926	
216	2.30259	1.17	154.328	213.62	
217	2.30259	1.19012	155.744	216.361	
218	2.30259	1.21073	157.21	219.148	
219	2.30259	1.23187	158.728	221.985	
220	2.30259	1.25357	160.299	224.871	
221	2.30259	1.27588	161.927	227.809	
222	2.30259	1.29884	163.614	230.8	
223	2.30259	1.32251	165.363	233.845	
224	2.30259	1.34694	167.177	236.946	
225	2.30259	1.3722	169.06	240.106	
226	2.30259	1.39838	171.016	243.326	
227	2.30259	1.42554	173.048	246.608	
228	2.30259	1.4538	175.161	249.956	
229	2.30259	1.48328	177.362	253.371	
230	2.30259	1.5141	179.654	256.858	
231	2.30259	1.55477	182.071	260.438	
232	2.30259	1.58927	184.597	264.097	
233	2.30259	1.62576	187.24	267.84	
234	2.30259	1.66456	190.011	271.673	
235	2.30259	1.70604	192.922	275.602	

236	2.30259	1.75069	195.986	279.633
237	2.30259	1.79912	199.223	283.775
238	2.30259	1.85218	202.654	288.04
239	2.30259	1.91103	206.306	292.44
240	2.30259	1.97737	210.216	296.993
241	2.30259	2.05375	214.434	301.722
242	2.30259	2.14441	219.032	306.66
243	2.30259	2.25713	224.127	311.857
244	2.30259	2.40892	229.93	317.404
245	2.3979	2.65209	236.963	323.763

Data Set Standard Deviation = 1.66656
Numerator = 104823
Denominator = 160589
W Statistic = 0.652741 = 104823 / 160589

5% Critical value of 0.976 exceeds 0.652741
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.652741
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	206
	11/16/2009	-1.42712	207
	6/30/2010	-1.30933	212
	11/17/2010	-1.23787	214
	7/6/2011	-1.30933	213

Rank Sum = 2402
Rank Mean = 120.1

Background Rank Sum = 2402
Background Rank Mean = 120.1

Compliance Wells

Well ID	Date	Result	Rank
LMW-6	1/16/1998	ND<2.30259	90
	3/16/1999	ND<2.30259	90
	9/23/1999	2.3979 J	245
	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	240
	11/16/2009	0.182322	238
	6/30/2010	0.182322	239

	11/17/2010	0.0953102	237
	7/6/2011	-0.328504	228

Rank Sum = 2687
Rank Mean = 134.35

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	191
	6/30/2010	-1.60944	202
	11/17/2010	-1.83258 J	193
	7/6/2011	-1.46968	205

Rank Sum = 2055
Rank Mean = 120.882

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	208
	6/30/2010	-1.77196 J	199
	11/17/2010	-1.56065	204
	7/6/2011	-1.60944	203

Rank Sum = 1174
Rank Mean = 146.75

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	231
	11/16/2009	-1.34707	210
	11/16/2009	-1.20397	215
	11/16/2009	-1.38629	209
	6/30/2010	-0.356675	225
	11/17/2010	-0.544727	223
	7/6/2011	-0.287682	229

Rank Sum = 2262
Rank Mean = 150.8

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<-3.24419 U	90
	11/16/2009	-2.52573 J	181
	6/30/2010	-2.32279 J	183

	11/17/2010	-2.55105 J	180
	7/6/2011	-2.04022 J	185

Rank Sum = 1269
Rank Mean = 126.9

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	194
	11/16/2009	-1.83258 J	195
	6/30/2010	-1.77196 J	200
	11/17/2010	-0.673345	220
	7/6/2011	-1.83258 J	196

Rank Sum = 2535
Rank Mean = 115.227

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	233
	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	224
	11/17/2010	-1.66073 J	201
	7/6/2011	0.993252	242

Rank Sum = 2160
Rank Mean = 120

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	219
	11/16/2009	-0.34249	226
	6/30/2010	-0.248461	230
	11/17/2010	-0.34249	227
	7/6/2011	0.405465	241

Rank Sum = 2493
Rank Mean = 124.65

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	244
	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	192
	11/16/2009	-2.04022 J	186
	6/30/2010	-2.04022 J	187
	11/17/2010	-1.83258 J	197
	7/6/2011	-2.04022 J	188

Rank Sum = 2454
Rank Mean = 122.7

LMW-9D	11/18/2006	ND<2.30259	90
	6/2/2007	ND<2.30259	90
	11/15/2007	1.09861 J	243
	5/20/2008	ND<2.30259	90
	11/20/2008	ND<2.30259	90
	6/11/2009	ND<-3.24419 U	90
	11/16/2009	ND<-3.24419 U	90
	6/30/2010	ND<-3.24419 U	90
	11/17/2010	-2.51331 J	182
	7/6/2011	-2.04022 J	189

Rank Sum = 1244
Rank Mean = 124.4

LMW-9S	11/18/2006	0 J	234
	6/2/2007	0 J	235
	11/15/2007	ND<2.30259	90
	5/20/2008	0 J	236
	11/20/2008	ND<2.30259	90
	6/11/2009	-2.04022 J	190
	6/30/2010	-1.83258 J	198
	11/17/2010	-1.34707	211
	7/6/2011	-0.139262	232

Rank Sum = 1716
Rank Mean = 190.667

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	216
	11/16/2009	-0.867501	217
	6/30/2010	-0.562119	222
	11/17/2010	-0.634878	221
	7/6/2011	-0.798508	218

Rank Sum = 1544
Rank Mean = 154.4

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

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

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

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

Calculation Results:

Kruskal-Wallis H Statistic = 24.2524
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 39.7574
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
24.2524 < 26.2962 indicating no significant group difference at 5% significance level
39.7574 > 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 120.1

Well	Mean Rank		Dif from Bkg	Critical Value
LMW-6	134.35	14.25	52.1355	
LMW-10	120.882	0.782353		54.387
LMW-14R		146.75	26.65	68.9688
LMW-15R		150.8	30.7	56.3128
LMW-16	126.9	6.8	63.8527	
LMW-3	115.227	-4.87273	50.9368	
LMW-7	120	-0.1	53.5641	
LMW-8	124.65	4.55	52.1355	
LMW-9	122.7	2.6	52.1355	
LMW-9D	124.4	4.3	63.8527	
LMW-9S	190.667	70.5667	66.1754	
LMW-3S	154.4	34.3	63.8527	
LMW-11	90	-30.1	61.8875	
LMW-12	90	-30.1	61.8875	
MW-5	90	-30.1	58.7359	
LMW-13	90	-30.1	61.8875	

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 120.1

Well	Mean Rank		Dif from Bkg	Critical Value
LMW-6	134.35	14.25	61.58	
LMW-10	120.882	0.782353		64.2393
LMW-14R		146.75	26.65	81.4627
LMW-15R		150.8	30.7	66.514
LMW-16	126.9	6.8	75.4198	
LMW-3	115.227	-4.87273	60.1642	
LMW-7	120	-0.1	63.2674	
LMW-8	124.65	4.55	61.58	
LMW-9	122.7	2.6	61.58	
LMW-9D	124.4	4.3	75.4198	
LMW-9S	190.667	70.5667	78.1632	
LMW-3S	154.4	34.3	75.4198	
LMW-11	90	-30.1	73.0986	
LMW-12	90	-30.1	73.0986	
MW-5	90	-30.1	69.3761	
LMW-13	90	-30.1	73.0986	

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Cobalt

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

Total Percent Non-Detects = 73.0612%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 20
Maximum Background Concentration = 2.30259
Confidence Level = 71.4%
False Positive Rate = 28.6%

Location	Date	Samples	Mean	Significant
LMW-6	7/6/2011	1	-0.328504	FALSE
LMW-10	7/6/2011	1	-1.46968	FALSE
LMW-14R	7/6/2011	1	-1.60944	FALSE
LMW-15R	7/6/2011	1	-0.287682	FALSE
LMW-16	7/6/2011	1	-2.04022	FALSE
LMW-3	7/6/2011	1	-1.83258	FALSE
LMW-7	7/6/2011	1	0.993252	FALSE
LMW-8	7/6/2011	1	0.405465	FALSE
LMW-9	7/6/2011	1	-2.04022	FALSE
LMW-9D	7/6/2011	1	-2.04022	FALSE
LMW-9S	7/6/2011	1	-0.139262	FALSE
LMW-3S	7/6/2011	1	-0.798508	FALSE
LMW-11	11/20/2008	1	2.30259	FALSE
LMW-12	11/20/2008	1	2.30259	FALSE
MW-5	11/20/2008	1	2.30259	FALSE
LMW-13	11/20/2008	1	2.30259	FALSE

Concentrations (ppb)

Parameter: Copper

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 240
Total Non-Detect: 143
Percent Non-Detects: 59.5833%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	11 (55%)	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
			7/6/2011	1.1	1.1

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-3S	9	3 (33.3333%)	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
			7/6/2011	1.3	1.3
LMW-9D	10	2 (20%)	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
			7/6/2011	2	2

LMW-9	20	11 (55%)	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	
			7/6/2011	0.65 J	0.65 J	
LMW-8	20	12 (60%)	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	
			7/6/2011	0.48 J	0.48 J	
LMW-7	18	7 (38.8889%)	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	
			7/6/2011	13	13	
LMW-9S	9	4 (44.4444%)	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	
			7/6/2011	0.49 J	0.49 J	
LMW-3	21	15 (71.4286%)	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	
			7/6/2011	1	1	
LMW-16	9	2 (22.2222%)	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	
			7/6/2011	0.67 J	0.67 J	
LMW-15R	14	4 (28.5714%)	11/18/2006	3 J	3 J	
			6/2/2007	5 J	5 J	
			11/15/2007	ND<20	ND<20	
			11/15/2007	5 J	5 J	
			5/20/2008	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			11/20/2008	5 J	5 J	
			6/11/2009	3.7	3.7	
			11/16/2009	0.92 J	0.92 J	
			11/16/2009	0.57 J	0.57 J	
			11/16/2009	1.7	1.7	
			11/17/2010	2.3	2.3	
			7/6/2011	0.59 J	0.59 J	
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	0.81 J	0.81 J	
			11/17/2010	0.96 J	0.96 J	

			7/6/2011	2	2	
LMW-10	17	12 (70.5882%)	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	
			7/6/2011	0.35 J	0.35 J	
LMW-6	20	12 (60%)	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	
			7/6/2011	1.1	1.1	
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 = 240

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.105	-2.65209	7.03356	-0.278469
2	0.35	-2.40892	12.8365	-1.12159
3	0.36	-2.25713	17.9311	-1.93416
4	0.39	-2.14441	22.5296	-2.77048
5	0.46	-2.05375	26.7475	-3.7152
6	0.48	-1.97737	30.6575	-4.66434
7	0.49	-1.8957	34.2511	-5.59323
8	0.51	-1.83843	37.6309	-6.53083
9	0.53	-1.78661	40.8229	-7.47773
10	0.57	-1.7392	43.8477	-8.46907
11	0.59	-1.6954	46.7221	-9.46936
12	0.59	-1.65463	49.4599	-10.4456
13	0.59	-1.61644	52.0728	-11.3993
14	0.65	-1.57179	54.5433	-12.4209
15	0.65	-1.5382	56.9093	-13.4208
16	0.67	-1.50626	59.1782	-14.43
17	0.69	-1.47579	61.3561	-15.4483
18	0.7	-1.44663	63.4489	-16.4609
19	0.74	-1.41865	65.4614	-17.5107
20	0.75	-1.39175	67.3984	-18.5545
21	0.75	-1.35946	69.2465	-19.5741
22	0.75	-1.33462	71.0278	-20.5751
23	0.78	-1.31058	72.7454	-21.5973
24	0.81	-1.28727	74.4024	-22.64
25	0.82	-1.26464	76.0018	-23.677
26	0.83	-1.24264	77.5459	-24.7084
27	0.87	-1.21596	79.0245	-25.7663
28	0.88	-1.19522	80.453	-26.8181
29	0.9	-1.17499	81.8336	-27.8756
30	0.92	-1.15522	83.1682	-28.9384
31	0.96	-1.1359	84.4584	-30.0289
32	1	-1.11699	85.7061	-31.1459
33	1.1	-1.09847	86.9127	-32.3542
34	1.1	-1.07584	88.0701	-33.5376
35	1.1	-1.05812	89.1898	-34.7015
36	1.2	-1.04073	90.2729	-35.9504
37	1.3	-1.02365	91.3208	-37.2811
38	1.3	-1.00687	92.3345	-38.5901
39	1.3	-0.990356	93.3153	-39.8775
40	1.4	-0.974114	94.2642	-41.2413
41	1.6	-0.954165	95.1747	-42.768
42	1.6	-0.938476	96.0554	-44.2695
43	1.7	-0.923014	96.9074	-45.8386
44	1.7	-0.907769	97.7314	-47.3819
45	1.7	-0.892733	98.5284	-48.8995
46	1.7	-0.877897	99.2991	-50.3919
47	1.7	-0.859618	100.038	-51.8533
48	1.9	-0.845198	100.752	-53.4591
49	2	-0.830953	101.443	-55.1211

50	2	-0.816874	102.11	-56.7548
51	2	-0.802956	102.755	-58.3607
52	2	-0.789191	103.378	-59.9391
53	2	-0.775574	103.979	-61.4902
54	2	-0.758753	104.555	-63.0078
55	2.2	-0.745449	105.111	-64.6477
56	2.3	-0.732275	105.647	-66.332
57	2.4	-0.719228	106.164	-68.0581
58	3	-0.706302	106.663	-70.177
59	3	-0.693493	107.144	-72.2575
60	3	-0.680797	107.607	-74.2999
61	3.7	-0.665079	108.05	-76.7607
62	3.8	-0.652622	108.476	-79.2407
63	4	-0.640266	108.886	-81.8017
64	4	-0.628006	109.28	-84.3137
65	5	-0.615839	109.659	-87.3929
66	5	-0.603765	110.024	-90.4118
67	5	-0.588793	110.37	-93.3557
68	5	-0.576911	110.703	-96.2403
69	5	-0.565108	111.023	-99.0658
70	5	-0.553384	111.329	-101.833
71	5	-0.541736	111.622	-104.541
72	5	-0.530162	111.903	-107.192
73	5	-0.518658	112.172	-109.786
74	5	-0.504372	112.427	-112.307
75	6	-0.493018	112.67	-115.265
76	6	-0.481728	112.902	-118.156
77	6	-0.470498	113.123	-120.979
78	6	-0.459327	113.334	-123.735
79	6	-0.448213	113.535	-126.424
80	7	-0.437153	113.726	-129.484
81	7	-0.423405	113.906	-132.448
82	7	-0.412463	114.076	-135.335
83	7	-0.401571	114.237	-138.146
84	7	-0.390726	114.39	-140.881
85	8	-0.379927	114.534	-143.921
86	8	-0.369171	114.67	-146.874
87	8	-0.358459	114.799	-149.742
88	9	-0.345126	114.918	-152.848
89	9	-0.334503	115.03	-155.858
90	9	-0.323919	115.135	-158.774
91	10	-0.31337	115.233	-161.907
92	10	-0.302855	115.325	-164.936
93	10	-0.292375	115.41	-167.86
94	10	-0.279319	115.488	-170.653
95	10	-0.268908	115.56	-173.342
96	10	-0.258527	115.627	-175.927
97	10	-0.248174	115.689	-178.409
98	10	-0.237847	115.745	-180.787
99	10	-0.227545	115.797	-183.063
100	10	-0.217267	115.844	-185.236
101	10	-0.204452	115.886	-187.28
102	10	-0.194225	115.924	-189.222
103	10	-0.184017	115.958	-191.062
104	10	-0.173829	115.988	-192.801
105	10	-0.163659	116.015	-194.437
106	10	-0.153505	116.038	-195.972
107	10	-0.143367	116.059	-197.406
108	10	-0.130716	116.076	-198.713
109	10	-0.12061	116.091	-199.919
110	10	-0.110516	116.103	-201.025
111	10	-0.100433	116.113	-202.029

112	10	-0.0903606	116.121	-202.932
113	10	-0.0802981	116.127	-203.735
114	10	-0.0677301	116.132	-204.413
115	10	-0.0576847	116.135	-204.99
116	10	-0.0476439	116.138	-205.466
117	10	-0.0376076	116.139	-205.842
118	10	-0.0275759	116.14	-206.118
119	10	-0.0175476	116.14	-206.293
120	10	-0.00751925	116.14	-206.369
121	10	0.00751925	116.14	-206.293
122	10	0.0175476	116.141	-206.118
123	10	0.0275759	116.141	-205.842
124	10	0.0376076	116.143	-205.466
125	10	0.0476439	116.145	-204.99
126	10	0.0576847	116.148	-204.413
127	10	0.0677301	116.153	-203.735
128	10	0.0802981	116.159	-202.932
129	10	0.0903606	116.167	-202.029
130	10	0.100433	116.178	-201.025
131	10	0.110516	116.19	-199.919
132	10	0.12061	116.204	-198.713
133	10	0.130716	116.221	-197.406
134	10	0.143367	116.242	-195.972
135	10	0.153505	116.266	-194.437
136	10	0.163659	116.292	-192.801
137	10	0.173829	116.323	-191.062
138	10	0.184017	116.356	-189.222
139	10	0.194225	116.394	-187.28
140	10	0.204452	116.436	-185.236
141	10	0.217267	116.483	-183.063
142	10	0.227545	116.535	-180.787
143	10	0.237847	116.591	-178.409
144	10	0.248174	116.653	-175.927
145	10	0.258527	116.72	-173.342
146	10	0.268908	116.792	-170.653
147	10	0.279319	116.87	-167.86
148	10	0.292375	116.956	-164.936
149	10	0.302855	117.047	-161.907
150	10	0.31337	117.146	-158.774
151	10	0.323919	117.251	-155.534
152	10	0.334503	117.362	-152.189
153	10	0.345126	117.482	-148.738
154	10	0.358459	117.61	-145.154
155	10	0.369171	117.746	-141.462
156	10	0.379927	117.891	-137.663
157	10	0.390726	118.043	-133.755
158	10	0.401571	118.205	-129.74
159	10	0.412463	118.375	-125.615
160	10	0.423405	118.554	-121.381
161	10	0.437153	118.745	-117.009
162	10	0.448213	118.946	-112.527
163	10	0.459327	119.157	-107.934
164	10	0.470498	119.378	-103.229
165	10	0.481728	119.61	-98.4118
166	10	0.493018	119.853	-93.4816
167	10	0.504372	120.108	-88.4379
168	10	0.518658	120.377	-83.2513
169	10	0.530162	120.658	-77.9497
170	10	0.541736	120.951	-72.5324
171	10	0.553384	121.258	-66.9985
172	10	0.565108	121.577	-61.3474
173	10	0.576911	121.91	-55.5783

174	10	0.588793		122.257	-49.6904
175	10	0.603765		122.621	-43.6528
176	10	0.615839		123	-37.4944
177	10	0.628006		123.395	-31.2143
178	10	0.640266		123.805	-24.8116
179	10	0.652622		124.231	-18.2854
180	10	0.665079		124.673	-11.6346
181	10	0.680797		125.136	-4.82667
182	10	0.693493		125.617	2.10826
183	10	0.706302		126.116	9.17129
184	10	0.719228		126.633	16.3636
185	10	0.732275		127.17	23.6863
186	10	0.745449		127.725	31.1408
187	10	0.758753		128.301	38.7283
188	10	0.775574		128.903	46.4841
189	10	0.789191		129.525	54.376
190	10	0.802956		130.17	62.4056
191	10	0.816874		130.837	70.5743
192	10	0.830953		131.528	78.8838
193	10	0.845198		132.242	87.3358
194	10	0.859618		132.981	95.932
195	10	0.877897		133.752	104.711
196	10	0.892733		134.549	113.638
197	10	0.907769		135.373	122.716
198	10	0.923014		136.225	131.946
199	10	0.938476		137.106	141.331
200	10	0.954165		138.016	150.873
201	10	0.974114		138.965	160.614
202	10	0.990356		139.946	170.517
203	10	1.00687	140.96	180.586	
204	10	1.02365	142.007	190.822	
205	10	1.04073	143.091	201.23	
206	10	1.05812	144.21	211.811	
207	10	1.07584	145.368	222.569	
208	10	1.09847	146.574	233.554	
209	10	1.11699	147.822	244.724	
210	10	1.1359	149.112	256.083	
211	10	1.15522	150.447	267.635	
212	10	1.17499	151.827	279.385	
213	10	1.19522	153.256	291.337	
214	10	1.21596	154.734	303.497	
215	10	1.24264	156.279	315.923	
216	10	1.26464	157.878	328.57	
217	10	1.28727	159.535	341.442	
218	10	1.31058	161.253	354.548	
219	10	1.33462	163.034	367.894	
220	10	1.35946	164.882	381.489	
221	10	1.39175	166.819	395.406	
222	10	1.41865	168.831	409.593	
223	10	1.44663	170.924	424.059	
224	10	1.47579	173.102	438.817	
225	10	1.50626	175.371	453.88	
226	10	1.5382	177.737	469.262	
227	10	1.57179	180.208	484.98	
228	10	1.61644	182.82	501.144	
229	10	1.65463	185.558	517.69	
230	10	1.6954	188.433	534.644	
231	10	1.7392	191.457	552.036	
232	10	1.78661	194.649	569.902	
233	10	1.83843	198.029	588.287	
234	10	1.8957	201.623	607.244	
235	11	1.97737	205.533	628.995	

236	12	2.05375	209.751	653.64
237	13	2.14441	214.349	681.517
238	18	2.25713	219.444	722.145
239	20	2.40892	225.247	770.324
240	73	2.65209	232.28	963.926

Data Set Standard Deviation = 5.80489
Numerator = 929153
Denominator = 1.87068e+006
W Statistic = 0.496694 = 929153 / 1.87068e+006

5% Critical value of 0.976 exceeds 0.496694
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.496694
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 = 240

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-2.25379	-2.65209	7.03356	5.97726
2	-1.04982	-2.40892	12.8365	8.5062
3	-1.02165	-2.25713	17.9311	10.8122
4	-0.941609	-2.14441	22.5296	12.8314
5	-0.776529	-2.05375	26.7475	14.4262
6	-0.733969	-1.97737	30.6575	15.8775
7	-0.71335	-1.8957	34.2511	17.2298
8	-0.673345	-1.83843	37.6309	18.4677
9	-0.634878	-1.78661	40.8229	19.602
10	-0.562119	-1.7392	43.8477	20.5796
11	-0.527633	-1.6954	46.7221	21.4742
12	-0.527633	-1.65463	49.4599	22.3472
13	-0.527633	-1.61644	52.0728	23.2001
14	-0.430783	-1.57179	54.5433	23.8772
15	-0.430783	-1.5382	56.9093	24.5398
16	-0.400478	-1.50626	59.1782	25.143
17	-0.371064	-1.47579	61.3561	25.6907
18	-0.356675	-1.44663	63.4489	26.2066
19	-0.301105	-1.41865	65.4614	26.6338
20	-0.287682	-1.39175	67.3984	27.0342
21	-0.287682	-1.35946	69.2465	27.4253
22	-0.287682	-1.33462	71.0278	27.8092
23	-0.248461	-1.31058	72.7454	28.1348
24	-0.210721	-1.28727	74.4024	28.4061
25	-0.198451	-1.26464	76.0018	28.6571
26	-0.18633	-1.24264	77.5459	28.8886
27	-0.139262	-1.21596	79.0245	29.0579
28	-0.127833	-1.19522	80.453	29.2107
29	-0.105361	-1.17499	81.8336	29.3345
30	-0.0833816	-1.15522	83.1682	29.4309
31	-0.040822	-1.1359	84.4584	29.4772
32	0	-1.11699	85.7061	29.4772
33	0.0953102	-1.09847	86.9127	29.3725
34	0.0953102	-1.07584	88.0701	29.27
35	0.0953102	-1.05812	89.1898	29.1691
36	0.182322	-1.04073	90.2729	28.9794
37	0.262364	-1.02365	91.3208	28.7108
38	0.262364	-1.00687	92.3345	28.4467
39	0.262364	-0.990356	93.3153	28.1868
40	0.336472	-0.974114	94.2642	27.8591
41	0.470004	-0.954165	95.1747	27.4106
42	0.470004	-0.938476	96.0554	26.9695
43	0.530628	-0.923014	96.9074	26.4797
44	0.530628	-0.907769	97.7314	25.9981
45	0.530628	-0.892733	98.5284	25.5243
46	0.530628	-0.877897	99.2991	25.0585
47	0.530628	-0.859618	100.038	24.6024
48	0.641854	-0.845198	100.752	24.0599
49	0.693147	-0.830953	101.443	23.4839

50	0.693147	-0.816874	102.11	22.9177
51	0.693147	-0.802956	102.755	22.3611
52	0.693147	-0.789191	103.378	21.8141
53	0.693147	-0.775574	103.979	21.2765
54	0.693147	-0.758753	104.555	20.7506
55	0.788457	-0.745449	105.111	20.1628
56	0.832909	-0.732275	105.647	19.5529
57	0.875469	-0.719228	106.164	18.9232
58	1.09861	-0.706302	106.663	18.1473
59	1.09861	-0.693493	107.144	17.3854
60	1.09861	-0.680797	107.607	16.6375
61	1.30833	-0.665079	108.05	15.7673
62	1.335	-0.652622	108.476	14.8961
63	1.38629	-0.640266	108.886	14.0085
64	1.38629	-0.628006	109.28	13.1379
65	1.60944	-0.615839	109.659	12.1467
66	1.60944	-0.603765	110.024	11.175
67	1.60944	-0.588793	110.37	10.2274
68	1.60944	-0.576911	110.703	9.29888
69	1.60944	-0.565108	111.023	8.38938
70	1.60944	-0.553384	111.329	7.49874
71	1.60944	-0.541736	111.622	6.62685
72	1.60944	-0.530162	111.903	5.77359
73	1.60944	-0.518658	112.172	4.93884
74	1.60944	-0.504372	112.427	4.12708
75	1.79176	-0.493018	112.67	3.24371
76	1.79176	-0.481728	112.902	2.38057
77	1.79176	-0.470498	113.123	1.53756
78	1.79176	-0.459327	113.334	0.714553
79	1.79176	-0.448213	113.535	-0.0885365
80	1.94591	-0.437153	113.726	-0.939197
81	1.94591	-0.423405	113.906	-1.76311
82	1.94591	-0.412463	114.076	-2.56572
83	1.94591	-0.401571	114.237	-3.34714
84	1.94591	-0.390726	114.39	-4.10746
85	2.07944	-0.379927	114.534	-4.8975
86	2.07944	-0.369171	114.67	-5.66516
87	2.07944	-0.358459	114.799	-6.41056
88	2.19722	-0.345126	114.918	-7.16888
89	2.19722	-0.334503	115.03	-7.90386
90	2.19722	-0.323919	115.135	-8.61558
91	2.30259	-0.31337	115.233	-9.33714
92	2.30259	-0.302855	115.325	-10.0345
93	2.30259	-0.292375	115.41	-10.7077
94	2.30259	-0.279319	115.488	-11.3509
95	2.30259	-0.268908	115.56	-11.97
96	2.30259	-0.258527	115.627	-12.5653
97	2.30259	-0.248174	115.689	-13.1368
98	2.30259	-0.237847	115.745	-13.6844
99	2.30259	-0.227545	115.797	-14.2084
100	2.30259	-0.217267	115.844	-14.7087
101	2.30259	-0.204452	115.886	-15.1794
102	2.30259	-0.194225	115.924	-15.6266
103	2.30259	-0.184017	115.958	-16.0504
104	2.30259	-0.173829	115.988	-16.4506
105	2.30259	-0.163659	116.015	-16.8274
106	2.30259	-0.153505	116.038	-17.1809
107	2.30259	-0.143367	116.059	-17.511
108	2.30259	-0.130716	116.076	-17.812
109	2.30259	-0.12061	116.091	-18.0897
110	2.30259	-0.110516	116.103	-18.3442
111	2.30259	-0.100433	116.113	-18.5754

112	2.30259	-0.0903606	116.121	-18.7835
113	2.30259	-0.0802981	116.127	-18.9684
114	2.30259	-0.0677301	116.132	-19.1244
115	2.30259	-0.0576847	116.135	-19.2572
116	2.30259	-0.0476439	116.138	-19.3669
117	2.30259	-0.0376076	116.139	-19.4535
118	2.30259	-0.0275759	116.14	-19.517
119	2.30259	-0.0175476	116.14	-19.5574
120	2.30259	-0.00751925	116.14	-19.5747
121	2.30259	0.00751925	116.14	-19.5574
122	2.30259	0.0175476	116.141	-19.517
123	2.30259	0.0275759	116.141	-19.4535
124	2.30259	0.0376076	116.143	-19.3669
125	2.30259	0.0476439	116.145	-19.2572
126	2.30259	0.0576847	116.148	-19.1244
127	2.30259	0.0677301	116.153	-18.9684
128	2.30259	0.0802981	116.159	-18.7835
129	2.30259	0.0903606	116.167	-18.5754
130	2.30259	0.100433	116.178	-18.3442
131	2.30259	0.110516	116.19	-18.0897
132	2.30259	0.12061	116.204	-17.812
133	2.30259	0.130716	116.221	-17.511
134	2.30259	0.143367	116.242	-17.1809
135	2.30259	0.153505	116.266	-16.8274
136	2.30259	0.163659	116.292	-16.4506
137	2.30259	0.173829	116.323	-16.0504
138	2.30259	0.184017	116.356	-15.6266
139	2.30259	0.194225	116.394	-15.1794
140	2.30259	0.204452	116.436	-14.7087
141	2.30259	0.217267	116.483	-14.2084
142	2.30259	0.227545	116.535	-13.6844
143	2.30259	0.237847	116.591	-13.1368
144	2.30259	0.248174	116.653	-12.5653
145	2.30259	0.258527	116.72	-11.97
146	2.30259	0.268908	116.792	-11.3509
147	2.30259	0.279319	116.87	-10.7077
148	2.30259	0.292375	116.956	-10.0345
149	2.30259	0.302855	117.047	-9.33714
150	2.30259	0.31337	117.146	-8.61558
151	2.30259	0.323919	117.251	-7.86973
152	2.30259	0.334503	117.362	-7.09951
153	2.30259	0.345126	117.482	-6.30482
154	2.30259	0.358459	117.61	-5.47944
155	2.30259	0.369171	117.746	-4.62939
156	2.30259	0.379927	117.891	-3.75458
157	2.30259	0.390726	118.043	-2.8549
158	2.30259	0.401571	118.205	-1.93025
159	2.30259	0.412463	118.375	-0.980519
160	2.30259	0.423405	118.554	-0.00559324
161	2.30259	0.437153	118.745	1.00099
162	2.30259	0.448213	118.946	2.03304
163	2.30259	0.459327	119.157	3.09068
164	2.30259	0.470498	119.378	4.17404
165	2.30259	0.481728	119.61	5.28325
166	2.30259	0.493018	119.853	6.41847
167	2.30259	0.504372	120.108	7.57983
168	2.30259	0.518658	120.377	8.77408
169	2.30259	0.530162	120.658	9.99482
170	2.30259	0.541736	120.951	11.2422
171	2.30259	0.553384	121.258	12.5164
172	2.30259	0.565108	121.577	13.8176
173	2.30259	0.576911	121.91	15.146

174	2.30259	0.588793		122.257	16.5018
175	2.30259	0.603765		122.621	17.892
176	2.30259	0.615839		123	19.31
177	2.30259	0.628006		123.395	20.7561
178	2.30259	0.640266		123.805	22.2303
179	2.30259	0.652622		124.231	23.733
180	2.30259	0.665079		124.673	25.2644
181	2.30259	0.680797		125.136	26.832
182	2.30259	0.693493		125.617	28.4289
183	2.30259	0.706302		126.116	30.0552
184	2.30259	0.719228		126.633	31.7113
185	2.30259	0.732275		127.17	33.3974
186	2.30259	0.745449		127.725	35.1138
187	2.30259	0.758753		128.301	36.8609
188	2.30259	0.775574		128.903	38.6468
189	2.30259	0.789191		129.525	40.4639
190	2.30259	0.802956		130.17	42.3128
191	2.30259	0.816874		130.837	44.1937
192	2.30259	0.830953		131.528	46.1071
193	2.30259	0.845198		132.242	48.0532
194	2.30259	0.859618		132.981	50.0326
195	2.30259	0.877897		133.752	52.054
196	2.30259	0.892733		134.549	54.1096
197	2.30259	0.907769		135.373	56.1998
198	2.30259	0.923014		136.225	58.3251
199	2.30259	0.938476		137.106	60.486
200	2.30259	0.954165		138.016	62.6831
201	2.30259	0.974114		138.965	64.9261
202	2.30259	0.990356		139.946	67.2065
203	2.30259	1.00687	140.96	69.5248	
204	2.30259	1.02365	142.007	71.8819	
205	2.30259	1.04073	143.091	74.2783	
206	2.30259	1.05812	144.21	76.7147	
207	2.30259	1.07584	145.368	79.1919	
208	2.30259	1.09847	146.574	81.7212	
209	2.30259	1.11699	147.822	84.2932	
210	2.30259	1.1359	149.112	86.9087	
211	2.30259	1.15522	150.447	89.5687	
212	2.30259	1.17499	151.827	92.2742	
213	2.30259	1.19522	153.256	95.0263	
214	2.30259	1.21596	154.734	97.8261	
215	2.30259	1.24264	156.279	100.687	
216	2.30259	1.26464	157.878	103.599	
217	2.30259	1.28727	159.535	106.563	
218	2.30259	1.31058	161.253	109.581	
219	2.30259	1.33462	163.034	112.654	
220	2.30259	1.35946	164.882	115.784	
221	2.30259	1.39175	166.819	118.989	
222	2.30259	1.41865	168.831	122.256	
223	2.30259	1.44663	170.924	125.587	
224	2.30259	1.47579	173.102	128.985	
225	2.30259	1.50626	175.371	132.453	
226	2.30259	1.5382	177.737	135.995	
227	2.30259	1.57179	180.208	139.614	
228	2.30259	1.61644	182.82	143.336	
229	2.30259	1.65463	185.558	147.146	
230	2.30259	1.6954	188.433	151.05	
231	2.30259	1.7392	191.457	155.054	
232	2.30259	1.78661	194.649	159.168	
233	2.30259	1.83843	198.029	163.401	
234	2.30259	1.8957	201.623	167.766	
235	2.3979	1.97737	205.533	172.508	

236	2.48491	2.05375	209.751	177.611
237	2.56495	2.14441	214.349	183.112
238	2.89037	2.25713	219.444	189.636
239	2.99573	2.40892	225.247	196.852
240	4.29046	2.65209	232.28	208.231

Data Set Standard Deviation = 1.04805
Numerator = 43360
Denominator = 60978
W Statistic = 0.711077 = 43360 / 60978

5% Critical value of 0.976 exceeds 0.711077
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.711077
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	240
	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	227
	11/15/2007	1.60944 J	207
	5/20/2008	2.07944 J	228
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.301105 J	161
	11/16/2009	-0.248461 J	165
	6/30/2010	0.262364	179
	11/17/2010	-0.139262 J	169
	7/6/2011	0.0953102	175

Rank Sum = 2543
Rank Mean = 127.15

Background Rank Sum = 2543
Background Rank Mean = 127.15

Compliance Wells

Well ID	Date	Result	Rank
LMW-3S	11/18/2006	0.693147 J	191
	6/2/2007	ND<2.30259	72
	11/15/2007	1.79176 J	217
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	0.336472	182
	11/16/2009	-0.198451 J	167
	11/17/2010	0.530628	185
	7/6/2011	0.262364	180

Rank Sum = 1338
Rank Mean = 148.667

LMW-9D	11/18/2006	1.79176 J	218
	6/2/2007	ND<2.30259	72
	11/15/2007	2.19722 J	230
	5/20/2008	0.693147 J	192
	11/20/2008	ND<2.30259	72

	6/11/2009	-0.371064 J	159
	11/16/2009	-0.287682 J	162
	6/30/2010	-0.105361 J	171
	11/17/2010	-0.634878 J	151
	7/6/2011	0.693147	193

Rank Sum = 1620
Rank Mean = 162

LMW-9	1/16/1998	2.19722 J	231
	3/16/1999	ND<2.30259	72
	9/23/1999	2.48491 J	236
	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	208
	11/15/2007	1.94591 J	222
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.127833 J	170
	11/16/2009	-0.527633 J	153
	6/30/2010	0.875469	199
	11/17/2010	0.530628	186
	7/6/2011	-0.430783 J	156

Rank Sum = 2553
Rank Mean = 127.65

LMW-8	1/16/1998	0.693147 J	194
	3/16/1999	1.60944 J	209
	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	219
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.287682 J	163
	11/16/2009	-0.430783 J	157
	6/30/2010	0.262364	181
	11/17/2010	-0.287682 J	164
	7/6/2011	-0.733969 J	148

Rank Sum = 2299
Rank Mean = 114.95

LMW-7	1/16/1998	2.99573	239
	3/16/1999	1.60944 J	210
	9/23/1999	1.60944 J	211
	3/14/2000	ND<2.30259	72
	9/23/2003	ND<2.30259	72
	3/10/2004	ND<2.30259	72
	10/12/2004	ND<2.30259	72
	4/1/2005	2.30259 J	233

	10/26/2005	2.3979	J	235
	6/19/2006	2.30259	J	234
	11/18/2006	ND<2.30259		72
	6/2/2007	1.79176	J	220
	11/15/2007	2.07944	J	229
	5/20/2008	ND<2.30259		72
	11/20/2008	ND<2.30259		72
	6/11/2009	1.38629		205
	11/17/2010	1.335		204
	7/6/2011	2.56495		237

Rank Sum = 2961
Rank Mean = 164.5

LMW-9S	11/18/2006	ND<2.30259		72
	6/2/2007	ND<2.30259		72
	11/15/2007	1.94591	J	223
	5/20/2008	ND<2.30259		72
	11/20/2008	ND<2.30259		72
	6/11/2009	-0.18633	J	168
	6/30/2010	0.530628		187
	11/17/2010	0.470004		183
	7/6/2011	-0.71335	J	149

Rank Sum = 1198
Rank Mean = 133.111

LMW-3	11/19/1996	ND<2.30259		72
	3/24/1997	ND<2.30259		72
	1/16/1998	1.38629	J	206
	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	232
	5/20/2008	ND<2.30259		72
	11/20/2008	ND<2.30259		72
	6/11/2009	-0.356675	J	160
	11/16/2009	0.0953102		176
	11/17/2010	0.470004		184
	7/6/2011	0		174

Rank Sum = 2212
Rank Mean = 105.333

LMW-16	11/18/2006	ND<2.30259		72
	6/2/2007	1.94591	J	224
	11/15/2007	1.79176	J	221
	5/20/2008	ND<2.30259		72
	11/20/2008	1.60944	J	212
	6/11/2009	-1.02165	J	145
	11/16/2009	-0.527633	J	154
	11/17/2010	-0.776529	J	147
	7/6/2011	-0.400478	J	158

Rank Sum = 1405
Rank Mean = 156.111

LMW-15R	11/18/2006	1.09861	J	200

	6/2/2007	1.60944 J	213
	11/15/2007	ND<2.30259	72
	11/15/2007	1.60944 J	214
	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	215
	6/11/2009	1.30833	203
	11/16/2009	-0.0833816 J	172
	11/16/2009	-0.562119 J	152
	11/16/2009	0.530628	188
	11/17/2010	0.832909	198
	7/6/2011	-0.527633 J	155

Rank Sum = 2198
Rank Mean = 157

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	166
	11/17/2010	-0.040822 J	173
	7/6/2011	0.693147	195

Rank Sum = 822
Rank Mean = 117.429

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	196
	11/20/2008	ND<2.30259	72
	6/11/2009	-0.673345 J	150
	11/16/2009	ND<-2.25379 U	72
	6/30/2010	0.641854	190
	11/17/2010	-0.941609 J	146
	7/6/2011	-1.04982 J	144

Rank Sum = 1690
Rank Mean = 99.4118

LMW-6	1/16/1998	2.89037 J	238
	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	225
	11/15/2007	1.94591 J	226
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72
	6/11/2009	0.530628	189

	11/16/2009	0.182322	178
	6/30/2010	1.09861	201
	11/17/2010	0.788457	197
	7/6/2011	0.0953102	177

Rank Sum = 2495
Rank Mean = 124.75

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	202
	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	216
	5/20/2008	ND<2.30259	72
	11/20/2008	ND<2.30259	72

Rank Sum = 1210
Rank Mean = 93.0769

Calculation Results:

Kruskal-Wallis H Statistic = 40.1345
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 50.9014
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
40.1345 > 26.2962 indicating a significant group difference at 5% significance level
50.9014 > 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 127.15

Well	Mean Rank		Dif from Bkg	Critical Value
LMW-3S	148.667	21.5167	64.8276	
LMW-9D	162	34.85	62.5522	
LMW-9	127.65	0.5	51.0737	
LMW-8	114.95	-12.2	51.0737	
LMW-7	164.5	37.35	52.4732	
LMW-9S	133.111	5.96111	64.8276	
LMW-3	105.333	-21.8167	50.462	
LMW-16	156.111	28.9611	64.8276	
LMW-15R		157	29.85	56.2804
LMW-14R		117.429	-9.7214	70.9275
LMW-10	99.4118	-27.7382	53.2793	
LMW-6	124.75	-2.4	51.0737	
LMW-11	72	-55.15	60.6271	
LMW-12	72	-55.15	60.6271	
LMW-13	72	-55.15	60.6271	
MW-5	93.0769	-34.0731	57.5397	

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 127.15

Well	Mean Rank		Dif from Bkg	Critical Value
LMW-3S	148.667	21.5167	76.5713	
LMW-9D	162	34.85	73.8837	
LMW-9	127.65	0.5	60.3258	
LMW-8	114.95	-12.2	60.3258	
LMW-7	164.5	37.35	61.9789	
LMW-9S	133.111	5.96111	76.5713	
LMW-3	105.333	-21.8167	59.6033	
LMW-16	156.111	28.9611	76.5713	
LMW-15R		157	29.85	66.4758
LMW-14R		117.429	-9.7214	83.7763
LMW-10	99.4118	-27.7382	62.931	
LMW-6	124.75	-2.4	60.3258	
LMW-11	72	-55.15	71.6098	
LMW-12	72	-55.15	71.6098	
LMW-13	72	-55.15	71.6098	
MW-5	93.0769	-34.0731	67.9631	

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Copper

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

Total Percent Non-Detects = 59.5833%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 20
Maximum Background Concentration = 4.29046
Confidence Level = 71.4%
False Positive Rate = 28.6%

Location	Date	Samples	Mean	Significant
LMW-3S	7/6/2011	1	0.262364	FALSE
LMW-9D	7/6/2011	1	0.693147	FALSE
LMW-9	7/6/2011	1	-0.430783	FALSE
LMW-8	7/6/2011	1	-0.733969	FALSE
LMW-7	7/6/2011	1	2.56495	FALSE
LMW-9S	7/6/2011	1	-0.71335	FALSE
LMW-3	7/6/2011	1	0	FALSE
LMW-16	7/6/2011	1	-0.400478	FALSE
LMW-15R	7/6/2011	1	-0.527633	FALSE
LMW-14R	7/6/2011	1	0.693147	FALSE
LMW-10	7/6/2011	1	-1.04982	FALSE
LMW-6	7/6/2011	1	0.0953102	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 (ppb)

Parameter: Dichlorodifluoromethane

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 232
Total Non-Detect: 213
Percent Non-Detects: 91.8103%
Total Background Measurements: 19
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	19	16 (84.2105%)	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
			7/6/2011	ND<0.25 U	ND<0.25 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
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<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
			7/6/2011	ND<0.25 U	ND<0.25 U
LMW-9D9		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	
			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	
			7/6/2011	ND<0.25 U	ND<0.25 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	
			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	
			7/6/2011	ND<0.25 U	ND<0.25 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	
			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	
			7/6/2011	ND<0.25 U	ND<0.25 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
			11/17/2010	ND<0.25 U	ND<0.25 U
			7/6/2011	ND<0.25 U	ND<0.25 U
LMW-10	16	10 (62.5%)	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	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
			7/6/2011	ND<0.25 U	ND<0.25 U
LMW-3S	9	2 (22.2222%)	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
			7/6/2011	0.76 J	0.76 J
LMW-3	21	20 (95.2381%)	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
			7/6/2011	ND<0.25 U	ND<0.25 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
			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
			7/6/2011	ND<0.25 U	ND<0.25 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
			6/30/2010	ND<0.25 U	ND<0.25 U
			11/17/2010	ND<0.25 U	ND<0.25 U
			7/6/2011	ND<0.25 U	ND<0.25 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
			6/30/2010	ND<0.25 U	ND<0.25 U
			11/17/2010	ND<0.25 U	ND<0.25 U
			7/6/2011	ND<0.25 U	ND<0.25 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
			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
			7/6/2011	ND<0.25 U	ND<0.25 U
LMW-13	11	11 (100%)	3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
LMW-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

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 = 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	0.125	-1.72793	43.4046	-0.215991
11	0.125	-1.67466	46.2091	-0.425324
12	0.125	-1.63524	48.8831	-0.629728
13	0.125	-1.59819	51.4373	-0.829502
14	0.125	-1.55477	53.8547	-1.02385
15	0.125	-1.52203	56.1712	-1.2141
16	0.125	-1.49085	58.3939	-1.40046
17	0.125	-1.46106	60.5286	-1.58309
18	0.125	-1.42554	62.5608	-1.76129
19	0.125	-1.39838	64.5162	-1.93608
20	0.125	-1.3722	66.3992	-2.10761
21	0.125	-1.34075	68.1968	-2.2752
22	0.125	-1.31652	69.93	-2.43977
23	0.125	-1.29303	71.6019	-2.6014
24	0.125	-1.26464	73.2013	-2.75948
25	0.125	-1.24264	74.7454	-2.91481
26	0.125	-1.22123	76.2368	-3.06746
27	0.125	-1.20036	77.6777	-3.21751
28	0.125	-1.17499	79.0583	-3.36438
29	0.125	-1.15522	80.3928	-3.50878
30	0.125	-1.1359	81.6831	-3.65077
31	0.125	-1.11232	82.9203	-3.78981
32	0.125	-1.0939	84.1169	-3.92655
33	0.125	-1.07584	85.2744	-4.06103
34	0.125	-1.05812	86.394	-4.19329
35	0.125	-1.03643	87.4682	-4.32284
36	0.125	-1.01943	88.5074	-4.45027
37	0.125	-1.00271	89.5128	-4.57561
38	0.125	-0.982202	90.4776	-4.69839
39	0.125	-0.966088	91.4109	-4.81915
40	0.125	-0.950222	92.3138	-4.93793
41	0.125	-0.93459	93.1873	-5.05475
42	0.125	-0.915365	94.0252	-5.16917
43	0.125	-0.900227	94.8356	-5.2817
44	0.125	-0.885291	95.6193	-5.39236
45	0.125	-0.866894	96.3708	-5.50072
46	0.125	-0.852385	97.0974	-5.60727
47	0.125	-0.838054	97.7997	-5.71203
48	0.125	-0.820379	98.4727	-5.81457
49	0.125	-0.806422	99.123	-5.91538

50	0.125	-0.792618	99.7513	-6.01445
51	0.125	-0.778966	100.358	-6.11182
52	0.41	-0.7621	100.939	-6.42429
53	0.5	-0.748762	101.5	-6.79867
54	0.5	-0.735557	102.041	-7.16645
55	0.5	-0.719228	102.558	-7.52606
56	0.5	-0.706302	103.057	-7.87921
57	0.5	-0.693493	103.538	-8.22596
58	0.5	-0.680797	104.001	-8.56636
59	0.5	-0.665079	104.443	-8.8989
60	0.5	-0.652622	104.869	-9.22521
61	0.5	-0.640266	105.279	-9.54534
62	0.5	-0.624956	105.67	-9.85782
63	0.5	-0.612813	106.045	-10.1642
64	0.5	-0.60076	106.406	-10.4646
65	0.5	-0.588793	106.753	-10.759
66	0.5	-0.573953	107.082	-11.046
67	0.5	-0.56217	107.398	-11.3271
68	0.5	-0.550465	107.701	-11.6023
69	0.5	-0.53594	107.989	-11.8703
70	0.5	-0.524401	108.264	-12.1325
71	0.5	-0.51293	108.527	-12.3889
72	0.5	-0.498687	108.776	-12.6383
73	0.5	-0.487364	109.013	-12.882
74	0.5	-0.476105	109.24	-13.12
75	0.5	-0.464904	109.456	-13.3525
76	0.5	-0.450985	109.659	-13.578
77	0.5	-0.439913	109.853	-13.7979
78	0.5	-0.428895	110.037	-14.0124
79	0.5	-0.415193	110.209	-14.22
80	0.5	-0.40429	110.373	-14.4221
81	0.5	-0.393433	110.527	-14.6188
82	0.5	-0.382622	110.674	-14.8101
83	0.5	-0.369171	110.81	-14.9947
84	0.5	-0.358459	110.939	-15.1739
85	0.5	-0.347787	111.059	-15.3478
86	0.5	-0.334503	111.171	-15.5151
87	0.5	-0.323919	111.276	-15.677
88	0.5	-0.31337	111.374	-15.8337
89	0.5	-0.302855	111.466	-15.9852
90	0.5	-0.28976	111.55	-16.13
91	0.5	-0.279319	111.628	-16.2697
92	0.5	-0.268908	111.7	-16.4042
93	0.5	-0.255936	111.766	-16.5321
94	0.5	-0.24559	111.826	-16.6549
95	0.5	-0.235269	111.882	-16.7725
96	0.5	-0.222403	111.931	-16.8838
97	0.5	-0.212137	111.976	-16.9898
98	0.5	-0.201894	112.017	-17.0908
99	0.5	-0.191671	112.054	-17.1866
100	0.5	-0.17892	112.086	-17.2761
101	0.5	-0.168741	112.114	-17.3604
102	0.5	-0.158579	112.139	-17.4397
103	0.5	-0.1459	112.161	-17.5127
104	0.5	-0.135774	112.179	-17.5806
105	0.5	-0.125661	112.195	-17.6434
106	0.5	-0.115562	112.208	-17.7012
107	0.5	-0.102953	112.219	-17.7526
108	0.5	-0.0928787	112.227	-17.7991
109	0.5	-0.0828129	112.234	-17.8405
110	0.5	-0.0702426	112.239	-17.8756
111	0.5	-0.0601949	112.243	-17.9057

112	0.5	-0.0501541	112.245	-17.9308
113	0.5	-0.0401167	112.247	-17.9508
114	0.5	-0.0275759	112.248	-17.9646
115	0.5	-0.0175476	112.248	-17.9734
116	0.5	-0.00751925	112.248	-17.9772
117	0.5	0.00751925	112.248	-17.9734
118	0.5	0.0175476	112.248	-17.9646
119	0.5	0.0275759	112.249	-17.9508
120	0.5	0.0401167	112.251	-17.9308
121	0.5	0.0501541	112.253	-17.9057
122	0.5	0.0601949	112.257	-17.8756
123	0.5	0.0702426	112.262	-17.8405
124	0.5	0.0828129	112.269	-17.7991
125	0.5	0.0928787	112.277	-17.7526
126	0.5	0.102953	112.288	-17.7012
127	0.5	0.115562	112.301	-17.6434
128	0.5	0.125661	112.317	-17.5806
129	0.5	0.135774	112.335	-17.5127
130	0.5	0.1459	112.357	-17.4397
131	0.5	0.158579	112.382	-17.3604
132	0.5	0.168741	112.41	-17.2761
133	0.5	0.17892	112.442	-17.1866
134	0.5	0.191671	112.479	-17.0908
135	0.5	0.201894	112.52	-16.9898
136	0.5	0.212137	112.565	-16.8838
137	0.5	0.222403	112.614	-16.7725
138	0.5	0.235269	112.67	-16.6549
139	0.5	0.24559	112.73	-16.5321
140	0.5	0.255936	112.796	-16.4042
141	0.5	0.268908	112.868	-16.2697
142	0.5	0.279319	112.946	-16.13
143	0.5	0.28976	113.03	-15.9852
144	0.5	0.302855	113.122	-15.8337
145	0.5	0.31337	113.22	-15.677
146	0.5	0.323919	113.325	-15.5151
147	0.5	0.334503	113.437	-15.3478
148	0.5	0.347787	113.558	-15.1739
149	0.5	0.358459	113.686	-14.9947
150	0.5	0.369171	113.822	-14.8101
151	0.5	0.382622	113.969	-14.6188
152	0.5	0.393433	114.123	-14.4221
153	0.5	0.40429	114.287	-14.22
154	0.5	0.415193	114.459	-14.0124
155	0.5	0.428895	114.643	-13.7979
156	0.5	0.439913	114.837	-13.578
157	0.5	0.450985	115.04	-13.3525
158	0.5	0.464904	115.256	-13.12
159	0.5	0.476105	115.483	-12.882
160	0.5	0.487364	115.721	-12.6383
161	0.5	0.498687	115.969	-12.3889
162	0.5	0.51293	116.232	-12.1325
163	0.5	0.524401	116.507	-11.8703
164	0.5	0.53594	116.795	-11.6023
165	0.5	0.550465	117.098	-11.3271
166	0.5	0.56217	117.414	-11.046
167	0.5	0.573953	117.743	-10.759
168	0.5	0.588793	118.09	-10.4646
169	0.5	0.60076	118.451	-10.1642
170	0.5	0.612813	118.826	-9.85782
171	0.5	0.624956	119.217	-9.54534
172	0.5	0.640266	119.627	-9.22521
173	0.5	0.652622	120.053	-8.8989

174	0.5	0.665079	120.495	-8.56636
175	0.5	0.680797	120.958	-8.22596
176	0.5	0.693493	121.439	-7.87921
177	0.5	0.706302	121.938	-7.52606
178	0.5	0.719228	122.455	-7.16645
179	0.5	0.735557	122.997	-6.79867
180	0.5	0.748762	123.557	-6.42429
181	0.5	0.7621	124.138	-6.04324
182	0.5	0.778966	124.745	-5.65375
183	0.5	0.792618	125.373	-5.25744
184	0.5	0.806422	126.023	-4.85423
185	0.5	0.820379	126.696	-4.44404
186	0.5	0.838054	127.399	-4.02502
187	0.5	0.852385	128.125	-3.59882
188	0.5	0.866894	128.877	-3.16538
189	0.5	0.885291	129.66	-2.72273
190	0.5	0.900227	130.471	-2.27262
191	0.5	0.915365	131.309	-1.81494
192	0.5	0.93459	132.182	-1.34764
193	0.5	0.950222	133.085	-0.872529
194	0.5	0.966088	134.018	-0.389485
195	0.5	0.982202	134.983	0.101616
196	0.5	1.00271	135.989	0.602971
197	0.5	1.01943	137.028	1.11269
198	0.5	1.03643	138.102	1.6309
199	0.5	1.05812	139.222	2.15996
200	0.5	1.07584	140.379	2.69788
201	0.5	1.0939	141.576	3.24483
202	0.5	1.11232	142.813	3.80099
203	0.5	1.1359	144.103	4.36894
204	0.5	1.15522	145.438	4.94655
205	0.5	1.17499	146.818	5.53404
206	0.5	1.20036	148.259	6.13422
207	0.5	1.22123	149.751	6.74484
208	0.5	1.24264	151.295	7.36616
209	0.5	1.26464	152.894	7.99848
210	0.5	1.29303	154.566	8.645
211	0.5	1.31652	156.299	9.30326
212	0.5	1.34075	158.097	9.97363
213	0.5	1.3722	159.98	10.6597
214	0.5	1.39838	161.935	11.3589
215	0.76	1.42554	163.967	12.4423
216	0.81	1.46106	166.102	13.6258
217	1	1.49085	168.325	15.1166
218	1.1	1.52203	170.641	16.7909
219	2	1.55477	173.059	19.9004
220	2	1.59819	175.613	23.0968
221	2	1.63524	178.287	26.3673
222	2	1.67466	181.091	29.7166
223	2	1.72793	184.077	33.1725
224	2	1.77438	187.226	36.7212
225	2.2	1.82501	190.556	40.7362
226	2.3	1.88079	194.094	45.0621
227	3	1.95996	197.935	50.9419
228	4	2.03352	202.07	59.076
229	4	2.12007	206.565	67.5563
230	4.9	2.25713	211.66	78.6162
231	9	2.40892	217.462	100.297
232	12	2.65209	224.496	132.122

Data Set Standard Deviation = 1.1007

Numerator = 17456.1
Denominator = 62828.3
W Statistic = 0.277839 = 17456.1 / 62828.3

5% Critical value of 0.976 exceeds 0.277839
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.277839
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 = 232

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-2.07944	-2.65209	7.03356	5.51486
2	-2.07944	-2.40892	12.8365	10.5241
3	-2.07944	-2.25713	17.9311	15.2176
4	-2.07944	-2.12007	22.4258	19.6262
5	-2.07944	-2.03352	26.561	23.8548
6	-2.07944	-1.95996	30.4025	27.9304
7	-2.07944	-1.88079	33.9398	31.8414
8	-2.07944	-1.82501	37.2705	35.6364
9	-2.07944	-1.77438	40.4189	39.3261
10	-2.07944	-1.72793	43.4046	42.9192
11	-2.07944	-1.67466	46.2091	46.4016
12	-2.07944	-1.63524	48.8831	49.802
13	-2.07944	-1.59819	51.4373	53.1253
14	-2.07944	-1.55477	53.8547	56.3584
15	-2.07944	-1.52203	56.1712	59.5234
16	-2.07944	-1.49085	58.3939	62.6235
17	-2.07944	-1.46106	60.5286	65.6617
18	-2.07944	-1.42554	62.5608	68.626
19	-2.07944	-1.39838	64.5162	71.5339
20	-2.07944	-1.3722	66.3992	74.3873
21	-2.07944	-1.34075	68.1968	77.1753
22	-2.07944	-1.31652	69.93	79.9129
23	-2.07944	-1.29303	71.6019	82.6017
24	-2.07944	-1.26464	73.2013	85.2315
25	-2.07944	-1.24264	74.7454	87.8155
26	-2.07944	-1.22123	76.2368	90.3549
27	-2.07944	-1.20036	77.6777	92.851
28	-2.07944	-1.17499	79.0583	95.2943
29	-2.07944	-1.15522	80.3928	97.6966
30	-2.07944	-1.1359	81.6831	100.059
31	-2.07944	-1.11232	82.9203	102.372
32	-2.07944	-1.0939	84.1169	104.646
33	-2.07944	-1.07584	85.2744	106.883
34	-2.07944	-1.05812	86.394	109.084
35	-2.07944	-1.03643	87.4682	111.239
36	-2.07944	-1.01943	88.5074	113.359
37	-2.07944	-1.00271	89.5128	115.444
38	-2.07944	-0.982202	90.4776	117.486
39	-2.07944	-0.966088	91.4109	119.495
40	-2.07944	-0.950222	92.3138	121.471
41	-2.07944	-0.93459	93.1873	123.415
42	-2.07944	-0.915365	94.0252	125.318
43	-0.891598	-0.900227	94.8356	126.121
44	-0.693147	-0.885291	95.6193	126.734
45	-0.693147	-0.866894	96.3708	127.335
46	-0.693147	-0.852385	97.0974	127.926
47	-0.693147	-0.838054	97.7997	128.507
48	-0.693147	-0.820379	98.4727	129.076
49	-0.693147	-0.806422	99.123	129.635

50	-0.693147	-0.792618	99.7513	130.184
51	-0.693147	-0.778966	100.358	130.724
52	-0.693147	-0.7621	100.939	131.252
53	-0.693147	-0.748762	101.5	131.771
54	-0.693147	-0.735557	102.041	132.281
55	-0.693147	-0.719228	102.558	132.779
56	-0.693147	-0.706302	103.057	133.269
57	-0.693147	-0.693493	103.538	133.75
58	-0.693147	-0.680797	104.001	134.222
59	-0.693147	-0.665079	104.443	134.683
60	-0.693147	-0.652622	104.869	135.135
61	-0.693147	-0.640266	105.279	135.579
62	-0.693147	-0.624956	105.67	136.012
63	-0.693147	-0.612813	106.045	136.437
64	-0.693147	-0.60076	106.406	136.853
65	-0.693147	-0.588793	106.753	137.261
66	-0.693147	-0.573953	107.082	137.659
67	-0.693147	-0.56217	107.398	138.049
68	-0.693147	-0.550465	107.701	138.43
69	-0.693147	-0.53594	107.989	138.802
70	-0.693147	-0.524401	108.264	139.165
71	-0.693147	-0.51293	108.527	139.521
72	-0.693147	-0.498687	108.776	139.867
73	-0.693147	-0.487364	109.013	140.204
74	-0.693147	-0.476105	109.24	140.534
75	-0.693147	-0.464904	109.456	140.857
76	-0.693147	-0.450985	109.659	141.169
77	-0.693147	-0.439913	109.853	141.474
78	-0.693147	-0.428895	110.037	141.771
79	-0.693147	-0.415193	110.209	142.059
80	-0.693147	-0.40429	110.373	142.339
81	-0.693147	-0.393433	110.527	142.612
82	-0.693147	-0.382622	110.674	142.877
83	-0.693147	-0.369171	110.81	143.133
84	-0.693147	-0.358459	110.939	143.382
85	-0.693147	-0.347787	111.059	143.623
86	-0.693147	-0.334503	111.171	143.855
87	-0.693147	-0.323919	111.276	144.079
88	-0.693147	-0.31337	111.374	144.296
89	-0.693147	-0.302855	111.466	144.506
90	-0.693147	-0.28976	111.55	144.707
91	-0.693147	-0.279319	111.628	144.901
92	-0.693147	-0.268908	111.7	145.087
93	-0.693147	-0.255936	111.766	145.265
94	-0.693147	-0.24559	111.826	145.435
95	-0.693147	-0.235269	111.882	145.598
96	-0.693147	-0.222403	111.931	145.752
97	-0.693147	-0.212137	111.976	145.899
98	-0.693147	-0.201894	112.017	146.039
99	-0.693147	-0.191671	112.054	146.172
100	-0.693147	-0.17892	112.086	146.296
101	-0.693147	-0.168741	112.114	146.413
102	-0.693147	-0.158579	112.139	146.523
103	-0.693147	-0.1459	112.161	146.624
104	-0.693147	-0.135774	112.179	146.718
105	-0.693147	-0.125661	112.195	146.805
106	-0.693147	-0.115562	112.208	146.885
107	-0.693147	-0.102953	112.219	146.957
108	-0.693147	-0.0928787	112.227	147.021
109	-0.693147	-0.0828129	112.234	147.078
110	-0.693147	-0.0702426	112.239	147.127
111	-0.693147	-0.0601949	112.243	147.169

112	-0.693147	-0.0501541	112.245	147.204
113	-0.693147	-0.0401167	112.247	147.231
114	-0.693147	-0.0275759	112.248	147.25
115	-0.693147	-0.0175476	112.248	147.263
116	-0.693147	-0.00751925	112.248	147.268
117	-0.693147	0.00751925	112.248	147.263
118	-0.693147	0.0175476	112.248	147.25
119	-0.693147	0.0275759	112.249	147.231
120	-0.693147	0.0401167	112.251	147.204
121	-0.693147	0.0501541	112.253	147.169
122	-0.693147	0.0601949	112.257	147.127
123	-0.693147	0.0702426	112.262	147.078
124	-0.693147	0.0828129	112.269	147.021
125	-0.693147	0.0928787	112.277	146.957
126	-0.693147	0.102953	112.288	146.885
127	-0.693147	0.115562	112.301	146.805
128	-0.693147	0.125661	112.317	146.718
129	-0.693147	0.135774	112.335	146.624
130	-0.693147	0.1459	112.357	146.523
131	-0.693147	0.158579	112.382	146.413
132	-0.693147	0.168741	112.41	146.296
133	-0.693147	0.17892	112.442	146.172
134	-0.693147	0.191671	112.479	146.039
135	-0.693147	0.201894	112.52	145.899
136	-0.693147	0.212137	112.565	145.752
137	-0.693147	0.222403	112.614	145.598
138	-0.693147	0.235269	112.67	145.435
139	-0.693147	0.24559	112.73	145.265
140	-0.693147	0.255936	112.796	145.087
141	-0.693147	0.268908	112.868	144.901
142	-0.693147	0.279319	112.946	144.707
143	-0.693147	0.28976	113.03	144.506
144	-0.693147	0.302855	113.122	144.296
145	-0.693147	0.31337	113.22	144.079
146	-0.693147	0.323919	113.325	143.855
147	-0.693147	0.334503	113.437	143.623
148	-0.693147	0.347787	113.558	143.382
149	-0.693147	0.358459	113.686	143.133
150	-0.693147	0.369171	113.822	142.877
151	-0.693147	0.382622	113.969	142.612
152	-0.693147	0.393433	114.123	142.339
153	-0.693147	0.40429	114.287	142.059
154	-0.693147	0.415193	114.459	141.771
155	-0.693147	0.428895	114.643	141.474
156	-0.693147	0.439913	114.837	141.169
157	-0.693147	0.450985	115.04	140.857
158	-0.693147	0.464904	115.256	140.534
159	-0.693147	0.476105	115.483	140.204
160	-0.693147	0.487364	115.721	139.867
161	-0.693147	0.498687	115.969	139.521
162	-0.693147	0.51293	116.232	139.165
163	-0.693147	0.524401	116.507	138.802
164	-0.693147	0.53594	116.795	138.43
165	-0.693147	0.550465	117.098	138.049
166	-0.693147	0.56217	117.414	137.659
167	-0.693147	0.573953	117.743	137.261
168	-0.693147	0.588793	118.09	136.853
169	-0.693147	0.60076	118.451	136.437
170	-0.693147	0.612813	118.826	136.012
171	-0.693147	0.624956	119.217	135.579
172	-0.693147	0.640266	119.627	135.135
173	-0.693147	0.652622	120.053	134.683

174	-0.693147		0.665079		120.495	134.222
175	-0.693147		0.680797		120.958	133.75
176	-0.693147		0.693493		121.439	133.269
177	-0.693147		0.706302		121.938	132.779
178	-0.693147		0.719228		122.455	132.281
179	-0.693147		0.735557		122.997	131.771
180	-0.693147		0.748762		123.557	131.252
181	-0.693147		0.7621	124.138	130.724	
182	-0.693147		0.778966		124.745	130.184
183	-0.693147		0.792618		125.373	129.635
184	-0.693147		0.806422		126.023	129.076
185	-0.693147		0.820379		126.696	128.507
186	-0.693147		0.838054		127.399	127.926
187	-0.693147		0.852385		128.125	127.335
188	-0.693147		0.866894		128.877	126.734
189	-0.693147		0.885291		129.66	126.121
190	-0.693147		0.900227		130.471	125.497
191	-0.693147		0.915365		131.309	124.862
192	-0.693147		0.93459	132.182	124.214	
193	-0.693147		0.950222		133.085	123.556
194	-0.693147		0.966088		134.018	122.886
195	-0.693147		0.982202		134.983	122.205
196	-0.693147		1.00271	135.989	121.51	
197	-0.693147		1.01943	137.028	120.804	
198	-0.693147		1.03643	138.102	120.085	
199	-0.693147		1.05812	139.222	119.352	
200	-0.693147		1.07584	140.379	118.606	
201	-0.693147		1.0939	141.576	117.848	
202	-0.693147		1.11232	142.813	117.077	
203	-0.693147		1.1359	144.103	116.29	
204	-0.693147		1.15522	145.438	115.489	
205	-0.693147		1.17499	146.818	114.674	
206	-0.274437		1.20036	148.259	114.345	
207	-0.210721		1.22123	149.751	114.088	
208	0	1.24264	151.295	114.088		
209	0	1.26464	152.894	114.088		
210	0	1.29303	154.566	114.088		
211	0	1.31652	156.299	114.088		
212	0	1.34075	158.097	114.088		
213	0	1.3722	159.98	114.088		
214	0	1.39838	161.935	114.088		
215	0	1.42554	163.967	114.088		
216	0	1.46106	166.102	114.088		
217	0	1.49085	168.325	114.088		
218	0.0953102		1.52203	170.641	114.233	
219	0.693147		1.55477	173.059	115.31	
220	0.693147		1.59819	175.613	116.418	
221	0.693147		1.63524	178.287	117.552	
222	0.693147		1.67466	181.091	118.712	
223	0.693147		1.72793	184.077	119.91	
224	0.693147		1.77438	187.226	121.14	
225	0.788457		1.82501	190.556	122.579	
226	0.832909		1.88079	194.094	124.145	
227	1.09861	1.95996	197.935	126.299		
228	1.38629	2.03352	202.07	129.118		
229	1.38629	2.12007	206.565	132.057		
230	1.58924	2.25713	211.66	135.644		
231	2.19722	2.40892	217.462	140.937		
232	2.48491	2.65209	224.496	147.527		

Data Set Standard Deviation = 0.766302

Numerator = 21764.2
Denominator = 30452.4
W Statistic = 0.714697 = 21764.2 / 30452.4

5% Critical value of 0.976 exceeds 0.714697
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.714697
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 = 91.8103%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 19
Maximum Background Concentration = 0.0953102
Confidence Level = 70.4%
False Positive Rate = 29.6%

Location	Date	Samples	Mean	Significant
LMW-6	7/6/2011	1	-2.07944	FALSE
LMW-9D	7/6/2011	1	-2.07944	FALSE
LMW-9	7/6/2011	1	-2.07944	FALSE
LMW-8	7/6/2011	1	-2.07944	FALSE
LMW-7	7/6/2011	1	-2.07944	FALSE
LMW-10	7/6/2011	1	-2.07944	FALSE
LMW-3S	7/6/2011	1	-0.274437	FALSE
LMW-3	7/6/2011	1	-2.07944	FALSE
LMW-16	7/6/2011	1	-2.07944	FALSE
LMW-9S	7/6/2011	1	-2.07944	FALSE
LMW-14R	7/6/2011	1	-2.07944	FALSE
LMW-15R	7/6/2011	1	-2.07944	FALSE
LMW-13	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
MW-5	11/20/2008	1	-0.693147	FALSE

Concentrations (ppb)

Parameter: Lead

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 158
Percent Non-Detects: 64.4898%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	11 (55%)	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
			7/6/2011	0.26 J	0.26 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-3	22	15 (68.1818%)	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

		7/6/2011	0.12 J	0.12 J	
LMW-9S	9	5 (55.5556%)	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	
		7/6/2011	ND<0.08 U	ND<0.08 U	
LMW-14R	8	3 (37.5%)	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	
		7/6/2011	0.3	0.3	
LMW-16	10	5 (50%)	11/18/2006	ND<0 J	ND<0 J
		6/2/2007	5	5	
		11/15/2007	2	2	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
		6/11/2009	ND<0.08 U		ND<0.08 U
		11/16/2009	0.099 J	0.099 J	
		6/30/2010	0.26 J	0.26 J	
		11/17/2010	ND<0.08 U		ND<0.08 U
		7/6/2011	0.16 J	0.16 J	
LMW-10	17	13 (76.4706%)	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
		7/6/2011	ND<0.08 U	ND<0.08 U	
LMW-3S	10	4 (40%)	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	0.093 J	0.093 J	
		11/17/2010	1.7	1.7	
		7/6/2011	1.7	1.7	

LMW-6	20	15 (75%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	16	16	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	
			4/1/2005	ND<1	ND<1	
			10/26/2005	ND<1	ND<1	
			6/19/2006	ND<1	ND<1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<0 J	ND<0 J	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	0.084 J	0.084 J	
			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	
			7/6/2011	0.099 J	0.099 J	
LMW-7	18	8 (44.4444%)	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	
			7/6/2011	2.5	2.5	
LMW-8	20	19 (95%)	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
			7/6/2011	ND<0.08 U	ND<0.08 U	
LMW-9	20	13 (65%)	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	
			7/6/2011	ND<0.08 U	ND<0.08 U	
LMW-9D	10	2 (20%)	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	
			7/6/2011	0.46	0.46	
LMW-15R	15	8 (53.3333%)	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	1	1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	0.89	0.89	
			11/16/2009	0.14 J	0.14 J	
			11/16/2009	ND<0.08 U		ND<0.08 U
			11/16/2009	0.21 J	0.21 J	
			6/30/2010	0.08 J	0.08 J	
			11/17/2010	0.16 J	0.16 J	
			7/6/2011	0.48	0.48	
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-12	11	9 (81.8182%)	3/14/2000		49	49

			9/23/2003	ND<1	ND<1
			3/10/2004	18	18
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
LMW-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

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 = 245

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	0.04	-1.66456	49.7231	-0.0665825
13	0.04	-1.62576	52.3662	-0.131613
14	0.04	-1.58927	54.892	-0.195184
15	0.04	-1.55477	57.3093	-0.257375
16	0.04	-1.5141	59.6018	-0.317939
17	0.04	-1.48328	61.802	-0.37727
18	0.04	-1.4538	63.9155	-0.435422
19	0.04	-1.42554	65.9477	-0.492444
20	0.04	-1.39838	67.9031	-0.548379
21	0.04	-1.3722	69.7861	-0.603267
22	0.04	-1.34694	71.6003	-0.657145
23	0.04	-1.32251	73.3494	-0.710045
24	0.04	-1.29884	75.0363	-0.761998
25	0.04	-1.27588	76.6642	-0.813033
26	0.04	-1.25357	78.2356	-0.863176
27	0.04	-1.23187	79.7531	-0.912451
28	0.04	-1.21073	81.219	-0.96088
29	0.04	-1.19012	82.6353	-1.00848
30	0.04	-1.17	84.0043	-1.05528
31	0.08	-1.1455	85.3164	-1.14692
32	0.084	-1.12639	86.5852	-1.24154
33	0.093	-1.10768	87.8121	-1.34456
34	0.099	-1.08935	88.9988	-1.4524
35	0.099	-1.07138	90.1467	-1.55847
36	0.1	-1.05375	91.2571	-1.66384
37	0.11	-1.03643	92.3312	-1.77785
38	0.11	-1.01943	93.3705	-1.88999
39	0.11	-1.00271	94.3759	-2.00029
40	0.12	-0.986272	95.3486	-2.11864
41	0.13	-0.970094	96.2897	-2.24475
42	0.14	-0.954165	97.2002	-2.37833
43	0.14	-0.938476	98.0809	-2.50972
44	0.16	-0.923014	98.9328	-2.6574
45	0.16	-0.907769	99.7569	-2.80265
46	0.16	-0.892733	100.554	-2.94548
47	0.16	-0.874218	101.318	-3.08536
48	0.17	-0.859618	102.057	-3.23149
49	0.17	-0.845198	102.771	-3.37518

50	0.17	-0.830953	103.462	-3.51644
51	0.19	-0.816874	104.129	-3.67164
52	0.21	-0.802956	104.774	-3.84027
53	0.22	-0.789191	105.397	-4.01389
54	0.23	-0.775574	105.998	-4.19227
55	0.26	-0.7621	106.579	-4.39042
56	0.26	-0.748762	107.14	-4.58509
57	0.3	-0.735557	107.681	-4.80576
58	0.3	-0.722479	108.203	-5.0225
59	0.31	-0.709522	108.706	-5.24246
60	0.37	-0.696684	109.192	-5.50023
61	0.44	-0.68396	109.659	-5.80117
62	0.46	-0.668209	110.106	-6.10855
63	0.48	-0.655726	110.536	-6.4233
64	0.5	-0.643345	110.95	-6.74497
65	0.5	-0.631062	111.348	-7.0605
66	0.5	-0.618872	111.731	-7.36994
67	0.5	-0.606775	112.099	-7.67332
68	0.5	-0.594766	112.453	-7.97071
69	0.5	-0.582841	112.793	-8.26213
70	0.5	-0.570999	113.119	-8.54763
71	0.5	-0.559237	113.431	-8.82724
72	0.5	-0.547551	113.731	-9.10102
73	0.5	-0.53594	114.018	-9.36899
74	0.5	-0.524401	114.293	-9.63119
75	0.5	-0.51293	114.556	-9.88766
76	0.5	-0.501527	114.808	-10.1384
77	0.5	-0.487364	115.046	-10.3821
78	0.5	-0.476105	115.272	-10.6202
79	0.5	-0.464904	115.488	-10.8526
80	0.5	-0.453763	115.694	-11.0795
81	0.5	-0.442676	115.89	-11.3008
82	0.5	-0.431644	116.077	-11.5166
83	0.5	-0.420664	116.253	-11.727
84	0.5	-0.409735	116.421	-11.9318
85	0.5	-0.398855	116.58	-12.1313
86	0.5	-0.388022	116.731	-12.3253
87	0.5	-0.377233	116.873	-12.5139
88	0.5	-0.36649	117.008	-12.6971
89	0.5	-0.355788	117.134	-12.875
90	0.5	-0.345126	117.253	-13.0476
91	0.5	-0.334503	117.365	-13.2149
92	0.5	-0.323919	117.47	-13.3768
93	0.5	-0.310738	117.567	-13.5322
94	0.5	-0.300232	117.657	-13.6823
95	0.5	-0.28976	117.741	-13.8272
96	0.5	-0.279319	117.819	-13.9668
97	0.5	-0.268908	117.891	-14.1013
98	0.5	-0.258527	117.958	-14.2306
99	0.5	-0.248174	118.02	-14.3546
100	0.5	-0.237847	118.076	-14.4736
101	0.5	-0.227545	118.128	-14.5873
102	0.5	-0.217267	118.175	-14.696
103	0.5	-0.207012	118.218	-14.7995
104	0.5	-0.196779	118.257	-14.8979
105	0.5	-0.186567	118.292	-14.9912
106	0.5	-0.176374	118.323	-15.0793
107	0.5	-0.166199	118.35	-15.1624
108	0.5	-0.153505	118.374	-15.2392
109	0.5	-0.143367	118.394	-15.3109
110	0.5	-0.133244	118.412	-15.3775
111	0.5	-0.123135	118.427	-15.4391

112	0.5	-0.113039	118.44	-15.4956
113	0.5	-0.102953	118.451	-15.5471
114	0.5	-0.0928787	118.459	-15.5935
115	0.5	-0.0828129	118.466	-15.6349
116	0.5	-0.0727562	118.471	-15.6713
117	0.5	-0.0627062	118.475	-15.7026
118	0.5	-0.0526632	118.478	-15.729
119	0.5	-0.0426257	118.48	-15.7503
120	0.5	-0.0325917	118.481	-15.7666
121	0.5	-0.0225612	118.482	-15.7779
122	0.5	-0.0125328	118.482	-15.7841
123	0.5	0	118.482	-15.7841
124	0.5	0.0125328	118.482	-15.7779
125	0.5	0.0225612	118.482	-15.7666
126	0.5	0.0325917	118.483	-15.7503
127	0.5	0.0426257	118.485	-15.729
128	0.5	0.0526632	118.488	-15.7026
129	0.5	0.0627062	118.492	-15.6713
130	0.5	0.0727562	118.497	-15.6349
131	0.5	0.0828129	118.504	-15.5935
132	0.5	0.0928787	118.513	-15.5471
133	0.5	0.102953	118.523	-15.4956
134	0.5	0.113039	118.536	-15.4391
135	0.5	0.123135	118.551	-15.3775
136	0.5	0.133244	118.569	-15.3109
137	0.5	0.143367	118.59	-15.2392
138	0.5	0.153505	118.613	-15.1624
139	0.5	0.166199	118.641	-15.0793
140	0.5	0.176374	118.672	-14.9912
141	0.5	0.186567	118.707	-14.8979
142	0.5	0.196779	118.745	-14.7995
143	0.5	0.207012	118.788	-14.696
144	0.5	0.217267	118.835	-14.5873
145	0.5	0.227545	118.887	-14.4736
146	0.5	0.237847	118.944	-14.3546
147	0.5	0.248174	119.005	-14.2306
148	0.5	0.258527	119.072	-14.1013
149	0.5	0.268908	119.145	-13.9668
150	0.5	0.279319	119.223	-13.8272
151	0.5	0.28976	119.306	-13.6823
152	0.5	0.300232	119.397	-13.5322
153	0.5	0.310738	119.493	-13.3768
154	0.5	0.323919	119.598	-13.2149
155	0.5	0.334503	119.71	-13.0476
156	0.5	0.345126	119.829	-12.875
157	0.5	0.355788	119.956	-12.6971
158	0.5	0.36649	120.09	-12.5139
159	0.5	0.377233	120.232	-12.3253
160	0.5	0.388022	120.383	-12.1313
161	0.5	0.398855	120.542	-11.9318
162	0.5	0.409735	120.71	-11.727
163	0.5	0.420664	120.887	-11.5166
164	0.5	0.431644	121.073	-11.3008
165	0.5	0.442676	121.269	-11.0795
166	0.5	0.453763	121.475	-10.8526
167	0.5	0.464904	121.691	-10.6202
168	0.5	0.476105	121.918	-10.3821
169	0.5	0.487364	122.155	-10.1384
170	0.5	0.501527	122.407	-9.88766
171	0.5	0.51293	122.67	-9.63119
172	0.5	0.524401	122.945	-9.36899
173	0.5	0.53594	123.232	-9.10102

174	0.5	0.547551		123.532	-8.82724
175	0.5	0.559237		123.845	-8.54763
176	0.5	0.570999		124.171	-8.26213
177	0.5	0.582841		124.51	-7.97071
178	0.5	0.594766		124.864	-7.67332
179	0.5	0.606775		125.232	-7.36994
180	0.5	0.618872		125.615	-7.0605
181	0.5	0.631062		126.014	-6.74497
182	0.5	0.643345		126.428	-6.4233
183	0.5	0.655726		126.858	-6.09543
184	0.5	0.668209		127.304	-5.76133
185	0.5	0.68396	127.772	-5.41935	
186	0.5	0.696684		128.257	-5.07101
187	0.5	0.709522		128.761	-4.71625
188	0.5	0.722479		129.283	-4.35501
189	0.5	0.735557		129.824	-3.98723
190	0.5	0.748762		130.384	-3.61285
191	0.5	0.7621	130.965	-3.2318	
192	0.51	0.775574		131.567	-2.83625
193	0.55	0.789191		132.189	-2.4022
194	0.57	0.802956		132.834	-1.94451
195	0.58	0.816874		133.501	-1.47073
196	0.71	0.830953		134.192	-0.88075
197	0.86	0.845198		134.906	-0.15388
198	0.88	0.859618		135.645	0.602584
199	0.89	0.874218		136.409	1.38064
200	1	0.892733		137.206	2.27337
201	1	0.907769		138.03	3.18114
202	1	0.923014		138.882	4.10415
203	1	0.938476		139.763	5.04263
204	1	0.954165		140.674	5.99679
205	1	0.970094		141.615	6.96689
206	1	0.986272		142.587	7.95316
207	1.7	1.00271	143.593	9.65777	
208	1.7	1.01943	144.632	11.3908	
209	2	1.03643	145.706	13.4637	
210	2	1.05375	146.817	15.5712	
211	2.5	1.07138	147.965	18.2496	
212	3	1.08935	149.151	21.5176	
213	3	1.10768	150.378	24.8407	
214	3	1.12639	151.647	28.2199	
215	3	1.1455	152.959	31.6564	
216	3	1.17	154.328	35.1664	
217	3	1.19012	155.744	38.7367	
218	3	1.21073	157.21	42.3689	
219	3	1.23187	158.728	46.0645	
220	3	1.25357	160.299	49.8252	
221	4	1.27588	161.927	54.9287	
222	4	1.29884	163.614	60.1241	
223	5	1.32251	165.363	66.7366	
224	8	1.34694	167.177	77.5121	
225	9	1.3722	169.06	89.8619	
226	11	1.39838	171.016	105.244	
227	13	1.42554	173.048	123.776	
228	14	1.4538	175.161	144.129	
229	16	1.48328	177.362	167.862	
230	16	1.5141	179.654	192.088	
231	17	1.55477	182.071	218.519	
232	18	1.58927	184.597	247.126	
233	18	1.62576	187.24	276.389	
234	19	1.66456	190.011	308.016	
235	21	1.70604	192.922	343.843	

236	22	1.75069	195.986	382.358
237	25	1.79912	199.223	427.336
238	27	1.85218	202.654	477.345
239	35	1.91103	206.306	544.231
240	44	1.97737	210.216	631.235
241	46	2.05375	214.434	725.707
242	49	2.14441	219.032	830.783
243	50	2.25713	224.127	943.64
244	52	2.40892	229.93	1068.9
245	130	2.65209	236.963	1413.68

Data Set Standard Deviation = 11.4757
Numerator = 1.99848e+006
Denominator = 7.61431e+006
W Statistic = 0.262463 = 1.99848e+006 / 7.61431e+006

5% Critical value of 0.976 exceeds 0.262463
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.262463
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 = 245

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	-2.14441	22.5296	30.4588
5	-3.21888	-2.05375	26.7475	37.0695
6	-3.21888	-1.97737	30.6575	43.4344
7	-3.21888	-1.91103	34.3095	49.5858
8	-3.21888	-1.85218	37.7401	55.5477
9	-3.21888	-1.79912	40.9769	61.3389
10	-3.21888	-1.75069	44.0418	66.9741
11	-3.21888	-1.70604	46.9524	72.4656
12	-3.21888	-1.66456	49.7231	77.8237
13	-3.21888	-1.62576	52.3662	83.0568
14	-3.21888	-1.58927	54.892	88.1724
15	-3.21888	-1.55477	57.3093	93.1771
16	-3.21888	-1.5141	59.6018	98.0508
17	-3.21888	-1.48328	61.802	102.825
18	-3.21888	-1.4538	63.9155	107.505
19	-3.21888	-1.42554	65.9477	112.094
20	-2.52573	-1.39838	67.9031	115.625
21	-2.47694	-1.3722	69.7861	119.024
22	-2.37516	-1.34694	71.6003	122.224
23	-2.31264	-1.32251	73.3494	125.282
24	-2.31264	-1.29884	75.0363	128.286
25	-2.30259	-1.27588	76.6642	131.224
26	-2.20727	-1.25357	78.2356	133.991
27	-2.20727	-1.23187	79.7531	136.71
28	-2.20727	-1.21073	81.219	139.382
29	-2.12026	-1.19012	82.6353	141.905
30	-2.04022	-1.17	84.0043	144.292
31	-1.96611	-1.1455	85.3164	146.545
32	-1.96611	-1.12639	86.5852	148.759
33	-1.83258	-1.10768	87.8121	150.789
34	-1.83258	-1.08935	88.9988	152.785
35	-1.83258	-1.07138	90.1467	154.749
36	-1.83258	-1.05375	91.2571	156.68
37	-1.77196	-1.03643	92.3312	158.516
38	-1.77196	-1.01943	93.3705	160.323
39	-1.77196	-1.00271	94.3759	162.1
40	-1.66073	-0.986272	95.3486	163.737
41	-1.56065	-0.970094	96.2897	165.251
42	-1.51413	-0.954165	97.2002	166.696
43	-1.46968	-0.938476	98.0809	168.075
44	-1.34707	-0.923014	98.9328	169.319
45	-1.34707	-0.907769	99.7569	170.542
46	-1.20397	-0.892733	100.554	171.616
47	-1.20397	-0.874218	101.318	172.669
48	-1.17118	-0.859618	102.057	173.676
49	-0.994252	-0.845198	102.771	174.516

50	-0.820981	-0.830953	103.462	175.198
51	-0.776529	-0.816874	104.129	175.833
52	-0.733969	-0.802956	104.774	176.422
53	-0.693147	-0.789191	105.397	176.969
54	-0.693147	-0.775574	105.998	177.507
55	-0.693147	-0.7621	106.579	178.035
56	-0.693147	-0.748762	107.14	178.554
57	-0.693147	-0.735557	107.681	179.064
58	-0.693147	-0.722479	108.203	179.564
59	-0.693147	-0.709522	108.706	180.056
60	-0.693147	-0.696684	109.192	180.539
61	-0.693147	-0.68396	109.659	181.013
62	-0.693147	-0.668209	110.106	181.476
63	-0.693147	-0.655726	110.536	181.931
64	-0.693147	-0.643345	110.95	182.377
65	-0.693147	-0.631062	111.348	182.814
66	-0.693147	-0.618872	111.731	183.243
67	-0.693147	-0.606775	112.099	183.664
68	-0.693147	-0.594766	112.453	184.076
69	-0.693147	-0.582841	112.793	184.48
70	-0.693147	-0.570999	113.119	184.876
71	-0.693147	-0.559237	113.431	185.264
72	-0.693147	-0.547551	113.731	185.643
73	-0.693147	-0.53594	114.018	186.015
74	-0.693147	-0.524401	114.293	186.378
75	-0.693147	-0.51293	114.556	186.734
76	-0.693147	-0.501527	114.808	187.081
77	-0.693147	-0.487364	115.046	187.419
78	-0.693147	-0.476105	115.272	187.749
79	-0.693147	-0.464904	115.488	188.071
80	-0.693147	-0.453763	115.694	188.386
81	-0.693147	-0.442676	115.89	188.693
82	-0.693147	-0.431644	116.077	188.992
83	-0.693147	-0.420664	116.253	189.283
84	-0.693147	-0.409735	116.421	189.567
85	-0.693147	-0.398855	116.58	189.844
86	-0.693147	-0.388022	116.731	190.113
87	-0.693147	-0.377233	116.873	190.374
88	-0.693147	-0.36649	117.008	190.628
89	-0.693147	-0.355788	117.134	190.875
90	-0.693147	-0.345126	117.253	191.114
91	-0.693147	-0.334503	117.365	191.346
92	-0.693147	-0.323919	117.47	191.571
93	-0.693147	-0.310738	117.567	191.786
94	-0.693147	-0.300232	117.657	191.994
95	-0.693147	-0.28976	117.741	192.195
96	-0.693147	-0.279319	117.819	192.389
97	-0.693147	-0.268908	117.891	192.575
98	-0.693147	-0.258527	117.958	192.754
99	-0.693147	-0.248174	118.02	192.926
100	-0.693147	-0.237847	118.076	193.091
101	-0.693147	-0.227545	118.128	193.249
102	-0.693147	-0.217267	118.175	193.399
103	-0.693147	-0.207012	118.218	193.543
104	-0.693147	-0.196779	118.257	193.679
105	-0.693147	-0.186567	118.292	193.809
106	-0.693147	-0.176374	118.323	193.931
107	-0.693147	-0.166199	118.35	194.046
108	-0.693147	-0.153505	118.374	194.152
109	-0.693147	-0.143367	118.394	194.252
110	-0.693147	-0.133244	118.412	194.344
111	-0.693147	-0.123135	118.427	194.429

112	-0.693147	-0.113039	118.44	194.508
113	-0.693147	-0.102953	118.451	194.579
114	-0.693147	-0.0928787	118.459	194.644
115	-0.693147	-0.0828129	118.466	194.701
116	-0.693147	-0.0727562	118.471	194.751
117	-0.693147	-0.0627062	118.475	194.795
118	-0.693147	-0.0526632	118.478	194.831
119	-0.693147	-0.0426257	118.48	194.861
120	-0.693147	-0.0325917	118.481	194.883
121	-0.693147	-0.0225612	118.482	194.899
122	-0.693147	-0.0125328	118.482	194.908
123	-0.693147	0	118.482	194.908
124	-0.693147	0.0125328	118.482	194.899
125	-0.693147	0.0225612	118.482	194.883
126	-0.693147	0.0325917	118.483	194.861
127	-0.693147	0.0426257	118.485	194.831
128	-0.693147	0.0526632	118.488	194.795
129	-0.693147	0.0627062	118.492	194.751
130	-0.693147	0.0727562	118.497	194.701
131	-0.693147	0.0828129	118.504	194.644
132	-0.693147	0.0928787	118.513	194.579
133	-0.693147	0.102953	118.523	194.508
134	-0.693147	0.113039	118.536	194.429
135	-0.693147	0.123135	118.551	194.344
136	-0.693147	0.133244	118.569	194.252
137	-0.693147	0.143367	118.59	194.152
138	-0.693147	0.153505	118.613	194.046
139	-0.693147	0.166199	118.641	193.931
140	-0.693147	0.176374	118.672	193.809
141	-0.693147	0.186567	118.707	193.679
142	-0.693147	0.196779	118.745	193.543
143	-0.693147	0.207012	118.788	193.399
144	-0.693147	0.217267	118.835	193.249
145	-0.693147	0.227545	118.887	193.091
146	-0.693147	0.237847	118.944	192.926
147	-0.693147	0.248174	119.005	192.754
148	-0.693147	0.258527	119.072	192.575
149	-0.693147	0.268908	119.145	192.389
150	-0.693147	0.279319	119.223	192.195
151	-0.693147	0.28976	119.306	191.994
152	-0.693147	0.300232	119.397	191.786
153	-0.693147	0.310738	119.493	191.571
154	-0.693147	0.323919	119.598	191.346
155	-0.693147	0.334503	119.71	191.114
156	-0.693147	0.345126	119.829	190.875
157	-0.693147	0.355788	119.956	190.628
158	-0.693147	0.36649	120.09	190.374
159	-0.693147	0.377233	120.232	190.113
160	-0.693147	0.388022	120.383	189.844
161	-0.693147	0.398855	120.542	189.567
162	-0.693147	0.409735	120.71	189.283
163	-0.693147	0.420664	120.887	188.992
164	-0.693147	0.431644	121.073	188.693
165	-0.693147	0.442676	121.269	188.386
166	-0.693147	0.453763	121.475	188.071
167	-0.693147	0.464904	121.691	187.749
168	-0.693147	0.476105	121.918	187.419
169	-0.693147	0.487364	122.155	187.081
170	-0.693147	0.501527	122.407	186.734
171	-0.693147	0.51293	122.67	186.378
172	-0.693147	0.524401	122.945	186.015
173	-0.693147	0.53594	123.232	185.643

174	-0.693147		0.547551	123.532	185.264
175	-0.693147		0.559237	123.845	184.876
176	-0.693147		0.570999	124.171	184.48
177	-0.693147		0.582841	124.51	184.076
178	-0.693147		0.594766	124.864	183.664
179	-0.693147		0.606775	125.232	183.243
180	-0.693147		0.618872	125.615	182.814
181	-0.673345		0.631062	126.014	182.389
182	-0.597837		0.643345	126.428	182.005
183	-0.562119		0.655726	126.858	181.636
184	-0.544727		0.668209	127.304	181.272
185	-0.342490	0.68396	127.772	181.038	
186	-0.150823		0.696684	128.257	180.933
187	-0.127833		0.709522	128.761	180.842
188	-0.116534		0.722479	129.283	180.758
189	0	0.735557		129.824	180.758
190	0	0.748762		130.384	180.758
191	0	0.7621	130.965	180.758	
192	0	0.775574		131.567	180.758
193	0	0.789191		132.189	180.758
194	0	0.802956		132.834	180.758
195	0	0.816874		133.501	180.758
196	0	0.830953		134.192	180.758
197	0	0.845198		134.906	180.758
198	0	0.859618		135.645	180.758
199	0	0.874218		136.409	180.758
200	0	0.892733		137.206	180.758
201	0	0.907769		138.03	180.758
202	0	0.923014		138.882	180.758
203	0	0.938476		139.763	180.758
204	0	0.954165		140.674	180.758
205	0	0.970094		141.615	180.758
206	0	0.986272		142.587	180.758
207	0.530628		1.00271	143.593	181.29
208	0.530628		1.01943	144.632	181.831
209	0.693147		1.03643	145.706	182.549
210	0.693147		1.05375	146.817	183.28
211	0.916291		1.07138	147.965	184.261
212	1.09861	1.08935	149.151	185.458	
213	1.09861	1.10768	150.378	186.675	
214	1.09861	1.12639	151.647	187.913	
215	1.09861	1.1455	152.959	189.171	
216	1.09861	1.17	154.328	190.456	
217	1.09861	1.19012	155.744	191.764	
218	1.09861	1.21073	157.21	193.094	
219	1.09861	1.23187	158.728	194.447	
220	1.09861	1.25357	160.299	195.825	
221	1.38629	1.27588	161.927	197.593	
222	1.38629	1.29884	163.614	199.394	
223	1.60944	1.32251	165.363	201.522	
224	2.07944	1.34694	167.177	204.323	
225	2.19722	1.3722	169.06	207.338	
226	2.3979	1.39838	171.016	210.691	
227	2.56495	1.42554	173.048	214.348	
228	2.63906	1.4538	175.161	218.185	
229	2.77259	1.48328	177.362	222.297	
230	2.77259	1.5141	179.654	226.495	
231	2.83321	1.55477	182.071	230.9	
232	2.89037	1.58927	184.597	235.494	
233	2.89037	1.62576	187.24	240.193	
234	2.94444	1.66456	190.011	245.094	
235	3.04452	1.70604	192.922	250.288	

236	3.09104	1.75069	195.986	255.699
237	3.21888	1.79912	199.223	261.491
238	3.29584	1.85218	202.654	267.595
239	3.55535	1.91103	206.306	274.389
240	3.78419	1.97737	210.216	281.872
241	3.82864	2.05375	214.434	289.735
242	3.89182	2.14441	219.032	298.081
243	3.91202	2.25713	224.127	306.911
244	3.95124	2.40892	229.93	316.429
245	4.86753	2.65209	236.963	329.338

Data Set Standard Deviation = 1.50744
Numerator = 108464
Denominator = 131386
W Statistic = 0.825531 = 108464 / 131386

5% Critical value of 0.976 exceeds 0.825531
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.825531
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	231
	3/16/1999	ND<-0.693147	79.5
	9/23/1999	2.19722	225
	3/14/2000	ND<-0.693147	79.5
	9/23/2003	ND<-0.693147	79.5
	3/10/2004	3.21888	237
	10/12/2004	ND<-0.693147	79.5
	4/1/2005	ND<-0.693147	79.5
	10/26/2005	ND<-0.693147	79.5
	6/19/2006	ND<-0.693147	79.5
	11/18/2006	ND<0 J	79.5
	6/2/2007	1.09861	212
	11/15/2007	ND<-0.693147	79.5
	5/20/2008	ND<-0.693147	79.5
	11/20/2008	ND<-0.693147	79.5
	6/11/2009	-2.04022 J	169
	11/16/2009	-1.20397 J	185
	6/30/2010	-1.66073 J	179
	11/17/2010	-1.83258 J	172
	7/6/2011	-1.34707 J	183

Rank Sum = 2667.5
Rank Mean = 133.375

Background Rank Sum = 2667.5
Background Rank Mean = 133.375

Compliance Wells

Well ID	Date	Result	Rank
LMW-3	11/19/1996	ND<-0.693147	79.5
	3/24/1997	2.3979	226
	1/16/1998	ND<-0.693147	79.5
	3/16/1999	ND<-0.693147	79.5
	9/23/1999	2.07944	224
	3/14/2000	ND<-0.693147	79.5
	9/23/2003	ND<-0.693147	79.5
	3/10/2004	ND<-0.693147	79.5
	10/12/2004	ND<-0.693147	79.5
	4/1/2005	ND<-0.693147	79.5
	10/26/2005	ND<-0.693147	79.5
	6/19/2006	ND<-0.693147	79.5
	11/18/2006	ND<-0.693147	79.5
	6/2/2007	ND<-0.693147	79.5
	11/15/2007	0	200
	5/20/2008	ND<-0.693147	79.5
	11/20/2008	ND<-0.693147	79.5
	6/11/2009	ND<-3.21888 U	79.5

	11/16/2009	-0.994252	188
	6/30/2010	-1.77196 J	176
	11/17/2010	-0.673345	192
	7/6/2011	-2.12026 J	168

Rank Sum = 2566.5
Rank Mean = 116.659

LMW-9S	11/18/2006	ND<-0.693147	79.5
	6/2/2007	0.693147	209
	11/15/2007	0	201
	5/20/2008	ND<-0.693147	79.5
	11/20/2008	ND<0 J	79.5
	6/11/2009	ND<-3.21888 U	79.5
	6/30/2010	-2.20727 J	165
	11/17/2010	-0.597837	193
	7/6/2011	ND<-3.21888 U	79.5

Rank Sum = 1165.5
Rank Mean = 129.5

LMW-14R	6/2/2007	1.38629	221
	11/15/2007	ND<-0.693147	79.5
	5/20/2008	ND<-0.693147	79.5
	11/20/2008	ND<-0.693147	79.5
	6/11/2009	-1.51413 J	181
	6/30/2010	-2.30259 J	164
	11/17/2010	-2.20727 J	166
	7/6/2011	-1.20397	186

Rank Sum = 1156.5
Rank Mean = 144.563

LMW-16	11/18/2006	ND<0 J	79.5
	6/2/2007	1.60944	223
	11/15/2007	0.693147	210
	5/20/2008	ND<-0.693147	79.5
	11/20/2008	ND<-0.693147	79.5
	6/11/2009	ND<-3.21888 U	79.5
	11/16/2009	-2.31264 J	162
	6/30/2010	-1.34707 J	184
	11/17/2010	ND<-3.21888 U	79.5
	7/6/2011	-1.83258 J	173

Rank Sum = 1349.5
Rank Mean = 134.95

LMW-10	3/14/2000	3.91202	243
	9/23/2003	ND<-0.693147	79.5
	3/10/2004	4.86753	245
	10/12/2004	ND<-0.693147	79.5
	4/1/2005	ND<-0.693147	79.5
	10/26/2005	ND<-0.693147	79.5
	6/19/2006	ND<0 J	79.5
	11/18/2006	ND<-0.693147	79.5
	6/2/2007	1.38629	222
	11/15/2007	ND<-0.693147	79.5
	5/20/2008	ND<-0.693147	79.5
	11/20/2008	ND<0 J	79.5
	6/11/2009	ND<-3.21888 U	79.5
	11/16/2009	ND<-3.21888 U	79.5
	6/30/2010	-2.20727 J	167
	11/17/2010	ND<-3.21888 U	79.5
	7/6/2011	ND<-3.21888 U	79.5

Rank Sum = 1910.5
Rank Mean = 112.382

LMW-3S	11/18/2006	ND<-0.693147	79.5
	6/2/2007	1.09861	213
	11/15/2007	0	202
	5/20/2008	ND<-0.693147	79.5
	11/20/2008	ND<-0.693147	79.5
	6/11/2009	-0.544727	195
	11/16/2009	ND<-3.21888 U	79.5
	6/30/2010	-2.37516 J	161
	11/17/2010	0.530628	207
	7/6/2011	0.530628	208

Rank Sum = 1504
Rank Mean = 150.4

LMW-6	1/16/1998	ND<-0.693147	79.5
	3/16/1999	ND<-0.693147	79.5
	9/23/1999	2.77259	229
	3/14/2000	ND<-0.693147	79.5
	9/23/2003	ND<-0.693147	79.5
	3/10/2004	ND<-0.693147	79.5
	10/12/2004	ND<-0.693147	79.5
	4/1/2005	ND<-0.693147	79.5
	10/26/2005	ND<-0.693147	79.5
	6/19/2006	ND<-0.693147	79.5
	11/18/2006	ND<-0.693147	79.5
	6/2/2007	ND<0 J	79.5
	11/15/2007	ND<-0.693147	79.5
	5/20/2008	ND<-0.693147	79.5
	11/20/2008	ND<-0.693147	79.5
	6/11/2009	-2.47694 J	160
	11/16/2009	ND<-3.21888 U	79.5
	6/30/2010	-1.96611 J	170
	11/17/2010	-1.77196 J	177
	7/6/2011	-2.31264 J	163

Rank Sum = 2091.5
Rank Mean = 104.575

LMW-7	1/16/1998	ND<-0.693147	79.5
	3/16/1999	ND<-0.693147	79.5
	9/23/1999	2.89037	232
	3/14/2000	2.77259	230
	9/23/2003	ND<-0.693147	79.5
	3/10/2004	ND<-0.693147	79.5
	10/12/2004	ND<-0.693147	79.5
	4/1/2005	1.09861	214
	10/26/2005	1.09861	215
	6/19/2006	1.09861	216
	11/18/2006	0	203
	6/2/2007	1.09861	217
	11/15/2007	ND<-0.693147	79.5
	5/20/2008	ND<-0.693147	79.5
	11/20/2008	ND<-0.693147	79.5
	6/11/2009	-0.127833	198
	11/17/2010	-0.150823	197
	7/6/2011	0.916291	211

Rank Sum = 2769
Rank Mean = 153.833

LMW-8	1/16/1998	ND<-0.693147	79.5
	3/16/1999	ND<-0.693147	79.5
	9/23/1999	3.04452	235
	3/14/2000	ND<-0.693147	79.5

	9/23/2003	ND<-0.693147	79.5
	3/10/2004	ND<-0.693147	79.5
	10/12/2004	ND<-0.693147	79.5
	4/1/2005	ND<-0.693147	79.5
	10/26/2005	ND<-0.693147	79.5
	6/19/2006	ND<-0.693147	79.5
	11/18/2006	ND<-0.693147	79.5
	6/2/2007	ND<-0.693147	79.5
	11/15/2007	ND<-0.693147	79.5
	5/20/2008	ND<-0.693147	79.5
	11/20/2008	ND<-0.693147	79.5
	6/11/2009	ND<-3.21888 U	79.5
	11/16/2009	ND<-3.21888 U	79.5
	6/30/2010	ND<-3.21888 U	79.5
	11/17/2010	ND<-3.21888 U	79.5
	7/6/2011	ND<-3.21888 U	79.5

Rank Sum = 1745.5
Rank Mean = 87.275

LMW-9	1/16/1998	ND<-0.693147	79.5
	3/16/1999	ND<-0.693147	79.5
	9/23/1999	3.29584	238
	3/14/2000	ND<-0.693147	79.5
	9/23/2003	ND<-0.693147	79.5
	3/10/2004	2.56495	227
	10/12/2004	ND<-0.693147	79.5
	4/1/2005	ND<0 J	79.5
	10/26/2005	ND<-0.693147	79.5
	6/19/2006	ND<0 J	79.5
	11/18/2006	ND<0 J	79.5
	6/2/2007	0	204
	11/15/2007	ND<-0.693147	79.5
	5/20/2008	0	205
	11/20/2008	ND<-0.693147	79.5
	6/11/2009	-1.77196 J	178
	11/16/2009	ND<-3.21888 U	79.5
	6/30/2010	-1.83258 J	174
	11/17/2010	-0.562119	194
	7/6/2011	ND<-3.21888 U	79.5

Rank Sum = 2453.5
Rank Mean = 122.675

LMW-9D	11/18/2006	1.09861	218
	6/2/2007	1.09861	219
	11/15/2007	ND<0 J	79.5
	5/20/2008	1.09861	220
	11/20/2008	ND<-0.693147	79.5
	6/11/2009	-0.34249	196
	11/16/2009	-1.17118	187
	6/30/2010	-1.46968 J	182
	11/17/2010	-0.820981	189
	7/6/2011	-0.776529	190

Rank Sum = 1760
Rank Mean = 176

LMW-15R	11/18/2006	ND<0 J	79.5
	6/2/2007	ND<-0.693147	79.5
	11/15/2007	ND<-0.693147	79.5
	11/15/2007	ND<-0.693147	79.5
	5/20/2008	ND<-0.693147	79.5
	5/20/2008	ND<-0.693147	79.5
	11/20/2008	0	206

	11/20/2008	ND<-0.693147	79.5
	6/11/2009	-0.116534	199
	11/16/2009	-1.96611 J	171
	11/16/2009	ND<-3.21888 U	79.5
	11/16/2009	-1.56065 J	180
	6/30/2010	-2.52573 J	159
	11/17/2010	-1.83258 J	175
	7/6/2011	-0.733969	191

Rank Sum = 1917
Rank Mean = 127.8

MW-5	1/16/1998	ND<-0.693147	79.5
	3/16/1999	ND<-0.693147	79.5
	9/23/1999	2.63906	228
	3/14/2000	3.09104	236
	9/23/2003	ND<-0.693147	79.5
	3/10/2004	3.95124	244
	10/12/2004	ND<-0.693147	79.5
	4/1/2005	ND<-0.693147	79.5
	10/26/2005	ND<-0.693147	79.5
	6/19/2006	ND<-0.693147	79.5
	11/15/2007	ND<-0.693147	79.5
	5/20/2008	ND<-0.693147	79.5
	11/20/2008	ND<-0.693147	79.5

Rank Sum = 1503
Rank Mean = 115.615

LMW-12	3/14/2000	3.89182	242
	9/23/2003	ND<-0.693147	79.5
	3/10/2004	2.89037	233
	10/12/2004	ND<-0.693147	79.5
	4/1/2005	ND<-0.693147	79.5
	10/26/2005	ND<-0.693147	79.5
	6/19/2006	ND<-0.693147	79.5
	6/2/2007	ND<-0.693147	79.5
	11/15/2007	ND<-0.693147	79.5
	5/20/2008	ND<-0.693147	79.5
	11/20/2008	ND<-0.693147	79.5

Rank Sum = 1190.5
Rank Mean = 108.227

LMW-13	3/14/2000	3.78419	240
	9/23/2003	ND<-0.693147	79.5
	3/10/2004	3.55535	239
	10/12/2004	ND<-0.693147	79.5
	4/1/2005	ND<-0.693147	79.5
	10/26/2005	ND<-0.693147	79.5
	6/19/2006	ND<-0.693147	79.5
	6/2/2007	ND<-0.693147	79.5
	11/15/2007	ND<-0.693147	79.5
	5/20/2008	ND<-0.693147	79.5
	11/20/2008	ND<-0.693147	79.5

Rank Sum = 1194.5
Rank Mean = 108.591

LMW-11	3/14/2000	2.94444	234
	9/23/2003	ND<-0.693147	79.5
	3/10/2004	3.82864	241
	10/12/2004	ND<-0.693147	79.5
	4/1/2005	ND<-0.693147	79.5
	10/26/2005	ND<-0.693147	79.5
	6/19/2006	ND<-0.693147	79.5

6/2/2007	ND<-0.693147	79.5	
11/15/2007	ND<-0.693147	79.5	
5/20/2008	ND<-0.693147	79.5	
11/20/2008	ND<-0.693147	79.5	

Rank Sum = 1190.5
Rank Mean = 108.227

Calculation Results:

Kruskal-Wallis H Statistic = 20.6368
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 28.2002
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
20.6368 < 26.2962 indicating no significant group difference at 5% significance level
28.2002 > 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 133.375

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-3	116.659	-16.7159	50.9368
LMW-9S	129.5	-3.875	66.1754
LMW-14R	144.563	11.1875	68.9688
LMW-16	134.95	1.575	63.8527
LMW-10	112.382	-20.9926	54.387
LMW-3S	150.4	17.025	63.8527
LMW-6	104.575	-28.8	52.1355
LMW-7	153.833	20.4583	53.5641
LMW-8	87.275	-46.1	52.1355
LMW-9	122.675	-10.7	52.1355
LMW-9D	176	42.625	63.8527
LMW-15R	127.8	-5.575	56.3128
MW-5	115.615	-17.7596	58.7359
LMW-12	108.227	-25.1477	61.8875
LMW-13	108.591	-24.7841	61.8875
LMW-11	108.227	-25.1477	61.8875

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 133.375

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-3	116.659	-16.7159	60.1642
LMW-9S	129.5	-3.875	78.1632
LMW-14R	144.563	11.1875	81.4627
LMW-16	134.95	1.575	75.4198
LMW-10	112.382	-20.9926	64.2393
LMW-3S	150.4	17.025	75.4198
LMW-6	104.575	-28.8	61.58
LMW-7	153.833	20.4583	63.2674
LMW-8	87.275	-46.1	61.58
LMW-9	122.675	-10.7	61.58
LMW-9D	176	42.625	75.4198
LMW-15R	127.8	-5.575	66.514
MW-5	115.615	-17.7596	69.3761
LMW-12	108.227	-25.1477	73.0986
LMW-13	108.591	-24.7841	73.0986
LMW-11	108.227	-25.1477	73.0986

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Lead

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

Total Percent Non-Detects = 64.4898%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 20
Maximum Background Concentration = 3.21888
Confidence Level = 71.4%
False Positive Rate = 28.6%

Location	Date	Samples	Mean	Significant
LMW-3	7/6/2011	1	-2.12026	FALSE
LMW-9S	7/6/2011	1	-3.21888	FALSE
LMW-14R	7/6/2011	1	-1.20397	FALSE
LMW-16	7/6/2011	1	-1.83258	FALSE
LMW-10	7/6/2011	1	-3.21888	FALSE
LMW-3S	7/6/2011	1	0.530628	FALSE
LMW-6	7/6/2011	1	-2.31264	FALSE
LMW-7	7/6/2011	1	0.916291	FALSE
LMW-8	7/6/2011	1	-3.21888	FALSE
LMW-9	7/6/2011	1	-3.21888	FALSE
LMW-9D	7/6/2011	1	-0.776529	FALSE
LMW-15R	7/6/2011	1	-0.733969	FALSE
MW-5	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
LMW-11	11/20/2008	1	-0.693147	FALSE

Concentrations (ppb)

Parameter: Methylene Chloride

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 237
Percent Non-Detects: 96.7347%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	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<1 U	ND<1 U
			11/16/2009	ND<1 U	ND<1 U
			6/30/2010	ND<1 U	ND<1 U
			11/17/2010	ND<1 U	ND<1 U
			7/6/2011	3.7 J B	3.7 J B

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9	20	20 (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<1 U	ND<1 U
			11/16/2009	ND<1 U	ND<1 U
			6/30/2010	ND<1 U	ND<1 U
			11/17/2010	ND<1 U	ND<1 U
			7/6/2011	ND<1 U	ND<1 U

LMW-10	17	16 (94.1176%)	3/14/2000	ND<1	ND<1	
			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	ND<1 U	ND<1 U	
			11/16/2009	ND<1 U	ND<1 U	
			6/30/2010	ND<1 U	ND<1 U	
			11/17/2010	ND<1 U	ND<1 U	
			7/6/2011	2.4 J	2.4 J	
LMW-15R	12	11 (91.6667%)	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<1 U	ND<1 U	
			6/30/2010	ND<1 U	ND<1 U	
			11/17/2010	ND<1 U	ND<1 U	
			7/6/2011	3.1 J B	3.1 J B	
LMW-16	10	10 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			6/11/2009	ND<1 U	ND<1 U	
			11/16/2009	ND<1 U	ND<1 U	
			6/30/2010	ND<1 U	ND<1 U	
			11/17/2010	ND<1 U	ND<1 U	
			7/6/2011	ND<1 U	ND<1 U	
LMW-3	22	21 (95.4545%)	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<1 U	ND<1 U	
			11/16/2009	ND<1 U	ND<1 U	
			6/30/2010	ND<1 U	ND<1 U	

			11/17/2010	ND<1 U	ND<1 U
			7/6/2011	3.1 J B	3.1 J B
LMW-3S	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<1 U	ND<1 U
			11/16/2009	ND<1 U	ND<1 U
			6/30/2010	ND<1 U	ND<1 U
			11/17/2010	ND<1 U	ND<1 U
			7/6/2011	3.2 J B	3.2 J B
LMW-6	20	20 (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<1 U	ND<1 U
			11/16/2009	ND<1 U	ND<1 U
			6/30/2010	ND<1 U	ND<1 U
			11/17/2010	ND<1 U	ND<1 U
			7/6/2011	ND<1 U	ND<1 U
LMW-8	20	20 (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<1 U	ND<1 U
			11/16/2009	ND<1 U	ND<1 U
			6/30/2010	ND<1 U	ND<1 U
			11/17/2010	ND<1 U	ND<1 U
			7/6/2011	ND<1 U	ND<1 U
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<1 U	ND<1 U

			11/16/2009	ND<1 U	ND<1 U
			6/30/2010	ND<1 U	ND<1 U
			11/17/2010	ND<1 U	ND<1 U
			7/6/2011	3.4 J B	3.4 J B
LMW-9S	12	12 (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<1 U	ND<1 U
			11/16/2009	ND<1 U	ND<1 U
			11/16/2009	ND<1 U	ND<1 U
			11/16/2009	ND<1 U	ND<1 U
			6/30/2010	ND<1 U	ND<1 U
			11/17/2010	ND<1 U	ND<1 U
			7/6/2011	ND<1 U	ND<1 U
LMW-14R	8	7 (87.5%)	6/2/2007	ND<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<1 U	ND<1 U
			6/30/2010	ND<1 U	ND<1 U
			11/17/2010	ND<1 U	ND<1 U
			7/6/2011	3.1 J B	3.1 J B
LMW-7	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<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<1 U	ND<1 U
			11/17/2010	ND<1 U	ND<1 U
			7/6/2011	3 J B	3 J B
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
MW-5	13	13 (100%)	1/16/1998		ND<1	ND<1
			3/16/1999		ND<1	ND<1
			9/23/1999		ND<1	ND<1
			3/14/2000		ND<1	ND<1
			9/23/2003		ND<1	ND<1
			3/10/2004		ND<1	ND<1
			10/12/2004		ND<1	ND<1
			4/1/2005	ND<1	ND<1	
			10/26/2005		ND<1	ND<1
			6/19/2006		ND<1	ND<1
			11/15/2007		ND<0 J	ND<0 J
			5/20/2008		ND<1	ND<1
			11/20/2008		ND<1	ND<1

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Methylene Chloride

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 245

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	0.5	-2.14441	22.5296	-1.0722
5	0.5	-2.05375	26.7475	-2.09908
6	0.5	-1.97737	30.6575	-3.08776
7	0.5	-1.91103	34.3095	-4.04328
8	0.5	-1.85218	37.7401	-4.96937
9	0.5	-1.79912	40.9769	-5.86892
10	0.5	-1.75069	44.0418	-6.74427
11	0.5	-1.70604	46.9524	-7.59729
12	0.5	-1.66456	49.7231	-8.42957
13	0.5	-1.62576	52.3662	-9.24245
14	0.5	-1.58927	54.892	-10.0371
15	0.5	-1.55477	57.3093	-10.8145
16	0.5	-1.5141	59.6018	-11.5715
17	0.5	-1.48328	61.802	-12.3132
18	0.5	-1.4538	63.9155	-13.0401
19	0.5	-1.42554	65.9477	-13.7528
20	0.5	-1.39838	67.9031	-14.452
21	0.5	-1.3722	69.7861	-15.1381
22	0.5	-1.34694	71.6003	-15.8116
23	0.5	-1.32251	73.3494	-16.4729
24	0.5	-1.29884	75.0363	-17.1223
25	0.5	-1.27588	76.6642	-17.7602
26	0.5	-1.25357	78.2356	-18.387
27	0.5	-1.23187	79.7531	-19.0029
28	0.5	-1.21073	81.219	-19.6083
29	0.5	-1.19012	82.6353	-20.2033
30	0.5	-1.17	84.0043	-20.7883
31	0.5	-1.1455	85.3164	-21.3611
32	0.5	-1.12639	86.5852	-21.9243
33	0.5	-1.10768	87.8121	-22.4781
34	0.5	-1.08935	88.9988	-23.0228
35	0.5	-1.07138	90.1467	-23.5585
36	0.5	-1.05375	91.2571	-24.0854
37	0.5	-1.03643	92.3312	-24.6036
38	0.5	-1.01943	93.3705	-25.1133
39	0.5	-1.00271	94.3759	-25.6147
40	0.5	-0.986272	95.3486	-26.1078
41	0.5	-0.970094	96.2897	-26.5928
42	0.5	-0.954165	97.2002	-27.0699
43	0.5	-0.938476	98.0809	-27.5392
44	0.5	-0.923014	98.9328	-28.0007
45	0.5	-0.907769	99.7569	-28.4546
46	0.5	-0.892733	100.554	-28.9009
47	0.5	-0.874218	101.318	-29.338
48	0.5	-0.859618	102.057	-29.7678
49	0.5	-0.845198	102.771	-30.1904

50	0.5	-0.830953	103.462	-30.6059
51	0.5	-0.816874	104.129	-31.0143
52	0.5	-0.802956	104.774	-31.4158
53	0.5	-0.789191	105.397	-31.8104
54	0.5	-0.775574	105.998	-32.1982
55	0.5	-0.7621	106.579	-32.5793
56	0.5	-0.748762	107.14	-32.9536
57	0.5	-0.735557	107.681	-33.3214
58	0.5	-0.722479	108.203	-33.6827
59	0.5	-0.709522	108.706	-34.0374
60	0.5	-0.696684	109.192	-34.3858
61	0.5	-0.68396	109.659	-34.7277
62	0.5	-0.668209	110.106	-35.0618
63	0.5	-0.655726	110.536	-35.3897
64	0.5	-0.643345	110.95	-35.7114
65	0.5	-0.631062	111.348	-36.0269
66	0.5	-0.618872	111.731	-36.3363
67	0.5	-0.606775	112.099	-36.6397
68	0.5	-0.594766	112.453	-36.9371
69	0.5	-0.582841	112.793	-37.2285
70	0.5	-0.570999	113.119	-37.514
71	0.5	-0.559237	113.431	-37.7937
72	0.5	-0.547551	113.731	-38.0674
73	0.5	-0.53594	114.018	-38.3354
74	0.5	-0.524401	114.293	-38.5976
75	0.5	-0.51293	114.556	-38.8541
76	0.5	-0.501527	114.808	-39.1048
77	0.5	-0.487364	115.046	-39.3485
78	0.5	-0.476105	115.272	-39.5866
79	0.5	-0.464904	115.488	-39.819
80	0.5	-0.453763	115.694	-40.0459
81	0.5	-0.442676	115.89	-40.2672
82	0.5	-0.431644	116.077	-40.4831
83	0.5	-0.420664	116.253	-40.6934
84	0.5	-0.409735	116.421	-40.8983
85	0.5	-0.398855	116.58	-41.0977
86	0.5	-0.388022	116.731	-41.2917
87	0.5	-0.377233	116.873	-41.4803
88	0.5	-0.36649	117.008	-41.6636
89	0.5	-0.355788	117.134	-41.8415
90	0.5	-0.345126	117.253	-42.014
91	0.5	-0.334503	117.365	-42.1813
92	0.5	-0.323919	117.47	-42.3432
93	0.5	-0.310738	117.567	-42.4986
94	0.5	-0.300232	117.657	-42.6487
95	0.5	-0.28976	117.741	-42.7936
96	0.5	-0.279319	117.819	-42.9333
97	0.5	-0.268908	117.891	-43.0677
98	0.5	-0.258527	117.958	-43.197
99	0.5	-0.248174	118.02	-43.3211
100	0.5	-0.237847	118.076	-43.44
101	0.5	-0.227545	118.128	-43.5538
102	0.5	-0.217267	118.175	-43.6624
103	0.5	-0.207012	118.218	-43.7659
104	0.5	-0.196779	118.257	-43.8643
105	0.5	-0.186567	118.292	-43.9576
106	0.5	-0.176374	118.323	-44.0458
107	0.5	-0.166199	118.35	-44.1289
108	0.5	-0.153505	118.374	-44.2056
109	0.5	-0.143367	118.394	-44.2773
110	0.5	-0.133244	118.412	-44.3439
111	0.5	-0.123135	118.427	-44.4055

112	0.5	-0.113039	118.44	-44.462
113	0.5	-0.102953	118.451	-44.5135
114	0.5	-0.0928787	118.459	-44.5599
115	0.5	-0.0828129	118.466	-44.6013
116	0.5	-0.0727562	118.471	-44.6377
117	0.5	-0.0627062	118.475	-44.6691
118	0.5	-0.0526632	118.478	-44.6954
119	0.5	-0.0426257	118.48	-44.7167
120	0.5	-0.0325917	118.481	-44.733
121	0.5	-0.0225612	118.482	-44.7443
122	0.5	-0.0125328	118.482	-44.7505
123	0.5	0	118.482	-44.7505
124	0.5	0.0125328	118.482	-44.7443
125	0.5	0.0225612	118.482	-44.733
126	0.5	0.0325917	118.483	-44.7167
127	0.5	0.0426257	118.485	-44.6954
128	0.5	0.0526632	118.488	-44.6691
129	0.5	0.0627062	118.492	-44.6377
130	0.5	0.0727562	118.497	-44.6013
131	0.5	0.0828129	118.504	-44.5599
132	0.5	0.0928787	118.513	-44.5135
133	0.5	0.102953	118.523	-44.462
134	0.5	0.113039	118.536	-44.4055
135	0.5	0.123135	118.551	-44.3439
136	0.5	0.133244	118.569	-44.2773
137	0.5	0.143367	118.59	-44.2056
138	0.5	0.153505	118.613	-44.1289
139	0.5	0.166199	118.641	-44.0458
140	0.5	0.176374	118.672	-43.9576
141	0.5	0.186567	118.707	-43.8643
142	0.5	0.196779	118.745	-43.7659
143	0.5	0.207012	118.788	-43.6624
144	0.5	0.217267	118.835	-43.5538
145	0.5	0.227545	118.887	-43.44
146	0.5	0.237847	118.944	-43.3211
147	0.5	0.248174	119.005	-43.197
148	0.5	0.258527	119.072	-43.0677
149	0.5	0.268908	119.145	-42.9333
150	0.5	0.279319	119.223	-42.7936
151	0.5	0.28976	119.306	-42.6487
152	0.5	0.300232	119.397	-42.4986
153	0.5	0.310738	119.493	-42.3432
154	0.5	0.323919	119.598	-42.1813
155	0.5	0.334503	119.71	-42.014
156	0.5	0.345126	119.829	-41.8415
157	0.5	0.355788	119.956	-41.6636
158	0.5	0.36649	120.09	-41.4803
159	0.5	0.377233	120.232	-41.2917
160	0.5	0.388022	120.383	-41.0977
161	0.5	0.398855	120.542	-40.8983
162	0.5	0.409735	120.71	-40.6934
163	0.5	0.420664	120.887	-40.4831
164	0.5	0.431644	121.073	-40.2672
165	0.5	0.442676	121.269	-40.0459
166	0.5	0.453763	121.475	-39.819
167	0.5	0.464904	121.691	-39.5866
168	0.5	0.476105	121.918	-39.3485
169	0.5	0.487364	122.155	-39.1048
170	0.5	0.501527	122.407	-38.8541
171	0.5	0.51293	122.67	-38.5976
172	0.5	0.524401	122.945	-38.3354
173	0.5	0.53594	123.232	-38.0674

174	0.5	0.547551	123.532	-37.7937
175	0.5	0.559237	123.845	-37.514
176	0.5	0.570999	124.171	-37.2285
177	0.5	0.582841	124.51	-36.9371
178	0.5	0.594766	124.864	-36.6397
179	0.5	0.606775	125.232	-36.3363
180	0.5	0.618872	125.615	-36.0269
181	0.5	0.631062	126.014	-35.7114
182	0.5	0.643345	126.428	-35.3897
183	0.5	0.655726	126.858	-35.0618
184	0.5	0.668209	127.304	-34.7277
185	0.5	0.68396	127.772	-34.3858
186	0.5	0.696684	128.257	-34.0374
187	0.5	0.709522	128.761	-33.6827
188	0.5	0.722479	129.283	-33.3214
189	0.5	0.735557	129.824	-32.9536
190	0.5	0.748762	130.384	-32.5793
191	0.5	0.7621	130.965	-32.1982
192	0.5	0.775574	131.567	-31.8104
193	0.5	0.789191	132.189	-31.4158
194	0.5	0.802956	132.834	-31.0143
195	0.5	0.816874	133.501	-30.6059
196	0.5	0.830953	134.192	-30.1904
197	0.5	0.845198	134.906	-29.7678
198	0.5	0.859618	135.645	-29.338
199	0.5	0.874218	136.409	-28.9009
200	0.5	0.892733	137.206	-28.4546
201	0.5	0.907769	138.03	-28.0007
202	0.5	0.923014	138.882	-27.5392
203	0.5	0.938476	139.763	-27.0699
204	0.5	0.954165	140.674	-26.5928
205	0.5	0.970094	141.615	-26.1078
206	0.5	0.986272	142.587	-25.6147
207	0.5	1.00271	143.593	-25.1133
208	0.5	1.01943	144.632	-24.6036
209	0.5	1.03643	145.706	-24.0854
210	0.5	1.05375	146.817	-23.5585
211	0.5	1.07138	147.965	-23.0228
212	0.5	1.08935	149.151	-22.4781
213	0.5	1.10768	150.378	-21.9243
214	0.5	1.12639	151.647	-21.3611
215	0.5	1.1455	152.959	-20.7883
216	0.5	1.17	154.328	-20.2033
217	0.5	1.19012	155.744	-19.6083
218	0.5	1.21073	157.21	-19.0029
219	0.5	1.23187	158.728	-18.387
220	0.5	1.25357	160.299	-17.7602
221	0.5	1.27588	161.927	-17.1223
222	0.5	1.29884	163.614	-16.4729
223	0.5	1.32251	165.363	-15.8116
224	0.5	1.34694	167.177	-15.1381
225	0.5	1.3722	169.06	-14.452
226	0.5	1.39838	171.016	-13.7528
227	0.5	1.42554	173.048	-13.0401
228	0.5	1.4538	175.161	-12.3132
229	0.5	1.48328	177.362	-11.5715
230	0.5	1.5141	179.654	-10.8145
231	0.5	1.55477	182.071	-10.0371
232	0.5	1.58927	184.597	-9.24245
233	0.5	1.62576	187.24	-8.42957
234	0.5	1.66456	190.011	-7.59729
235	0.5	1.70604	192.922	-6.74427

236	0.5	1.75069	195.986	-5.86892
237	0.5	1.79912	199.223	-4.96937
238	2.4	1.85218	202.654	-0.524141
239	3	1.91103	206.306	5.20895
240	3.1	1.97737	210.216	11.3388
241	3.1	2.05375	214.434	17.7054
242	3.1	2.14441	219.032	24.3531
243	3.2	2.25713	224.127	31.5759
244	3.4	2.40892	229.93	39.7662
245	3.7	2.65209	236.963	49.5789

Data Set Standard Deviation = 0.475972
Numerator = 2458.07
Denominator = 13098.9
W Statistic = 0.187656 = 2458.07 / 13098.9

5% Critical value of 0.976 exceeds 0.187656
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.187656
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Methylene Chloride

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 245

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	-2.14441	22.5296	6.55894
5	-0.693147	-2.05375	26.7475	7.98249
6	-0.693147	-1.97737	30.6575	9.35309
7	-0.693147	-1.91103	34.3095	10.6777
8	-0.693147	-1.85218	37.7401	11.9616
9	-0.693147	-1.79912	40.9769	13.2086
10	-0.693147	-1.75069	44.0418	14.4221
11	-0.693147	-1.70604	46.9524	15.6046
12	-0.693147	-1.66456	49.7231	16.7584
13	-0.693147	-1.62576	52.3662	17.8853
14	-0.693147	-1.58927	54.892	18.9869
15	-0.693147	-1.55477	57.3093	20.0646
16	-0.693147	-1.5141	59.6018	21.1141
17	-0.693147	-1.48328	61.802	22.1422
18	-0.693147	-1.4538	63.9155	23.1499
19	-0.693147	-1.42554	65.9477	24.138
20	-0.693147	-1.39838	67.9031	25.1073
21	-0.693147	-1.3722	69.7861	26.0585
22	-0.693147	-1.34694	71.6003	26.9921
23	-0.693147	-1.32251	73.3494	27.9088
24	-0.693147	-1.29884	75.0363	28.8091
25	-0.693147	-1.27588	76.6642	29.6934
26	-0.693147	-1.25357	78.2356	30.5623
27	-0.693147	-1.23187	79.7531	31.4162
28	-0.693147	-1.21073	81.219	32.2554
29	-0.693147	-1.19012	82.6353	33.0803
30	-0.693147	-1.17	84.0043	33.8913
31	-0.693147	-1.1455	85.3164	34.6853
32	-0.693147	-1.12639	86.5852	35.4661
33	-0.693147	-1.10768	87.8121	36.2339
34	-0.693147	-1.08935	88.9988	36.9889
35	-0.693147	-1.07138	90.1467	37.7316
36	-0.693147	-1.05375	91.2571	38.462
37	-0.693147	-1.03643	92.3312	39.1804
38	-0.693147	-1.01943	93.3705	39.887
39	-0.693147	-1.00271	94.3759	40.582
40	-0.693147	-0.986272	95.3486	41.2656
41	-0.693147	-0.970094	96.2897	41.9381
42	-0.693147	-0.954165	97.2002	42.5994
43	-0.693147	-0.938476	98.0809	43.2499
44	-0.693147	-0.923014	98.9328	43.8897
45	-0.693147	-0.907769	99.7569	44.5189
46	-0.693147	-0.892733	100.554	45.1377
47	-0.693147	-0.874218	101.318	45.7437
48	-0.693147	-0.859618	102.057	46.3395
49	-0.693147	-0.845198	102.771	46.9254

50	-0.693147	-0.830953	103.462	47.5013
51	-0.693147	-0.816874	104.129	48.0676
52	-0.693147	-0.802956	104.774	48.6241
53	-0.693147	-0.789191	105.397	49.1712
54	-0.693147	-0.775574	105.998	49.7087
55	-0.693147	-0.7621	106.579	50.237
56	-0.693147	-0.748762	107.14	50.756
57	-0.693147	-0.735557	107.681	51.2658
58	-0.693147	-0.722479	108.203	51.7666
59	-0.693147	-0.709522	108.706	52.2584
60	-0.693147	-0.696684	109.192	52.7413
61	-0.693147	-0.68396	109.659	53.2154
62	-0.693147	-0.668209	110.106	53.6786
63	-0.693147	-0.655726	110.536	54.1331
64	-0.693147	-0.643345	110.95	54.579
65	-0.693147	-0.631062	111.348	55.0165
66	-0.693147	-0.618872	111.731	55.4454
67	-0.693147	-0.606775	112.099	55.866
68	-0.693147	-0.594766	112.453	56.2783
69	-0.693147	-0.582841	112.793	56.6823
70	-0.693147	-0.570999	113.119	57.078
71	-0.693147	-0.559237	113.431	57.4657
72	-0.693147	-0.547551	113.731	57.8452
73	-0.693147	-0.53594	114.018	58.2167
74	-0.693147	-0.524401	114.293	58.5802
75	-0.693147	-0.51293	114.556	58.9357
76	-0.693147	-0.501527	114.808	59.2834
77	-0.693147	-0.487364	115.046	59.6212
78	-0.693147	-0.476105	115.272	59.9512
79	-0.693147	-0.464904	115.488	60.2734
80	-0.693147	-0.453763	115.694	60.588
81	-0.693147	-0.442676	115.89	60.8948
82	-0.693147	-0.431644	116.077	61.194
83	-0.693147	-0.420664	116.253	61.4856
84	-0.693147	-0.409735	116.421	61.7696
85	-0.693147	-0.398855	116.58	62.046
86	-0.693147	-0.388022	116.731	62.315
87	-0.693147	-0.377233	116.873	62.5765
88	-0.693147	-0.36649	117.008	62.8305
89	-0.693147	-0.355788	117.134	63.0771
90	-0.693147	-0.345126	117.253	63.3163
91	-0.693147	-0.334503	117.365	63.5482
92	-0.693147	-0.323919	117.47	63.7727
93	-0.693147	-0.310738	117.567	63.9881
94	-0.693147	-0.300232	117.657	64.1962
95	-0.693147	-0.28976	117.741	64.3971
96	-0.693147	-0.279319	117.819	64.5907
97	-0.693147	-0.268908	117.891	64.7771
98	-0.693147	-0.258527	117.958	64.9563
99	-0.693147	-0.248174	118.02	65.1283
100	-0.693147	-0.237847	118.076	65.2931
101	-0.693147	-0.227545	118.128	65.4509
102	-0.693147	-0.217267	118.175	65.6015
103	-0.693147	-0.207012	118.218	65.745
104	-0.693147	-0.196779	118.257	65.8814
105	-0.693147	-0.186567	118.292	66.0107
106	-0.693147	-0.176374	118.323	66.1329
107	-0.693147	-0.166199	118.35	66.2481
108	-0.693147	-0.153505	118.374	66.3545
109	-0.693147	-0.143367	118.394	66.4539
110	-0.693147	-0.133244	118.412	66.5463
111	-0.693147	-0.123135	118.427	66.6316

112	-0.693147	-0.113039	118.44	66.71
113	-0.693147	-0.102953	118.451	66.7813
114	-0.693147	-0.0928787	118.459	66.8457
115	-0.693147	-0.0828129	118.466	66.9031
116	-0.693147	-0.0727562	118.471	66.9535
117	-0.693147	-0.0627062	118.475	66.997
118	-0.693147	-0.0526632	118.478	67.0335
119	-0.693147	-0.0426257	118.48	67.0631
120	-0.693147	-0.0325917	118.481	67.0856
121	-0.693147	-0.0225612	118.482	67.1013
122	-0.693147	-0.0125328	118.482	67.11
123	-0.693147	0	118.482	67.11
124	-0.693147	0.0125328	118.482	67.1013
125	-0.693147	0.0225612	118.482	67.0856
126	-0.693147	0.0325917	118.483	67.0631
127	-0.693147	0.0426257	118.485	67.0335
128	-0.693147	0.0526632	118.488	66.997
129	-0.693147	0.0627062	118.492	66.9535
130	-0.693147	0.0727562	118.497	66.9031
131	-0.693147	0.0828129	118.504	66.8457
132	-0.693147	0.0928787	118.513	66.7813
133	-0.693147	0.102953	118.523	66.71
134	-0.693147	0.113039	118.536	66.6316
135	-0.693147	0.123135	118.551	66.5463
136	-0.693147	0.133244	118.569	66.4539
137	-0.693147	0.143367	118.59	66.3545
138	-0.693147	0.153505	118.613	66.2481
139	-0.693147	0.166199	118.641	66.1329
140	-0.693147	0.176374	118.672	66.0107
141	-0.693147	0.186567	118.707	65.8814
142	-0.693147	0.196779	118.745	65.745
143	-0.693147	0.207012	118.788	65.6015
144	-0.693147	0.217267	118.835	65.4509
145	-0.693147	0.227545	118.887	65.2931
146	-0.693147	0.237847	118.944	65.1283
147	-0.693147	0.248174	119.005	64.9563
148	-0.693147	0.258527	119.072	64.7771
149	-0.693147	0.268908	119.145	64.5907
150	-0.693147	0.279319	119.223	64.3971
151	-0.693147	0.28976	119.306	64.1962
152	-0.693147	0.300232	119.397	63.9881
153	-0.693147	0.310738	119.493	63.7727
154	-0.693147	0.323919	119.598	63.5482
155	-0.693147	0.334503	119.71	63.3163
156	-0.693147	0.345126	119.829	63.0771
157	-0.693147	0.355788	119.956	62.8305
158	-0.693147	0.36649	120.09	62.5765
159	-0.693147	0.377233	120.232	62.315
160	-0.693147	0.388022	120.383	62.046
161	-0.693147	0.398855	120.542	61.7696
162	-0.693147	0.409735	120.71	61.4856
163	-0.693147	0.420664	120.887	61.194
164	-0.693147	0.431644	121.073	60.8948
165	-0.693147	0.442676	121.269	60.588
166	-0.693147	0.453763	121.475	60.2734
167	-0.693147	0.464904	121.691	59.9512
168	-0.693147	0.476105	121.918	59.6212
169	-0.693147	0.487364	122.155	59.2834
170	-0.693147	0.501527	122.407	58.9357
171	-0.693147	0.51293	122.67	58.5802
172	-0.693147	0.524401	122.945	58.2167
173	-0.693147	0.53594	123.232	57.8452

174	-0.693147		0.547551	123.532	57.4657
175	-0.693147		0.559237	123.845	57.078
176	-0.693147		0.570999	124.171	56.6823
177	-0.693147		0.582841	124.51	56.2783
178	-0.693147		0.594766	124.864	55.866
179	-0.693147		0.606775	125.232	55.4454
180	-0.693147		0.618872	125.615	55.0165
181	-0.693147		0.631062	126.014	54.579
182	-0.693147		0.643345	126.428	54.1331
183	-0.693147		0.655726	126.858	53.6786
184	-0.693147		0.668209	127.304	53.2154
185	-0.693147		0.68396	127.772	52.7413
186	-0.693147		0.696684	128.257	52.2584
187	-0.693147		0.709522	128.761	51.7666
188	-0.693147		0.722479	129.283	51.2658
189	-0.693147		0.735557	129.824	50.756
190	-0.693147		0.748762	130.384	50.237
191	-0.693147		0.7621	130.965	49.7087
192	-0.693147		0.775574	131.567	49.1712
193	-0.693147		0.789191	132.189	48.6241
194	-0.693147		0.802956	132.834	48.0676
195	-0.693147		0.816874	133.501	47.5013
196	-0.693147		0.830953	134.192	46.9254
197	-0.693147		0.845198	134.906	46.3395
198	-0.693147		0.859618	135.645	45.7437
199	-0.693147		0.874218	136.409	45.1377
200	-0.693147		0.892733	137.206	44.5189
201	-0.693147		0.907769	138.03	43.8897
202	-0.693147		0.923014	138.882	43.2499
203	-0.693147		0.938476	139.763	42.5994
204	-0.693147		0.954165	140.674	41.9381
205	-0.693147		0.970094	141.615	41.2656
206	-0.693147		0.986272	142.587	40.582
207	-0.693147		1.00271	143.593	39.887
208	-0.693147		1.01943	144.632	39.1804
209	-0.693147		1.03643	145.706	38.462
210	-0.693147		1.05375	146.817	37.7316
211	-0.693147		1.07138	147.965	36.9889
212	-0.693147		1.08935	149.151	36.2339
213	-0.693147		1.10768	150.378	35.4661
214	-0.693147		1.12639	151.647	34.6853
215	-0.693147		1.1455	152.959	33.8913
216	-0.693147		1.17	154.328	33.0803
217	-0.693147		1.19012	155.744	32.2554
218	-0.693147		1.21073	157.21	31.4162
219	-0.693147		1.23187	158.728	30.5623
220	-0.693147		1.25357	160.299	29.6934
221	-0.693147		1.27588	161.927	28.8091
222	-0.693147		1.29884	163.614	27.9088
223	-0.693147		1.32251	165.363	26.9921
224	-0.693147		1.34694	167.177	26.0585
225	-0.693147		1.3722	169.06	25.1073
226	-0.693147		1.39838	171.016	24.138
227	-0.693147		1.42554	173.048	23.1499
228	-0.693147		1.4538	175.161	22.1422
229	-0.693147		1.48328	177.362	21.1141
230	-0.693147		1.5141	179.654	20.0646
231	-0.693147		1.55477	182.071	18.9869
232	-0.693147		1.58927	184.597	17.8853
233	-0.693147		1.62576	187.24	16.7584
234	-0.693147		1.66456	190.011	15.6046
235	0	1.70604	192.922	15.6046	

236	0	1.75069	195.986	15.6046	
237	0	1.79912	199.223	15.6046	
238	0.875469		1.85218	202.654	17.2261
239	1.09861	1.91103	206.306	19.3256	
240	1.1314	1.97737	210.216	21.5628	
241	1.1314	2.05375	214.434	23.8864	
242	1.1314	2.14441	219.032	26.3126	
243	1.16315	2.25713	224.127	28.938	
244	1.22378	2.40892	229.93	31.886	
245	1.30833	2.65209	236.963	35.3558	

Data Set Standard Deviation = 0.333197
Numerator = 1250.03
Denominator = 6419.08
W Statistic = 0.194737 = 1250.03 / 6419.08

5% Critical value of 0.976 exceeds 0.194737
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.194737
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Methylene Chloride

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

Total Percent Non-Detects = 96.7347%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 20
Maximum Background Concentration = 1.30833
Confidence Level = 71.4%
False Positive Rate = 28.6%

Location	Date	Samples	Mean	Significant
LMW-9	7/6/2011	1	-0.693147	FALSE
LMW-10	7/6/2011	1	0.875469	FALSE
LMW-15R	7/6/2011	1	1.1314	FALSE
LMW-16	7/6/2011	1	-0.693147	FALSE
LMW-3	7/6/2011	1	1.1314	FALSE
LMW-3S	7/6/2011	1	1.16315	FALSE
LMW-6	7/6/2011	1	-0.693147	FALSE
LMW-8	7/6/2011	1	-0.693147	FALSE
LMW-9D	7/6/2011	1	1.22378	FALSE
LMW-9S	7/6/2011	1	-0.693147	FALSE
LMW-14R	7/6/2011	1	1.1314	FALSE
LMW-7	7/6/2011	1	1.09861	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
MW-5	11/20/2008	1	-0.693147	FALSE

Concentrations (ppb)

Parameter: Nickel

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 149
Percent Non-Detects: 60.8163%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	11 (55%)	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
			7/6/2011	1.2	1.2

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-3S	10	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
			7/6/2011	3.1	3.1
LMW-9	20	12 (60%)	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	
			7/6/2011	0.98 J	0.98 J	
LMW-14R	8	2 (25%)	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	
			7/6/2011	1.8	1.8	
LMW-15R	12	6 (50%)	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	1 J	1 J	
			5/20/2008	ND<30	ND<30	
			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	
			7/6/2011	0.93 J	0.93 J	
LMW-16	10	5 (50%)	11/18/2006	1 J	1 J	
			6/2/2007	ND<30	ND<30	
			11/15/2007	ND<30	ND<30	
			5/20/2008	ND<30	ND<30	
			11/20/2008	ND<30	ND<30	
			6/11/2009	0.72	0.72	
			11/16/2009	0.66	0.66	
			6/30/2010	0.97 J	0.97 J	
			11/17/2010	ND<0.4 U		ND<0.4 U
			7/6/2011	0.65 J	0.65 J	
LMW-10	17	13 (76.4706%)	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
			7/6/2011	0.7 J	0.7 J	

LMW-3	22	16 (72.7273%)	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	
			7/6/2011	0.85 J	0.85 J	
LMW-6	20	12 (60%)	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	
			7/6/2011	1.1	1.1	
LMW-8	20	12 (60%)	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	
		7/6/2011	0.95 J	0.95 J	
LMW-9D	10	3 (30%)	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	
		7/6/2011	2.5	2.5	
LMW-9S	12	4 (33.3333%)	11/18/2006	1 J	1 J
		6/2/2007	ND<30	ND<30	
		11/15/2007	ND<30	ND<30	
		5/20/2008	1 J	1 J	
		11/20/2008	ND<30	ND<30	
		6/11/2009	1.2	1.2	
		11/16/2009	1.6 J B	1.6 J B	
		11/16/2009	0.97 J B	0.97 J B	
		11/16/2009	0.8 J B	0.8 J B	
		6/30/2010	ND<0.4 U		ND<0.4 U
		11/17/2010	0.44 J	0.44 J	
		7/6/2011	0.67 J	0.67 J	
LMW-7	18	9 (50%)	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	
		7/6/2011	7.5	7.5	
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-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
MW-5	13	11 (84.6154%)	1/16/1998		ND<30	ND<30
			3/16/1999		6 J	6 J
			9/23/1999		ND<30	ND<30
			3/14/2000		ND<30	ND<30
			9/23/2003		ND<30	ND<30
			3/10/2004		ND<30	ND<30
			10/12/2004		ND<30	ND<30
			4/1/2005	ND<30	ND<30	
			10/26/2005		ND<30	ND<30
			6/19/2006		ND<30	ND<30
			11/15/2007		3 J	3 J
			5/20/2008		ND<30	ND<30
			11/20/2008		ND<30	ND<30
LMW-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

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 = 245

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	-2.14441	22.5296	-1.89251
5	0.2	-2.05375	26.7475	-2.30326
6	0.33	-1.97737	30.6575	-2.95579
7	0.38	-1.91103	34.3095	-3.68198
8	0.44	-1.85218	37.7401	-4.49694
9	0.46	-1.79912	40.9769	-5.32453
10	0.5	-1.75069	44.0418	-6.19988
11	0.53	-1.70604	46.9524	-7.10408
12	0.54	-1.66456	49.7231	-8.00294
13	0.55	-1.62576	52.3662	-8.89711
14	0.6	-1.58927	54.892	-9.85067
15	0.61	-1.55477	57.3093	-10.7991
16	0.63	-1.5141	59.6018	-11.753
17	0.64	-1.48328	61.802	-12.7023
18	0.65	-1.4538	63.9155	-13.6472
19	0.65	-1.42554	65.9477	-14.5738
20	0.66	-1.39838	67.9031	-15.4968
21	0.67	-1.3722	69.7861	-16.4162
22	0.69	-1.34694	71.6003	-17.3455
23	0.69	-1.32251	73.3494	-18.2581
24	0.7	-1.29884	75.0363	-19.1673
25	0.72	-1.27588	76.6642	-20.0859
26	0.76	-1.25357	78.2356	-21.0386
27	0.79	-1.23187	79.7531	-22.0118
28	0.8	-1.21073	81.219	-22.9804
29	0.84	-1.19012	82.6353	-23.9801
30	0.85	-1.17	84.0043	-24.9746
31	0.93	-1.1455	85.3164	-26.0399
32	0.95	-1.12639	86.5852	-27.1099
33	0.97	-1.10768	87.8121	-28.1844
34	0.97	-1.08935	88.9988	-29.2411
35	0.98	-1.07138	90.1467	-30.291
36	0.98	-1.05375	91.2571	-31.3237
37	1	-1.03643	92.3312	-32.3601
38	1	-1.01943	93.3705	-33.3795
39	1	-1.00271	94.3759	-34.3823
40	1	-0.986272	95.3486	-35.3685
41	1	-0.970094	96.2897	-36.3386
42	1	-0.954165	97.2002	-37.2928
43	1	-0.938476	98.0809	-38.2313
44	1	-0.923014	98.9328	-39.1543
45	1	-0.907769	99.7569	-40.062
46	1	-0.892733	100.554	-40.9548
47	1	-0.874218	101.318	-41.829
48	1	-0.859618	102.057	-42.6886
49	1	-0.845198	102.771	-43.5338

50	1	-0.830953	103.462	-44.3648
51	1.1	-0.816874	104.129	-45.2633
52	1.1	-0.802956	104.774	-46.1466
53	1.1	-0.789191	105.397	-47.0147
54	1.2	-0.775574	105.998	-47.9454
55	1.2	-0.7621	106.579	-48.8599
56	1.2	-0.748762	107.14	-49.7584
57	1.3	-0.735557	107.681	-50.7146
58	1.6	-0.722479	108.203	-51.8706
59	1.7	-0.709522	108.706	-53.0768
60	1.8	-0.696684	109.192	-54.3308
61	1.8	-0.68396	109.659	-55.5619
62	1.9	-0.668209	110.106	-56.8315
63	1.9	-0.655726	110.536	-58.0774
64	1.9	-0.643345	110.95	-59.2998
65	2	-0.631062	111.348	-60.5619
66	2	-0.618872	111.731	-61.7996
67	2	-0.606775	112.099	-63.0132
68	2	-0.594766	112.453	-64.2027
69	2	-0.582841	112.793	-65.3684
70	2.2	-0.570999	113.119	-66.6246
71	2.2	-0.559237	113.431	-67.8549
72	2.5	-0.547551	113.731	-69.2238
73	2.6	-0.53594	114.018	-70.6173
74	2.8	-0.524401	114.293	-72.0856
75	3	-0.51293	114.556	-73.6244
76	3	-0.501527	114.808	-75.1289
77	3	-0.487364	115.046	-76.591
78	3	-0.476105	115.272	-78.0194
79	3	-0.464904	115.488	-79.4141
80	3	-0.453763	115.694	-80.7754
81	3	-0.442676	115.89	-82.1034
82	3	-0.431644	116.077	-83.3983
83	3	-0.420664	116.253	-84.6603
84	3.1	-0.409735	116.421	-85.9305
85	3.1	-0.398855	116.58	-87.1669
86	4	-0.388022	116.731	-88.719
87	4	-0.377233	116.873	-90.228
88	4.1	-0.36649	117.008	-91.7306
89	5	-0.355788	117.134	-93.5095
90	5	-0.345126	117.253	-95.2351
91	5	-0.334503	117.365	-96.9077
92	5	-0.323919	117.47	-98.5272
93	5.5	-0.310738	117.567	-100.236
94	6	-0.300232	117.657	-102.038
95	6	-0.28976	117.741	-103.776
96	6	-0.279319	117.819	-105.452
97	6	-0.268908	117.891	-107.066
98	7	-0.258527	117.958	-108.875
99	7.5	-0.248174	118.02	-110.737
100	9	-0.237847	118.076	-112.877
101	15	-0.227545	118.128	-116.29
102	15	-0.217267	118.175	-119.549
103	15	-0.207012	118.218	-122.655
104	15	-0.196779	118.257	-125.606
105	15	-0.186567	118.292	-128.405
106	15	-0.176374	118.323	-131.05
107	15	-0.166199	118.35	-133.543
108	15	-0.153505	118.374	-135.846
109	15	-0.143367	118.394	-137.996
110	15	-0.133244	118.412	-139.995
111	15	-0.123135	118.427	-141.842

112	15	-0.113039	118.44	-143.538
113	15	-0.102953	118.451	-145.082
114	15	-0.0928787	118.459	-146.475
115	15	-0.0828129	118.466	-147.717
116	15	-0.0727562	118.471	-148.809
117	15	-0.0627062	118.475	-149.749
118	15	-0.0526632	118.478	-150.539
119	15	-0.0426257	118.48	-151.179
120	15	-0.0325917	118.481	-151.668
121	15	-0.0225612	118.482	-152.006
122	15	-0.0125328	118.482	-152.194
123	15	0	118.482	-152.194
124	15	0.0125328	118.482	-152.006
125	15	0.0225612	118.482	-151.668
126	15	0.0325917	118.483	-151.179
127	15	0.0426257	118.485	-150.539
128	15	0.0526632	118.488	-149.749
129	15	0.0627062	118.492	-148.809
130	15	0.0727562	118.497	-147.717
131	15	0.0828129	118.504	-146.475
132	15	0.0928787	118.513	-145.082
133	15	0.102953	118.523	-143.538
134	15	0.113039	118.536	-141.842
135	15	0.123135	118.551	-139.995
136	15	0.133244	118.569	-137.996
137	15	0.143367	118.59	-135.846
138	15	0.153505	118.613	-133.543
139	15	0.166199	118.641	-131.05
140	15	0.176374	118.672	-128.405
141	15	0.186567	118.707	-125.606
142	15	0.196779	118.745	-122.655
143	15	0.207012	118.788	-119.549
144	15	0.217267	118.835	-116.29
145	15	0.227545	118.887	-112.877
146	15	0.237847	118.944	-109.31
147	15	0.248174	119.005	-105.587
148	15	0.258527	119.072	-101.709
149	15	0.268908	119.145	-97.6754
150	15	0.279319	119.223	-93.4856
151	15	0.28976	119.306	-89.1392
152	15	0.300232	119.397	-84.6357
153	15	0.310738	119.493	-79.9747
154	15	0.323919	119.598	-75.1159
155	15	0.334503	119.71	-70.0983
156	15	0.345126	119.829	-64.9214
157	15	0.355788	119.956	-59.5846
158	15	0.36649	120.09	-54.0873
159	15	0.377233	120.232	-48.4288
160	15	0.388022	120.383	-42.6084
161	15	0.398855	120.542	-36.6256
162	15	0.409735	120.71	-30.4796
163	15	0.420664	120.887	-24.1696
164	15	0.431644	121.073	-17.695
165	15	0.442676	121.269	-11.0548
166	15	0.453763	121.475	-4.24837
167	15	0.464904	121.691	2.72519
168	15	0.476105	121.918	9.86676
169	15	0.487364	122.155	17.1772
170	15	0.501527	122.407	24.7001
171	15	0.51293	122.67	32.3941
172	15	0.524401	122.945	40.2601
173	15	0.53594	123.232	48.2992

174	15	0.547551		123.532	56.5125
175	15	0.559237		123.845	64.901
176	15	0.570999		124.171	73.466
177	15	0.582841		124.51	82.2086
178	15	0.594766		124.864	91.1301
179	15	0.606775		125.232	100.232
180	15	0.618872		125.615	109.515
181	15	0.631062		126.014	118.981
182	15	0.643345		126.428	128.631
183	15	0.655726		126.858	138.467
184	15	0.668209		127.304	148.49
185	15	0.68396	127.772	158.749	
186	15	0.696684		128.257	169.2
187	15	0.709522		128.761	179.842
188	15	0.722479		129.283	190.68
189	15	0.735557		129.824	201.713
190	15	0.748762		130.384	212.944
191	15	0.7621	130.965	224.376	
192	15	0.775574		131.567	236.01
193	15	0.789191		132.189	247.847
194	15	0.802956		132.834	259.892
195	15	0.816874		133.501	272.145
196	15	0.830953		134.192	284.609
197	15	0.845198		134.906	297.287
198	15	0.859618		135.645	310.181
199	15	0.874218		136.409	323.295
200	15	0.892733		137.206	336.686
201	15	0.907769		138.03	350.302
202	15	0.923014		138.882	364.147
203	15	0.938476		139.763	378.225
204	15	0.954165		140.674	392.537
205	15	0.970094		141.615	407.088
206	15	0.986272		142.587	421.882
207	15	1.00271	143.593	436.923	
208	15	1.01943	144.632	452.215	
209	15	1.03643	145.706	467.761	
210	15	1.05375	146.817	483.567	
211	15	1.07138	147.965	499.638	
212	15	1.08935	149.151	515.978	
213	15	1.10768	150.378	532.593	
214	15	1.12639	151.647	549.489	
215	15	1.1455	152.959	566.672	
216	15	1.17	154.328	584.222	
217	15	1.19012	155.744	602.074	
218	15	1.21073	157.21	620.235	
219	15	1.23187	158.728	638.712	
220	15	1.25357	160.299	657.516	
221	15	1.27588	161.927	676.654	
222	15	1.29884	163.614	696.137	
223	15	1.32251	165.363	715.974	
224	15	1.34694	167.177	736.178	
225	15	1.3722	169.06	756.761	
226	15	1.39838	171.016	777.737	
227	15	1.42554	173.048	799.12	
228	15	1.4538	175.161	820.927	
229	15	1.48328	177.362	843.176	
230	15	1.5141	179.654	865.888	
231	15	1.55477	182.071	889.21	
232	15	1.58927	184.597	913.049	
233	15	1.62576	187.24	937.435	
234	15	1.66456	190.011	962.404	
235	15	1.70604	192.922	987.994	

236	15	1.75069	195.986	1014.25
237	15	1.79912	199.223	1041.24
238	15	1.85218	202.654	1069.02
239	15	1.91103	206.306	1097.69
240	15	1.97737	210.216	1127.35
241	15	2.05375	214.434	1158.16
242	15	2.14441	219.032	1190.32
243	15	2.25713	224.127	1224.18
244	15	2.40892	229.93	1260.31
245	18	2.65209	236.963	1308.05

Data Set Standard Deviation = 6.53078
Numerator = 1.711e+006
Denominator = 2.46605e+006
W Statistic = 0.693821 = 1.711e+006 / 2.46605e+006

5% Critical value of 0.976 exceeds 0.693821
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.693821
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 = 245

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	-2.14441	22.5296	15.2294
5	-1.60944	-2.05375	26.7475	18.5348
6	-1.10866	-1.97737	30.6575	20.727
7	-0.967584	-1.91103	34.3095	22.5761
8	-0.820981	-1.85218	37.7401	24.0967
9	-0.776529	-1.79912	40.9769	25.4937
10	-0.693147	-1.75069	44.0418	26.7072
11	-0.634878	-1.70604	46.9524	27.7904
12	-0.616186	-1.66456	49.7231	28.816
13	-0.597837	-1.62576	52.3662	29.788
14	-0.510826	-1.58927	54.892	30.5998
15	-0.494296	-1.55477	57.3093	31.3683
16	-0.462035	-1.5141	59.6018	32.0679
17	-0.446287	-1.48328	61.802	32.7299
18	-0.430783	-1.4538	63.9155	33.3562
19	-0.430783	-1.42554	65.9477	33.9703
20	-0.415515	-1.39838	67.9031	34.5513
21	-0.400478	-1.3722	69.7861	35.1008
22	-0.371064	-1.34694	71.6003	35.6006
23	-0.371064	-1.32251	73.3494	36.0914
24	-0.356675	-1.29884	75.0363	36.5546
25	-0.328504	-1.27588	76.6642	36.9738
26	-0.274437	-1.25357	78.2356	37.3178
27	-0.235722	-1.23187	79.7531	37.6082
28	-0.223144	-1.21073	81.219	37.8783
29	-0.174353	-1.19012	82.6353	38.0858
30	-0.162519	-1.17	84.0043	38.276
31	-0.0725707	-1.1455	85.3164	38.3591
32	-0.0512933	-1.12639	86.5852	38.4169
33	-0.0304592	-1.10768	87.8121	38.4506
34	-0.0304592	-1.08935	88.9988	38.4838
35	-0.0202027	-1.07138	90.1467	38.5054
36	-0.0202027	-1.05375	91.2571	38.5267
37	0	-1.03643	92.3312	38.5267
38	0	-1.01943	93.3705	38.5267
39	0	-1.00271	94.3759	38.5267
40	0	-0.986272	95.3486	38.5267
41	0	-0.970094	96.2897	38.5267
42	0	-0.954165	97.2002	38.5267
43	0	-0.938476	98.0809	38.5267
44	0	-0.923014	98.9328	38.5267
45	0	-0.907769	99.7569	38.5267
46	0	-0.892733	100.554	38.5267
47	0	-0.874218	101.318	38.5267
48	0	-0.859618	102.057	38.5267
49	0	-0.845198	102.771	38.5267

50	0	-0.830953	103.462	38.5267
51	0.0953102	-0.816874	104.129	38.4489
52	0.0953102	-0.802956	104.774	38.3724
53	0.0953102	-0.789191	105.397	38.2971
54	0.182322	-0.775574	105.998	38.1557
55	0.182322	-0.7621	106.579	38.0168
56	0.182322	-0.748762	107.14	37.8803
57	0.262364	-0.735557	107.681	37.6873
58	0.470004	-0.722479	108.203	37.3477
59	0.530628	-0.709522	108.706	36.9712
60	0.587787	-0.696684	109.192	36.5617
61	0.587787	-0.68396	109.659	36.1597
62	0.641854	-0.668209	110.106	35.7308
63	0.641854	-0.655726	110.536	35.3099
64	0.641854	-0.643345	110.95	34.897
65	0.693147	-0.631062	111.348	34.4596
66	0.693147	-0.618872	111.731	34.0306
67	0.693147	-0.606775	112.099	33.61
68	0.693147	-0.594766	112.453	33.1978
69	0.693147	-0.582841	112.793	32.7938
70	0.788457	-0.570999	113.119	32.3436
71	0.788457	-0.559237	113.431	31.9026
72	0.916291	-0.547551	113.731	31.4009
73	0.955511	-0.53594	114.018	30.8888
74	1.02962	-0.524401	114.293	30.3489
75	1.09861	-0.51293	114.556	29.7854
76	1.09861	-0.501527	114.808	29.2344
77	1.09861	-0.487364	115.046	28.699
78	1.09861	-0.476105	115.272	28.1759
79	1.09861	-0.464904	115.488	27.6652
80	1.09861	-0.453763	115.694	27.1666
81	1.09861	-0.442676	115.89	26.6803
82	1.09861	-0.431644	116.077	26.2061
83	1.09861	-0.420664	116.253	25.744
84	1.1314	-0.409735	116.421	25.2804
85	1.1314	-0.398855	116.58	24.8291
86	1.38629	-0.388022	116.731	24.2912
87	1.38629	-0.377233	116.873	23.7682
88	1.41099	-0.36649	117.008	23.2511
89	1.60944	-0.355788	117.134	22.6785
90	1.60944	-0.345126	117.253	22.1231
91	1.60944	-0.334503	117.365	21.5847
92	1.60944	-0.323919	117.47	21.0634
93	1.70475	-0.310738	117.567	20.5336
94	1.79176	-0.300232	117.657	19.9957
95	1.79176	-0.28976	117.741	19.4765
96	1.79176	-0.279319	117.819	18.976
97	1.79176	-0.268908	117.891	18.4942
98	1.94591	-0.258527	117.958	17.9912
99	2.0149	-0.248174	118.02	17.4911
100	2.19722	-0.237847	118.076	16.9685
101	2.70805	-0.227545	118.128	16.3523
102	2.70805	-0.217267	118.175	15.7639
103	2.70805	-0.207012	118.218	15.2033
104	2.70805	-0.196779	118.257	14.6704
105	2.70805	-0.186567	118.292	14.1652
106	2.70805	-0.176374	118.323	13.6876
107	2.70805	-0.166199	118.35	13.2375
108	2.70805	-0.153505	118.374	12.8218
109	2.70805	-0.143367	118.394	12.4336
110	2.70805	-0.133244	118.412	12.0727
111	2.70805	-0.123135	118.427	11.7393

112	2.70805	-0.113039	118.44	11.4332
113	2.70805	-0.102953	118.451	11.1544
114	2.70805	-0.0928787	118.459	10.9028
115	2.70805	-0.0828129	118.466	10.6786
116	2.70805	-0.0727562	118.471	10.4815
117	2.70805	-0.0627062	118.475	10.3117
118	2.70805	-0.0526632	118.478	10.1691
119	2.70805	-0.0426257	118.48	10.0537
120	2.70805	-0.0325917	118.481	9.96543
121	2.70805	-0.0225612	118.482	9.90433
122	2.70805	-0.0125328	118.482	9.87039
123	2.70805	0	118.482	9.87039
124	2.70805	0.0125328	118.482	9.90433
125	2.70805	0.0225612	118.482	9.96543
126	2.70805	0.0325917	118.483	10.0537
127	2.70805	0.0426257	118.485	10.1691
128	2.70805	0.0526632	118.488	10.3117
129	2.70805	0.0627062	118.492	10.4815
130	2.70805	0.0727562	118.497	10.6786
131	2.70805	0.0828129	118.504	10.9028
132	2.70805	0.0928787	118.513	11.1544
133	2.70805	0.102953	118.523	11.4332
134	2.70805	0.113039	118.536	11.7393
135	2.70805	0.123135	118.551	12.0727
136	2.70805	0.133244	118.569	12.4336
137	2.70805	0.143367	118.59	12.8218
138	2.70805	0.153505	118.613	13.2375
139	2.70805	0.166199	118.641	13.6876
140	2.70805	0.176374	118.672	14.1652
141	2.70805	0.186567	118.707	14.6704
142	2.70805	0.196779	118.745	15.2033
143	2.70805	0.207012	118.788	15.7639
144	2.70805	0.217267	118.835	16.3523
145	2.70805	0.227545	118.887	16.9685
146	2.70805	0.237847	118.944	17.6126
147	2.70805	0.248174	119.005	18.2847
148	2.70805	0.258527	119.072	18.9848
149	2.70805	0.268908	119.145	19.713
150	2.70805	0.279319	119.223	20.4694
151	2.70805	0.28976	119.306	21.2541
152	2.70805	0.300232	119.397	22.0671
153	2.70805	0.310738	119.493	22.9086
154	2.70805	0.323919	119.598	23.7858
155	2.70805	0.334503	119.71	24.6917
156	2.70805	0.345126	119.829	25.6263
157	2.70805	0.355788	119.956	26.5898
158	2.70805	0.36649	120.09	27.5822
159	2.70805	0.377233	120.232	28.6038
160	2.70805	0.388022	120.383	29.6546
161	2.70805	0.398855	120.542	30.7347
162	2.70805	0.409735	120.71	31.8443
163	2.70805	0.420664	120.887	32.9835
164	2.70805	0.431644	121.073	34.1524
165	2.70805	0.442676	121.269	35.3512
166	2.70805	0.453763	121.475	36.58
167	2.70805	0.464904	121.691	37.839
168	2.70805	0.476105	121.918	39.1283
169	2.70805	0.487364	122.155	40.4481
170	2.70805	0.501527	122.407	41.8063
171	2.70805	0.51293	122.67	43.1953
172	2.70805	0.524401	122.945	44.6154
173	2.70805	0.53594	123.232	46.0668

174	2.70805	0.547551		123.532	47.5496
175	2.70805	0.559237		123.845	49.064
176	2.70805	0.570999		124.171	50.6103
177	2.70805	0.582841		124.51	52.1887
178	2.70805	0.594766		124.864	53.7993
179	2.70805	0.606775		125.232	55.4425
180	2.70805	0.618872		125.615	57.1184
181	2.70805	0.631062		126.014	58.8274
182	2.70805	0.643345		126.428	60.5696
183	2.70805	0.655726		126.858	62.3453
184	2.70805	0.668209		127.304	64.1549
185	2.70805	0.68396	127.772	66.0071	
186	2.70805	0.696684		128.257	67.8937
187	2.70805	0.709522		128.761	69.8151
188	2.70805	0.722479		129.283	71.7717
189	2.70805	0.735557		129.824	73.7636
190	2.70805	0.748762		130.384	75.7913
191	2.70805	0.7621	130.965	77.8551	
192	2.70805	0.775574		131.567	79.9554
193	2.70805	0.789191		132.189	82.0925
194	2.70805	0.802956		132.834	84.267
195	2.70805	0.816874		133.501	86.4791
196	2.70805	0.830953		134.192	88.7294
197	2.70805	0.845198		134.906	91.0182
198	2.70805	0.859618		135.645	93.3461
199	2.70805	0.874218		136.409	95.7135
200	2.70805	0.892733		137.206	98.1311
201	2.70805	0.907769		138.03	100.589
202	2.70805	0.923014		138.882	103.089
203	2.70805	0.938476		139.763	105.63
204	2.70805	0.954165		140.674	108.214
205	2.70805	0.970094		141.615	110.841
206	2.70805	0.986272		142.587	113.512
207	2.70805	1.00271	143.593	116.228	
208	2.70805	1.01943	144.632	118.988	
209	2.70805	1.03643	145.706	121.795	
210	2.70805	1.05375	146.817	124.649	
211	2.70805	1.07138	147.965	127.55	
212	2.70805	1.08935	149.151	130.5	
213	2.70805	1.10768	150.378	133.5	
214	2.70805	1.12639	151.647	136.55	
215	2.70805	1.1455	152.959	139.652	
216	2.70805	1.17	154.328	142.82	
217	2.70805	1.19012	155.744	146.043	
218	2.70805	1.21073	157.21	149.322	
219	2.70805	1.23187	158.728	152.658	
220	2.70805	1.25357	160.299	156.053	
221	2.70805	1.27588	161.927	159.508	
222	2.70805	1.29884	163.614	163.025	
223	2.70805	1.32251	165.363	166.607	
224	2.70805	1.34694	167.177	170.254	
225	2.70805	1.3722	169.06	173.97	
226	2.70805	1.39838	171.016	177.757	
227	2.70805	1.42554	173.048	181.617	
228	2.70805	1.4538	175.161	185.554	
229	2.70805	1.48328	177.362	189.571	
230	2.70805	1.5141	179.654	193.672	
231	2.70805	1.55477	182.071	197.882	
232	2.70805	1.58927	184.597	202.186	
233	2.70805	1.62576	187.24	206.588	
234	2.70805	1.66456	190.011	211.096	
235	2.70805	1.70604	192.922	215.716	

236	2.70805	1.75069	195.986	220.457
237	2.70805	1.79912	199.223	225.329
238	2.70805	1.85218	202.654	230.345
239	2.70805	1.91103	206.306	235.52
240	2.70805	1.97737	210.216	240.875
241	2.70805	2.05375	214.434	246.437
242	2.70805	2.14441	219.032	252.244
243	2.70805	2.25713	224.127	258.356
244	2.70805	2.40892	229.93	264.88
245	2.89037	2.65209	236.963	272.545

Data Set Standard Deviation = 1.31329
Numerator = 74280.9
Denominator = 99722.6
W Statistic = 0.744875 = 74280.9 / 99722.6

5% Critical value of 0.976 exceeds 0.744875
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.744875
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	181
	6/2/2007	1.79176	238
	11/15/2007	1.09861 J	219
	5/20/2008	1.60944 J	233
	11/20/2008	ND<2.70805	75
	6/11/2009	-0.235722	171
	11/16/2009	0.182322	198
	6/30/2010	-0.274437 J	170
	11/17/2010	0.0953102	195
	7/6/2011	0.182322	199

Rank Sum = 2629
Rank Mean = 131.45

Background Rank Sum = 2629
Background Rank Mean = 131.45

Compliance Wells

Well ID	Date	Result	Rank
LMW-3S	11/18/2006	0.693147 J	209
	6/2/2007	1.38629 J	230
	11/15/2007	1.60944 J	234
	5/20/2008	1.09861 J	220
	11/20/2008	1.09861 J	221
	6/11/2009	0.955511	217
	11/16/2009	1.02962	218
	6/30/2010	1.41099	232
	11/17/2010	1.1314	228
	7/6/2011	1.1314	229

Rank Sum = 2238
Rank Mean = 223.8

LMW-9	1/16/1998	ND<2.70805	75
	3/16/1999	1.79176 J	239
	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	222
	11/15/2007	ND<2.70805	75
	5/20/2008	0 J	182
	11/20/2008	2.19722 J	244
	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
	7/6/2011	-0.0202027 J	179

Rank Sum = 2429
Rank Mean = 121.45

LMW-14R	6/2/2007	ND<2.70805	75
	11/15/2007	ND<2.70805	75
	5/20/2008	0.693147 J	210
	11/20/2008	1.09861 J	223
	6/11/2009	0.788457	214
	6/30/2010	-0.174353 J	173
	11/17/2010	0.641854	206
	7/6/2011	0.587787	204

Rank Sum = 1380
Rank Mean = 172.5

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	0 J	184
	5/20/2008	ND<2.70805	75
	11/20/2008	ND<2.70805	75
	11/20/2008	ND<2.70805	75
	6/11/2009	1.09861	224
	6/30/2010	0	185
	11/17/2010	-0.0202027 J	180
	7/6/2011	-0.0725707 J	175

Rank Sum = 1581
Rank Mean = 131.75

LMW-16	11/18/2006	0 J	186
	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	169
	11/16/2009	-0.415515	164
	6/30/2010	-0.0304592 J	177
	11/17/2010	ND<-1.60944 U	75
	7/6/2011	-0.430783 J	162

Rank Sum = 1233
Rank Mean = 123.3

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	187
	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
	7/6/2011	-0.356675 J	168

Rank Sum = 1635
Rank Mean = 96.1765

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	188
	11/20/2008	ND<2.70805	75
	6/11/2009	-0.616186 J	156
	11/16/2009	0.0953102	196
	6/30/2010	0.262364	201
	11/17/2010	1.09861	225
	7/6/2011	-0.162519 J	174

Rank Sum = 2340
Rank Mean = 106.364

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	189
	6/2/2007	1.60944	235
	11/15/2007	ND<2.70805	75
	5/20/2008	0.693147 J	211
	11/20/2008	ND<2.70805	75
	6/11/2009	0.788457	215
	11/16/2009	0.587787 J	205
	6/30/2010	0.641854	207
	11/17/2010	0.641854	208
	7/6/2011	0.0953102	197

Rank Sum = 2567

Rank Mean = 128.35

LMW-8	1/16/1998	ND<2.70805	75
	3/16/1999	1.79176 J	240
	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	190
	6/2/2007	ND<2.70805	75
	11/15/2007	ND<2.70805	75
	5/20/2008	0 J	191
	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	166
	11/17/2010	-0.430783 J	163
	7/6/2011	-0.0512933 J	176

Rank Sum = 2346
Rank Mean = 117.3

LMW-9D	11/18/2006	0.693147 J	212
	6/2/2007	ND<2.70805	75
	11/15/2007	ND<2.70805	75
	5/20/2008	0 J	192
	11/20/2008	ND<2.70805	75
	6/11/2009	-0.597837 J	157
	11/16/2009	-0.371064	167
	6/30/2010	-0.634878 J	155
	11/17/2010	-0.510826 J	158
	7/6/2011	0.916291	216

Rank Sum = 1482
Rank Mean = 148.2

LMW-9S	11/18/2006	0 J	193
	6/2/2007	ND<2.70805	75
	11/15/2007	ND<2.70805	75
	5/20/2008	0 J	194
	11/20/2008	ND<2.70805	75
	6/11/2009	0.182322	200
	11/16/2009	0.470004 J B	202
	11/16/2009	-0.0304592 J B	178
	11/16/2009	-0.223144 J B	172
	6/30/2010	ND<-1.60944 U	75
	11/17/2010	-0.820981 J	152
	7/6/2011	-0.400478 J	165

Rank Sum = 1756
Rank Mean = 146.333

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	245
	10/26/2005	ND<2.70805	75

	6/19/2006	ND<2.70805	75
	11/18/2006	1.38629 J	231
	6/2/2007	1.94591	242
	11/15/2007	1.60944 J	236
	5/20/2008	0.693147 J	213
	11/20/2008	1.09861 J	226
	6/11/2009	1.70475	237
	11/17/2010	0.530628	203
	7/6/2011	2.0149	243

Rank Sum = 2751
Rank Mean = 152.833

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-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

MW-5	1/16/1998	ND<2.70805	75
	3/16/1999	1.79176 J	241
	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	227
	5/20/2008	ND<2.70805	75
	11/20/2008	ND<2.70805	75

Rank Sum = 1293
Rank Mean = 99.4615

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

Calculation Results:

Kruskal-Wallis H Statistic = 50.8284
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 65.5792
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
50.8284 > 26.2962 indicating a significant group difference at 5% significance level
65.5792 > 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 131.45

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-3S	223.8	92.35	63.8527
LMW-9	121.45	-10	52.1355
LMW-14R	172.5	41.05	68.9688
LMW-15R	131.75	0.3	60.2009
LMW-16	123.3	-8.15	63.8527
LMW-10	96.1765	-35.2735	54.387
LMW-3	106.364	-25.0864	50.9368
LMW-6	128.35	-3.1	52.1355
LMW-8	117.3	-14.15	52.1355
LMW-9D	148.2	16.75	63.8527
LMW-9S	146.333	14.8833	60.2009
LMW-7	152.833	21.3833	53.5641
LMW-12	75	-56.45	61.8875
LMW-13	75	-56.45	61.8875
MW-5	99.4615	-31.9885	58.7359
LMW-11	75	-56.45	61.8875

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 131.45

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-3S	223.8	92.35	75.4198
LMW-9	121.45	-10	61.58
LMW-14R	172.5	41.05	81.4627
LMW-15R	131.75	0.3	71.1064
LMW-16	123.3	-8.15	75.4198
LMW-10	96.1765	-35.2735	64.2393
LMW-3	106.364	-25.0864	60.1642
LMW-6	128.35	-3.1	61.58
LMW-8	117.3	-14.15	61.58
LMW-9D	148.2	16.75	75.4198
LMW-9S	146.333	14.8833	71.1064
LMW-7	152.833	21.3833	63.2674
LMW-12	75	-56.45	73.0986
LMW-13	75	-56.45	73.0986
MW-5	99.4615	-31.9885	69.3761
LMW-11	75	-56.45	73.0986

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
1.1314	0.693147 J	0.438255	9	0
1.60944 J	1.38629 J	0.223144	10	0
1.09861 J	1.38629 J	-0.287682	10	1
1.09861 J	1.38629 J	-0.287682	10	2
0.955511	1.38629 J	-0.430783	10	3
1.02962	1.38629 J	-0.356675	10	4
1.41099	1.38629 J	0.0246926	11	4
1.1314	1.38629 J	-0.254892	11	5
1.1314	1.38629 J	-0.254892	11	6
1.09861 J	1.60944 J	-0.510826	11	7
1.09861 J	1.60944 J	-0.510826	11	8
0.955511	1.60944 J	-0.653926	11	9
1.02962	1.60944 J	-0.579818	11	10
1.41099	1.60944 J	-0.198451	11	11
1.1314	1.60944 J	-0.478036	11	12
1.1314	1.60944 J	-0.478036	11	13
1.09861 J	1.09861 J	0	11	13
0.955511	1.09861 J	-0.143101	11	14
1.02962	1.09861 J	-0.0689929	11	15
1.41099	1.09861 J	0.312375	12	15
1.1314	1.09861 J	0.0327898	13	15
1.1314	1.09861 J	0.0327898	14	15
0.955511	1.09861 J	-0.143101	14	16
1.02962	1.09861 J	-0.0689929	14	17
1.41099	1.09861 J	0.312375	15	17
1.1314	1.09861 J	0.0327898	16	17
1.1314	1.09861 J	0.0327898	17	17
1.02962	0.955511	0.074108	18	17
1.41099	0.955511	0.455476	19	17
1.1314	0.955511	0.175891	20	17
1.1314	0.955511	0.175891	21	17
1.41099	1.02962	0.381368	22	17
1.1314	1.02962	0.101783	23	17

1.1314	1.02962	0.101783	24	17
1.1314	1.41099	-0.279585	24	18
1.1314	1.41099	-0.279585	24	19

1.1314	1.1314	0	24	19

S Statistic = 24 - 19 = 5
Comparing at 1.0 - (0.05 / 2) = 97.5% confidence level (two-tailed)
Probability of obtaining S >= |5| is 0.728
0.728 >= 0.025 indicating no evidence of a trend

Concentrations (ppb)

Parameter: Nitrate

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 132
Total Non-Detect: 59
Percent Non-Detects: 44.697%
Total Background Measurements: 9
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	9	5 (55.5556%)	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<0.072 U	ND<0.072 U
			7/6/2011	ND<0.075 U	ND<0.075 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-6	9	3 (33.3333%)	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
			7/6/2011	1700	1700
LMW-10	9	2 (22.2222%)	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
			7/6/2011	580	580
LMW-14R	7	4 (57.1429%)	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<0.072 U	ND<0.072 U
			7/6/2011	350	350
LMW-15R	11	6 (54.5455%)	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	
			7/6/2011	68000 J	68000 J	
LMW-16	9	5 (55.5556%)	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<0.072 U		ND<0.072 U
			7/6/2011	180 J	180 J	
LMW-3	9	2 (22.2222%)	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	
			7/6/2011	730	730	
LMW-7	7	2 (28.5714%)	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	
			7/6/2011	86 J	86 J	
LMW-8	9	2 (22.2222%)	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	
			7/6/2011	260	260	
LMW-9	9	2 (22.2222%)	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	0.094 J	0.094 J	
			7/6/2011	110 J	110 J	
LMW-9D	9	3 (33.3333%)	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	0.097 J	0.097 J	
			7/6/2011	130 J	130 J	
LMW-9S	11	5 (45.4545%)	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	770 J M H		770 J M H
			11/16/2009	7300 H	7300 H	
			6/30/2010	60 J	60 J	
			11/17/2010	0.21 J	0.21 J	
			7/6/2011	ND<0.075 U	ND<0.075 U	
LMW-3S	9	3 (33.3333%)	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	0.088 J	0.088 J	
			7/6/2011	150 J	150 J	
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-12	4	4 (100%)	6/2/2007	ND<10	ND<10	
			11/15/2007	ND<10	ND<10	
			5/20/2008	ND<10	ND<10	
			11/20/2008	ND<10	ND<10	
LMW-11	4	4 (100%)	6/2/2007	ND<10	ND<10	
			11/15/2007	ND<10	ND<10	
			5/20/2008	ND<10	ND<10	
			11/20/2008	ND<10	ND<10	

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 = 132

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.036	-2.457276	6.03819	-0.0884618
2	0.036	-2.170091	0.7475	-0.166585
3	0.036	-2.014091	4.8041	-0.239092
4	0.0375	-1.880791	8.3414	-0.309622
5	0.0375	-1.786612	1.5334	-0.37662
6	0.088	-1.6954	24.4078	-0.525815
7	0.094	-1.625762	7.0509	-0.678637
8	0.097	-1.554772	9.4682	-0.82945
9	0.19	-1.498523	1.7138	-1.11417
10	0.21	-1.439533	3.786	-1.41647
11	0.52	-1.391753	5.723	-2.14018
12	0.56	-1.340753	7.5206	-2.891
13	0.61	-1.298843	9.2076	-3.68329
14	1.4	-1.253574	0.779	-5.43828
15	1.6	-1.215964	2.2575	-7.38382
16	5	-1.174994	3.6381	-13.2588
17	5	-1.140694	4.9393	-18.9622
18	5	-1.103064	6.156	-24.4775
19	5	-1.071384	7.3039	-29.8344
20	5	-1.036434	8.3781	-35.0166
21	5	-1.006874	9.3919	-40.0509
22	5	-0.974114	50.3408	-44.9215
23	5	-0.946291	51.2362	-49.6529
24	5	-0.915365	52.0741	-54.2297
25	5	-0.889006	52.8645	-58.6748
26	5	-0.859618	53.6034	-62.9729
27	5	-0.830953	54.2939	-67.1276
28	5	-0.806422	54.9442	-71.1597
29	5	-0.778966	55.551	-75.0546
30	5	-0.755415	56.1216	-78.8316
31	5	-0.729003	56.6531	-82.4767
32	5	-0.706302	57.152	-86.0082
33	5	-0.680797	57.6154	-89.4122
34	5	-0.658838	58.0495	-92.7063
35	5	-0.634124	58.4516	-95.877
36	5	-0.612813	58.8272	-98.941
37	5	-0.588793	59.1738	-101.885
38	5	-0.568052	59.4965	-104.725
39	5	-0.544642	59.7932	-107.448
40	5	-0.524401	60.0681	-110.07
41	5	-0.501527	60.3197	-112.578
42	5	-0.481728	60.5517	-114.987
43	5	-0.459327	60.7627	-117.283
44	5	-0.439913	60.9562	-119.483
45	5	-0.417928	61.1309	-121.573
46	5	-0.398855	61.29	-123.567
47	5	-0.377233	61.4323	-125.453
48	5	-0.358459	61.5608	-127.245
49	5	-0.337155	61.6745	-128.931

50	5	-0.318639	61.776	-130.524
51	5	-0.297612	61.8646	-132.012
52	5	-0.279319	61.9426	-133.409
53	5	-0.258527	62.0094	-134.702
54	5	-0.237847	62.066	-135.891
55	5	-0.219834	62.1143	-136.99
56	5	-0.199336	62.1541	-137.987
57	5	-0.181468	62.187	-138.894
58	5	-0.161119	62.2129	-139.7
59	5	-0.143367	62.2335	-140.416
60	5	-0.123135	62.2487	-141.032
61	5	-0.105474	62.2598	-141.559
62	5	-0.0853288	62.2671	-141.986
63	5	-0.0677301	62.2717	-142.325
64	18	-0.0476439	62.2739	-143.182
65	18	-0.0300838	62.2748	-143.724
66	18	-0.0100272	62.2749	-143.904
67	45	0.0100272	62.275	-143.453
68	45	0.0300838	62.2759	-142.099
69	50	0.0476439	62.2782	-139.717
70	52	0.0677301	62.2828	-136.195
71	58	0.0853288	62.2901	-131.246
72	60	0.105474	62.3012	-124.918
73	78	0.123135	62.3164	-115.313
74	84	0.143367	62.3369	-103.27
75	86	0.161119	62.3629	-89.4141
76	99	0.181468	62.3958	-71.4487
77	107	0.199336	62.4355	-50.1197
78	109	0.219834	62.4839	-26.1578
79	110	0.237847	62.5404	0.00528174
80	119	0.258527	62.6073	30.77
81	128	0.279319	62.6853	66.5229
82	130	0.297612	62.7739	105.212
83	150	0.318639	62.8754	153.008
84	166	0.337155	62.9891	208.976
85	180	0.358459	63.1176	273.499
86	180	0.377233	63.2599	341.401
87	180	0.398855	63.419	413.195
88	180	0.417928	63.5936	488.422
89	196	0.439913	63.7871	574.645
90	209	0.459327	63.9981	670.644
91	216	0.481728	64.2302	774.697
92	260	0.501527	64.4817	905.094
93	295	0.524401	64.7567	1059.79
94	321	0.544642	65.0533	1234.62
95	326	0.568052	65.376	1419.81
96	333	0.588793	65.7227	1615.88
97	350	0.612813	66.0982	1830.36
98	369	0.634124	66.5004	2064.35
99	370	0.658838	66.9344	2308.12
100	371	0.680797	67.3979	2560.7
101	377	0.706302	67.8968	2826.97
102	398	0.729003	68.4282	3117.12
103	406	0.755415	68.9989	3423.82
104	430	0.778966	69.6057	3758.77
105	450	0.806422	70.256	4121.66
106	455	0.830953	70.9465	4499.74
107	461	0.859618	71.6854	4896.03
108	515	0.889006	72.4757	5353.87
109	546	0.915365	73.3136	5853.66
110	551	0.946291	74.2091	6375.06
111	570	0.974114	75.158	6930.31

112	580	1.00687	76.1718	7514.29
113	710	1.03643	77.246	8250.16
114	730	1.07138	78.3938	9032.26
115	740	1.10306	79.6106	9848.53
116	770	1.14069	80.9117	10726.9
117	870	1.17499	82.2923	11749.1
118	880	1.21596	83.7709	12819.1
119	1000	1.25357	85.3423	14072.7
120	1020	1.29884	87.0293	15397.5
121	1150	1.34075	88.8269	16939.4
122	1400	1.39175	90.7639	18887.8
123	1410	1.43953	92.8361	20917.6
124	1700	1.49852	95.0817	23465
125	2100	1.55477	97.499	26730.1
126	2400	1.62576	100.142	30631.9
127	4780	1.6954	103.016	38735.9
128	5000	1.78661	106.208	47669
129	7300	1.88079	109.746	61398.7
130	17200	2.01409	113.802	96041.1
131	68000	2.17009	118.512	243607
132	643000	2.45727	124.55	1.82363e+006

Data Set Standard Deviation = 56213.7
Numerator = 3.32564e+012
Denominator = 5.15583e+013
W Statistic = 0.0645025 = 3.32564e+012 / 5.15583e+013

5% Critical value of 0.976 exceeds 0.0645025
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.0645025
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 = 132

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-3.32424	-2.45727	6.03819	8.16856
2	-3.32424	-2.17009	10.7475	15.3824
3	-3.32424	-2.01409	14.8041	22.0778
4	-3.28341	-1.88079	18.3414	28.2532
5	-3.28341	-1.78661	21.5334	34.1194
6	-2.43042	-1.6954	24.4078	38.2399
7	-2.36446	-1.62576	27.0509	42.084
8	-2.33304	-1.55477	29.4682	45.7113
9	-1.66073	-1.49852	31.7138	48.1999
10	-1.56065	-1.43953	33.786	50.4465
11	-0.653926	-1.39175	35.723	51.3566
12	-0.579818	-1.34075	37.5206	52.134
13	-0.494296	-1.29884	39.2076	52.776
14	0.336472	-1.25357	40.779	52.3542
15	0.470004	-1.21596	42.2575	51.7827
16	1.60944	-1.17499	43.6381	49.8917
17	1.60944	-1.14069	44.9393	48.0558
18	1.60944	-1.10306	46.156	46.2805
19	1.60944	-1.07138	47.3039	44.5562
20	1.60944	-1.03643	48.3781	42.8881
21	1.60944	-1.00687	49.3919	41.2676
22	1.60944	-0.974114	50.3408	39.6998
23	1.60944	-0.946291	51.2362	38.1768
24	1.60944	-0.915365	52.0741	36.7036
25	1.60944	-0.889006	52.8645	35.2728
26	1.60944	-0.859618	53.6034	33.8893
27	1.60944	-0.830953	54.2939	32.552
28	1.60944	-0.806422	54.9442	31.2541
29	1.60944	-0.778966	55.551	30.0004
30	1.60944	-0.755415	56.1216	28.7846
31	1.60944	-0.729003	56.6531	27.6113
32	1.60944	-0.706302	57.152	26.4745
33	1.60944	-0.680797	57.6154	25.3788
34	1.60944	-0.658838	58.0495	24.3185
35	1.60944	-0.634124	58.4516	23.2979
36	1.60944	-0.612813	58.8272	22.3116
37	1.60944	-0.588793	59.1738	21.364
38	1.60944	-0.568052	59.4965	20.4497
39	1.60944	-0.544642	59.7932	19.5732
40	1.60944	-0.524401	60.0681	18.7292
41	1.60944	-0.501527	60.3197	17.922
42	1.60944	-0.481728	60.5517	17.1467
43	1.60944	-0.459327	60.7627	16.4074
44	1.60944	-0.439913	60.9562	15.6994
45	1.60944	-0.417928	61.1309	15.0268
46	1.60944	-0.398855	61.29	14.3849
47	1.60944	-0.377233	61.4323	13.7777
48	1.60944	-0.358459	61.5608	13.2008
49	1.60944	-0.337155	61.6745	12.6582

50	1.60944	-0.318639	61.776	12.1454
51	1.60944	-0.297612	61.8646	11.6664
52	1.60944	-0.279319	61.9426	11.2168
53	1.60944	-0.258527	62.0094	10.8007
54	1.60944	-0.237847	62.066	10.4179
55	1.60944	-0.219834	62.1143	10.0641
56	1.60944	-0.199336	62.1541	9.74331
57	1.60944	-0.181468	62.187	9.45124
58	1.60944	-0.161119	62.2129	9.19193
59	1.60944	-0.143367	62.2335	8.96119
60	1.60944	-0.123135	62.2487	8.76301
61	1.60944	-0.105474	62.2598	8.59326
62	1.60944	-0.0853288	62.2671	8.45593
63	1.60944	-0.0677301	62.2717	8.34692
64	2.89037	-0.0476439	62.2739	8.20921
65	2.89037	-0.0300838	62.2748	8.12226
66	2.89037	-0.0100272	62.2749	8.09328
67	3.80666	0.0100272	62.275	8.13145
68	3.80666	0.0300838	62.2759	8.24597
69	3.91202	0.0476439	62.2782	8.43235
70	3.95124	0.0677301	62.2828	8.69997
71	4.06044	0.0853288	62.2901	9.04644
72	4.09434	0.105474	62.3012	9.47829
73	4.35671	0.123135	62.3164	10.0148
74	4.43082	0.143367	62.3369	10.65
75	4.45435	0.161119	62.3629	11.3677
76	4.59512	0.181468	62.3958	12.2015
77	4.67283	0.199336	62.4355	13.133
78	4.69135	0.219834	62.4839	14.1643
79	4.70048	0.237847	62.5404	15.2823
80	4.77912	0.258527	62.6073	16.5178
81	4.85203	0.279319	62.6853	17.8731
82	4.86753	0.297612	62.7739	19.3217
83	5.01064	0.318639	62.8754	20.9183
84	5.11199	0.337155	62.9891	22.6419
85	5.19296	0.358459	63.1176	24.5033
86	5.19296	0.377233	63.2599	26.4623
87	5.19296	0.398855	63.419	28.5335
88	5.19296	0.417928	63.5936	30.7038
89	5.27811	0.439913	63.7871	33.0257
90	5.34233	0.459327	63.9981	35.4796
91	5.37528	0.481728	64.2302	38.069
92	5.56068	0.501527	64.4817	40.8578
93	5.68698	0.524401	64.7567	43.8401
94	5.77144	0.544642	65.0533	46.9835
95	5.7869	0.568052	65.376	50.2707
96	5.80814	0.588793	65.7227	53.6905
97	5.85793	0.612813	66.0982	57.2803
98	5.9108	0.634124	66.5004	61.0285
99	5.9135	0.658838	66.9344	64.9246
100	5.9162	0.680797	67.3979	68.9523
101	5.93225	0.706302	67.8968	73.1422
102	5.98645	0.729003	68.4282	77.5064
103	6.00635	0.755415	68.9989	82.0437
104	6.06379	0.778966	69.6057	86.7672
105	6.10925	0.806422	70.256	91.6938
106	6.1203	0.830953	70.9465	96.7795
107	6.1334	0.859618	71.6854	102.052
108	6.24417	0.889006	72.4757	107.603
109	6.30262	0.915365	73.3136	113.372
110	6.31173	0.946291	74.2091	119.345
111	6.34564	0.974114	75.158	125.526

112	6.36303	1.00687	76.1718	131.933
113	6.56526	1.03643	77.246	138.737
114	6.59304	1.07138	78.3938	145.801
115	6.60665	1.10306	79.6106	153.089
116	6.64639	1.14069	80.9117	160.67
117	6.76849	1.17499	82.2923	168.623
118	6.77992	1.21596	83.7709	176.867
119	6.90776	1.25357	85.3423	185.526
120	6.92756	1.29884	87.0293	194.524
121	7.04752	1.34075	88.8269	203.973
122	7.24423	1.39175	90.7639	214.055
123	7.25134	1.43953	92.8361	224.494
124	7.43838	1.49852	95.0817	235.64
125	7.64969	1.55477	97.499	247.534
126	7.78322	1.62576	100.142	260.188
127	8.4722	1.6954	103.016	274.551
128	8.51719	1.78661	106.208	289.768
129	8.89563	1.88079	109.746	306.499
130	9.75266	2.01409	113.802	326.142
131	11.1273	2.17009	118.512	350.289
132	13.3739	2.45727	124.55	383.152

Data Set Standard Deviation = 3.09141
Numerator = 146806
Denominator = 155929
W Statistic = 0.94149 = 146806 / 155929

5% Critical value of 0.976 exceeds 0.94149
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.94149
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	72
	6/2/2007	13.3739	132
	11/15/2007	ND<1.60944	30
	5/20/2008	5.9108	98
	11/20/2008	ND<1.60944	30
	11/16/2009	ND<5.19296 U	30
	6/30/2010	4.43082 J	77
	11/17/2010	ND<-3.32424 U	30
	7/6/2011	ND<-3.28341 U	30

Rank Sum = 529
Rank Mean = 58.7778

Background Rank Sum = 529
Background Rank Mean = 58.7778

Compliance Wells

Well ID	Date	Result	Rank
LMW-6	11/18/2006	7.04752	121
	6/2/2007	ND<1.60944	30
	11/15/2007	ND<1.60944	30
	5/20/2008	7.25134	123
	11/20/2008	ND<1.60944	30
	11/16/2009	8.51719	128
	6/30/2010	6.77992	118
	11/17/2010	0.336472	68
	7/6/2011	7.43838	124

Rank Sum = 772
Rank Mean = 85.7778

LMW-10	11/18/2006	6.31173	110
	6/2/2007	6.92756	120
	11/15/2007	ND<1.60944	30
	5/20/2008	6.00635	103
	11/20/2008	ND<1.60944	30
	11/16/2009	7.78322	126
	6/30/2010	5.9135	99
	11/17/2010	-0.653926	65
	7/6/2011	6.36303	112

Rank Sum = 795
Rank Mean = 88.3333

LMW-14R	6/2/2007	5.7869	95
	11/15/2007	ND<1.60944	30
	5/20/2008	5.9162	100
	11/20/2008	ND<1.60944	30

	6/30/2010	ND<2.89037 U	30
	11/17/2010	ND<-3.32424 U	30
	7/6/2011	5.85793	97

Rank Sum = 412
Rank Mean = 58.8571

LMW-15R	11/18/2006	8.4722	127
	6/2/2007	7.24423	122
	11/15/2007	ND<1.60944	30
	11/15/2007	ND<1.60944	30
	5/20/2008	ND<1.60944	30
	5/20/2008	ND<1.60944	30
	11/20/2008	ND<1.60944	30
	11/20/2008	ND<1.60944	30
	6/30/2010	7.64969	125
	11/17/2010	0.470004	69
	7/6/2011	11.1273 J	131

Rank Sum = 754
Rank Mean = 68.5455

LMW-16	11/18/2006	3.95124	73
	6/2/2007	5.11199	87
	11/15/2007	ND<1.60944	30
	5/20/2008	5.93225	101
	11/20/2008	ND<1.60944	30
	11/16/2009	ND<5.19296 U	30
	6/30/2010	ND<2.89037 U	30
	11/17/2010	ND<-3.32424 U	30
	7/6/2011	5.19296 J	88

Rank Sum = 499
Rank Mean = 55.4444

LMW-3	11/18/2006	5.80814	96
	6/2/2007	5.34233	90
	11/15/2007	ND<1.60944	30
	5/20/2008	6.24417	108
	11/20/2008	ND<1.60944	30
	11/16/2009	6.76849 J H	117
	6/30/2010	4.35671 J M	76
	11/17/2010	-1.66073 J	63
	7/6/2011	6.59304	114

Rank Sum = 724
Rank Mean = 80.4444

LMW-7	11/18/2006	4.77912	83
	6/2/2007	5.68698	93
	11/15/2007	ND<1.60944	30
	5/20/2008	4.85203	84
	11/20/2008	ND<1.60944	30
	11/17/2010	-0.579818 J	66
	7/6/2011	4.45435 J	78

Rank Sum = 464
Rank Mean = 66.2857

LMW-8	11/18/2006	5.37528	91
	6/2/2007	5.98645	102
	11/15/2007	ND<1.60944	30
	5/20/2008	6.34564	111
	11/20/2008	ND<1.60944	30
	11/16/2009	6.60665 J	115
	6/30/2010	3.80666 J	70
	11/17/2010	-0.494296	67

	7/6/2011	5.56068	92

Rank Sum = 708
Rank Mean = 78.6667

LMW-9	11/18/2006	4.59512	79
	6/2/2007	9.75266	130
	11/15/2007	ND<1.60944	30
	5/20/2008	6.1203	106
	11/20/2008	ND<1.60944	30
	11/16/2009	6.10925 J M H	105
	6/30/2010	3.80666 J	71
	11/17/2010	-2.36446 J	61
	7/6/2011	4.70048 J	82

Rank Sum = 694
Rank Mean = 77.1111

LMW-9D	11/18/2006	4.67283	80
	6/2/2007	6.1334	107
	11/15/2007	ND<1.60944	30
	5/20/2008	ND<1.60944	30
	11/20/2008	ND<1.60944	30
	11/16/2009	6.06379 J M H	104
	6/30/2010	4.06044 J	74
	11/17/2010	-2.33304 J	62
	7/6/2011	4.86753 J	85

Rank Sum = 602
Rank Mean = 66.8889

LMW-9S	11/18/2006	4.69135	81
	6/2/2007	6.90776	119
	11/15/2007	ND<1.60944	30
	5/20/2008	ND<1.60944	30
	11/20/2008	ND<1.60944	30
	11/16/2009	ND<5.19296 U	30
	11/16/2009	6.64639 J M H	116
	11/16/2009	8.89563 H	129
	6/30/2010	4.09434 J	75
	11/17/2010	-1.56065 J	64
	7/6/2011	ND<-3.28341 U	30

Rank Sum = 734
Rank Mean = 66.7273

LMW-3S	11/18/2006	5.77144	94
	6/2/2007	5.27811	89
	11/15/2007	ND<1.60944	30
	5/20/2008	6.30262	109
	11/20/2008	ND<1.60944	30
	11/16/2009	6.56526 J M	113
	6/30/2010	ND<2.89037 U	30
	11/17/2010	-2.43042 J	60
	7/6/2011	5.01064 J	86

Rank Sum = 641
Rank Mean = 71.2222

MW-5	11/15/2007	ND<1.60944	30
	5/20/2008	ND<1.60944	30
	11/20/2008	ND<1.60944	30

Rank Sum = 90
Rank Mean = 30

LMW-13	6/2/2007	ND<1.60944	30

	11/15/2007	ND<1.60944	30
	5/20/2008	ND<1.60944	30
	11/20/2008	ND<1.60944	30

Rank Sum = 120
Rank Mean = 30

LMW-12	6/2/2007	ND<1.60944	30
	11/15/2007	ND<1.60944	30
	5/20/2008	ND<1.60944	30
	11/20/2008	ND<1.60944	30

Rank Sum = 120
Rank Mean = 30

LMW-11	6/2/2007	ND<1.60944	30
	11/15/2007	ND<1.60944	30
	5/20/2008	ND<1.60944	30
	11/20/2008	ND<1.60944	30

Rank Sum = 120
Rank Mean = 30

Calculation Results:

Kruskal-Wallis H Statistic = 23.246
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 25.5248
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
23.246 < 26.2962 indicating no significant group difference at 5% significance level
25.5248 < 26.2962 indicating no significant group difference at 5% significance level when adjusted for ties

Concentrations (ppb)

Parameter: Selenium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 210
Percent Non-Detects: 85.7143%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	20 (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
			7/6/2011	ND<0.21 U	ND<0.21 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-3S	10	10 (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
			7/6/2011	ND<0.21 U	ND<0.21 U
LMW-10	17	16 (94.1176%)	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	
			7/6/2011	2.8	2.8	
LMW-14R	8	8 (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	
			7/6/2011	ND<0.21 U	ND<0.21 U	
LMW-15R	12	10 (83.3333%)	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	
			7/6/2011	0.32 J	0.32 J	
LMW-16	10	8 (80%)	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	
			7/6/2011	ND<0.21 U	ND<0.21 U	
LMW-3	22	22 (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	

			7/6/2011	ND<0.21 U	ND<0.21 U	
LMW-6	20	8 (40%)	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	
			7/6/2011	5.6	5.6	
LMW-7	18	17 (94.4444%)	1/16/1998	ND<2	ND<2	
			3/16/1999	ND<2	ND<2	
			9/23/1999	ND<2	ND<2	
			3/14/2000	ND<2	ND<2	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	
			10/12/2004	ND<2	ND<2	
			4/1/2005	ND<2	ND<2	
			10/26/2005	ND<2	ND<2	
			6/19/2006	ND<2	ND<2	
			11/18/2006	ND<2	ND<2	
			6/2/2007	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			6/11/2009	ND<0.21 U	ND<0.21 U	
			11/17/2010	ND<0.21 U	ND<0.21 U	
			7/6/2011	0.3 J	0.3 J	
LMW-8	20	10 (50%)	1/16/1998	ND<2	ND<2	
			3/16/1999	ND<2	ND<2	
			9/23/1999	ND<2	ND<2	
			3/14/2000	ND<2	ND<2	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	
			10/12/2004	ND<2	ND<2	
			4/1/2005	3	3	
			10/26/2005	1 J	1 J	
			6/19/2006	1 J	1 J	
			11/18/2006	1 J	1 J	
			6/2/2007	1 J	1 J	
			11/15/2007	3	3	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			6/11/2009	0.64	0.64	
			11/16/2009	0.59	0.59	
			6/30/2010	0.33 J	0.33 J	
			11/17/2010	0.66	0.66	
			7/6/2011	ND<0.21 U	ND<0.21 U	

LMW-9	20	19 (95%)	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
			7/6/2011	ND<0.21 U	ND<0.21 U	
LMW-9D	10	8 (80%)	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
			7/6/2011	0.49 J	0.49 J	
LMW-9S	12	8 (66.6667%)	11/18/2006	4	4	
			6/2/2007	4	4	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
			6/11/2009	ND<0.21 U		ND<0.21 U
			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	
			7/6/2011	0.38 J	0.38 J	
LMW-12	11	11 (100%)	3/14/2000	ND<2	ND<2	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	
			10/12/2004	ND<2	ND<2	
			4/1/2005	ND<2	ND<2	
			10/26/2005	ND<2	ND<2	
			6/19/2006	ND<2	ND<2	
			6/2/2007	ND<2	ND<2	
			11/15/2007	ND<2	ND<2	
			5/20/2008	ND<2	ND<2	
			11/20/2008	ND<2	ND<2	
LMW-11	11	11 (100%)	3/14/2000	ND<2	ND<2	
			9/23/2003	ND<2	ND<2	
			3/10/2004	ND<2	ND<2	
			10/12/2004	ND<2	ND<2	

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

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 = 245

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	-2.14441	22.5296	-0.993567
5	0.105	-2.05375	26.7475	-1.20921
6	0.105	-1.97737	30.6575	-1.41683
7	0.105	-1.91103	34.3095	-1.61749
8	0.105	-1.85218	37.7401	-1.81197
9	0.105	-1.79912	40.9769	-2.00088
10	0.105	-1.75069	44.0418	-2.1847
11	0.105	-1.70604	46.9524	-2.36384
12	0.105	-1.66456	49.7231	-2.53861
13	0.105	-1.62576	52.3662	-2.70932
14	0.105	-1.58927	54.892	-2.87619
15	0.105	-1.55477	57.3093	-3.03944
16	0.105	-1.5141	59.6018	-3.19842
17	0.105	-1.48328	61.802	-3.35417
18	0.105	-1.4538	63.9155	-3.50682
19	0.105	-1.42554	65.9477	-3.6565
20	0.105	-1.39838	67.9031	-3.80333
21	0.105	-1.3722	69.7861	-3.94741
22	0.105	-1.34694	71.6003	-4.08884
23	0.105	-1.32251	73.3494	-4.2277
24	0.105	-1.29884	75.0363	-4.36408
25	0.105	-1.27588	76.6642	-4.49805
26	0.105	-1.25357	78.2356	-4.62967
27	0.105	-1.23187	79.7531	-4.75902
28	0.105	-1.21073	81.219	-4.88614
29	0.105	-1.19012	82.6353	-5.01111
30	0.105	-1.17	84.0043	-5.13396
31	0.105	-1.1455	85.3164	-5.25424
32	0.105	-1.12639	86.5852	-5.37251
33	0.105	-1.10768	87.8121	-5.48881
34	0.105	-1.08935	88.9988	-5.60319
35	0.105	-1.07138	90.1467	-5.71569
36	0.105	-1.05375	91.2571	-5.82633
37	0.105	-1.03643	92.3312	-5.93516
38	0.105	-1.01943	93.3705	-6.0422
39	0.105	-1.00271	94.3759	-6.14748
40	0.105	-0.986272	95.3486	-6.25104
41	0.105	-0.970094	96.2897	-6.3529
42	0.105	-0.954165	97.2002	-6.45309
43	0.105	-0.938476	98.0809	-6.55163
44	0.105	-0.923014	98.9328	-6.64854
45	0.105	-0.907769	99.7569	-6.74386
46	0.24	-0.892733	100.554	-6.95812
47	0.26	-0.874218	101.318	-7.18541
48	0.28	-0.859618	102.057	-7.42611
49	0.3	-0.845198	102.771	-7.67967

50	0.31	-0.830953	103.462	-7.93726
51	0.32	-0.816874	104.129	-8.19866
52	0.33	-0.802956	104.774	-8.46364
53	0.38	-0.789191	105.397	-8.76353
54	0.49	-0.775574	105.998	-9.14356
55	0.59	-0.7621	106.579	-9.5932
56	0.64	-0.748762	107.14	-10.0724
57	0.66	-0.735557	107.681	-10.5579
58	1	-0.722479	108.203	-11.2804
59	1	-0.709522	108.706	-11.9899
60	1	-0.696684	109.192	-12.6866
61	1	-0.68396	109.659	-13.3705
62	1	-0.668209	110.106	-14.0387
63	1	-0.655726	110.536	-14.6945
64	1	-0.643345	110.95	-15.3378
65	1	-0.631062	111.348	-15.9689
66	1	-0.618872	111.731	-16.5877
67	1	-0.606775	112.099	-17.1945
68	1	-0.594766	112.453	-17.7893
69	1	-0.582841	112.793	-18.3721
70	1	-0.570999	113.119	-18.9431
71	1	-0.559237	113.431	-19.5024
72	1	-0.547551	113.731	-20.0499
73	1	-0.53594	114.018	-20.5858
74	1	-0.524401	114.293	-21.1102
75	1	-0.51293	114.556	-21.6232
76	1	-0.501527	114.808	-22.1247
77	1	-0.487364	115.046	-22.6121
78	1	-0.476105	115.272	-23.0882
79	1	-0.464904	115.488	-23.5531
80	1	-0.453763	115.694	-24.0068
81	1	-0.442676	115.89	-24.4495
82	1	-0.431644	116.077	-24.8812
83	1	-0.420664	116.253	-25.3018
84	1	-0.409735	116.421	-25.7116
85	1	-0.398855	116.58	-26.1104
86	1	-0.388022	116.731	-26.4984
87	1	-0.377233	116.873	-26.8757
88	1	-0.36649	117.008	-27.2422
89	1	-0.355788	117.134	-27.5979
90	1	-0.345126	117.253	-27.9431
91	1	-0.334503	117.365	-28.2776
92	1	-0.323919	117.47	-28.6015
93	1	-0.310738	117.567	-28.9122
94	1	-0.300232	117.657	-29.2125
95	1	-0.28976	117.741	-29.5022
96	1	-0.279319	117.819	-29.7815
97	1	-0.268908	117.891	-30.0505
98	1	-0.258527	117.958	-30.309
99	1	-0.248174	118.02	-30.5572
100	1	-0.237847	118.076	-30.795
101	1	-0.227545	118.128	-31.0225
102	1	-0.217267	118.175	-31.2398
103	1	-0.207012	118.218	-31.4468
104	1	-0.196779	118.257	-31.6436
105	1	-0.186567	118.292	-31.8302
106	1	-0.176374	118.323	-32.0065
107	1	-0.166199	118.35	-32.1727
108	1	-0.153505	118.374	-32.3262
109	1	-0.143367	118.394	-32.4696
110	1	-0.133244	118.412	-32.6029
111	1	-0.123135	118.427	-32.726

112	1	-0.113039	118.44	-32.839
113	1	-0.102953	118.451	-32.942
114	1	-0.0928787	118.459	-33.0349
115	1	-0.0828129	118.466	-33.1177
116	1	-0.0727562	118.471	-33.1904
117	1	-0.0627062	118.475	-33.2531
118	1	-0.0526632	118.478	-33.3058
119	1	-0.0426257	118.48	-33.3484
120	1	-0.0325917	118.481	-33.381
121	1	-0.0225612	118.482	-33.4036
122	1	-0.0125328	118.482	-33.4161
123	1	0	118.482	-33.4161
124	1	0.0125328	118.482	-33.4036
125	1	0.0225612	118.482	-33.381
126	1	0.0325917	118.483	-33.3484
127	1	0.0426257	118.485	-33.3058
128	1	0.0526632	118.488	-33.2531
129	1	0.0627062	118.492	-33.1904
130	1	0.0727562	118.497	-33.1177
131	1	0.0828129	118.504	-33.0349
132	1	0.0928787	118.513	-32.942
133	1	0.102953	118.523	-32.839
134	1	0.113039	118.536	-32.726
135	1	0.123135	118.551	-32.6029
136	1	0.133244	118.569	-32.4696
137	1	0.143367	118.59	-32.3262
138	1	0.153505	118.613	-32.1727
139	1	0.166199	118.641	-32.0065
140	1	0.176374	118.672	-31.8302
141	1	0.186567	118.707	-31.6436
142	1	0.196779	118.745	-31.4468
143	1	0.207012	118.788	-31.2398
144	1	0.217267	118.835	-31.0225
145	1	0.227545	118.887	-30.795
146	1	0.237847	118.944	-30.5572
147	1	0.248174	119.005	-30.309
148	1	0.258527	119.072	-30.0505
149	1	0.268908	119.145	-29.7815
150	1	0.279319	119.223	-29.5022
151	1	0.28976	119.306	-29.2125
152	1	0.300232	119.397	-28.9122
153	1	0.310738	119.493	-28.6015
154	1	0.323919	119.598	-28.2776
155	1	0.334503	119.71	-27.9431
156	1	0.345126	119.829	-27.5979
157	1	0.355788	119.956	-27.2422
158	1	0.36649	120.09	-26.8757
159	1	0.377233	120.232	-26.4984
160	1	0.388022	120.383	-26.1104
161	1	0.398855	120.542	-25.7116
162	1	0.409735	120.71	-25.3018
163	1	0.420664	120.887	-24.8812
164	1	0.431644	121.073	-24.4495
165	1	0.442676	121.269	-24.0068
166	1	0.453763	121.475	-23.5531
167	1	0.464904	121.691	-23.0882
168	1	0.476105	121.918	-22.6121
169	1	0.487364	122.155	-22.1247
170	1	0.501527	122.407	-21.6232
171	1	0.51293	122.67	-21.1102
172	1	0.524401	122.945	-20.5858
173	1	0.53594	123.232	-20.0499

174	1	0.547551	123.532	-19.5024
175	1	0.559237	123.845	-18.9431
176	1	0.570999	124.171	-18.3721
177	1	0.582841	124.51	-17.7893
178	1	0.594766	124.864	-17.1945
179	1	0.606775	125.232	-16.5877
180	1	0.618872	125.615	-15.9689
181	1	0.631062	126.014	-15.3378
182	1	0.643345	126.428	-14.6945
183	1	0.655726	126.858	-14.0387
184	1	0.668209	127.304	-13.3705
185	1	0.68396	127.772	-12.6866
186	1	0.696684	128.257	-11.9899
187	1	0.709522	128.761	-11.2804
188	1	0.722479	129.283	-10.5579
189	1	0.735557	129.824	-9.82232
190	1	0.748762	130.384	-9.07356
191	1	0.7621	130.965	-8.31146
192	1	0.775574	131.567	-7.53588
193	1	0.789191	132.189	-6.74669
194	1	0.802956	132.834	-5.94373
195	1	0.816874	133.501	-5.12686
196	1	0.830953	134.192	-4.29591
197	1	0.845198	134.906	-3.45071
198	1	0.859618	135.645	-2.59109
199	1	0.874218	136.409	-1.71687
200	1	0.892733	137.206	-0.82414
201	1	0.907769	138.03	0.0836287
202	1	0.923014	138.882	1.00664
203	1	0.938476	139.763	1.94512
204	1	0.954165	140.674	2.89928
205	1	0.970094	141.615	3.86938
206	1	0.986272	142.587	4.85565
207	1	1.00271	143.593	5.85836
208	1	1.01943	144.632	6.87779
209	1	1.03643	145.706	7.91422
210	1	1.05375	146.817	8.96797
211	1	1.07138	147.965	10.0393
212	1	1.08935	149.151	11.1287
213	1	1.10768	150.378	12.2364
214	1	1.12639	151.647	13.3628
215	1	1.1455	152.959	14.5083
216	1	1.17	154.328	15.6783
217	1	1.19012	155.744	16.8684
218	1	1.21073	157.21	18.0791
219	1	1.23187	158.728	19.311
220	1	1.25357	160.299	20.5645
221	1	1.27588	161.927	21.8404
222	1	1.29884	163.614	23.1393
223	1	1.32251	165.363	24.4618
224	1	1.34694	167.177	25.8087
225	1	1.3722	169.06	27.1809
226	1	1.39838	171.016	28.5793
227	1	1.42554	173.048	30.0048
228	2	1.4538	175.161	32.9124
229	2	1.48328	177.362	35.879
230	2	1.5141	179.654	38.9072
231	2	1.55477	182.071	42.0168
232	2	1.58927	184.597	45.1953
233	2	1.62576	187.24	48.4468
234	2.6	1.66456	190.011	52.7747
235	2.8	1.70604	192.922	57.5516

236	3	1.75069	195.986	62.8037
237	3	1.79912	199.223	68.201
238	3.2	1.85218	202.654	74.128
239	3.2	1.91103	206.306	80.2433
240	4	1.97737	210.216	88.1527
241	4	2.05375	214.434	96.3677
242	4	2.14441	219.032	104.945
243	4	2.25713	224.127	113.974
244	5.6	2.40892	229.93	127.464
245	6	2.65209	236.963	143.376

Data Set Standard Deviation = 0.789269
Numerator = 20556.8
Denominator = 36018.1
W Statistic = 0.570734 = 20556.8 / 36018.1

5% Critical value of 0.976 exceeds 0.570734
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.570734
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 = 245

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	-2.14441	22.5296	21.3266
5	-2.25379	-2.05375	26.7475	25.9554
6	-2.25379	-1.97737	30.6575	30.412
7	-2.25379	-1.91103	34.3095	34.719
8	-2.25379	-1.85218	37.7401	38.8934
9	-2.25379	-1.79912	40.9769	42.9483
10	-2.25379	-1.75069	44.0418	46.894
11	-2.25379	-1.70604	46.9524	50.739
12	-2.25379	-1.66456	49.7231	54.4906
13	-2.25379	-1.62576	52.3662	58.1548
14	-2.25379	-1.58927	54.892	61.7367
15	-2.25379	-1.55477	57.3093	65.2408
16	-2.25379	-1.5141	59.6018	68.6533
17	-2.25379	-1.48328	61.802	71.9963
18	-2.25379	-1.4538	63.9155	75.2729
19	-2.25379	-1.42554	65.9477	78.4857
20	-2.25379	-1.39838	67.9031	81.6374
21	-2.25379	-1.3722	69.7861	84.7301
22	-2.25379	-1.34694	71.6003	87.7658
23	-2.25379	-1.32251	73.3494	90.7464
24	-2.25379	-1.29884	75.0363	93.6738
25	-2.25379	-1.27588	76.6642	96.5493
26	-2.25379	-1.25357	78.2356	99.3746
27	-2.25379	-1.23187	79.7531	102.151
28	-2.25379	-1.21073	81.219	104.88
29	-2.25379	-1.19012	82.6353	107.562
30	-2.25379	-1.17	84.0043	110.199
31	-2.25379	-1.1455	85.3164	112.781
32	-2.25379	-1.12639	86.5852	115.319
33	-2.25379	-1.10768	87.8121	117.816
34	-2.25379	-1.08935	88.9988	120.271
35	-2.25379	-1.07138	90.1467	122.686
36	-2.25379	-1.05375	91.2571	125.061
37	-2.25379	-1.03643	92.3312	127.396
38	-2.25379	-1.01943	93.3705	129.694
39	-2.25379	-1.00271	94.3759	131.954
40	-2.25379	-0.986272	95.3486	134.177
41	-2.25379	-0.970094	96.2897	136.363
42	-2.25379	-0.954165	97.2002	138.514
43	-2.25379	-0.938476	98.0809	140.629
44	-2.25379	-0.923014	98.9328	142.709
45	-2.25379	-0.907769	99.7569	144.755
46	-1.42712	-0.892733	100.554	146.029
47	-1.34707	-0.874218	101.318	147.207
48	-1.27297	-0.859618	102.057	148.301
49	-1.20397	-0.845198	102.771	149.319

50	-1.17118	-0.830953	103.462	150.292	
51	-1.13943	-0.816874	104.129	151.223	
52	-1.10866	-0.802956	104.774	152.113	
53	-0.967584	-0.789191	105.397	152.876	
54	-0.71335	-0.775574	105.998	153.43	
55	-0.527633	-0.7621	106.579	153.832	
56	-0.446287	-0.748762	107.14	154.166	
57	-0.415515	-0.735557	107.681	154.472	
58	0	-0.722479	108.203	154.472	
59	0	-0.709522	108.706	154.472	
60	0	-0.696684	109.192	154.472	
61	0	-0.68396	109.659	154.472	
62	0	-0.668209	110.106	154.472	
63	0	-0.655726	110.536	154.472	
64	0	-0.643345	110.95	154.472	
65	0	-0.631062	111.348	154.472	
66	0	-0.618872	111.731	154.472	
67	0	-0.606775	112.099	154.472	
68	0	-0.594766	112.453	154.472	
69	0	-0.582841	112.793	154.472	
70	0	-0.570999	113.119	154.472	
71	0	-0.559237	113.431	154.472	
72	0	-0.547551	113.731	154.472	
73	0	-0.53594	114.018	154.472	
74	0	-0.524401	114.293	154.472	
75	0	-0.51293	114.556	154.472	
76	0	-0.501527	114.808	154.472	
77	0	-0.487364	115.046	154.472	
78	0	-0.476105	115.272	154.472	
79	0	-0.464904	115.488	154.472	
80	0	-0.453763	115.694	154.472	
81	0	-0.442676	115.89	154.472	
82	0	-0.431644	116.077	154.472	
83	0	-0.420664	116.253	154.472	
84	0	-0.409735	116.421	154.472	
85	0	-0.398855	116.58	154.472	
86	0	-0.388022	116.731	154.472	
87	0	-0.377233	116.873	154.472	
88	0	-0.36649	117.008	154.472	
89	0	-0.355788	117.134	154.472	
90	0	-0.345126	117.253	154.472	
91	0	-0.334503	117.365	154.472	
92	0	-0.323919	117.47	154.472	
93	0	-0.310738	117.567	154.472	
94	0	-0.300232	117.657	154.472	
95	0	-0.28976	117.741	154.472	
96	0	-0.279319	117.819	154.472	
97	0	-0.268908	117.891	154.472	
98	0	-0.258527	117.958	154.472	
99	0	-0.248174	118.02	154.472	
100	0	-0.237847	118.076	154.472	
101	0	-0.227545	118.128	154.472	
102	0	-0.217267	118.175	154.472	
103	0	-0.207012	118.218	154.472	
104	0	-0.196779	118.257	154.472	
105	0	-0.186567	118.292	154.472	
106	0	-0.176374	118.323	154.472	
107	0	-0.166199	118.35	154.472	
108	0	-0.153505	118.374	154.472	
109	0	-0.143367	118.394	154.472	
110	0	-0.133244	118.412	154.472	
111	0	-0.123135	118.427	154.472	

112	0	-0.113039	118.44	154.472
113	0	-0.102953	118.451	154.472
114	0	-0.0928787	118.459	154.472
115	0	-0.0828129	118.466	154.472
116	0	-0.0727562	118.471	154.472
117	0	-0.0627062	118.475	154.472
118	0	-0.0526632	118.478	154.472
119	0	-0.0426257	118.48	154.472
120	0	-0.0325917	118.481	154.472
121	0	-0.0225612	118.482	154.472
122	0	-0.0125328	118.482	154.472
123	0	0	118.482	154.472
124	0	0.0125328	118.482	154.472
125	0	0.0225612	118.482	154.472
126	0	0.0325917	118.483	154.472
127	0	0.0426257	118.485	154.472
128	0	0.0526632	118.488	154.472
129	0	0.0627062	118.492	154.472
130	0	0.0727562	118.497	154.472
131	0	0.0828129	118.504	154.472
132	0	0.0928787	118.513	154.472
133	0	0.102953	118.523	154.472
134	0	0.113039	118.536	154.472
135	0	0.123135	118.551	154.472
136	0	0.133244	118.569	154.472
137	0	0.143367	118.59	154.472
138	0	0.153505	118.613	154.472
139	0	0.166199	118.641	154.472
140	0	0.176374	118.672	154.472
141	0	0.186567	118.707	154.472
142	0	0.196779	118.745	154.472
143	0	0.207012	118.788	154.472
144	0	0.217267	118.835	154.472
145	0	0.227545	118.887	154.472
146	0	0.237847	118.944	154.472
147	0	0.248174	119.005	154.472
148	0	0.258527	119.072	154.472
149	0	0.268908	119.145	154.472
150	0	0.279319	119.223	154.472
151	0	0.28976	119.306	154.472
152	0	0.300232	119.397	154.472
153	0	0.310738	119.493	154.472
154	0	0.323919	119.598	154.472
155	0	0.334503	119.71	154.472
156	0	0.345126	119.829	154.472
157	0	0.355788	119.956	154.472
158	0	0.36649	120.09	154.472
159	0	0.377233	120.232	154.472
160	0	0.388022	120.383	154.472
161	0	0.398855	120.542	154.472
162	0	0.409735	120.71	154.472
163	0	0.420664	120.887	154.472
164	0	0.431644	121.073	154.472
165	0	0.442676	121.269	154.472
166	0	0.453763	121.475	154.472
167	0	0.464904	121.691	154.472
168	0	0.476105	121.918	154.472
169	0	0.487364	122.155	154.472
170	0	0.501527	122.407	154.472
171	0	0.51293	122.67	154.472
172	0	0.524401	122.945	154.472
173	0	0.53594	123.232	154.472

174	0	0.547551		123.532	154.472
175	0	0.559237		123.845	154.472
176	0	0.570999		124.171	154.472
177	0	0.582841		124.51	154.472
178	0	0.594766		124.864	154.472
179	0	0.606775		125.232	154.472
180	0	0.618872		125.615	154.472
181	0	0.631062		126.014	154.472
182	0	0.643345		126.428	154.472
183	0	0.655726		126.858	154.472
184	0	0.668209		127.304	154.472
185	0	0.68396	127.772	154.472	
186	0	0.696684		128.257	154.472
187	0	0.709522		128.761	154.472
188	0	0.722479		129.283	154.472
189	0	0.735557		129.824	154.472
190	0	0.748762		130.384	154.472
191	0	0.7621	130.965	154.472	
192	0	0.775574		131.567	154.472
193	0	0.789191		132.189	154.472
194	0	0.802956		132.834	154.472
195	0	0.816874		133.501	154.472
196	0	0.830953		134.192	154.472
197	0	0.845198		134.906	154.472
198	0	0.859618		135.645	154.472
199	0	0.874218		136.409	154.472
200	0	0.892733		137.206	154.472
201	0	0.907769		138.03	154.472
202	0	0.923014		138.882	154.472
203	0	0.938476		139.763	154.472
204	0	0.954165		140.674	154.472
205	0	0.970094		141.615	154.472
206	0	0.986272		142.587	154.472
207	0	1.00271	143.593	154.472	
208	0	1.01943	144.632	154.472	
209	0	1.03643	145.706	154.472	
210	0	1.05375	146.817	154.472	
211	0	1.07138	147.965	154.472	
212	0	1.08935	149.151	154.472	
213	0	1.10768	150.378	154.472	
214	0	1.12639	151.647	154.472	
215	0	1.1455	152.959	154.472	
216	0	1.17	154.328	154.472	
217	0	1.19012	155.744	154.472	
218	0	1.21073	157.21	154.472	
219	0	1.23187	158.728	154.472	
220	0	1.25357	160.299	154.472	
221	0	1.27588	161.927	154.472	
222	0	1.29884	163.614	154.472	
223	0	1.32251	165.363	154.472	
224	0	1.34694	167.177	154.472	
225	0	1.3722	169.06	154.472	
226	0	1.39838	171.016	154.472	
227	0	1.42554	173.048	154.472	
228	0.693147		1.4538	175.161	155.479
229	0.693147		1.48328	177.362	156.507
230	0.693147		1.5141	179.654	157.557
231	0.693147		1.55477	182.071	158.635
232	0.693147		1.58927	184.597	159.736
233	0.693147		1.62576	187.24	160.863
234	0.955511		1.66456	190.011	162.454
235	1.02962	1.70604	192.922	164.21	

236	1.09861	1.75069	195.986	166.133
237	1.09861	1.79912	199.223	168.11
238	1.16315	1.85218	202.654	170.264
239	1.16315	1.91103	206.306	172.487
240	1.38629	1.97737	210.216	175.228
241	1.38629	2.05375	214.434	178.075
242	1.38629	2.14441	219.032	181.048
243	1.38629	2.25713	224.127	184.177
244	1.72277	2.40892	229.93	188.327
245	1.79176	2.65209	236.963	193.079

Data Set Standard Deviation = 0.970267
Numerator = 37279.6
Denominator = 54431.9
W Statistic = 0.684885 = 37279.6 / 54431.9

5% Critical value of 0.976 exceeds 0.684885
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.684885
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	105.5
	3/16/1999	ND<0	105.5
	9/23/1999	ND<0	105.5
	3/14/2000	ND<0	105.5
	9/23/2003	ND<0	105.5
	3/10/2004	ND<0	105.5
	10/12/2004	ND<0	105.5
	4/1/2005	ND<0	105.5
	10/26/2005	ND<0	105.5
	6/19/2006	ND<0	105.5
	11/18/2006	ND<0	105.5
	6/2/2007	ND<0	105.5
	11/15/2007	ND<0	105.5
	5/20/2008	ND<0	105.5
	11/20/2008	ND<0	105.5
	6/11/2009	ND<-2.25379 U	105.5
	11/16/2009	ND<-2.25379 U	105.5
	6/30/2010	ND<-2.25379 U	105.5
	11/17/2010	ND<-2.25379 U	105.5
	7/6/2011	ND<-2.25379 U	105.5

Rank Sum = 2110
Rank Mean = 105.5

Background Rank Sum = 2110
Background Rank Mean = 105.5

Compliance Wells

Well ID	Date	Result	Rank
LMW-3S	11/18/2006	ND<0	105.5
	6/2/2007	ND<0	105.5
	11/15/2007	ND<0	105.5
	5/20/2008	ND<0	105.5
	11/20/2008	ND<0	105.5
	6/11/2009	ND<-2.25379 U	105.5
	11/16/2009	ND<-2.25379 U	105.5
	6/30/2010	ND<-2.25379 U	105.5
	11/17/2010	ND<-2.25379 U	105.5
	7/6/2011	ND<-2.25379 U	105.5

Rank Sum = 1055
Rank Mean = 105.5

LMW-10	3/14/2000	ND<0	105.5
	9/23/2003	ND<0	105.5
	3/10/2004	ND<0	105.5
	10/12/2004	ND<0	105.5

	4/1/2005	ND<0	105.5	
	10/26/2005	ND<0	105.5	
	6/19/2006	ND<0	105.5	
	11/18/2006	ND<0	105.5	
	6/2/2007	ND<0	105.5	
	11/15/2007	ND<0	105.5	
	5/20/2008	ND<0	105.5	
	11/20/2008	ND<0	105.5	
	6/11/2009	ND<-2.25379 U	105.5	
	11/16/2009	ND<-2.25379 U	105.5	
	6/30/2010	ND<-2.25379 U	105.5	
	11/17/2010	ND<-2.25379 U	105.5	
	7/6/2011	1.02962	235	

Rank Sum = 1923
Rank Mean = 113.118

LMW-14R	6/2/2007	ND<0	105.5	
	11/15/2007	ND<0	105.5	
	5/20/2008	ND<0	105.5	
	11/20/2008	ND<0	105.5	
	6/11/2009	ND<-2.25379 U	105.5	
	6/30/2010	ND<-2.25379 U	105.5	
	11/17/2010	ND<-2.25379 U	105.5	
	7/6/2011	ND<-2.25379 U	105.5	

Rank Sum = 844
Rank Mean = 105.5

LMW-15R	11/18/2006	ND<0	105.5	
	6/2/2007	ND<0	105.5	
	11/15/2007	ND<0	105.5	
	11/15/2007	ND<0	105.5	
	5/20/2008	ND<0	105.5	
	5/20/2008	ND<0	105.5	
	11/20/2008	ND<0	105.5	
	11/20/2008	ND<0	105.5	
	6/11/2009	-1.42712 J	211	
	6/30/2010	ND<-2.25379 U	105.5	
	11/17/2010	ND<-2.25379 U	105.5	
	7/6/2011	-1.13943 J	216	

Rank Sum = 1482
Rank Mean = 123.5

LMW-16	11/18/2006	ND<0	105.5	
	6/2/2007	ND<0	105.5	
	11/15/2007	0.693147	228	
	5/20/2008	ND<0	105.5	
	11/20/2008	ND<0	105.5	
	6/11/2009	ND<-2.25379 U	105.5	
	11/16/2009	ND<-2.25379 U	105.5	
	6/30/2010	ND<-2.25379 U	105.5	
	11/17/2010	-1.17118 J	215	
	7/6/2011	ND<-2.25379 U	105.5	

Rank Sum = 1287
Rank Mean = 128.7

LMW-3	11/19/1996	ND<0	105.5	
	3/24/1997	ND<0	105.5	
	1/16/1998	ND<0	105.5	
	3/16/1999	ND<0	105.5	
	9/23/1999	ND<0	105.5	
	3/14/2000	ND<0	105.5	
	9/23/2003	ND<0	105.5	

	3/10/2004	ND<0	105.5	
	10/12/2004	ND<0	105.5	
	4/1/2005	ND<0	105.5	
	10/26/2005	ND<0	105.5	
	6/19/2006	ND<0	105.5	
	11/18/2006	ND<0	105.5	
	6/2/2007	ND<0	105.5	
	11/15/2007	ND<0	105.5	
	5/20/2008	ND<0	105.5	
	11/20/2008	ND<0	105.5	
	6/11/2009	ND<-2.25379 U		105.5
	11/16/2009	ND<-2.25379 U		105.5
	6/30/2010	ND<-2.25379 U		105.5
	11/17/2010	ND<-2.25379 U		105.5
	7/6/2011	ND<-2.25379 U	105.5	

Rank Sum = 2321
Rank Mean = 105.5

LMW-6	1/16/1998	ND<0	105.5	
	3/16/1999	ND<0	105.5	
	9/23/1999	ND<0	105.5	
	3/14/2000	ND<0	105.5	
	9/23/2003	ND<0	105.5	
	3/10/2004	ND<0	105.5	
	10/12/2004	ND<0	105.5	
	4/1/2005	ND<0	105.5	
	10/26/2005	0 J	223	
	6/19/2006	0.693147		229
	11/18/2006	0.693147		230
	6/2/2007	0.693147	231	
	11/15/2007	1.38629		240
	5/20/2008	0.693147		232
	11/20/2008	0.693147		233
	6/11/2009	1.16315		238
	11/16/2009	0.955511		234
	6/30/2010	1.16315		239
	11/17/2010	1.79176		245
	7/6/2011	1.72277	244	

Rank Sum = 3662
Rank Mean = 183.1

LMW-7	1/16/1998	ND<0	105.5	
	3/16/1999	ND<0	105.5	
	9/23/1999	ND<0	105.5	
	3/14/2000	ND<0	105.5	
	9/23/2003	ND<0	105.5	
	3/10/2004	ND<0	105.5	
	10/12/2004	ND<0	105.5	
	4/1/2005	ND<0	105.5	
	10/26/2005	ND<0	105.5	
	6/19/2006	ND<0	105.5	
	11/18/2006	ND<0	105.5	
	6/2/2007	ND<0	105.5	
	11/15/2007	ND<0	105.5	
	5/20/2008	ND<0	105.5	
	11/20/2008	ND<0	105.5	
	6/11/2009	ND<-2.25379 U		105.5
	11/17/2010	ND<-2.25379 U		105.5
	7/6/2011	-1.20397 J	214	

Rank Sum = 2007.5
Rank Mean = 111.528

LMW-8	1/16/1998	ND<0	105.5	
	3/16/1999	ND<0	105.5	
	9/23/1999	ND<0	105.5	
	3/14/2000	ND<0	105.5	
	9/23/2003	ND<0	105.5	
	3/10/2004	ND<0	105.5	
	10/12/2004	ND<0	105.5	
	4/1/2005	1.09861	236	
	10/26/2005	0 J	224	
	6/19/2006	0 J	225	
	11/18/2006	0 J	226	
	6/2/2007	0 J	227	
	11/15/2007	1.09861		237
	5/20/2008	ND<0	105.5	
	11/20/2008	ND<0	105.5	
	6/11/2009	-0.446287		221
	11/16/2009	-0.527633		220
	6/30/2010	-1.10866 J		217
	11/17/2010	-0.415515		222
	7/6/2011	ND<-2.25379 U	105.5	

Rank Sum = 3310
Rank Mean = 165.5

LMW-9	1/16/1998	ND<0	105.5	
	3/16/1999	ND<0	105.5	
	9/23/1999	ND<0	105.5	
	3/14/2000	ND<0	105.5	
	9/23/2003	ND<0	105.5	
	3/10/2004	ND<0	105.5	
	10/12/2004	ND<0	105.5	
	4/1/2005	ND<0	105.5	
	10/26/2005	ND<0	105.5	
	6/19/2006	ND<0	105.5	
	11/18/2006	ND<0	105.5	
	6/2/2007	ND<0	105.5	
	11/15/2007	ND<0	105.5	
	5/20/2008	ND<0	105.5	
	11/20/2008	ND<0	105.5	
	6/11/2009	-1.27297 J		213
	11/16/2009	ND<-2.25379 U		105.5
	6/30/2010	ND<-2.25379 U		105.5
	11/17/2010	ND<-2.25379 U		105.5
	7/6/2011	ND<-2.25379 U	105.5	

Rank Sum = 2217.5
Rank Mean = 110.875

LMW-9D	11/18/2006	ND<0	105.5	
	6/2/2007	ND<0	105.5	
	11/15/2007	1.38629		241
	5/20/2008	ND<0	105.5	
	11/20/2008	ND<0	105.5	
	6/11/2009	ND<-2.25379 U		105.5
	11/16/2009	ND<-2.25379 U		105.5
	6/30/2010	ND<-2.25379 U		105.5
	11/17/2010	ND<-2.25379 U		105.5
	7/6/2011	-0.71335 J	219	

Rank Sum = 1304
Rank Mean = 130.4

LMW-9S	11/18/2006	1.38629		242
	6/2/2007	1.38629	243	
	11/15/2007	ND<0	105.5	

	5/20/2008	ND<0	105.5	
	11/20/2008	ND<0	105.5	
	6/11/2009	ND<-2.25379	U	105.5
	11/16/2009	ND<-2.25379	U	105.5
	11/16/2009	ND<-2.25379	U	105.5
	11/16/2009	ND<-2.25379	U	105.5
	6/30/2010	ND<-2.25379	U	105.5
	11/17/2010	-1.34707	J	212
	7/6/2011	-0.967584	J	218

Rank Sum = 1759
Rank Mean = 146.583

LMW-12	3/14/2000	ND<0	105.5
	9/23/2003	ND<0	105.5
	3/10/2004	ND<0	105.5
	10/12/2004	ND<0	105.5
	4/1/2005	ND<0	105.5
	10/26/2005	ND<0	105.5
	6/19/2006	ND<0	105.5
	6/2/2007	ND<0	105.5
	11/15/2007	ND<0	105.5
	5/20/2008	ND<0	105.5
	11/20/2008	ND<0	105.5

Rank Sum = 1160.5
Rank Mean = 105.5

LMW-11	3/14/2000	ND<0	105.5
	9/23/2003	ND<0	105.5
	3/10/2004	ND<0	105.5
	10/12/2004	ND<0	105.5
	4/1/2005	ND<0	105.5
	10/26/2005	ND<0	105.5
	6/19/2006	ND<0	105.5
	6/2/2007	ND<0	105.5
	11/15/2007	ND<0	105.5
	5/20/2008	ND<0	105.5
	11/20/2008	ND<0	105.5

Rank Sum = 1160.5
Rank Mean = 105.5

LMW-13	3/14/2000	ND<0	105.5
	9/23/2003	ND<0	105.5
	3/10/2004	ND<0	105.5
	10/12/2004	ND<0	105.5
	4/1/2005	ND<0	105.5
	10/26/2005	ND<0	105.5
	6/19/2006	ND<0	105.5
	6/2/2007	ND<0	105.5
	11/15/2007	ND<0	105.5
	5/20/2008	ND<0	105.5
	11/20/2008	ND<0	105.5

Rank Sum = 1160.5
Rank Mean = 105.5

MW-5	1/16/1998	ND<0	105.5
	3/16/1999	ND<0	105.5
	9/23/1999	ND<0	105.5
	3/14/2000	ND<0	105.5
	9/23/2003	ND<0	105.5
	3/10/2004	ND<0	105.5
	10/12/2004	ND<0	105.5
	4/1/2005	ND<0	105.5

10/26/2005	ND<0	105.5
6/19/2006	ND<0	105.5
11/15/2007	ND<0	105.5
5/20/2008	ND<0	105.5
11/20/2008	ND<0	105.5

Rank Sum = 1371.5
Rank Mean = 105.5

Calculation Results:

Kruskal-Wallis H Statistic = 30.9302
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 83.535
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
30.9302 > 26.2962 indicating a significant group difference at 5% significance level
83.535 > 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 105.5

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-3S	105.5	0	63.8527
LMW-10	113.118	7.61765	54.387
LMW-14R	105.5	0	68.9688
LMW-15R	123.5	18	60.2009
LMW-16	128.7	23.2	63.8527
LMW-3	105.5	0	50.9368
LMW-6	183.1	77.6	52.1355
LMW-7	111.528	6.02778	53.5641
LMW-8	165.5	60	52.1355
LMW-9	110.875	5.375	52.1355
LMW-9D	130.4	24.9	63.8527
LMW-9S	146.583	41.0833	60.2009
LMW-12	105.5	0	61.8875
LMW-11	105.5	0	61.8875
LMW-13	105.5	0	61.8875
MW-5	105.5	0	58.7359

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 105.5

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-3S	105.5	0	75.4198
LMW-10	113.118	7.61765	64.2393
LMW-14R	105.5	0	81.4627
LMW-15R	123.5	18	71.1064
LMW-16	128.7	23.2	75.4198
LMW-3	105.5	0	60.1642
LMW-6	183.1	77.6	61.58
LMW-7	111.528	6.02778	63.2674
LMW-8	165.5	60	61.58
LMW-9	110.875	5.375	61.58
LMW-9D	130.4	24.9	75.4198
LMW-9S	146.583	41.0833	71.1064
LMW-12	105.5	0	73.0986
LMW-11	105.5	0	73.0986
LMW-13	105.5	0	73.0986
MW-5	105.5	0	69.3761

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
1.72277		ND<0	1.72277	11	0
ND<0	ND<0	0	11	0	
ND<0	ND<0	0	11	0	
ND<0	ND<0	0	11	0	
ND<0	ND<0	0	11	0	
ND<0	ND<0	0	11	0	
ND<0	ND<0	0	11	0	
0 J	ND<0	0	11	0	
0.693147		ND<0	0.693147	12	0
0.693147		ND<0	0.693147	13	0
0.693147		ND<0	0.693147	14	0
1.38629		ND<0	1.38629	15	0
0.693147		ND<0	0.693147	16	0
0.693147		ND<0	0.693147	17	0
1.16315		ND<0	1.16315	18	0
0.955511		ND<0	0.955511	19	0
1.16315		ND<0	1.16315	20	0
1.79176		ND<0	1.79176	21	0
1.72277		ND<0	1.72277	22	0
ND<0	ND<0	0	22	0	
ND<0	ND<0	0	22	0	
ND<0	ND<0	0	22	0	
ND<0	ND<0	0	22	0	
ND<0	ND<0	0	22	0	
0 J	ND<0	0	22	0	
0.693147		ND<0	0.693147	23	0
0.693147		ND<0	0.693147	24	0
0.693147		ND<0	0.693147	25	0

1.38629	ND<0	1.38629	26	0	
0.693147	ND<0	0.693147	27	0	
0.693147	ND<0	0.693147	28	0	
1.16315	ND<0	1.16315	29	0	
0.955511	ND<0	0.955511	30	0	
1.16315	ND<0	1.16315	31	0	
1.79176	ND<0	1.79176	32	0	
1.72277	ND<0	1.72277	33	0	

ND<0	ND<0	0	33	0
ND<0	ND<0	0	33	0
ND<0	ND<0	0	33	0
ND<0	ND<0	0	33	0
0 J	ND<0	0	33	0

0.693147	ND<0	0.693147	34	0	
0.693147	ND<0	0.693147	35	0	
0.693147	ND<0	0.693147	36	0	
1.38629	ND<0	1.38629	37	0	
0.693147	ND<0	0.693147	38	0	
0.693147	ND<0	0.693147	39	0	
1.16315	ND<0	1.16315	40	0	
0.955511	ND<0	0.955511	41	0	
1.16315	ND<0	1.16315	42	0	
1.79176	ND<0	1.79176	43	0	
1.72277	ND<0	1.72277	44	0	

ND<0	ND<0	0	44	0
ND<0	ND<0	0	44	0
ND<0	ND<0	0	44	0
0 J	ND<0	0	44	0

0.693147	ND<0	0.693147	45	0	
0.693147	ND<0	0.693147	46	0	
0.693147	ND<0	0.693147	47	0	
1.38629	ND<0	1.38629	48	0	
0.693147	ND<0	0.693147	49	0	
0.693147	ND<0	0.693147	50	0	
1.16315	ND<0	1.16315	51	0	
0.955511	ND<0	0.955511	52	0	
1.16315	ND<0	1.16315	53	0	
1.79176	ND<0	1.79176	54	0	
1.72277	ND<0	1.72277	55	0	

ND<0	ND<0	0	55	0
ND<0	ND<0	0	55	0
0 J	ND<0	0	55	0

0.693147	ND<0	0.693147	56	0	
0.693147	ND<0	0.693147	57	0	
0.693147	ND<0	0.693147	58	0	
1.38629	ND<0	1.38629	59	0	
0.693147	ND<0	0.693147	60	0	
0.693147	ND<0	0.693147	61	0	
1.16315	ND<0	1.16315	62	0	
0.955511	ND<0	0.955511	63	0	
1.16315	ND<0	1.16315	64	0	
1.79176	ND<0	1.79176	65	0	
1.72277	ND<0	1.72277	66	0	

ND<0	ND<0	0	66	0
0 J	ND<0	0	66	0

0.693147	ND<0	0.693147	67	0	
0.693147	ND<0	0.693147	68	0	
0.693147	ND<0	0.693147	69	0	

1.38629	ND<0	1.38629	70	0	
0.693147	ND<0	0.693147	71	0	
0.693147	ND<0	0.693147	72	0	
1.16315	ND<0	1.16315	73	0	
0.955511	ND<0	0.955511	74	0	
1.16315	ND<0	1.16315	75	0	
1.79176	ND<0	1.79176	76	0	
1.72277	ND<0	1.72277	77	0	
0 J	ND<0	0	77	0	
0.693147	ND<0	0.693147	78	0	
0.693147	ND<0	0.693147	79	0	
0.693147	ND<0	0.693147	80	0	
1.38629	ND<0	1.38629	81	0	
0.693147	ND<0	0.693147	82	0	
0.693147	ND<0	0.693147	83	0	
1.16315	ND<0	1.16315	84	0	
0.955511	ND<0	0.955511	85	0	
1.16315	ND<0	1.16315	86	0	
1.79176	ND<0	1.79176	87	0	
1.72277	ND<0	1.72277	88	0	
0.693147	0 J	0.693147	89	0	
0.693147	0 J	0.693147	90	0	
0.693147	0 J	0.693147	91	0	
1.38629	0 J	1.38629	92	0	
0.693147	0 J	0.693147	93	0	
0.693147	0 J	0.693147	94	0	
1.16315	0 J	1.16315	95	0	
0.955511	0 J	0.955511	96	0	
1.16315	0 J	1.16315	97	0	
1.79176	0 J	1.79176	98	0	
1.72277	0 J	1.72277	99	0	
0.693147	0.693147	0	99	0	
0.693147	0.693147	0	99	0	
1.38629	0.693147	0.693147	100	0	
0.693147	0.693147	0	100	0	
0.693147	0.693147	0	100	0	
1.16315	0.693147	0.470004	101	0	
0.955511	0.693147	0.262364	102	0	
1.16315	0.693147	0.470004	103	0	
1.79176	0.693147	1.09861	104	0	
1.72277	0.693147	1.02962	105	0	
0.693147	0.693147	0	105	0	
1.38629	0.693147	0.693147	106	0	
0.693147	0.693147	0	106	0	
0.693147	0.693147	0	106	0	
1.16315	0.693147	0.470004	107	0	
0.955511	0.693147	0.262364	108	0	
1.16315	0.693147	0.470004	109	0	
1.79176	0.693147	1.09861	110	0	
1.72277	0.693147	1.02962	111	0	
1.38629	0.693147	0.693147	112	0	
0.693147	0.693147	0	112	0	
0.693147	0.693147	0	112	0	
1.16315	0.693147	0.470004	113	0	
0.955511	0.693147	0.262364	114	0	
1.16315	0.693147	0.470004	115	0	
1.79176	0.693147	1.09861	116	0	

1.72277	0.693147	1.02962	117	0
0.693147	1.38629	-0.693147	117	1
0.693147	1.38629	-0.693147	117	2
1.16315	1.38629	-0.223144	117	3
0.955511	1.38629	-0.430783	117	4
1.16315	1.38629	-0.223144	117	5
1.79176	1.38629	0.405465	118	5
1.72277	1.38629	0.336472	119	5
0.693147	0.693147	0	119	5
1.16315	0.693147	0.470004	120	5
0.955511	0.693147	0.262364	121	5
1.16315	0.693147	0.470004	122	5
1.79176	0.693147	1.09861	123	5
1.72277	0.693147	1.02962	124	5
1.16315	0.693147	0.470004	125	5
0.955511	0.693147	0.262364	126	5
1.16315	0.693147	0.470004	127	5
1.79176	0.693147	1.09861	128	5
1.72277	0.693147	1.02962	129	5
0.955511	1.16315	-0.207639	129	6
1.16315	1.16315	0	129	6
1.79176	1.16315	0.628609	130	6
1.72277	1.16315	0.559616	131	6
1.16315	0.955511	0.207639	132	6
1.79176	0.955511	0.836248	133	6
1.72277	0.955511	0.767255	134	6
1.79176	1.16315	0.628609	135	6
1.72277	1.16315	0.559616	136	6
1.72277	1.79176	-0.0689929	136	7

S Statistic = 136 - 7 = 129

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
7/6/2011	1

There are 0 time periods with multiple data

A = 1974
B = 0
C = 564
D = 0
E = 94
F = 0
a = 17100
b = 61560
c = 760
Group Variance = 840.333
Z-Score = 4.41554
Comparison Level at 1.0 - (0.05 / 2) = 97.5% confidence level = 1.97737 (two-tailed)
|4.41554| > 1.97737 indicating a trend

Mann-Kendall Trend Analysis

Parameter: Selenium

Location: LMW-8

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

95% Confidence Level

Xj	Xk	Xj - Xk		Positives	Negatives
ND<0	ND<0	0	0	0	
ND<0	ND<0	0	0	0	
ND<0	ND<0	0	0	0	
ND<0	ND<0	0	0	0	
ND<0	ND<0	0	0	0	
ND<0	ND<0	0	0	0	
1.09861		ND<0	1.09861	1	0
0 J	ND<0	0	1	0	
0 J	ND<0	0	1	0	
0 J	ND<0	0	1	0	
0 J	ND<0	0	1	0	
1.09861		ND<0	1.09861	2	0
ND<0	ND<0	0	2	0	
ND<0	ND<0	0	2	0	
-0.446287		ND<0	-0.446287	2	1
-0.527633		ND<0	-0.527633	2	2
-1.10866 J		ND<0	-1.108662	3	
-0.415515		ND<0	-0.415515	2	4
ND<-2.25379 U		ND<0	-2.253792	5	
ND<0	ND<0	0	2	5	
ND<0	ND<0	0	2	5	
ND<0	ND<0	0	2	5	
ND<0	ND<0	0	2	5	
ND<0	ND<0	0	2	5	
1.09861		ND<0	1.09861	3	5
0 J	ND<0	0	3	5	
0 J	ND<0	0	3	5	
0 J	ND<0	0	3	5	
0 J	ND<0	0	3	5	
1.09861		ND<0	1.09861	4	5
ND<0	ND<0	0	4	5	
ND<0	ND<0	0	4	5	
-0.446287		ND<0	-0.446287	4	6
-0.527633		ND<0	-0.527633	4	7
-1.10866 J		ND<0	-1.108664	8	
-0.415515		ND<0	-0.415515	4	9
ND<-2.25379 U		ND<0	-2.253794	10	
ND<0	ND<0	0	4	10	
ND<0	ND<0	0	4	10	
ND<0	ND<0	0	4	10	
ND<0	ND<0	0	4	10	
1.09861		ND<0	1.09861	5	10
0 J	ND<0	0	5	10	
0 J	ND<0	0	5	10	
0 J	ND<0	0	5	10	
0 J	ND<0	0	5	10	

1.09861		ND<0	1.09861	6	10	
ND<0	ND<0	0	6	10		
ND<0	ND<0	0	6	10		
-0.446287		ND<0	-0.446287		6	11
-0.527633		ND<0	-0.527633		6	12
-1.10866 J		ND<0	-1.108666		13	
-0.415515		ND<0	-0.415515		6	14
ND<-2.25379 U		ND<0	-2.253796		15	
ND<0	ND<0	0	6	15		
ND<0	ND<0	0	6	15		
ND<0	ND<0	0	6	15		
1.09861		ND<0	1.09861	7	15	
0 J	ND<0	0	7	15		
0 J	ND<0	0	7	15		
0 J	ND<0	0	7	15		
0 J	ND<0	0	7	15		
1.09861		ND<0	1.09861	8	15	
ND<0	ND<0	0	8	15		
ND<0	ND<0	0	8	15		
-0.446287		ND<0	-0.446287		8	16
-0.527633		ND<0	-0.527633		8	17
-1.10866 J		ND<0	-1.108668		18	
-0.415515		ND<0	-0.415515		8	19
ND<-2.25379 U		ND<0	-2.253798		20	
ND<0	ND<0	0	8	20		
ND<0	ND<0	0	8	20		
1.09861		ND<0	1.09861	9	20	
0 J	ND<0	0	9	20		
0 J	ND<0	0	9	20		
0 J	ND<0	0	9	20		
0 J	ND<0	0	9	20		
1.09861		ND<0	1.09861	10	20	
ND<0	ND<0	0	10	20		
ND<0	ND<0	0	10	20		
-0.446287		ND<0	-0.446287		10	21
-0.527633		ND<0	-0.527633		10	22
-1.10866 J		ND<0	-1.108661	0	23	
-0.415515		ND<0	-0.415515		10	24
ND<-2.25379 U		ND<0	-2.253791	0	25	
ND<0	ND<0	0	10	25		
1.09861		ND<0	1.09861	11	25	
0 J	ND<0	0	11	25		
0 J	ND<0	0	11	25		
0 J	ND<0	0	11	25		
0 J	ND<0	0	11	25		
1.09861		ND<0	1.09861	12	25	
ND<0	ND<0	0	12	25		
ND<0	ND<0	0	12	25		
-0.446287		ND<0	-0.446287		12	26
-0.527633		ND<0	-0.527633		12	27
-1.10866 J		ND<0	-1.108661	2	28	
-0.415515		ND<0	-0.415515		12	29
ND<-2.25379 U		ND<0	-2.253791	2	30	
1.09861		ND<0	1.09861	13	30	
0 J	ND<0	0	13	30		
0 J	ND<0	0	13	30		
0 J	ND<0	0	13	30		
0 J	ND<0	0	13	30		

1.09861		ND<0	1.09861	14	30	
ND<0	ND<0	0	14	30		
ND<0	ND<0	0	14	30		
-0.446287		ND<0	-0.446287		14	31
-0.527633		ND<0	-0.527633		14	32
-1.10866 J		ND<0	-1.10866	14	33	
-0.415515		ND<0	-0.415515		14	34
ND<-2.25379 U		ND<0	-2.25379	14	35	
0 J	1.09861		-1.09861	14	36	
0 J	1.09861		-1.09861	14	37	
0 J	1.09861		-1.09861	14	38	
0 J	1.09861		-1.09861	14	39	
1.09861		1.09861		0	14	39
ND<0	1.09861		-1.09861	14	40	
ND<0	1.09861		-1.09861	14	41	
-0.446287		1.09861		-1.5449	14	42
-0.527633		1.09861		-1.62625	14	43
-1.10866 J		1.09861		-2.20727	14	44
-0.415515		1.09861		-1.51413	14	45
ND<-2.25379 U		1.09861		-3.35241	14	46
0 J	0 J	0	14	46		
0 J	0 J	0	14	46		
0 J	0 J	0	14	46		
1.09861		0 J	1.09861	15	46	
ND<0	0 J	0	15	46		
ND<0	0 J	0	15	46		
-0.446287		0 J	-0.446287		15	47
-0.527633		0 J	-0.527633		15	48
-1.10866 J		0 J	-1.10866	15	49	
-0.415515		0 J	-0.415515		15	50
ND<-2.25379 U		0 J	-2.25379	15	51	
0 J	0 J	0	15	51		
0 J	0 J	0	15	51		
1.09861		0 J	1.09861	16	51	
ND<0	0 J	0	16	51		
ND<0	0 J	0	16	51		
-0.446287		0 J	-0.446287		16	52
-0.527633		0 J	-0.527633		16	53
-1.10866 J		0 J	-1.10866	16	54	
-0.415515		0 J	-0.415515		16	55
ND<-2.25379 U		0 J	-2.25379	16	56	
0 J	0 J	0	16	56		
1.09861		0 J	1.09861	17	56	
ND<0	0 J	0	17	56		
ND<0	0 J	0	17	56		
-0.446287		0 J	-0.446287		17	57
-0.527633		0 J	-0.527633		17	58
-1.10866 J		0 J	-1.10866	17	59	
-0.415515		0 J	-0.415515		17	60
ND<-2.25379 U		0 J	-2.25379	17	61	
1.09861		0 J	1.09861	18	61	
ND<0	0 J	0	18	61		
ND<0	0 J	0	18	61		
-0.446287		0 J	-0.446287		18	62
-0.527633		0 J	-0.527633		18	63
-1.10866 J		0 J	-1.10866	18	64	
-0.415515		0 J	-0.415515		18	65

ND<-2.25379 U	0 J	-2.2537918	66		
ND<0	1.09861	-1.0986118	67		
ND<0	1.09861	-1.0986118	68		
-0.446287	1.09861	-1.5449	18	69	
-0.527633	1.09861	-1.6262518	70		
-1.10866 J	1.09861	-2.2072718	71		
-0.415515	1.09861	-1.5141318	72		
ND<-2.25379 U	1.09861	-3.3524118	73		
ND<0	ND<0	0	18	73	
-0.446287	ND<0	-0.446287	18	74	
-0.527633	ND<0	-0.527633	18	75	
-1.10866 J	ND<0	-1.1086618	76		
-0.415515	ND<0	-0.415515	18	77	
ND<-2.25379 U	ND<0	-2.2537918	78		
-0.446287	ND<0	-0.446287	18	79	
-0.527633	ND<0	-0.527633	18	80	
-1.10866 J	ND<0	-1.1086618	81		
-0.415515	ND<0	-0.415515	18	82	
ND<-2.25379 U	ND<0	-2.2537918	83		
-0.527633	-0.446287	-0.0813456	18	84	
-1.10866 J	-0.446287	-0.662376	18	85	
-0.415515	-0.446287	0.0307717	19	85	
ND<-2.25379 U	-0.446287	-1.8075119	86		
-1.10866 J	-0.527633	-0.5810319	87		
-0.415515	-0.527633	0.112117	20	87	
ND<-2.25379 U	-0.527633	-1.7261620	88		
-0.415515	-1.10866 J	0.693147	21	88	
ND<-2.25379 U	-1.10866 J	-1.1451321	89		
ND<-2.25379 U	-0.415515	-1.8382821	90		

S Statistic = 21 - 90 = -69

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
7/6/2011	1

There are 0 time periods with multiple data

A = 4854
B = 0
C = 1716
D = 0
E = 158
F = 0
a = 17100
b = 61560
c = 760
Group Variance = 680.333
Z-Score = -2.60704
Comparison Level at 1.0 - (0.05 / 2) = 97.5% confidence level = 1.97737 (two-tailed)
|-2.60704| > 1.97737 indicating a trend

Concentrations (ppb)

Parameter: Silver

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 239
Percent Non-Detects: 97.551%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	20 (100%)	1/16/1998	ND<50	ND<50
			3/16/1999	ND<50	ND<50
			9/23/1999	ND<50	ND<50
			3/14/2000	ND<50	ND<50
			9/23/2003	ND<50	ND<50
			3/10/2004	ND<50	ND<50
			10/12/2004	ND<50	ND<50
			4/1/2005	ND<50	ND<50
			10/26/2005	ND<50	ND<50
			6/19/2006	ND<50	ND<50
			11/18/2006	ND<50	ND<50
			6/2/2007	ND<50	ND<50
			11/15/2007	ND<50	ND<50
			5/20/2008	ND<50	ND<50
			11/20/2008	ND<50	ND<50
			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
			7/6/2011	ND<0.1 U	ND<0.1 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-10	17	17 (100%)	3/14/2000	ND<50	ND<50
			9/23/2003	ND<50	ND<50
			3/10/2004	ND<50	ND<50
			10/12/2004	ND<50	ND<50
			4/1/2005	ND<50	ND<50
			10/26/2005	ND<50	ND<50
			6/19/2006	ND<50	ND<50
			11/18/2006	ND<50	ND<50
			6/2/2007	ND<50	ND<50
			11/15/2007	ND<50	ND<50
			5/20/2008	ND<50	ND<50
			11/20/2008	ND<50	ND<50
			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
			7/6/2011	ND<0.1 U	ND<0.1 U
LMW-14R	8	7 (87.5%)	6/2/2007	ND<50	ND<50
			11/15/2007	ND<50	ND<50
			5/20/2008	ND<50	ND<50

			11/20/2008	ND<50	ND<50
			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
			7/6/2011	0.1 U H	0.1 U H
LMW-15R	12	11 (91.6667%)	11/18/2006	ND<50	ND<50
			6/2/2007	ND<50	ND<50
			11/15/2007	ND<50	ND<50
			11/15/2007	ND<50	ND<50
			5/20/2008	ND<50	ND<50
			5/20/2008	ND<50	ND<50
			11/20/2008	ND<50	ND<50
			11/20/2008	ND<50	ND<50
			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
			7/6/2011	0.1 U H	0.1 U H
LMW-16	10	10 (100%)	11/18/2006	ND<50	ND<50
			6/2/2007	ND<50	ND<50
			11/15/2007	ND<50	ND<50
			5/20/2008	ND<50	ND<50
			11/20/2008	ND<50	ND<50
			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
			7/6/2011	ND<0.1 U	ND<0.1 U
LMW-3S	10	9 (90%)	11/18/2006	ND<50	ND<50
			6/2/2007	ND<50	ND<50
			11/15/2007	ND<50	ND<50
			5/20/2008	ND<50	ND<50
			11/20/2008	ND<50	ND<50
			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
			7/6/2011	0.1 U H	0.1 U H
LMW-6	20	20 (100%)	1/16/1998	ND<50	ND<50
			3/16/1999	ND<50	ND<50
			9/23/1999	ND<50	ND<50
			3/14/2000	ND<50	ND<50
			9/23/2003	ND<50	ND<50
			3/10/2004	ND<50	ND<50
			10/12/2004	ND<50	ND<50
			4/1/2005	ND<50	ND<50
			10/26/2005	ND<50	ND<50
			6/19/2006	ND<50	ND<50
			11/18/2006	ND<50	ND<50
			6/2/2007	ND<50	ND<50
			11/15/2007	ND<50	ND<50
			5/20/2008	ND<50	ND<50
			11/20/2008	ND<50	ND<50
			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
			7/6/2011	ND<0.1 U	ND<0.1 U

LMW-7	18	17 (94.4444%)	1/16/1998	ND<50	ND<50
			3/16/1999	ND<50	ND<50
			9/23/1999	ND<50	ND<50
			3/14/2000	ND<50	ND<50
			9/23/2003	ND<50	ND<50
			3/10/2004	ND<50	ND<50
			10/12/2004	ND<50	ND<50
			4/1/2005	ND<50	ND<50
			10/26/2005	ND<50	ND<50
			6/19/2006	ND<50	ND<50
			11/18/2006	ND<50	ND<50
			6/2/2007	ND<50	ND<50
			11/15/2007	ND<50	ND<50
			5/20/2008	ND<50	ND<50
			11/20/2008	ND<50	ND<50
			6/11/2009	ND<0.1 U	ND<0.1 U
			11/17/2010	ND<0.1 U	ND<0.1 U
			7/6/2011	0.1 U H	0.1 U H
LMW-8	20	20 (100%)	1/16/1998	ND<50	ND<50
			3/16/1999	ND<50	ND<50
			9/23/1999	ND<50	ND<50
			3/14/2000	ND<50	ND<50
			9/23/2003	ND<50	ND<50
			3/10/2004	ND<50	ND<50
			10/12/2004	ND<50	ND<50
			4/1/2005	ND<50	ND<50
			10/26/2005	ND<50	ND<50
			6/19/2006	ND<50	ND<50
			11/18/2006	ND<50	ND<50
			6/2/2007	ND<50	ND<50
			11/15/2007	ND<50	ND<50
			5/20/2008	ND<50	ND<50
			11/20/2008	ND<50	ND<50
			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
			7/6/2011	ND<0.1 U	ND<0.1 U
LMW-9	20	20 (100%)	1/16/1998	ND<50	ND<50
			3/16/1999	ND<50	ND<50
			9/23/1999	ND<50	ND<50
			3/14/2000	ND<50	ND<50
			9/23/2003	ND<50	ND<50
			3/10/2004	ND<50	ND<50
			10/12/2004	ND<50	ND<50
			4/1/2005	ND<50	ND<50
			10/26/2005	ND<50	ND<50
			6/19/2006	ND<50	ND<50
			11/18/2006	ND<50	ND<50
			6/2/2007	ND<50	ND<50
			11/15/2007	ND<50	ND<50
			5/20/2008	ND<50	ND<50
			11/20/2008	ND<50	ND<50
			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
			7/6/2011	ND<0.1 U	ND<0.1 U
LMW-9D	10	9 (90%)	11/18/2006	ND<50	ND<50

			6/2/2007	ND<50	ND<50	
			11/15/2007	ND<50	ND<50	
			5/20/2008	ND<50	ND<50	
			11/20/2008	33 J	33 J	
			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
			7/6/2011	ND<0.1 U	ND<0.1 U	
LMW-9S	12	12 (100%)	11/18/2006	ND<50	ND<50	
			6/2/2007	ND<50	ND<50	
			11/15/2007	ND<50	ND<50	
			5/20/2008	ND<50	ND<50	
			11/20/2008	ND<50	ND<50	
			6/11/2009	ND<0.1 U		ND<0.1 U
			11/16/2009	ND<0.1 U		ND<0.1 U
			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
			7/6/2011	ND<0.1 U	ND<0.1 U	
LMW-3	22	21 (95.4545%)	11/19/1996	ND<50	ND<50	
			3/24/1997	ND<50	ND<50	
			1/16/1998	ND<50	ND<50	
			3/16/1999	ND<50	ND<50	
			9/23/1999	ND<50	ND<50	
			3/14/2000	ND<50	ND<50	
			9/23/2003	ND<50	ND<50	
			3/10/2004	ND<50	ND<50	
			10/12/2004	ND<50	ND<50	
			4/1/2005	ND<50	ND<50	
			10/26/2005	ND<50	ND<50	
			6/19/2006	ND<50	ND<50	
			11/18/2006	ND<50	ND<50	
			6/2/2007	ND<50	ND<50	
			11/15/2007	ND<50	ND<50	
			5/20/2008	ND<50	ND<50	
			11/20/2008	ND<50	ND<50	
			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
			7/6/2011	0.1 U H	0.1 U H	
LMW-11	11	11 (100%)	3/14/2000	ND<50	ND<50	
			9/23/2003	ND<50	ND<50	
			3/10/2004	ND<50	ND<50	
			10/12/2004	ND<50	ND<50	
			4/1/2005	ND<50	ND<50	
			10/26/2005	ND<50	ND<50	
			6/19/2006	ND<50	ND<50	
			6/2/2007	ND<50	ND<50	
			11/15/2007	ND<50	ND<50	
			5/20/2008	ND<50	ND<50	
			11/20/2008	ND<50	ND<50	
LMW-12	11	11 (100%)	3/14/2000	ND<50	ND<50	
			9/23/2003	ND<50	ND<50	
			3/10/2004	ND<50	ND<50	
			10/12/2004	ND<50	ND<50	

			4/1/2005	ND<50	ND<50	
			10/26/2005		ND<50	ND<50
			6/19/2006		ND<50	ND<50
			6/2/2007	ND<50	ND<50	
			11/15/2007		ND<50	ND<50
			5/20/2008		ND<50	ND<50
			11/20/2008		ND<50	ND<50
LMW-13	11	11 (100%)	3/14/2000		ND<50	ND<50
			9/23/2003		ND<50	ND<50
			3/10/2004		ND<50	ND<50
			10/12/2004		ND<50	ND<50
			4/1/2005	ND<50	ND<50	
			10/26/2005		ND<50	ND<50
			6/19/2006		ND<50	ND<50
			6/2/2007	ND<50	ND<50	
			11/15/2007		ND<50	ND<50
			5/20/2008		ND<50	ND<50
			11/20/2008		ND<50	ND<50
MW-5	13	13 (100%)	1/16/1998		ND<50	ND<50
			3/16/1999		ND<50	ND<50
			9/23/1999		ND<50	ND<50
			3/14/2000		ND<50	ND<50
			9/23/2003		ND<50	ND<50
			3/10/2004		ND<50	ND<50
			10/12/2004		ND<50	ND<50
			4/1/2005	ND<50	ND<50	
			10/26/2005		ND<50	ND<50
			6/19/2006		ND<50	ND<50
			11/15/2007		ND<50	ND<50
			5/20/2008		ND<50	ND<50
			11/20/2008		ND<50	ND<50

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Silver

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 245

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	-2.14441	22.5296	-0.473127
5	0.05	-2.05375	26.7475	-0.575815
6	0.05	-1.97737	30.6575	-0.674683
7	0.05	-1.91103	34.3095	-0.770235
8	0.05	-1.85218	37.7401	-0.862844
9	0.05	-1.79912	40.9769	-0.952799
10	0.05	-1.75069	44.0418	-1.04033
11	0.05	-1.70604	46.9524	-1.12564
12	0.05	-1.66456	49.7231	-1.20886
13	0.05	-1.62576	52.3662	-1.29015
14	0.05	-1.58927	54.892	-1.36962
15	0.05	-1.55477	57.3093	-1.44735
16	0.05	-1.5141	59.6018	-1.52306
17	0.05	-1.48328	61.802	-1.59722
18	0.05	-1.4538	63.9155	-1.66991
19	0.05	-1.42554	65.9477	-1.74119
20	0.05	-1.39838	67.9031	-1.81111
21	0.05	-1.3722	69.7861	-1.87972
22	0.05	-1.34694	71.6003	-1.94707
23	0.05	-1.32251	73.3494	-2.01319
24	0.05	-1.29884	75.0363	-2.07813
25	0.05	-1.27588	76.6642	-2.14193
26	0.05	-1.25357	78.2356	-2.20461
27	0.05	-1.23187	79.7531	-2.2662
28	0.05	-1.21073	81.219	-2.32674
29	0.05	-1.19012	82.6353	-2.38624
30	0.05	-1.17	84.0043	-2.44474
31	0.05	-1.1455	85.3164	-2.50202
32	0.05	-1.12639	86.5852	-2.55834
33	0.05	-1.10768	87.8121	-2.61372
34	0.05	-1.08935	88.9988	-2.66819
35	0.05	-1.07138	90.1467	-2.72176
36	0.05	-1.05375	91.2571	-2.77444
37	0.05	-1.03643	92.3312	-2.82627
38	0.05	-1.01943	93.3705	-2.87724
39	0.05	-1.00271	94.3759	-2.92737
40	0.05	-0.986272	95.3486	-2.97669
41	0.05	-0.970094	96.2897	-3.02519
42	0.05	-0.954165	97.2002	-3.0729
43	0.05	-0.938476	98.0809	-3.11982
44	0.05	-0.923014	98.9328	-3.16597
45	0.05	-0.907769	99.7569	-3.21136
46	0.05	-0.892733	100.554	-3.256
47	0.05	-0.874218	101.318	-3.29971
48	0.05	-0.859618	102.057	-3.34269
49	0.05	-0.845198	102.771	-3.38495

50	0.05	-0.830953	103.462	-3.4265
51	0.05	-0.816874	104.129	-3.46734
52	0.05	-0.802956	104.774	-3.50749
53	0.05	-0.789191	105.397	-3.54695
54	0.05	-0.775574	105.998	-3.58573
55	0.05	-0.7621	106.579	-3.62383
56	0.05	-0.748762	107.14	-3.66127
57	0.05	-0.735557	107.681	-3.69805
58	0.05	-0.722479	108.203	-3.73417
59	0.1	-0.709522	108.706	-3.80512
60	0.1	-0.696684	109.192	-3.87479
61	0.1	-0.68396	109.659	-3.94319
62	0.1	-0.668209	110.106	-4.01001
63	0.1	-0.655726	110.536	-4.07558
64	25	-0.643345	110.95	-20.1592
65	25	-0.631062	111.348	-35.9358
66	25	-0.618872	111.731	-51.4076
67	25	-0.606775	112.099	-66.5769
68	25	-0.594766	112.453	-81.4461
69	25	-0.582841	112.793	-96.0171
70	25	-0.570999	113.119	-110.292
71	25	-0.559237	113.431	-124.273
72	25	-0.547551	113.731	-137.962
73	25	-0.53594	114.018	-151.36
74	25	-0.524401	114.293	-164.47
75	25	-0.51293	114.556	-177.294
76	25	-0.501527	114.808	-189.832
77	25	-0.487364	115.046	-202.016
78	25	-0.476105	115.272	-213.918
79	25	-0.464904	115.488	-225.541
80	25	-0.453763	115.694	-236.885
81	25	-0.442676	115.89	-247.952
82	25	-0.431644	116.077	-258.743
83	25	-0.420664	116.253	-269.26
84	25	-0.409735	116.421	-279.503
85	25	-0.398855	116.58	-289.475
86	25	-0.388022	116.731	-299.175
87	25	-0.377233	116.873	-308.606
88	25	-0.36649	117.008	-317.768
89	25	-0.355788	117.134	-326.663
90	25	-0.345126	117.253	-335.291
91	25	-0.334503	117.365	-343.654
92	25	-0.323919	117.47	-351.752
93	25	-0.310738	117.567	-359.52
94	25	-0.300232	117.657	-367.026
95	25	-0.28976	117.741	-374.27
96	25	-0.279319	117.819	-381.253
97	25	-0.268908	117.891	-387.975
98	25	-0.258527	117.958	-394.439
99	25	-0.248174	118.02	-400.643
100	25	-0.237847	118.076	-406.589
101	25	-0.227545	118.128	-412.278
102	25	-0.217267	118.175	-417.709
103	25	-0.207012	118.218	-422.885
104	25	-0.196779	118.257	-427.804
105	25	-0.186567	118.292	-432.468
106	25	-0.176374	118.323	-436.878
107	25	-0.166199	118.35	-441.033
108	25	-0.153505	118.374	-444.87
109	25	-0.143367	118.394	-448.455
110	25	-0.133244	118.412	-451.786
111	25	-0.123135	118.427	-454.864

112	25	-0.113039	118.44	-457.69
113	25	-0.102953	118.451	-460.264
114	25	-0.0928787	118.459	-462.586
115	25	-0.0828129	118.466	-464.656
116	25	-0.0727562	118.471	-466.475
117	25	-0.0627062	118.475	-468.043
118	25	-0.0526632	118.478	-469.359
119	25	-0.0426257	118.48	-470.425
120	25	-0.0325917	118.481	-471.24
121	25	-0.0225612	118.482	-471.804
122	25	-0.0125328	118.482	-472.117
123	25	0	118.482	-472.117
124	25	0.0125328	118.482	-471.804
125	25	0.0225612	118.482	-471.24
126	25	0.0325917	118.483	-470.425
127	25	0.0426257	118.485	-469.359
128	25	0.0526632	118.488	-468.043
129	25	0.0627062	118.492	-466.475
130	25	0.0727562	118.497	-464.656
131	25	0.0828129	118.504	-462.586
132	25	0.0928787	118.513	-460.264
133	25	0.102953	118.523	-457.69
134	25	0.113039	118.536	-454.864
135	25	0.123135	118.551	-451.786
136	25	0.133244	118.569	-448.455
137	25	0.143367	118.59	-444.87
138	25	0.153505	118.613	-441.033
139	25	0.166199	118.641	-436.878
140	25	0.176374	118.672	-432.468
141	25	0.186567	118.707	-427.804
142	25	0.196779	118.745	-422.885
143	25	0.207012	118.788	-417.709
144	25	0.217267	118.835	-412.278
145	25	0.227545	118.887	-406.589
146	25	0.237847	118.944	-400.643
147	25	0.248174	119.005	-394.439
148	25	0.258527	119.072	-387.975
149	25	0.268908	119.145	-381.253
150	25	0.279319	119.223	-374.27
151	25	0.28976	119.306	-367.026
152	25	0.300232	119.397	-359.52
153	25	0.310738	119.493	-351.752
154	25	0.323919	119.598	-343.654
155	25	0.334503	119.71	-335.291
156	25	0.345126	119.829	-326.663
157	25	0.355788	119.956	-317.768
158	25	0.36649	120.09	-308.606
159	25	0.377233	120.232	-299.175
160	25	0.388022	120.383	-289.475
161	25	0.398855	120.542	-279.503
162	25	0.409735	120.71	-269.26
163	25	0.420664	120.887	-258.743
164	25	0.431644	121.073	-247.952
165	25	0.442676	121.269	-236.885
166	25	0.453763	121.475	-225.541
167	25	0.464904	121.691	-213.918
168	25	0.476105	121.918	-202.016
169	25	0.487364	122.155	-189.832
170	25	0.501527	122.407	-177.294
171	25	0.51293	122.67	-164.47
172	25	0.524401	122.945	-151.36
173	25	0.53594	123.232	-137.962

174	25	0.547551		123.532	-124.273
175	25	0.559237		123.845	-110.292
176	25	0.570999		124.171	-96.0171
177	25	0.582841		124.51	-81.4461
178	25	0.594766		124.864	-66.5769
179	25	0.606775		125.232	-51.4076
180	25	0.618872		125.615	-35.9358
181	25	0.631062		126.014	-20.1592
182	25	0.643345		126.428	-4.07558
183	25	0.655726		126.858	12.3176
184	25	0.668209		127.304	29.0228
185	25	0.68396	127.772	46.1218	
186	25	0.696684		128.257	63.5389
187	25	0.709522		128.761	81.277
188	25	0.722479		129.283	99.3389
189	25	0.735557		129.824	117.728
190	25	0.748762		130.384	136.447
191	25	0.7621	130.965	155.499	
192	25	0.775574		131.567	174.889
193	25	0.789191		132.189	194.619
194	25	0.802956		132.834	214.692
195	25	0.816874		133.501	235.114
196	25	0.830953		134.192	255.888
197	25	0.845198		134.906	277.018
198	25	0.859618		135.645	298.509
199	25	0.874218		136.409	320.364
200	25	0.892733		137.206	342.682
201	25	0.907769		138.03	365.377
202	25	0.923014		138.882	388.452
203	25	0.938476		139.763	411.914
204	25	0.954165		140.674	435.768
205	25	0.970094		141.615	460.02
206	25	0.986272		142.587	484.677
207	25	1.00271	143.593	509.745	
208	25	1.01943	144.632	535.231	
209	25	1.03643	145.706	561.141	
210	25	1.05375	146.817	587.485	
211	25	1.07138	147.965	614.269	
212	25	1.08935	149.151	641.503	
213	25	1.10768	150.378	669.195	
214	25	1.12639	151.647	697.355	
215	25	1.1455	152.959	725.993	
216	25	1.17	154.328	755.243	
217	25	1.19012	155.744	784.996	
218	25	1.21073	157.21	815.264	
219	25	1.23187	158.728	846.06	
220	25	1.25357	160.299	877.4	
221	25	1.27588	161.927	909.296	
222	25	1.29884	163.614	941.767	
223	25	1.32251	165.363	974.83	
224	25	1.34694	167.177	1008.5	
225	25	1.3722	169.06	1042.81	
226	25	1.39838	171.016	1077.77	
227	25	1.42554	173.048	1113.41	
228	25	1.4538	175.161	1149.75	
229	25	1.48328	177.362	1186.83	
230	25	1.5141	179.654	1224.69	
231	25	1.55477	182.071	1263.56	
232	25	1.58927	184.597	1303.29	
233	25	1.62576	187.24	1343.93	
234	25	1.66456	190.011	1385.55	
235	25	1.70604	192.922	1428.2	

236	25	1.75069	195.986	1471.96
237	25	1.79912	199.223	1516.94
238	25	1.85218	202.654	1563.25
239	25	1.91103	206.306	1611.02
240	25	1.97737	210.216	1660.46
241	25	2.05375	214.434	1711.8
242	25	2.14441	219.032	1765.41
243	25	2.25713	224.127	1821.84
244	25	2.40892	229.93	1882.06
245	33	2.65209	236.963	1969.58

Data Set Standard Deviation = 10.9564
Numerator = 3.87925e+006
Denominator = 6.94071e+006
W Statistic = 0.558912 = 3.87925e+006 / 6.94071e+006

5% Critical value of 0.976 exceeds 0.558912
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.558912
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Silver

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 245

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	-2.14441	22.5296	28.3473
5	-2.99573	-2.05375	26.7475	34.4997
6	-2.99573	-1.97737	30.6575	40.4234
7	-2.99573	-1.91103	34.3095	46.1483
8	-2.99573	-1.85218	37.7401	51.697
9	-2.99573	-1.79912	40.9769	57.0866
10	-2.99573	-1.75069	44.0418	62.3312
11	-2.99573	-1.70604	46.9524	67.4421
12	-2.99573	-1.66456	49.7231	72.4287
13	-2.99573	-1.62576	52.3662	77.299
14	-2.99573	-1.58927	54.892	82.06
15	-2.99573	-1.55477	57.3093	86.7177
16	-2.99573	-1.5141	59.6018	91.2536
17	-2.99573	-1.48328	61.802	95.6971
18	-2.99573	-1.4538	63.9155	100.052
19	-2.99573	-1.42554	65.9477	104.323
20	-2.99573	-1.39838	67.9031	108.512
21	-2.99573	-1.3722	69.7861	112.623
22	-2.99573	-1.34694	71.6003	116.658
23	-2.99573	-1.32251	73.3494	120.62
24	-2.99573	-1.29884	75.0363	124.511
25	-2.99573	-1.27588	76.6642	128.333
26	-2.99573	-1.25357	78.2356	132.088
27	-2.99573	-1.23187	79.7531	135.779
28	-2.99573	-1.21073	81.219	139.406
29	-2.99573	-1.19012	82.6353	142.971
30	-2.99573	-1.17	84.0043	146.476
31	-2.99573	-1.1455	85.3164	149.907
32	-2.99573	-1.12639	86.5852	153.282
33	-2.99573	-1.10768	87.8121	156.6
34	-2.99573	-1.08935	88.9988	159.864
35	-2.99573	-1.07138	90.1467	163.073
36	-2.99573	-1.05375	91.2571	166.23
37	-2.99573	-1.03643	92.3312	169.335
38	-2.99573	-1.01943	93.3705	172.389
39	-2.99573	-1.00271	94.3759	175.392
40	-2.99573	-0.986272	95.3486	178.347
41	-2.99573	-0.970094	96.2897	181.253
42	-2.99573	-0.954165	97.2002	184.112
43	-2.99573	-0.938476	98.0809	186.923
44	-2.99573	-0.923014	98.9328	189.688
45	-2.99573	-0.907769	99.7569	192.408
46	-2.99573	-0.892733	100.554	195.082
47	-2.99573	-0.874218	101.318	197.701
48	-2.99573	-0.859618	102.057	200.276
49	-2.99573	-0.845198	102.771	202.808

50	-2.99573	-0.830953	103.462	205.297
51	-2.99573	-0.816874	104.129	207.745
52	-2.99573	-0.802956	104.774	210.15
53	-2.99573	-0.789191	105.397	212.514
54	-2.99573	-0.775574	105.998	214.838
55	-2.99573	-0.7621	106.579	217.121
56	-2.99573	-0.748762	107.14	219.364
57	-2.99573	-0.735557	107.681	221.567
58	-2.99573	-0.722479	108.203	223.732
59	-2.30259	-0.709522	108.706	225.365
60	-2.30259	-0.696684	109.192	226.97
61	-2.30259	-0.68396	109.659	228.544
62	-2.30259	-0.668209	110.106	230.083
63	-2.30259	-0.655726	110.536	231.593
64	3.21888	-0.643345	110.95	229.522
65	3.21888	-0.631062	111.348	227.491
66	3.21888	-0.618872	111.731	225.499
67	3.21888	-0.606775	112.099	223.546
68	3.21888	-0.594766	112.453	221.631
69	3.21888	-0.582841	112.793	219.755
70	3.21888	-0.570999	113.119	217.917
71	3.21888	-0.559237	113.431	216.117
72	3.21888	-0.547551	113.731	214.354
73	3.21888	-0.53594	114.018	212.629
74	3.21888	-0.524401	114.293	210.941
75	3.21888	-0.51293	114.556	209.29
76	3.21888	-0.501527	114.808	207.676
77	3.21888	-0.487364	115.046	206.107
78	3.21888	-0.476105	115.272	204.575
79	3.21888	-0.464904	115.488	203.078
80	3.21888	-0.453763	115.694	201.617
81	3.21888	-0.442676	115.89	200.193
82	3.21888	-0.431644	116.077	198.803
83	3.21888	-0.420664	116.253	197.449
84	3.21888	-0.409735	116.421	196.13
85	3.21888	-0.398855	116.58	194.846
86	3.21888	-0.388022	116.731	193.597
87	3.21888	-0.377233	116.873	192.383
88	3.21888	-0.36649	117.008	191.203
89	3.21888	-0.355788	117.134	190.058
90	3.21888	-0.345126	117.253	188.947
91	3.21888	-0.334503	117.365	187.871
92	3.21888	-0.323919	117.47	186.828
93	3.21888	-0.310738	117.567	185.828
94	3.21888	-0.300232	117.657	184.861
95	3.21888	-0.28976	117.741	183.929
96	3.21888	-0.279319	117.819	183.029
97	3.21888	-0.268908	117.891	182.164
98	3.21888	-0.258527	117.958	181.332
99	3.21888	-0.248174	118.02	180.533
100	3.21888	-0.237847	118.076	179.767
101	3.21888	-0.227545	118.128	179.035
102	3.21888	-0.217267	118.175	178.335
103	3.21888	-0.207012	118.218	177.669
104	3.21888	-0.196779	118.257	177.036
105	3.21888	-0.186567	118.292	176.435
106	3.21888	-0.176374	118.323	175.867
107	3.21888	-0.166199	118.35	175.332
108	3.21888	-0.153505	118.374	174.838
109	3.21888	-0.143367	118.394	174.377
110	3.21888	-0.133244	118.412	173.948
111	3.21888	-0.123135	118.427	173.552

112	3.21888	-0.113039	118.44	173.188
113	3.21888	-0.102953	118.451	172.856
114	3.21888	-0.0928787	118.459	172.557
115	3.21888	-0.0828129	118.466	172.291
116	3.21888	-0.0727562	118.471	172.057
117	3.21888	-0.0627062	118.475	171.855
118	3.21888	-0.0526632	118.478	171.685
119	3.21888	-0.0426257	118.48	171.548
120	3.21888	-0.0325917	118.481	171.443
121	3.21888	-0.0225612	118.482	171.371
122	3.21888	-0.0125328	118.482	171.33
123	3.21888	0	118.482	171.33
124	3.21888	0.0125328	118.482	171.371
125	3.21888	0.0225612	118.482	171.443
126	3.21888	0.0325917	118.483	171.548
127	3.21888	0.0426257	118.485	171.685
128	3.21888	0.0526632	118.488	171.855
129	3.21888	0.0627062	118.492	172.057
130	3.21888	0.0727562	118.497	172.291
131	3.21888	0.0828129	118.504	172.557
132	3.21888	0.0928787	118.513	172.856
133	3.21888	0.102953	118.523	173.188
134	3.21888	0.113039	118.536	173.552
135	3.21888	0.123135	118.551	173.948
136	3.21888	0.133244	118.569	174.377
137	3.21888	0.143367	118.59	174.838
138	3.21888	0.153505	118.613	175.332
139	3.21888	0.166199	118.641	175.867
140	3.21888	0.176374	118.672	176.435
141	3.21888	0.186567	118.707	177.036
142	3.21888	0.196779	118.745	177.669
143	3.21888	0.207012	118.788	178.335
144	3.21888	0.217267	118.835	179.035
145	3.21888	0.227545	118.887	179.767
146	3.21888	0.237847	118.944	180.533
147	3.21888	0.248174	119.005	181.332
148	3.21888	0.258527	119.072	182.164
149	3.21888	0.268908	119.145	183.029
150	3.21888	0.279319	119.223	183.929
151	3.21888	0.28976	119.306	184.861
152	3.21888	0.300232	119.397	185.828
153	3.21888	0.310738	119.493	186.828
154	3.21888	0.323919	119.598	187.871
155	3.21888	0.334503	119.71	188.947
156	3.21888	0.345126	119.829	190.058
157	3.21888	0.355788	119.956	191.203
158	3.21888	0.36649	120.09	192.383
159	3.21888	0.377233	120.232	193.597
160	3.21888	0.388022	120.383	194.846
161	3.21888	0.398855	120.542	196.13
162	3.21888	0.409735	120.71	197.449
163	3.21888	0.420664	120.887	198.803
164	3.21888	0.431644	121.073	200.193
165	3.21888	0.442676	121.269	201.617
166	3.21888	0.453763	121.475	203.078
167	3.21888	0.464904	121.691	204.575
168	3.21888	0.476105	121.918	206.107
169	3.21888	0.487364	122.155	207.676
170	3.21888	0.501527	122.407	209.29
171	3.21888	0.51293	122.67	210.941
172	3.21888	0.524401	122.945	212.629
173	3.21888	0.53594	123.232	214.354

174	3.21888	0.547551		123.532	216.117
175	3.21888	0.559237		123.845	217.917
176	3.21888	0.570999		124.171	219.755
177	3.21888	0.582841		124.51	221.631
178	3.21888	0.594766		124.864	223.546
179	3.21888	0.606775		125.232	225.499
180	3.21888	0.618872		125.615	227.491
181	3.21888	0.631062		126.014	229.522
182	3.21888	0.643345		126.428	231.593
183	3.21888	0.655726		126.858	233.704
184	3.21888	0.668209		127.304	235.854
185	3.21888	0.68396	127.772	238.056	
186	3.21888	0.696684		128.257	240.299
187	3.21888	0.709522		128.761	242.582
188	3.21888	0.722479		129.283	244.908
189	3.21888	0.735557		129.824	247.276
190	3.21888	0.748762		130.384	249.686
191	3.21888	0.7621	130.965	252.139	
192	3.21888	0.775574		131.567	254.635
193	3.21888	0.789191		132.189	257.176
194	3.21888	0.802956		132.834	259.76
195	3.21888	0.816874		133.501	262.39
196	3.21888	0.830953		134.192	265.065
197	3.21888	0.845198		134.906	267.785
198	3.21888	0.859618		135.645	270.552
199	3.21888	0.874218		136.409	273.366
200	3.21888	0.892733		137.206	276.24
201	3.21888	0.907769		138.03	279.162
202	3.21888	0.923014		138.882	282.133
203	3.21888	0.938476		139.763	285.154
204	3.21888	0.954165		140.674	288.225
205	3.21888	0.970094		141.615	291.348
206	3.21888	0.986272		142.587	294.522
207	3.21888	1.00271	143.593	297.75	
208	3.21888	1.01943	144.632	301.031	
209	3.21888	1.03643	145.706	304.367	
210	3.21888	1.05375	146.817	307.759	
211	3.21888	1.07138	147.965	311.208	
212	3.21888	1.08935	149.151	314.714	
213	3.21888	1.10768	150.378	318.28	
214	3.21888	1.12639	151.647	321.906	
215	3.21888	1.1455	152.959	325.593	
216	3.21888	1.17	154.328	329.359	
217	3.21888	1.19012	155.744	333.19	
218	3.21888	1.21073	157.21	337.087	
219	3.21888	1.23187	158.728	341.052	
220	3.21888	1.25357	160.299	345.087	
221	3.21888	1.27588	161.927	349.194	
222	3.21888	1.29884	163.614	353.375	
223	3.21888	1.32251	165.363	357.632	
224	3.21888	1.34694	167.177	361.968	
225	3.21888	1.3722	169.06	366.384	
226	3.21888	1.39838	171.016	370.886	
227	3.21888	1.42554	173.048	375.474	
228	3.21888	1.4538	175.161	380.154	
229	3.21888	1.48328	177.362	384.928	
230	3.21888	1.5141	179.654	389.802	
231	3.21888	1.55477	182.071	394.807	
232	3.21888	1.58927	184.597	399.922	
233	3.21888	1.62576	187.24	405.156	
234	3.21888	1.66456	190.011	410.514	
235	3.21888	1.70604	192.922	416.005	

236	3.21888	1.75069	195.986	421.64
237	3.21888	1.79912	199.223	427.432
238	3.21888	1.85218	202.654	433.393
239	3.21888	1.91103	206.306	439.545
240	3.21888	1.97737	210.216	445.91
241	3.21888	2.05375	214.434	452.52
242	3.21888	2.14441	219.032	459.423
243	3.21888	2.25713	224.127	466.688
244	3.21888	2.40892	229.93	474.443
245	3.49651	2.65209	236.963	483.716

Data Set Standard Deviation = 2.70002
Numerator = 233981
Denominator = 421508
W Statistic = 0.555104 = 233981 / 421508

5% Critical value of 0.976 exceeds 0.555104
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.555104
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Silver

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

Total Percent Non-Detects = 97.551%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 20
Maximum Background Concentration = 3.21888
Confidence Level = 71.4%
False Positive Rate = 28.6%

Location	Date	Samples	Mean	Significant
LMW-10	7/6/2011	1	-2.99573	FALSE
LMW-14R	7/6/2011	1	-2.30259	FALSE
LMW-15R	7/6/2011	1	-2.30259	FALSE
LMW-16	7/6/2011	1	-2.99573	FALSE
LMW-3S	7/6/2011	1	-2.30259	FALSE
LMW-6	7/6/2011	1	-2.99573	FALSE
LMW-7	7/6/2011	1	-2.30259	FALSE
LMW-8	7/6/2011	1	-2.99573	FALSE
LMW-9	7/6/2011	1	-2.99573	FALSE
LMW-9D	7/6/2011	1	-2.99573	FALSE
LMW-9S	7/6/2011	1	-2.99573	FALSE
LMW-3	7/6/2011	1	-2.30259	FALSE
LMW-11	11/20/2008	1	3.21888	FALSE
LMW-12	11/20/2008	1	3.21888	FALSE
LMW-13	11/20/2008	1	3.21888	FALSE
MW-5	11/20/2008	1	3.21888	FALSE

Concentrations (ppb)

Parameter: Thallium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 240
Percent Non-Detects: 97.9592%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	20 (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
			7/6/2011	ND<0.1 U	ND<0.1 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-3	22	22 (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

			7/6/2011	ND<0.1 U	ND<0.1 U	
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<0.1 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	
			7/6/2011	0.11 J	0.11 J	
LMW-10	17	17 (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	
			7/6/2011	ND<0.1 U	ND<0.1 U	
LMW-14R	8	8 (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	
			7/6/2011	ND<0.1 U	ND<0.1 U	
LMW-15R	12	12 (100%)	11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			11/15/2007	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			5/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			11/20/2008	ND<1	ND<1	
			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	
			7/6/2011	ND<0.1 U	ND<0.1 U	

LMW-16	10	10 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.1 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
			7/6/2011	ND<0.1 U	ND<0.1 U
LMW-9S	12	11 (91.6667%)	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
			11/16/2009	0.17 J	0.17 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
			7/6/2011	ND<0.1 U	ND<0.1 U
LMW-7	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<0.1 U	ND<0.1 U
			11/17/2010	ND<0.1 U	ND<0.1 U
			7/6/2011	ND<0.1 U	ND<0.1 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	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	
		7/6/2011	ND<0.1 U	ND<0.1 U	
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<0.1 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	
		7/6/2011	ND<0.1 U	ND<0.1 U	
LMW-6	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<0.1 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	
		7/6/2011	ND<0.1 U	ND<0.1 U	
LMW-3S	10	10 (100%)	11/18/2006	ND<1	ND<1
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
		6/11/2009	ND<0.1 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	
		7/6/2011	ND<0.1 U	ND<0.1 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
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
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

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 = 245

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	-2.14441	22.5296	-0.473127
5	0.05	-2.05375	26.7475	-0.575815
6	0.05	-1.97737	30.6575	-0.674683
7	0.05	-1.91103	34.3095	-0.770235
8	0.05	-1.85218	37.7401	-0.862844
9	0.05	-1.79912	40.9769	-0.952799
10	0.05	-1.75069	44.0418	-1.04033
11	0.05	-1.70604	46.9524	-1.12564
12	0.05	-1.66456	49.7231	-1.20886
13	0.05	-1.62576	52.3662	-1.29015
14	0.05	-1.58927	54.892	-1.36962
15	0.05	-1.55477	57.3093	-1.44735
16	0.05	-1.5141	59.6018	-1.52306
17	0.05	-1.48328	61.802	-1.59722
18	0.05	-1.4538	63.9155	-1.66991
19	0.05	-1.42554	65.9477	-1.74119
20	0.05	-1.39838	67.9031	-1.81111
21	0.05	-1.3722	69.7861	-1.87972
22	0.05	-1.34694	71.6003	-1.94707
23	0.05	-1.32251	73.3494	-2.01319
24	0.05	-1.29884	75.0363	-2.07813
25	0.05	-1.27588	76.6642	-2.14193
26	0.05	-1.25357	78.2356	-2.20461
27	0.05	-1.23187	79.7531	-2.2662
28	0.05	-1.21073	81.219	-2.32674
29	0.05	-1.19012	82.6353	-2.38624
30	0.05	-1.17	84.0043	-2.44474
31	0.05	-1.1455	85.3164	-2.50202
32	0.05	-1.12639	86.5852	-2.55834
33	0.05	-1.10768	87.8121	-2.61372
34	0.05	-1.08935	88.9988	-2.66819
35	0.05	-1.07138	90.1467	-2.72176
36	0.05	-1.05375	91.2571	-2.77444
37	0.05	-1.03643	92.3312	-2.82627
38	0.05	-1.01943	93.3705	-2.87724
39	0.05	-1.00271	94.3759	-2.92737
40	0.05	-0.986272	95.3486	-2.97669
41	0.05	-0.970094	96.2897	-3.02519
42	0.05	-0.954165	97.2002	-3.0729
43	0.05	-0.938476	98.0809	-3.11982
44	0.05	-0.923014	98.9328	-3.16597
45	0.05	-0.907769	99.7569	-3.21136
46	0.05	-0.892733	100.554	-3.256
47	0.05	-0.874218	101.318	-3.29971
48	0.05	-0.859618	102.057	-3.34269
49	0.05	-0.845198	102.771	-3.38495

50	0.05	-0.830953	103.462	-3.4265
51	0.05	-0.816874	104.129	-3.46734
52	0.05	-0.802956	104.774	-3.50749
53	0.05	-0.789191	105.397	-3.54695
54	0.05	-0.775574	105.998	-3.58573
55	0.05	-0.7621	106.579	-3.62383
56	0.05	-0.748762	107.14	-3.66127
57	0.05	-0.735557	107.681	-3.69805
58	0.05	-0.722479	108.203	-3.73417
59	0.11	-0.709522	108.706	-3.81222
60	0.13	-0.696684	109.192	-3.90279
61	0.13	-0.68396	109.659	-3.9917
62	0.17	-0.668209	110.106	-4.1053
63	0.18	-0.655726	110.536	-4.22333
64	0.5	-0.643345	110.95	-4.545
65	0.5	-0.631062	111.348	-4.86053
66	0.5	-0.618872	111.731	-5.16997
67	0.5	-0.606775	112.099	-5.47336
68	0.5	-0.594766	112.453	-5.77074
69	0.5	-0.582841	112.793	-6.06216
70	0.5	-0.570999	113.119	-6.34766
71	0.5	-0.559237	113.431	-6.62728
72	0.5	-0.547551	113.731	-6.90105
73	0.5	-0.53594	114.018	-7.16902
74	0.5	-0.524401	114.293	-7.43122
75	0.5	-0.51293	114.556	-7.68769
76	0.5	-0.501527	114.808	-7.93845
77	0.5	-0.487364	115.046	-8.18214
78	0.5	-0.476105	115.272	-8.42019
79	0.5	-0.464904	115.488	-8.65264
80	0.5	-0.453763	115.694	-8.87952
81	0.5	-0.442676	115.89	-9.10086
82	0.5	-0.431644	116.077	-9.31668
83	0.5	-0.420664	116.253	-9.52701
84	0.5	-0.409735	116.421	-9.73188
85	0.5	-0.398855	116.58	-9.93131
86	0.5	-0.388022	116.731	-10.1253
87	0.5	-0.377233	116.873	-10.3139
88	0.5	-0.36649	117.008	-10.4972
89	0.5	-0.355788	117.134	-10.6751
90	0.5	-0.345126	117.253	-10.8476
91	0.5	-0.334503	117.365	-11.0149
92	0.5	-0.323919	117.47	-11.1768
93	0.5	-0.310738	117.567	-11.3322
94	0.5	-0.300232	117.657	-11.4823
95	0.5	-0.28976	117.741	-11.6272
96	0.5	-0.279319	117.819	-11.7669
97	0.5	-0.268908	117.891	-11.9013
98	0.5	-0.258527	117.958	-12.0306
99	0.5	-0.248174	118.02	-12.1547
100	0.5	-0.237847	118.076	-12.2736
101	0.5	-0.227545	118.128	-12.3874
102	0.5	-0.217267	118.175	-12.496
103	0.5	-0.207012	118.218	-12.5995
104	0.5	-0.196779	118.257	-12.6979
105	0.5	-0.186567	118.292	-12.7912
106	0.5	-0.176374	118.323	-12.8794
107	0.5	-0.166199	118.35	-12.9625
108	0.5	-0.153505	118.374	-13.0392
109	0.5	-0.143367	118.394	-13.1109
110	0.5	-0.133244	118.412	-13.1775
111	0.5	-0.123135	118.427	-13.2391

112	0.5	-0.113039	118.44	-13.2956
113	0.5	-0.102953	118.451	-13.3471
114	0.5	-0.0928787	118.459	-13.3935
115	0.5	-0.0828129	118.466	-13.4349
116	0.5	-0.0727562	118.471	-13.4713
117	0.5	-0.0627062	118.475	-13.5027
118	0.5	-0.0526632	118.478	-13.529
119	0.5	-0.0426257	118.48	-13.5503
120	0.5	-0.0325917	118.481	-13.5666
121	0.5	-0.0225612	118.482	-13.5779
122	0.5	-0.0125328	118.482	-13.5842
123	0.5	0	118.482	-13.5842
124	0.5	0.0125328	118.482	-13.5779
125	0.5	0.0225612	118.482	-13.5666
126	0.5	0.0325917	118.483	-13.5503
127	0.5	0.0426257	118.485	-13.529
128	0.5	0.0526632	118.488	-13.5027
129	0.5	0.0627062	118.492	-13.4713
130	0.5	0.0727562	118.497	-13.4349
131	0.5	0.0828129	118.504	-13.3935
132	0.5	0.0928787	118.513	-13.3471
133	0.5	0.102953	118.523	-13.2956
134	0.5	0.113039	118.536	-13.2391
135	0.5	0.123135	118.551	-13.1775
136	0.5	0.133244	118.569	-13.1109
137	0.5	0.143367	118.59	-13.0392
138	0.5	0.153505	118.613	-12.9625
139	0.5	0.166199	118.641	-12.8794
140	0.5	0.176374	118.672	-12.7912
141	0.5	0.186567	118.707	-12.6979
142	0.5	0.196779	118.745	-12.5995
143	0.5	0.207012	118.788	-12.496
144	0.5	0.217267	118.835	-12.3874
145	0.5	0.227545	118.887	-12.2736
146	0.5	0.237847	118.944	-12.1547
147	0.5	0.248174	119.005	-12.0306
148	0.5	0.258527	119.072	-11.9013
149	0.5	0.268908	119.145	-11.7669
150	0.5	0.279319	119.223	-11.6272
151	0.5	0.28976	119.306	-11.4823
152	0.5	0.300232	119.397	-11.3322
153	0.5	0.310738	119.493	-11.1768
154	0.5	0.323919	119.598	-11.0149
155	0.5	0.334503	119.71	-10.8476
156	0.5	0.345126	119.829	-10.6751
157	0.5	0.355788	119.956	-10.4972
158	0.5	0.36649	120.09	-10.3139
159	0.5	0.377233	120.232	-10.1253
160	0.5	0.388022	120.383	-9.93131
161	0.5	0.398855	120.542	-9.73188
162	0.5	0.409735	120.71	-9.52701
163	0.5	0.420664	120.887	-9.31668
164	0.5	0.431644	121.073	-9.10086
165	0.5	0.442676	121.269	-8.87952
166	0.5	0.453763	121.475	-8.65264
167	0.5	0.464904	121.691	-8.42019
168	0.5	0.476105	121.918	-8.18214
169	0.5	0.487364	122.155	-7.93845
170	0.5	0.501527	122.407	-7.68769
171	0.5	0.51293	122.67	-7.43122
172	0.5	0.524401	122.945	-7.16902
173	0.5	0.53594	123.232	-6.90105

174	0.5	0.547551		123.532	-6.62728
175	0.5	0.559237		123.845	-6.34766
176	0.5	0.570999		124.171	-6.06216
177	0.5	0.582841		124.51	-5.77074
178	0.5	0.594766		124.864	-5.47336
179	0.5	0.606775		125.232	-5.16997
180	0.5	0.618872		125.615	-4.86053
181	0.5	0.631062		126.014	-4.545
182	0.5	0.643345		126.428	-4.22333
183	0.5	0.655726		126.858	-3.89547
184	0.5	0.668209		127.304	-3.56136
185	0.5	0.68396	127.772	-3.21938	
186	0.5	0.696684		128.257	-2.87104
187	0.5	0.709522		128.761	-2.51628
188	0.5	0.722479		129.283	-2.15504
189	0.5	0.735557		129.824	-1.78726
190	0.5	0.748762		130.384	-1.41288
191	0.5	0.7621	130.965	-1.03183	
192	0.5	0.775574		131.567	-0.644043
193	0.5	0.789191		132.189	-0.249448
194	0.5	0.802956		132.834	0.15203
195	0.5	0.816874		133.501	0.560467
196	0.5	0.830953		134.192	0.975944
197	0.5	0.845198		134.906	1.39854
198	0.5	0.859618		135.645	1.82835
199	0.5	0.874218		136.409	2.26546
200	0.5	0.892733		137.206	2.71183
201	0.5	0.907769		138.03	3.16571
202	0.5	0.923014		138.882	3.62722
203	0.5	0.938476		139.763	4.09646
204	0.5	0.954165		140.674	4.57354
205	0.5	0.970094		141.615	5.05859
206	0.5	0.986272		142.587	5.55172
207	0.5	1.00271	143.593	6.05308	
208	0.5	1.01943	144.632	6.56279	
209	0.5	1.03643	145.706	7.08101	
210	0.5	1.05375	146.817	7.60788	
211	0.5	1.07138	147.965	8.14357	
212	0.5	1.08935	149.151	8.68824	
213	0.5	1.10768	150.378	9.24208	
214	0.5	1.12639	151.647	9.80528	
215	0.5	1.1455	152.959	10.378	
216	0.5	1.17	154.328	10.963	
217	0.5	1.19012	155.744	11.5581	
218	0.5	1.21073	157.21	12.1635	
219	0.5	1.23187	158.728	12.7794	
220	0.5	1.25357	160.299	13.4062	
221	0.5	1.27588	161.927	14.0441	
222	0.5	1.29884	163.614	14.6935	
223	0.5	1.32251	165.363	15.3548	
224	0.5	1.34694	167.177	16.0282	
225	0.5	1.3722	169.06	16.7144	
226	0.5	1.39838	171.016	17.4135	
227	0.5	1.42554	173.048	18.1263	
228	0.5	1.4538	175.161	18.8532	
229	0.5	1.48328	177.362	19.5949	
230	0.5	1.5141	179.654	20.3519	
231	0.5	1.55477	182.071	21.1293	
232	0.5	1.58927	184.597	21.9239	
233	0.5	1.62576	187.24	22.7368	
234	0.5	1.66456	190.011	23.5691	
235	0.5	1.70604	192.922	24.4221	

236	0.5	1.75069	195.986	25.2975
237	0.5	1.79912	199.223	26.197
238	0.5	1.85218	202.654	27.1231
239	0.5	1.91103	206.306	28.0786
240	0.5	1.97737	210.216	29.0673
241	0.5	2.05375	214.434	30.0942
242	0.5	2.14441	219.032	31.1664
243	0.5	2.25713	224.127	32.2949
244	0.5	2.40892	229.93	33.4994
245	0.5	2.65209	236.963	34.8254

Data Set Standard Deviation = 0.194279
Numerator = 1212.81
Denominator = 2182.33
W Statistic = 0.555742 = 1212.81 / 2182.33

5% Critical value of 0.976 exceeds 0.555742
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.555742
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 = 245

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	-2.14441	22.5296	28.3473
5	-2.99573	-2.05375	26.7475	34.4997
6	-2.99573	-1.97737	30.6575	40.4234
7	-2.99573	-1.91103	34.3095	46.1483
8	-2.99573	-1.85218	37.7401	51.697
9	-2.99573	-1.79912	40.9769	57.0866
10	-2.99573	-1.75069	44.0418	62.3312
11	-2.99573	-1.70604	46.9524	67.4421
12	-2.99573	-1.66456	49.7231	72.4287
13	-2.99573	-1.62576	52.3662	77.299
14	-2.99573	-1.58927	54.892	82.06
15	-2.99573	-1.55477	57.3093	86.7177
16	-2.99573	-1.5141	59.6018	91.2536
17	-2.99573	-1.48328	61.802	95.6971
18	-2.99573	-1.4538	63.9155	100.052
19	-2.99573	-1.42554	65.9477	104.323
20	-2.99573	-1.39838	67.9031	108.512
21	-2.99573	-1.3722	69.7861	112.623
22	-2.99573	-1.34694	71.6003	116.658
23	-2.99573	-1.32251	73.3494	120.62
24	-2.99573	-1.29884	75.0363	124.511
25	-2.99573	-1.27588	76.6642	128.333
26	-2.99573	-1.25357	78.2356	132.088
27	-2.99573	-1.23187	79.7531	135.779
28	-2.99573	-1.21073	81.219	139.406
29	-2.99573	-1.19012	82.6353	142.971
30	-2.99573	-1.17	84.0043	146.476
31	-2.99573	-1.1455	85.3164	149.907
32	-2.99573	-1.12639	86.5852	153.282
33	-2.99573	-1.10768	87.8121	156.6
34	-2.99573	-1.08935	88.9988	159.864
35	-2.99573	-1.07138	90.1467	163.073
36	-2.99573	-1.05375	91.2571	166.23
37	-2.99573	-1.03643	92.3312	169.335
38	-2.99573	-1.01943	93.3705	172.389
39	-2.99573	-1.00271	94.3759	175.392
40	-2.99573	-0.986272	95.3486	178.347
41	-2.99573	-0.970094	96.2897	181.253
42	-2.99573	-0.954165	97.2002	184.112
43	-2.99573	-0.938476	98.0809	186.923
44	-2.99573	-0.923014	98.9328	189.688
45	-2.99573	-0.907769	99.7569	192.408
46	-2.99573	-0.892733	100.554	195.082
47	-2.99573	-0.874218	101.318	197.701
48	-2.99573	-0.859618	102.057	200.276
49	-2.99573	-0.845198	102.771	202.808

50	-2.99573	-0.830953	103.462	205.297
51	-2.99573	-0.816874	104.129	207.745
52	-2.99573	-0.802956	104.774	210.15
53	-2.99573	-0.789191	105.397	212.514
54	-2.99573	-0.775574	105.998	214.838
55	-2.99573	-0.7621	106.579	217.121
56	-2.99573	-0.748762	107.14	219.364
57	-2.99573	-0.735557	107.681	221.567
58	-2.99573	-0.722479	108.203	223.732
59	-2.20727	-0.709522	108.706	225.298
60	-2.04022	-0.696684	109.192	226.719
61	-2.04022	-0.68396	109.659	228.115
62	-1.77196	-0.668209	110.106	229.299
63	-1.7148	-0.655726	110.536	230.423
64	-0.693147	-0.643345	110.95	230.869
65	-0.693147	-0.631062	111.348	231.306
66	-0.693147	-0.618872	111.731	231.735
67	-0.693147	-0.606775	112.099	232.156
68	-0.693147	-0.594766	112.453	232.568
69	-0.693147	-0.582841	112.793	232.972
70	-0.693147	-0.570999	113.119	233.368
71	-0.693147	-0.559237	113.431	233.756
72	-0.693147	-0.547551	113.731	234.135
73	-0.693147	-0.53594	114.018	234.507
74	-0.693147	-0.524401	114.293	234.87
75	-0.693147	-0.51293	114.556	235.226
76	-0.693147	-0.501527	114.808	235.573
77	-0.693147	-0.487364	115.046	235.911
78	-0.693147	-0.476105	115.272	236.241
79	-0.693147	-0.464904	115.488	236.563
80	-0.693147	-0.453763	115.694	236.878
81	-0.693147	-0.442676	115.89	237.185
82	-0.693147	-0.431644	116.077	237.484
83	-0.693147	-0.420664	116.253	237.776
84	-0.693147	-0.409735	116.421	238.06
85	-0.693147	-0.398855	116.58	238.336
86	-0.693147	-0.388022	116.731	238.605
87	-0.693147	-0.377233	116.873	238.866
88	-0.693147	-0.36649	117.008	239.12
89	-0.693147	-0.355788	117.134	239.367
90	-0.693147	-0.345126	117.253	239.606
91	-0.693147	-0.334503	117.365	239.838
92	-0.693147	-0.323919	117.47	240.063
93	-0.693147	-0.310738	117.567	240.278
94	-0.693147	-0.300232	117.657	240.486
95	-0.693147	-0.28976	117.741	240.687
96	-0.693147	-0.279319	117.819	240.881
97	-0.693147	-0.268908	117.891	241.067
98	-0.693147	-0.258527	117.958	241.246
99	-0.693147	-0.248174	118.02	241.418
100	-0.693147	-0.237847	118.076	241.583
101	-0.693147	-0.227545	118.128	241.741
102	-0.693147	-0.217267	118.175	241.891
103	-0.693147	-0.207012	118.218	242.035
104	-0.693147	-0.196779	118.257	242.171
105	-0.693147	-0.186567	118.292	242.301
106	-0.693147	-0.176374	118.323	242.423
107	-0.693147	-0.166199	118.35	242.538
108	-0.693147	-0.153505	118.374	242.644
109	-0.693147	-0.143367	118.394	242.744
110	-0.693147	-0.133244	118.412	242.836
111	-0.693147	-0.123135	118.427	242.922

112	-0.693147	-0.113039	118.44	243
113	-0.693147	-0.102953	118.451	243.071
114	-0.693147	-0.0928787	118.459	243.136
115	-0.693147	-0.0828129	118.466	243.193
116	-0.693147	-0.0727562	118.471	243.243
117	-0.693147	-0.0627062	118.475	243.287
118	-0.693147	-0.0526632	118.478	243.323
119	-0.693147	-0.0426257	118.48	243.353
120	-0.693147	-0.0325917	118.481	243.376
121	-0.693147	-0.0225612	118.482	243.391
122	-0.693147	-0.0125328	118.482	243.4
123	-0.693147	0	118.482	243.4
124	-0.693147	0.0125328	118.482	243.391
125	-0.693147	0.0225612	118.482	243.376
126	-0.693147	0.0325917	118.483	243.353
127	-0.693147	0.0426257	118.485	243.323
128	-0.693147	0.0526632	118.488	243.287
129	-0.693147	0.0627062	118.492	243.243
130	-0.693147	0.0727562	118.497	243.193
131	-0.693147	0.0828129	118.504	243.136
132	-0.693147	0.0928787	118.513	243.071
133	-0.693147	0.102953	118.523	243
134	-0.693147	0.113039	118.536	242.922
135	-0.693147	0.123135	118.551	242.836
136	-0.693147	0.133244	118.569	242.744
137	-0.693147	0.143367	118.59	242.644
138	-0.693147	0.153505	118.613	242.538
139	-0.693147	0.166199	118.641	242.423
140	-0.693147	0.176374	118.672	242.301
141	-0.693147	0.186567	118.707	242.171
142	-0.693147	0.196779	118.745	242.035
143	-0.693147	0.207012	118.788	241.891
144	-0.693147	0.217267	118.835	241.741
145	-0.693147	0.227545	118.887	241.583
146	-0.693147	0.237847	118.944	241.418
147	-0.693147	0.248174	119.005	241.246
148	-0.693147	0.258527	119.072	241.067
149	-0.693147	0.268908	119.145	240.881
150	-0.693147	0.279319	119.223	240.687
151	-0.693147	0.28976	119.306	240.486
152	-0.693147	0.300232	119.397	240.278
153	-0.693147	0.310738	119.493	240.063
154	-0.693147	0.323919	119.598	239.838
155	-0.693147	0.334503	119.71	239.606
156	-0.693147	0.345126	119.829	239.367
157	-0.693147	0.355788	119.956	239.12
158	-0.693147	0.36649	120.09	238.866
159	-0.693147	0.377233	120.232	238.605
160	-0.693147	0.388022	120.383	238.336
161	-0.693147	0.398855	120.542	238.06
162	-0.693147	0.409735	120.71	237.776
163	-0.693147	0.420664	120.887	237.484
164	-0.693147	0.431644	121.073	237.185
165	-0.693147	0.442676	121.269	236.878
166	-0.693147	0.453763	121.475	236.563
167	-0.693147	0.464904	121.691	236.241
168	-0.693147	0.476105	121.918	235.911
169	-0.693147	0.487364	122.155	235.573
170	-0.693147	0.501527	122.407	235.226
171	-0.693147	0.51293	122.67	234.87
172	-0.693147	0.524401	122.945	234.507
173	-0.693147	0.53594	123.232	234.135

174	-0.693147	0.547551	123.532	233.756
175	-0.693147	0.559237	123.845	233.368
176	-0.693147	0.570999	124.171	232.972
177	-0.693147	0.582841	124.51	232.568
178	-0.693147	0.594766	124.864	232.156
179	-0.693147	0.606775	125.232	231.735
180	-0.693147	0.618872	125.615	231.306
181	-0.693147	0.631062	126.014	230.869
182	-0.693147	0.643345	126.428	230.423
183	-0.693147	0.655726	126.858	229.969
184	-0.693147	0.668209	127.304	229.505
185	-0.693147	0.68396	127.772	229.031
186	-0.693147	0.696684	128.257	228.548
187	-0.693147	0.709522	128.761	228.057
188	-0.693147	0.722479	129.283	227.556
189	-0.693147	0.735557	129.824	227.046
190	-0.693147	0.748762	130.384	226.527
191	-0.693147	0.7621	130.965	225.999
192	-0.693147	0.775574	131.567	225.461
193	-0.693147	0.789191	132.189	224.914
194	-0.693147	0.802956	132.834	224.358
195	-0.693147	0.816874	133.501	223.791
196	-0.693147	0.830953	134.192	223.215
197	-0.693147	0.845198	134.906	222.629
198	-0.693147	0.859618	135.645	222.034
199	-0.693147	0.874218	136.409	221.428
200	-0.693147	0.892733	137.206	220.809
201	-0.693147	0.907769	138.03	220.18
202	-0.693147	0.923014	138.882	219.54
203	-0.693147	0.938476	139.763	218.889
204	-0.693147	0.954165	140.674	218.228
205	-0.693147	0.970094	141.615	217.556
206	-0.693147	0.986272	142.587	216.872
207	-0.693147	1.00271	143.593	216.177
208	-0.693147	1.01943	144.632	215.47
209	-0.693147	1.03643	145.706	214.752
210	-0.693147	1.05375	146.817	214.022
211	-0.693147	1.07138	147.965	213.279
212	-0.693147	1.08935	149.151	212.524
213	-0.693147	1.10768	150.378	211.756
214	-0.693147	1.12639	151.647	210.975
215	-0.693147	1.1455	152.959	210.181
216	-0.693147	1.17	154.328	209.37
217	-0.693147	1.19012	155.744	208.545
218	-0.693147	1.21073	157.21	207.706
219	-0.693147	1.23187	158.728	206.852
220	-0.693147	1.25357	160.299	205.983
221	-0.693147	1.27588	161.927	205.099
222	-0.693147	1.29884	163.614	204.199
223	-0.693147	1.32251	165.363	203.282
224	-0.693147	1.34694	167.177	202.348
225	-0.693147	1.3722	169.06	201.397
226	-0.693147	1.39838	171.016	200.428
227	-0.693147	1.42554	173.048	199.44
228	-0.693147	1.4538	175.161	198.432
229	-0.693147	1.48328	177.362	197.404
230	-0.693147	1.5141	179.654	196.355
231	-0.693147	1.55477	182.071	195.277
232	-0.693147	1.58927	184.597	194.175
233	-0.693147	1.62576	187.24	193.048
234	-0.693147	1.66456	190.011	191.895
235	-0.693147	1.70604	192.922	190.712

236	-0.693147	1.75069	195.986	189.499
237	-0.693147	1.79912	199.223	188.251
238	-0.693147	1.85218	202.654	186.968
239	-0.693147	1.91103	206.306	185.643
240	-0.693147	1.97737	210.216	184.272
241	-0.693147	2.05375	214.434	182.849
242	-0.693147	2.14441	219.032	181.362
243	-0.693147	2.25713	224.127	179.798
244	-0.693147	2.40892	229.93	178.128
245	-0.693147	2.65209	236.963	176.29

Data Set Standard Deviation = 0.983055
Numerator = 31078.1
Denominator = 55876.2
W Statistic = 0.556197 = 31078.1 / 55876.2

5% Critical value of 0.976 exceeds 0.556197
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.556197
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 = 97.9592%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 20
Maximum Background Concentration = 0
Confidence Level = 71.4%
False Positive Rate = 28.6%

Location	Date	Samples	Mean	Significant
LMW-3	7/6/2011	1	-2.99573	FALSE
LMW-8	7/6/2011	1	-2.20727	FALSE
LMW-10	7/6/2011	1	-2.99573	FALSE
LMW-14R	7/6/2011	1	-2.99573	FALSE
LMW-15R	7/6/2011	1	-2.99573	FALSE
LMW-16	7/6/2011	1	-2.99573	FALSE
LMW-9S	7/6/2011	1	-2.99573	FALSE
LMW-7	7/6/2011	1	-2.99573	FALSE
LMW-9	7/6/2011	1	-2.99573	FALSE
LMW-9D	7/6/2011	1	-2.99573	FALSE
LMW-6	7/6/2011	1	-2.99573	FALSE
LMW-3S	7/6/2011	1	-2.99573	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
MW-5	11/20/2008	1	-0.693147	FALSE

Concentrations (ppb)

Parameter: Toluene

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 233
Percent Non-Detects: 95.102%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	18 (90%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<0 J	ND<0 J
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<0 J	ND<0 J
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<0 J	ND<0 J
			6/11/2009	0.56 J	0.56 J
			11/16/2009	ND<0.33 U	ND<0.33 U
			6/30/2010	ND<0.33 U	ND<0.33 U
			11/17/2010	ND<0.33 U	ND<0.33 U
			7/6/2011	1.2	1.2

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-8	20	20 (100%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<0 J	ND<0 J
			6/11/2009	ND<0.33 U	ND<0.33 U
			11/16/2009	ND<0.33 U	ND<0.33 U
			6/30/2010	ND<0.33 U	ND<0.33 U
			11/17/2010	ND<0.33 U	ND<0.33 U
			7/6/2011	ND<0.33 U	ND<0.33 U

LMW-3	22	21 (95.4545%)	11/19/1996	ND<1	ND<1
			3/24/1997	ND<1	ND<1
			1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<0 J	ND<0 J
			6/11/2009	ND<0.33 U	ND<0.33 U
			11/16/2009	ND<0.33 U	ND<0.33 U
			6/30/2010	ND<0.33 U	ND<0.33 U
			11/17/2010	ND<0.33 U	ND<0.33 U
			7/6/2011	0.38 J	0.38 J
LMW-9S	12	12 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<0 J	ND<0 J
			6/11/2009	ND<0.33 U	ND<0.33 U
			11/16/2009	ND<0.33 U	ND<0.33 U
			11/16/2009	ND<0.33 U	ND<0.33 U
			11/16/2009	ND<0.33 U	ND<0.33 U
			6/30/2010	ND<0.33 U	ND<0.33 U
			11/17/2010	ND<0.33 U	ND<0.33 U
			7/6/2011	ND<0.33 U	ND<0.33 U
LMW-10	17	16 (94.1176%)	3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<0 J	ND<0 J
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<0 J	ND<0 J
			6/11/2009	ND<0.33 U	ND<0.33 U
			11/16/2009	ND<0.33 U	ND<0.33 U
			6/30/2010	ND<0.33 U	ND<0.33 U
			11/17/2010	ND<0.33 U	ND<0.33 U
			7/6/2011	0.38 J	0.38 J
LMW-14R	8	7 (87.5%)	6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.33 U	ND<0.33 U
			6/30/2010	ND<0.33 U	ND<0.33 U
			11/17/2010	ND<0.33 U	ND<0.33 U
			7/6/2011	0.61 J	0.61 J

LMW-15R	12	12 (100%)	11/18/2006	ND<1	ND<1
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
		11/20/2008	ND<0 J	ND<0 J	
		6/11/2009	ND<0.33 U	ND<0.33 U	
		6/30/2010	ND<0.33 U	ND<0.33 U	
		11/17/2010	ND<0.33 U	ND<0.33 U	
		7/6/2011	ND<0.33 U	ND<0.33 U	
LMW-16	10	10 (100%)	11/18/2006	ND<0 J	ND<0 J
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
		6/11/2009	ND<0.33 U	ND<0.33 U	
		11/16/2009	ND<0.33 U	ND<0.33 U	
		6/30/2010	ND<0.33 U	ND<0.33 U	
		11/17/2010	ND<0.33 U	ND<0.33 U	
		7/6/2011	ND<0.33 U	ND<0.33 U	
LMW-3S	10	9 (90%)	11/18/2006	ND<1	ND<1
		6/2/2007	1	1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<0 J	ND<0 J	
		6/11/2009	ND<0.33 U	ND<0.33 U	
		11/16/2009	ND<0.33 U	ND<0.33 U	
		6/30/2010	ND<0.33 U	ND<0.33 U	
		11/17/2010	ND<0.33 U	ND<0.33 U	
		7/6/2011	ND<0.33 U	ND<0.33 U	
LMW-7	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	1	1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		11/18/2006	ND<0 J	ND<0 J	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
		6/11/2009	0.5 J	0.5 J	
		11/17/2010	ND<0.33 U	ND<0.33 U	
		7/6/2011	1.3	1.3	
LMW-9	20	18 (90%)	1/16/1998	ND<1	ND<1
		3/16/1999	ND<1	ND<1	
		9/23/1999	ND<1	ND<1	
		3/14/2000	ND<1	ND<1	
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	

		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		11/18/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<0 J	ND<0 J	
		6/11/2009	ND<0.33 U		ND<0.33 U
		11/16/2009	0.41 J	0.41 J	
		6/30/2010	ND<0.33 U		ND<0.33 U
		11/17/2010	ND<0.33 U		ND<0.33 U
		7/6/2011	0.39 J	0.39 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<0 J	ND<0 J	
		6/11/2009	ND<0.33 U		ND<0.33 U
		11/16/2009	ND<0.33 U		ND<0.33 U
		6/30/2010	ND<0.33 U		ND<0.33 U
		11/17/2010	ND<0.33 U		ND<0.33 U
		7/6/2011	0.43 J	0.43 J	
LMW-6	20	20 (100%)	1/16/1998	ND<1	ND<1
		3/16/1999	ND<1	ND<1	
		9/23/1999	ND<1	ND<1	
		3/14/2000	ND<1	ND<1	
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<1	ND<1	
		6/19/2006	ND<1	ND<1	
		11/18/2006	ND<1	ND<1	
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<0 J	ND<0 J	
		6/11/2009	ND<0.33 U		ND<0.33 U
		11/16/2009	ND<0.33 U		ND<0.33 U
		6/30/2010	ND<0.33 U		ND<0.33 U
		11/17/2010	ND<0.33 U		ND<0.33 U
		7/6/2011	ND<0.33 U	ND<0.33 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
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
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

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Toluene

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 245

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	-1.62576	52.3662	0
14	0	-1.58927	54.892	0
15	0	-1.55477	57.3093	0
16	0.165	-1.5141	59.6018	-0.249827
17	0.165	-1.48328	61.802	-0.494569
18	0.165	-1.4538	63.9155	-0.734446
19	0.165	-1.42554	65.9477	-0.969661
20	0.165	-1.39838	67.9031	-1.20039
21	0.165	-1.3722	69.7861	-1.42681
22	0.165	-1.34694	71.6003	-1.64905
23	0.165	-1.32251	73.3494	-1.86727
24	0.165	-1.29884	75.0363	-2.08157
25	0.165	-1.27588	76.6642	-2.29209
26	0.165	-1.25357	78.2356	-2.49893
27	0.165	-1.23187	79.7531	-2.70219
28	0.165	-1.21073	81.219	-2.90196
29	0.165	-1.19012	82.6353	-3.09833
30	0.165	-1.17	84.0043	-3.29138
31	0.165	-1.1455	85.3164	-3.48039
32	0.165	-1.12639	86.5852	-3.66624
33	0.165	-1.10768	87.8121	-3.84901
34	0.165	-1.08935	88.9988	-4.02875
35	0.165	-1.07138	90.1467	-4.20553
36	0.165	-1.05375	91.2571	-4.3794
37	0.165	-1.03643	92.3312	-4.55041
38	0.165	-1.01943	93.3705	-4.71861
39	0.165	-1.00271	94.3759	-4.88406
40	0.165	-0.986272	95.3486	-5.0468
41	0.165	-0.970094	96.2897	-5.20686
42	0.165	-0.954165	97.2002	-5.3643
43	0.165	-0.938476	98.0809	-5.51915
44	0.165	-0.923014	98.9328	-5.67144
45	0.165	-0.907769	99.7569	-5.82123
46	0.165	-0.892733	100.554	-5.96853
47	0.165	-0.874218	101.318	-6.11277
48	0.165	-0.859618	102.057	-6.25461
49	0.165	-0.845198	102.771	-6.39407

50	0.165	-0.830953	103.462	-6.53117
51	0.165	-0.816874	104.129	-6.66596
52	0.165	-0.802956	104.774	-6.79845
53	0.165	-0.789191	105.397	-6.92866
54	0.165	-0.775574	105.998	-7.05663
55	0.165	-0.7621	106.579	-7.18238
56	0.165	-0.748762	107.14	-7.30593
57	0.165	-0.735557	107.681	-7.42729
58	0.165	-0.722479	108.203	-7.5465
59	0.165	-0.709522	108.706	-7.66357
60	0.165	-0.696684	109.192	-7.77853
61	0.165	-0.68396	109.659	-7.89138
62	0.165	-0.668209	110.106	-8.00163
63	0.165	-0.655726	110.536	-8.10983
64	0.165	-0.643345	110.95	-8.21598
65	0.165	-0.631062	111.348	-8.32011
66	0.165	-0.618872	111.731	-8.42222
67	0.165	-0.606775	112.099	-8.52234
68	0.165	-0.594766	112.453	-8.62047
69	0.38	-0.582841	112.793	-8.84195
70	0.38	-0.570999	113.119	-9.05893
71	0.39	-0.559237	113.431	-9.27704
72	0.41	-0.547551	113.731	-9.50153
73	0.43	-0.53594	114.018	-9.73199
74	0.5	-0.524401	114.293	-9.99419
75	0.5	-0.51293	114.556	-10.2507
76	0.5	-0.501527	114.808	-10.5014
77	0.5	-0.487364	115.046	-10.7451
78	0.5	-0.476105	115.272	-10.9831
79	0.5	-0.464904	115.488	-11.2156
80	0.5	-0.453763	115.694	-11.4425
81	0.5	-0.442676	115.89	-11.6638
82	0.5	-0.431644	116.077	-11.8796
83	0.5	-0.420664	116.253	-12.09
84	0.5	-0.409735	116.421	-12.2948
85	0.5	-0.398855	116.58	-12.4943
86	0.5	-0.388022	116.731	-12.6883
87	0.5	-0.377233	116.873	-12.8769
88	0.5	-0.36649	117.008	-13.0601
89	0.5	-0.355788	117.134	-13.238
90	0.5	-0.345126	117.253	-13.4106
91	0.5	-0.334503	117.365	-13.5779
92	0.5	-0.323919	117.47	-13.7398
93	0.5	-0.310738	117.567	-13.8952
94	0.5	-0.300232	117.657	-14.0453
95	0.5	-0.28976	117.741	-14.1902
96	0.5	-0.279319	117.819	-14.3298
97	0.5	-0.268908	117.891	-14.4643
98	0.5	-0.258527	117.958	-14.5936
99	0.5	-0.248174	118.02	-14.7176
100	0.5	-0.237847	118.076	-14.8366
101	0.5	-0.227545	118.128	-14.9503
102	0.5	-0.217267	118.175	-15.059
103	0.5	-0.207012	118.218	-15.1625
104	0.5	-0.196779	118.257	-15.2609
105	0.5	-0.186567	118.292	-15.3541
106	0.5	-0.176374	118.323	-15.4423
107	0.5	-0.166199	118.35	-15.5254
108	0.5	-0.153505	118.374	-15.6022
109	0.5	-0.143367	118.394	-15.6739
110	0.5	-0.133244	118.412	-15.7405
111	0.5	-0.123135	118.427	-15.8021

112	0.5	-0.113039	118.44	-15.8586
113	0.5	-0.102953	118.451	-15.9101
114	0.5	-0.0928787	118.459	-15.9565
115	0.5	-0.0828129	118.466	-15.9979
116	0.5	-0.0727562	118.471	-16.0343
117	0.5	-0.0627062	118.475	-16.0656
118	0.5	-0.0526632	118.478	-16.092
119	0.5	-0.0426257	118.48	-16.1133
120	0.5	-0.0325917	118.481	-16.1296
121	0.5	-0.0225612	118.482	-16.1409
122	0.5	-0.0125328	118.482	-16.1471
123	0.5	0	118.482	-16.1471
124	0.5	0.0125328	118.482	-16.1409
125	0.5	0.0225612	118.482	-16.1296
126	0.5	0.0325917	118.483	-16.1133
127	0.5	0.0426257	118.485	-16.092
128	0.5	0.0526632	118.488	-16.0656
129	0.5	0.0627062	118.492	-16.0343
130	0.5	0.0727562	118.497	-15.9979
131	0.5	0.0828129	118.504	-15.9565
132	0.5	0.0928787	118.513	-15.9101
133	0.5	0.102953	118.523	-15.8586
134	0.5	0.113039	118.536	-15.8021
135	0.5	0.123135	118.551	-15.7405
136	0.5	0.133244	118.569	-15.6739
137	0.5	0.143367	118.59	-15.6022
138	0.5	0.153505	118.613	-15.5254
139	0.5	0.166199	118.641	-15.4423
140	0.5	0.176374	118.672	-15.3541
141	0.5	0.186567	118.707	-15.2609
142	0.5	0.196779	118.745	-15.1625
143	0.5	0.207012	118.788	-15.059
144	0.5	0.217267	118.835	-14.9503
145	0.5	0.227545	118.887	-14.8366
146	0.5	0.237847	118.944	-14.7176
147	0.5	0.248174	119.005	-14.5936
148	0.5	0.258527	119.072	-14.4643
149	0.5	0.268908	119.145	-14.3298
150	0.5	0.279319	119.223	-14.1902
151	0.5	0.28976	119.306	-14.0453
152	0.5	0.300232	119.397	-13.8952
153	0.5	0.310738	119.493	-13.7398
154	0.5	0.323919	119.598	-13.5779
155	0.5	0.334503	119.71	-13.4106
156	0.5	0.345126	119.829	-13.238
157	0.5	0.355788	119.956	-13.0601
158	0.5	0.36649	120.09	-12.8769
159	0.5	0.377233	120.232	-12.6883
160	0.5	0.388022	120.383	-12.4943
161	0.5	0.398855	120.542	-12.2948
162	0.5	0.409735	120.71	-12.09
163	0.5	0.420664	120.887	-11.8796
164	0.5	0.431644	121.073	-11.6638
165	0.5	0.442676	121.269	-11.4425
166	0.5	0.453763	121.475	-11.2156
167	0.5	0.464904	121.691	-10.9831
168	0.5	0.476105	121.918	-10.7451
169	0.5	0.487364	122.155	-10.5014
170	0.5	0.501527	122.407	-10.2507
171	0.5	0.51293	122.67	-9.99419
172	0.5	0.524401	122.945	-9.73199
173	0.5	0.53594	123.232	-9.46402

174	0.5	0.547551		123.532	-9.19024
175	0.5	0.559237		123.845	-8.91062
176	0.5	0.570999		124.171	-8.62512
177	0.5	0.582841		124.51	-8.3337
178	0.5	0.594766		124.864	-8.03632
179	0.5	0.606775		125.232	-7.73293
180	0.5	0.618872		125.615	-7.42349
181	0.5	0.631062		126.014	-7.10796
182	0.5	0.643345		126.428	-6.78629
183	0.5	0.655726		126.858	-6.45843
184	0.5	0.668209		127.304	-6.12432
185	0.5	0.68396	127.772	-5.78234	
186	0.5	0.696684		128.257	-5.434
187	0.5	0.709522		128.761	-5.07924
188	0.5	0.722479		129.283	-4.718
189	0.5	0.735557		129.824	-4.35022
190	0.5	0.748762		130.384	-3.97584
191	0.5	0.7621	130.965	-3.59479	
192	0.5	0.775574		131.567	-3.207
193	0.5	0.789191		132.189	-2.81241
194	0.5	0.802956		132.834	-2.41093
195	0.5	0.816874		133.501	-2.00249
196	0.5	0.830953		134.192	-1.58702
197	0.5	0.845198		134.906	-1.16442
198	0.5	0.859618		135.645	-0.734609
199	0.5	0.874218		136.409	-0.2975
200	0.5	0.892733		137.206	0.148866
201	0.5	0.907769		138.03	0.602751
202	0.5	0.923014		138.882	1.06426
203	0.5	0.938476		139.763	1.5335
204	0.5	0.954165		140.674	2.01058
205	0.5	0.970094		141.615	2.49563
206	0.5	0.986272		142.587	2.98876
207	0.5	1.00271	143.593	3.49012	
208	0.5	1.01943	144.632	3.99983	
209	0.5	1.03643	145.706	4.51805	
210	0.5	1.05375	146.817	5.04492	
211	0.5	1.07138	147.965	5.58061	
212	0.5	1.08935	149.151	6.12528	
213	0.5	1.10768	150.378	6.67912	
214	0.5	1.12639	151.647	7.24232	
215	0.5	1.1455	152.959	7.81507	
216	0.5	1.17	154.328	8.40007	
217	0.5	1.19012	155.744	8.99513	
218	0.5	1.21073	157.21	9.6005	
219	0.5	1.23187	158.728	10.2164	
220	0.5	1.25357	160.299	10.8432	
221	0.5	1.27588	161.927	11.4811	
222	0.5	1.29884	163.614	12.1306	
223	0.5	1.32251	165.363	12.7918	
224	0.5	1.34694	167.177	13.4653	
225	0.5	1.3722	169.06	14.1514	
226	0.5	1.39838	171.016	14.8506	
227	0.5	1.42554	173.048	15.5634	
228	0.5	1.4538	175.161	16.2903	
229	0.5	1.48328	177.362	17.0319	
230	0.5	1.5141	179.654	17.7889	
231	0.5	1.55477	182.071	18.5663	
232	0.5	1.58927	184.597	19.361	
233	0.5	1.62576	187.24	20.1738	
234	0.5	1.66456	190.011	21.0061	
235	0.5	1.70604	192.922	21.8592	

236	0.5	1.75069	195.986	22.7345
237	0.5	1.79912	199.223	23.6341
238	0.5	1.85218	202.654	24.5601
239	0.5	1.91103	206.306	25.5157
240	0.56	1.97737	210.216	26.623
241	0.61	2.05375	214.434	27.8758
242	1	2.14441	219.032	30.0202
243	1	2.25713	224.127	32.2773
244	1.2	2.40892	229.93	35.168
245	1.3	2.65209	236.963	38.6157

Data Set Standard Deviation = 0.194393
Numerator = 1491.17
Denominator = 2184.91
W Statistic = 0.682487 = 1491.17 / 2184.91

5% Critical value of 0.976 exceeds 0.682487
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.682487
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Toluene

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 245

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-1.80181	-2.65209	7.03356	4.77856
2	-1.80181	-2.40892	12.8365	9.11898
3	-1.80181	-2.25713	17.9311	13.1859
4	-1.80181	-2.14441	22.5296	17.0497
5	-1.80181	-2.05375	26.7475	20.7502
6	-1.80181	-1.97737	30.6575	24.313
7	-1.80181	-1.91103	34.3095	27.7563
8	-1.80181	-1.85218	37.7401	31.0936
9	-1.80181	-1.79912	40.9769	34.3353
10	-1.80181	-1.75069	44.0418	37.4897
11	-1.80181	-1.70604	46.9524	40.5636
12	-1.80181	-1.66456	49.7231	43.5629
13	-1.80181	-1.62576	52.3662	46.4922
14	-1.80181	-1.58927	54.892	49.3557
15	-1.80181	-1.55477	57.3093	52.1571
16	-1.80181	-1.5141	59.6018	54.8853
17	-1.80181	-1.48328	61.802	57.5579
18	-1.80181	-1.4538	63.9155	60.1773
19	-1.80181	-1.42554	65.9477	62.7459
20	-1.80181	-1.39838	67.9031	65.2655
21	-1.80181	-1.3722	69.7861	67.738
22	-1.80181	-1.34694	71.6003	70.1649
23	-1.80181	-1.32251	73.3494	72.5478
24	-1.80181	-1.29884	75.0363	74.888
25	-1.80181	-1.27588	76.6642	77.1869
26	-1.80181	-1.25357	78.2356	79.4456
27	-1.80181	-1.23187	79.7531	81.6652
28	-1.80181	-1.21073	81.219	83.8467
29	-1.80181	-1.19012	82.6353	85.9911
30	-1.80181	-1.17	84.0043	88.0992
31	-1.80181	-1.1455	85.3164	90.1632
32	-1.80181	-1.12639	86.5852	92.1927
33	-1.80181	-1.10768	87.8121	94.1885
34	-1.80181	-1.08935	88.9988	96.1513
35	-1.80181	-1.07138	90.1467	98.0818
36	-1.80181	-1.05375	91.2571	99.9804
37	-1.80181	-1.03643	92.3312	101.848
38	-1.80181	-1.01943	93.3705	103.685
39	-1.80181	-1.00271	94.3759	105.491
40	-1.80181	-0.986272	95.3486	107.268
41	-1.80181	-0.970094	96.2897	109.016
42	-1.80181	-0.954165	97.2002	110.736
43	-1.80181	-0.938476	98.0809	112.427
44	-1.80181	-0.923014	98.9328	114.09
45	-1.80181	-0.907769	99.7569	115.725
46	-1.80181	-0.892733	100.554	117.334
47	-1.80181	-0.874218	101.318	118.909
48	-1.80181	-0.859618	102.057	120.458
49	-1.80181	-0.845198	102.771	121.981

50	-1.80181	-0.830953	103.462	123.478
51	-1.80181	-0.816874	104.129	124.95
52	-1.80181	-0.802956	104.774	126.397
53	-1.80181	-0.789191	105.397	127.819
54	-0.967584	-0.775574	105.998	128.569
55	-0.967584	-0.7621	106.579	129.306
56	-0.941609	-0.748762	107.14	130.011
57	-0.891598	-0.735557	107.681	130.667
58	-0.84397	-0.722479	108.203	131.277
59	-0.693147	-0.709522	108.706	131.769
60	-0.693147	-0.696684	109.192	132.252
61	-0.693147	-0.68396	109.659	132.726
62	-0.693147	-0.668209	110.106	133.189
63	-0.693147	-0.655726	110.536	133.643
64	-0.693147	-0.643345	110.95	134.089
65	-0.693147	-0.631062	111.348	134.527
66	-0.693147	-0.618872	111.731	134.956
67	-0.693147	-0.606775	112.099	135.376
68	-0.693147	-0.594766	112.453	135.789
69	-0.693147	-0.582841	112.793	136.193
70	-0.693147	-0.570999	113.119	136.588
71	-0.693147	-0.559237	113.431	136.976
72	-0.693147	-0.547551	113.731	137.356
73	-0.693147	-0.53594	114.018	137.727
74	-0.693147	-0.524401	114.293	138.091
75	-0.693147	-0.51293	114.556	138.446
76	-0.693147	-0.501527	114.808	138.794
77	-0.693147	-0.487364	115.046	139.132
78	-0.693147	-0.476105	115.272	139.462
79	-0.693147	-0.464904	115.488	139.784
80	-0.693147	-0.453763	115.694	140.098
81	-0.693147	-0.442676	115.89	140.405
82	-0.693147	-0.431644	116.077	140.704
83	-0.693147	-0.420664	116.253	140.996
84	-0.693147	-0.409735	116.421	141.28
85	-0.693147	-0.398855	116.58	141.556
86	-0.693147	-0.388022	116.731	141.825
87	-0.693147	-0.377233	116.873	142.087
88	-0.693147	-0.36649	117.008	142.341
89	-0.693147	-0.355788	117.134	142.587
90	-0.693147	-0.345126	117.253	142.827
91	-0.693147	-0.334503	117.365	143.059
92	-0.693147	-0.323919	117.47	143.283
93	-0.693147	-0.310738	117.567	143.498
94	-0.693147	-0.300232	117.657	143.707
95	-0.693147	-0.28976	117.741	143.907
96	-0.693147	-0.279319	117.819	144.101
97	-0.693147	-0.268908	117.891	144.287
98	-0.693147	-0.258527	117.958	144.467
99	-0.693147	-0.248174	118.02	144.639
100	-0.693147	-0.237847	118.076	144.804
101	-0.693147	-0.227545	118.128	144.961
102	-0.693147	-0.217267	118.175	145.112
103	-0.693147	-0.207012	118.218	145.255
104	-0.693147	-0.196779	118.257	145.392
105	-0.693147	-0.186567	118.292	145.521
106	-0.693147	-0.176374	118.323	145.643
107	-0.693147	-0.166199	118.35	145.758
108	-0.693147	-0.153505	118.374	145.865
109	-0.693147	-0.143367	118.394	145.964
110	-0.693147	-0.133244	118.412	146.057
111	-0.693147	-0.123135	118.427	146.142

112	-0.693147	-0.113039	118.44	146.22
113	-0.693147	-0.102953	118.451	146.292
114	-0.693147	-0.0928787	118.459	146.356
115	-0.693147	-0.0828129	118.466	146.413
116	-0.693147	-0.0727562	118.471	146.464
117	-0.693147	-0.0627062	118.475	146.507
118	-0.693147	-0.0526632	118.478	146.544
119	-0.693147	-0.0426257	118.48	146.573
120	-0.693147	-0.0325917	118.481	146.596
121	-0.693147	-0.0225612	118.482	146.612
122	-0.693147	-0.0125328	118.482	146.62
123	-0.693147	0	118.482	146.62
124	-0.693147	0.0125328	118.482	146.612
125	-0.693147	0.0225612	118.482	146.596
126	-0.693147	0.0325917	118.483	146.573
127	-0.693147	0.0426257	118.485	146.544
128	-0.693147	0.0526632	118.488	146.507
129	-0.693147	0.0627062	118.492	146.464
130	-0.693147	0.0727562	118.497	146.413
131	-0.693147	0.0828129	118.504	146.356
132	-0.693147	0.0928787	118.513	146.292
133	-0.693147	0.102953	118.523	146.22
134	-0.693147	0.113039	118.536	146.142
135	-0.693147	0.123135	118.551	146.057
136	-0.693147	0.133244	118.569	145.964
137	-0.693147	0.143367	118.59	145.865
138	-0.693147	0.153505	118.613	145.758
139	-0.693147	0.166199	118.641	145.643
140	-0.693147	0.176374	118.672	145.521
141	-0.693147	0.186567	118.707	145.392
142	-0.693147	0.196779	118.745	145.255
143	-0.693147	0.207012	118.788	145.112
144	-0.693147	0.217267	118.835	144.961
145	-0.693147	0.227545	118.887	144.804
146	-0.693147	0.237847	118.944	144.639
147	-0.693147	0.248174	119.005	144.467
148	-0.693147	0.258527	119.072	144.287
149	-0.693147	0.268908	119.145	144.101
150	-0.693147	0.279319	119.223	143.907
151	-0.693147	0.28976	119.306	143.707
152	-0.693147	0.300232	119.397	143.498
153	-0.693147	0.310738	119.493	143.283
154	-0.693147	0.323919	119.598	143.059
155	-0.693147	0.334503	119.71	142.827
156	-0.693147	0.345126	119.829	142.587
157	-0.693147	0.355788	119.956	142.341
158	-0.693147	0.36649	120.09	142.087
159	-0.693147	0.377233	120.232	141.825
160	-0.693147	0.388022	120.383	141.556
161	-0.693147	0.398855	120.542	141.28
162	-0.693147	0.409735	120.71	140.996
163	-0.693147	0.420664	120.887	140.704
164	-0.693147	0.431644	121.073	140.405
165	-0.693147	0.442676	121.269	140.098
166	-0.693147	0.453763	121.475	139.784
167	-0.693147	0.464904	121.691	139.462
168	-0.693147	0.476105	121.918	139.132
169	-0.693147	0.487364	122.155	138.794
170	-0.693147	0.501527	122.407	138.446
171	-0.693147	0.51293	122.67	138.091
172	-0.693147	0.524401	122.945	137.727
173	-0.693147	0.53594	123.232	137.356

174	-0.693147		0.547551	123.532	136.976
175	-0.693147		0.559237	123.845	136.588
176	-0.693147		0.570999	124.171	136.193
177	-0.693147		0.582841	124.51	135.789
178	-0.693147		0.594766	124.864	135.376
179	-0.693147		0.606775	125.232	134.956
180	-0.693147		0.618872	125.615	134.527
181	-0.693147		0.631062	126.014	134.089
182	-0.693147		0.643345	126.428	133.643
183	-0.693147		0.655726	126.858	133.189
184	-0.693147		0.668209	127.304	132.726
185	-0.693147		0.68396	127.772	132.252
186	-0.693147		0.696684	128.257	131.769
187	-0.693147		0.709522	128.761	131.277
188	-0.693147		0.722479	129.283	130.776
189	-0.693147		0.735557	129.824	130.266
190	-0.693147		0.748762	130.384	129.747
191	-0.693147		0.7621	130.965	129.219
192	-0.693147		0.775574	131.567	128.682
193	-0.693147		0.789191	132.189	128.135
194	-0.693147		0.802956	132.834	127.578
195	-0.693147		0.816874	133.501	127.012
196	-0.693147		0.830953	134.192	126.436
197	-0.693147		0.845198	134.906	125.85
198	-0.693147		0.859618	135.645	125.254
199	-0.693147		0.874218	136.409	124.648
200	-0.693147		0.892733	137.206	124.029
201	-0.693147		0.907769	138.03	123.4
202	-0.693147		0.923014	138.882	122.76
203	-0.693147		0.938476	139.763	122.11
204	-0.693147		0.954165	140.674	121.448
205	-0.693147		0.970094	141.615	120.776
206	-0.693147		0.986272	142.587	120.092
207	-0.693147		1.00271	143.593	119.397
208	-0.693147		1.01943	144.632	118.691
209	-0.693147		1.03643	145.706	117.972
210	-0.693147		1.05375	146.817	117.242
211	-0.693147		1.07138	147.965	116.499
212	-0.693147		1.08935	149.151	115.744
213	-0.693147		1.10768	150.378	114.976
214	-0.693147		1.12639	151.647	114.196
215	-0.693147		1.1455	152.959	113.402
216	-0.693147		1.17	154.328	112.591
217	-0.693147		1.19012	155.744	111.766
218	-0.693147		1.21073	157.21	110.927
219	-0.693147		1.23187	158.728	110.073
220	-0.693147		1.25357	160.299	109.204
221	-0.693147		1.27588	161.927	108.319
222	-0.693147		1.29884	163.614	107.419
223	-0.693147		1.32251	165.363	106.502
224	-0.693147		1.34694	167.177	105.569
225	-0.579818		1.3722	169.06	104.773
226	-0.494296		1.39838	171.016	104.082
227	0	1.42554	173.048	104.082	
228	0	1.4538	175.161	104.082	
229	0	1.48328	177.362	104.082	
230	0	1.5141	179.654	104.082	
231	0	1.55477	182.071	104.082	
232	0	1.58927	184.597	104.082	
233	0	1.62576	187.24	104.082	
234	0	1.66456	190.011	104.082	
235	0	1.70604	192.922	104.082	

236	0	1.75069	195.986	104.082	
237	0	1.79912	199.223	104.082	
238	0	1.85218	202.654	104.082	
239	0	1.91103	206.306	104.082	
240	0	1.97737	210.216	104.082	
241	0	2.05375	214.434	104.082	
242	0	2.14441	219.032	104.082	
243	0	2.25713	224.127	104.082	
244	0.182322		2.40892	229.93	104.521
245	0.262364		2.65209	236.963	105.217

Data Set Standard Deviation = 0.522797
Numerator = 11070.6
Denominator = 15802.9
W Statistic = 0.700544 = 11070.6 / 15802.9

5% Critical value of 0.976 exceeds 0.700544
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.700544
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Toluene

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

Total Percent Non-Detects = 95.102%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 20
Maximum Background Concentration = 0.182322
Confidence Level = 71.4%
False Positive Rate = 28.6%

Location	Date	Samples	Mean	Significant
LMW-8	7/6/2011	1	-1.80181	FALSE
LMW-3	7/6/2011	1	-0.967584	FALSE
LMW-9S	7/6/2011	1	-1.80181	FALSE
LMW-10	7/6/2011	1	-0.967584	FALSE
LMW-14R	7/6/2011	1	-0.494296	FALSE
LMW-15R	7/6/2011	1	-1.80181	FALSE
LMW-16	7/6/2011	1	-1.80181	FALSE
LMW-3S	7/6/2011	1	-1.80181	FALSE
LMW-7	7/6/2011	1	0.262364	TRUE
LMW-9	7/6/2011	1	-0.941609	FALSE
LMW-9D	7/6/2011	1	-0.84397	FALSE
LMW-6	7/6/2011	1	-1.80181	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
MW-5	11/20/2008	1	-0.693147	FALSE

Mann-Kendall Trend Analysis

Parameter: Toluene

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	
0	ND<-0.693147	0.693147	1	0	
ND<-0.693147	ND<-0.693147	0	1	0	
ND<-0.693147	ND<-0.693147	0	1	0	
ND<0 J	ND<-0.693147	0.693147	2	0	
ND<-0.693147	ND<-0.693147	0	2	0	
ND<-0.693147	ND<-0.693147	0	2	0	
ND<-0.693147	ND<-0.693147	0	2	0	
ND<-0.693147	ND<-0.693147	0	2	0	
-0.693147 J	ND<-0.693147	0	2	0	
ND<-1.80181 U	ND<-0.693147	-1.108662		1	
0.262364	ND<-0.693147	0.955511		3	1
ND<-0.693147	ND<-0.693147	0	3	1	
ND<-0.693147	ND<-0.693147	0	3	1	
ND<-0.693147	ND<-0.693147	0	3	1	
ND<-0.693147	ND<-0.693147	0	3	1	
ND<-0.693147	ND<-0.693147	0	3	1	
0	ND<-0.693147	0.693147	4	1	
ND<-0.693147	ND<-0.693147	0	4	1	
ND<-0.693147	ND<-0.693147	0	4	1	
ND<0 J	ND<-0.693147	0.693147	5	1	
ND<-0.693147	ND<-0.693147	0	5	1	
ND<-0.693147	ND<-0.693147	0	5	1	
ND<-0.693147	ND<-0.693147	0	5	1	
ND<-0.693147	ND<-0.693147	0	5	1	
-0.693147 J	ND<-0.693147	0	5	1	
ND<-1.80181 U	ND<-0.693147	-1.108665		2	
0.262364	ND<-0.693147	0.955511		6	2
ND<-0.693147	ND<-0.693147	0	6	2	
ND<-0.693147	ND<-0.693147	0	6	2	
ND<-0.693147	ND<-0.693147	0	6	2	
ND<-0.693147	ND<-0.693147	0	6	2	
0	ND<-0.693147	0.693147	7	2	
ND<-0.693147	ND<-0.693147	0	7	2	
ND<-0.693147	ND<-0.693147	0	7	2	
ND<0 J	ND<-0.693147	0.693147	8	2	
ND<-0.693147	ND<-0.693147	0	8	2	
ND<-0.693147	ND<-0.693147	0	8	2	
ND<-0.693147	ND<-0.693147	0	8	2	
ND<-0.693147	ND<-0.693147	0	8	2	
-0.693147 J	ND<-0.693147	0	8	2	

ND<-1.80181 U ND<-0.693147 -1.108668 3
0.262364 ND<-0.693147 0.955511 9 3

ND<-0.693147 ND<-0.693147 0 9 3
ND<-0.693147 ND<-0.693147 0 9 3
ND<-0.693147 ND<-0.693147 0 9 3
0 ND<-0.693147 0.693147 10 3
ND<-0.693147 ND<-0.693147 0 10 3
ND<-0.693147 ND<-0.693147 0 10 3
ND<0 J ND<-0.693147 0.693147 11 3
ND<-0.693147 ND<-0.693147 0 11 3
ND<-0.693147 ND<-0.693147 0 11 3
ND<-0.693147 ND<-0.693147 0 11 3
ND<-0.693147 ND<-0.693147 0 11 3
-0.693147 J ND<-0.693147 0 11 3
ND<-1.80181 U ND<-0.693147 -1.108661 4
0.262364 ND<-0.693147 0.955511 12 4

ND<-0.693147 ND<-0.693147 0 12 4
ND<-0.693147 ND<-0.693147 0 12 4
0 ND<-0.693147 0.693147 13 4
ND<-0.693147 ND<-0.693147 0 13 4
ND<-0.693147 ND<-0.693147 0 13 4
ND<0 J ND<-0.693147 0.693147 14 4
ND<-0.693147 ND<-0.693147 0 14 4
ND<-0.693147 ND<-0.693147 0 14 4
ND<-0.693147 ND<-0.693147 0 14 4
ND<-0.693147 ND<-0.693147 0 14 4
-0.693147 J ND<-0.693147 0 14 4
ND<-1.80181 U ND<-0.693147 -1.108661 4 5
0.262364 ND<-0.693147 0.955511 15 5

ND<-0.693147 ND<-0.693147 0 15 5
0 ND<-0.693147 0.693147 16 5
ND<-0.693147 ND<-0.693147 0 16 5
ND<-0.693147 ND<-0.693147 0 16 5
ND<0 J ND<-0.693147 0.693147 17 5
ND<-0.693147 ND<-0.693147 0 17 5
ND<-0.693147 ND<-0.693147 0 17 5
ND<-0.693147 ND<-0.693147 0 17 5
ND<-0.693147 ND<-0.693147 0 17 5
-0.693147 J ND<-0.693147 0 17 5
ND<-1.80181 U ND<-0.693147 -1.108661 7 6
0.262364 ND<-0.693147 0.955511 18 6

0 ND<-0.693147 0.693147 19 6
ND<-0.693147 ND<-0.693147 0 19 6
ND<-0.693147 ND<-0.693147 0 19 6
ND<0 J ND<-0.693147 0.693147 20 6
ND<-0.693147 ND<-0.693147 0 20 6
ND<-0.693147 ND<-0.693147 0 20 6
ND<-0.693147 ND<-0.693147 0 20 6
ND<-0.693147 ND<-0.693147 0 20 6
-0.693147 J ND<-0.693147 0 20 6
ND<-1.80181 U ND<-0.693147 -1.108662 0 7
0.262364 ND<-0.693147 0.955511 21 7

ND<-0.693147 0 -0.693147 21 8
ND<-0.693147 0 -0.693147 21 9
ND<0 J 0 0 21 9
ND<-0.693147 0 -0.693147 21 10
ND<-0.693147 0 -0.693147 21 11

ND<-0.693147	0	-0.693147	21	12	
ND<-0.693147	0	-0.693147	21	13	
-0.693147 J	0	-0.693147	21	14	
ND<-1.80181 U	0	-1.8018121	15		
0.262364	0	0.262364	22	15	
ND<-0.693147	ND<-0.693147	0	22	15	
ND<0 J	ND<-0.693147	0.693147	23	15	
ND<-0.693147	ND<-0.693147	0	23	15	
ND<-0.693147	ND<-0.693147	0	23	15	
ND<-0.693147	ND<-0.693147	0	23	15	
ND<-0.693147	ND<-0.693147	0	23	15	
-0.693147 J	ND<-0.693147	0	23	15	
ND<-1.80181 U	ND<-0.693147	-1.1086	23	16	
0.262364	ND<-0.693147	0.955511	24	16	
ND<0 J	ND<-0.693147	0.693147	25	16	
ND<-0.693147	ND<-0.693147	0	25	16	
ND<-0.693147	ND<-0.693147	0	25	16	
ND<-0.693147	ND<-0.693147	0	25	16	
ND<-0.693147	ND<-0.693147	0	25	16	
-0.693147 J	ND<-0.693147	0	25	16	
ND<-1.80181 U	ND<-0.693147	-1.1086	25	17	
0.262364	ND<-0.693147	0.955511	26	17	
ND<-0.693147	ND<0 J	-0.693147	26	18	
ND<-0.693147	ND<0 J	-0.693147	26	19	
ND<-0.693147	ND<0 J	-0.693147	26	20	
ND<-0.693147	ND<0 J	-0.693147	26	21	
-0.693147 J	ND<0 J	-0.693147	26	22	
ND<-1.80181 U	ND<0 J	-1.8018126	23		
0.262364	ND<0 J	0.262364	27	23	
ND<-0.693147	ND<-0.693147	0	27	23	
ND<-0.693147	ND<-0.693147	0	27	23	
ND<-0.693147	ND<-0.693147	0	27	23	
-0.693147 J	ND<-0.693147	0	27	23	
ND<-1.80181 U	ND<-0.693147	-1.1086	27	24	
0.262364	ND<-0.693147	0.955511	28	24	
ND<-0.693147	ND<-0.693147	0	28	24	
ND<-0.693147	ND<-0.693147	0	28	24	
-0.693147 J	ND<-0.693147	0	28	24	
ND<-1.80181 U	ND<-0.693147	-1.1086	28	25	
0.262364	ND<-0.693147	0.955511	29	25	
ND<-0.693147	ND<-0.693147	0	29	25	
-0.693147 J	ND<-0.693147	0	29	25	
ND<-1.80181 U	ND<-0.693147	-1.1086	29	26	
0.262364	ND<-0.693147	0.955511	30	26	
-0.693147 J	ND<-0.693147	0	30	26	
ND<-1.80181 U	ND<-0.693147	-1.1086	30	27	
0.262364	ND<-0.693147	0.955511	31	27	
ND<-1.80181 U	-0.693147 J	-1.1086	31	28	
0.262364	-0.693147 J	0.955511	32	28	
0.262364	ND<-1.80181 U	2.06417	33	28	

S Statistic = 33 - 28 = 5

Tied Group	Value	Members
1	-0.693147	14
2	0	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
11/17/2010	1
7/6/2011	1

There are 0 time periods with multiple data

A = 6024
B = 0
C = 2184
D = 0
E = 184
F = 0
a = 12546
b = 44064
c = 612
Group Variance = 362.333
Z-Score = 0.210139
Comparison Level at 1.0 - (0.05 / 2) = 97.5% confidence level = 1.97737 (two-tailed)
|0.210139| <= 1.97737 indicating no evidence of a trend

Concentrations (ppb)

Parameter: Trichloroethylene

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 234
Percent Non-Detects: 95.5102%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	20 (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
			7/6/2011	ND<0.13 U	ND<0.13 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-16	10	10 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.13 U	ND<0.13 U
			11/16/2009	ND<0.13 U	ND<0.13 U
			6/30/2010	ND<0.13 U	ND<0.13 U
			11/17/2010	ND<0.13 U	ND<0.13 U
			7/6/2011	ND<0.13 U	ND<0.13 U
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<0.13 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
			7/6/2011	0.13 J	0.13 J

LMW-10	17	12 (70.5882%)	3/14/2000	ND<1	ND<1
			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
			7/6/2011	1.4	1.4
LMW-15R	12	12 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			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
			7/6/2011	ND<0.13 U	ND<0.13 U
LMW-3	22	22 (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
			7/6/2011	ND<0.13 U	ND<0.13 U
LMW-3S	10	10 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.13 U	ND<0.13 U
			11/16/2009	ND<0.13 U	ND<0.13 U

			6/30/2010	ND<0.13 U	ND<0.13 U
			11/17/2010	ND<0.13 U	ND<0.13 U
			7/6/2011	ND<0.13 U	ND<0.13 U
LMW-6	20	20 (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
			7/6/2011	ND<0.13 U	ND<0.13 U
LMW-7	18	18 (100%)	1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.13 U	ND<0.13 U
			11/17/2010	ND<0.13 U	ND<0.13 U
			7/6/2011	ND<0.13 U	ND<0.13 U
LMW-8	20	16 (80%)	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	
			7/6/2011	ND<0.13 U	ND<0.13 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<0.13 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	
			7/6/2011	0.16 J	0.16 J	
LMW-14R		8	8 (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	
			7/6/2011	ND<0.13 U	ND<0.13 U	
LMW-9S	12	12 (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	
			7/6/2011	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-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: Trichloroethylene

All Locations

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL
Total Number of Measurements = 245

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	0.065	-1.79912	40.9769	-0.116943
10	0.065	-1.75069	44.0418	-0.230737
11	0.065	-1.70604	46.9524	-0.34163
12	0.065	-1.66456	49.7231	-0.449827
13	0.065	-1.62576	52.3662	-0.555501
14	0.065	-1.58927	54.892	-0.658804
15	0.065	-1.55477	57.3093	-0.759864
16	0.065	-1.5141	59.6018	-0.858281
17	0.065	-1.48328	61.802	-0.954694
18	0.065	-1.4538	63.9155	-1.04919
19	0.065	-1.42554	65.9477	-1.14185
20	0.065	-1.39838	67.9031	-1.23275
21	0.065	-1.3722	69.7861	-1.32194
22	0.065	-1.34694	71.6003	-1.40949
23	0.065	-1.32251	73.3494	-1.49545
24	0.065	-1.29884	75.0363	-1.57988
25	0.065	-1.27588	76.6642	-1.66281
26	0.065	-1.25357	78.2356	-1.74429
27	0.065	-1.23187	79.7531	-1.82436
28	0.065	-1.21073	81.219	-1.90306
29	0.065	-1.19012	82.6353	-1.98042
30	0.065	-1.17	84.0043	-2.05647
31	0.065	-1.1455	85.3164	-2.13093
32	0.065	-1.12639	86.5852	-2.20414
33	0.065	-1.10768	87.8121	-2.27614
34	0.065	-1.08935	88.9988	-2.34695
35	0.065	-1.07138	90.1467	-2.41659
36	0.065	-1.05375	91.2571	-2.48508
37	0.065	-1.03643	92.3312	-2.55245
38	0.065	-1.01943	93.3705	-2.61871
39	0.065	-1.00271	94.3759	-2.68389
40	0.065	-0.986272	95.3486	-2.748
41	0.065	-0.970094	96.2897	-2.81105
42	0.065	-0.954165	97.2002	-2.87307
43	0.065	-0.938476	98.0809	-2.93407
44	0.065	-0.923014	98.9328	-2.99407
45	0.065	-0.907769	99.7569	-3.05307
46	0.065	-0.892733	100.554	-3.1111
47	0.065	-0.874218	101.318	-3.16793
48	0.065	-0.859618	102.057	-3.2238
49	0.065	-0.845198	102.771	-3.27874

50	0.065	-0.830953	103.462	-3.33275
51	0.065	-0.816874	104.129	-3.38585
52	0.065	-0.802956	104.774	-3.43804
53	0.065	-0.789191	105.397	-3.48934
54	0.065	-0.775574	105.998	-3.53975
55	0.065	-0.7621	106.579	-3.58929
56	0.065	-0.748762	107.14	-3.63796
57	0.065	-0.735557	107.681	-3.68577
58	0.065	-0.722479	108.203	-3.73273
59	0.065	-0.709522	108.706	-3.77885
60	0.065	-0.696684	109.192	-3.82413
61	0.13	-0.68396	109.659	-3.91305
62	0.14	-0.668209	110.106	-4.0066
63	0.16	-0.655726	110.536	-4.11151
64	0.19	-0.643345	110.95	-4.23375
65	0.29	-0.631062	111.348	-4.41676
66	0.41	-0.618872	111.731	-4.67049
67	0.5	-0.606775	112.099	-4.97388
68	0.5	-0.594766	112.453	-5.27126
69	0.5	-0.582841	112.793	-5.56268
70	0.5	-0.570999	113.119	-5.84818
71	0.5	-0.559237	113.431	-6.1278
72	0.5	-0.547551	113.731	-6.40158
73	0.5	-0.53594	114.018	-6.66955
74	0.5	-0.524401	114.293	-6.93175
75	0.5	-0.51293	114.556	-7.18821
76	0.5	-0.501527	114.808	-7.43898
77	0.5	-0.487364	115.046	-7.68266
78	0.5	-0.476105	115.272	-7.92071
79	0.5	-0.464904	115.488	-8.15316
80	0.5	-0.453763	115.694	-8.38004
81	0.5	-0.442676	115.89	-8.60138
82	0.5	-0.431644	116.077	-8.8172
83	0.5	-0.420664	116.253	-9.02754
84	0.5	-0.409735	116.421	-9.2324
85	0.5	-0.398855	116.58	-9.43183
86	0.5	-0.388022	116.731	-9.62584
87	0.5	-0.377233	116.873	-9.81446
88	0.5	-0.36649	117.008	-9.9977
89	0.5	-0.355788	117.134	-10.1756
90	0.5	-0.345126	117.253	-10.3482
91	0.5	-0.334503	117.365	-10.5154
92	0.5	-0.323919	117.47	-10.6774
93	0.5	-0.310738	117.567	-10.8327
94	0.5	-0.300232	117.657	-10.9829
95	0.5	-0.28976	117.741	-11.1277
96	0.5	-0.279319	117.819	-11.2674
97	0.5	-0.268908	117.891	-11.4019
98	0.5	-0.258527	117.958	-11.5311
99	0.5	-0.248174	118.02	-11.6552
100	0.5	-0.237847	118.076	-11.7741
101	0.5	-0.227545	118.128	-11.8879
102	0.5	-0.217267	118.175	-11.9965
103	0.5	-0.207012	118.218	-12.1
104	0.5	-0.196779	118.257	-12.1984
105	0.5	-0.186567	118.292	-12.2917
106	0.5	-0.176374	118.323	-12.3799
107	0.5	-0.166199	118.35	-12.463
108	0.5	-0.153505	118.374	-12.5397
109	0.5	-0.143367	118.394	-12.6114
110	0.5	-0.133244	118.412	-12.6781
111	0.5	-0.123135	118.427	-12.7396

112	0.5	-0.113039	118.44	-12.7961
113	0.5	-0.102953	118.451	-12.8476
114	0.5	-0.0928787	118.459	-12.8941
115	0.5	-0.0828129	118.466	-12.9355
116	0.5	-0.0727562	118.471	-12.9718
117	0.5	-0.0627062	118.475	-13.0032
118	0.5	-0.0526632	118.478	-13.0295
119	0.5	-0.0426257	118.48	-13.0508
120	0.5	-0.0325917	118.481	-13.0671
121	0.5	-0.0225612	118.482	-13.0784
122	0.5	-0.0125328	118.482	-13.0847
123	0.5	0	118.482	-13.0847
124	0.5	0.0125328	118.482	-13.0784
125	0.5	0.0225612	118.482	-13.0671
126	0.5	0.0325917	118.483	-13.0508
127	0.5	0.0426257	118.485	-13.0295
128	0.5	0.0526632	118.488	-13.0032
129	0.5	0.0627062	118.492	-12.9718
130	0.5	0.0727562	118.497	-12.9355
131	0.5	0.0828129	118.504	-12.8941
132	0.5	0.0928787	118.513	-12.8476
133	0.5	0.102953	118.523	-12.7961
134	0.5	0.113039	118.536	-12.7396
135	0.5	0.123135	118.551	-12.6781
136	0.5	0.133244	118.569	-12.6114
137	0.5	0.143367	118.59	-12.5397
138	0.5	0.153505	118.613	-12.463
139	0.5	0.166199	118.641	-12.3799
140	0.5	0.176374	118.672	-12.2917
141	0.5	0.186567	118.707	-12.1984
142	0.5	0.196779	118.745	-12.1
143	0.5	0.207012	118.788	-11.9965
144	0.5	0.217267	118.835	-11.8879
145	0.5	0.227545	118.887	-11.7741
146	0.5	0.237847	118.944	-11.6552
147	0.5	0.248174	119.005	-11.5311
148	0.5	0.258527	119.072	-11.4019
149	0.5	0.268908	119.145	-11.2674
150	0.5	0.279319	119.223	-11.1277
151	0.5	0.28976	119.306	-10.9829
152	0.5	0.300232	119.397	-10.8327
153	0.5	0.310738	119.493	-10.6774
154	0.5	0.323919	119.598	-10.5154
155	0.5	0.334503	119.71	-10.3482
156	0.5	0.345126	119.829	-10.1756
157	0.5	0.355788	119.956	-9.9977
158	0.5	0.36649	120.09	-9.81446
159	0.5	0.377233	120.232	-9.62584
160	0.5	0.388022	120.383	-9.43183
161	0.5	0.398855	120.542	-9.2324
162	0.5	0.409735	120.71	-9.02754
163	0.5	0.420664	120.887	-8.8172
164	0.5	0.431644	121.073	-8.60138
165	0.5	0.442676	121.269	-8.38004
166	0.5	0.453763	121.475	-8.15316
167	0.5	0.464904	121.691	-7.92071
168	0.5	0.476105	121.918	-7.68266
169	0.5	0.487364	122.155	-7.43898
170	0.5	0.501527	122.407	-7.18821
171	0.5	0.51293	122.67	-6.93175
172	0.5	0.524401	122.945	-6.66955
173	0.5	0.53594	123.232	-6.40158

174	0.5	0.547551	123.532	-6.1278
175	0.5	0.559237	123.845	-5.84818
176	0.5	0.570999	124.171	-5.56268
177	0.5	0.582841	124.51	-5.27126
178	0.5	0.594766	124.864	-4.97388
179	0.5	0.606775	125.232	-4.67049
180	0.5	0.618872	125.615	-4.36106
181	0.5	0.631062	126.014	-4.04553
182	0.5	0.643345	126.428	-3.72385
183	0.5	0.655726	126.858	-3.39599
184	0.5	0.668209	127.304	-3.06189
185	0.5	0.68396	127.772	-2.71991
186	0.5	0.696684	128.257	-2.37156
187	0.5	0.709522	128.761	-2.0168
188	0.5	0.722479	129.283	-1.65556
189	0.5	0.735557	129.824	-1.28778
190	0.5	0.748762	130.384	-0.913403
191	0.5	0.7621	130.965	-0.532353
192	0.5	0.775574	131.567	-0.144567
193	0.5	0.789191	132.189	0.250029
194	0.5	0.802956	132.834	0.651507
195	0.5	0.816874	133.501	1.05994
196	0.5	0.830953	134.192	1.47542
197	0.5	0.845198	134.906	1.89802
198	0.5	0.859618	135.645	2.32783
199	0.5	0.874218	136.409	2.76494
200	0.5	0.892733	137.206	3.2113
201	0.5	0.907769	138.03	3.66519
202	0.5	0.923014	138.882	4.1267
203	0.5	0.938476	139.763	4.59593
204	0.5	0.954165	140.674	5.07302
205	0.5	0.970094	141.615	5.55806
206	0.5	0.986272	142.587	6.0512
207	0.5	1.00271	143.593	6.55255
208	0.5	1.01943	144.632	7.06227
209	0.5	1.03643	145.706	7.58048
210	0.5	1.05375	146.817	8.10736
211	0.5	1.07138	147.965	8.64305
212	0.5	1.08935	149.151	9.18772
213	0.5	1.10768	150.378	9.74156
214	0.5	1.12639	151.647	10.3048
215	0.5	1.1455	152.959	10.8775
216	0.5	1.17	154.328	11.4625
217	0.5	1.19012	155.744	12.0576
218	0.5	1.21073	157.21	12.6629
219	0.5	1.23187	158.728	13.2789
220	0.5	1.25357	160.299	13.9056
221	0.5	1.27588	161.927	14.5436
222	0.5	1.29884	163.614	15.193
223	0.5	1.32251	165.363	15.8543
224	0.5	1.34694	167.177	16.5277
225	0.5	1.3722	169.06	17.2138
226	0.5	1.39838	171.016	17.913
227	0.5	1.42554	173.048	18.6258
228	0.5	1.4538	175.161	19.3527
229	0.5	1.48328	177.362	20.0943
230	0.5	1.5141	179.654	20.8514
231	0.5	1.55477	182.071	21.6288
232	0.5	1.58927	184.597	22.4234
233	0.5	1.62576	187.24	23.2363
234	0.5	1.66456	190.011	24.0686
235	0.5	1.70604	192.922	24.9216

236	0.5	1.75069	195.986	25.7969
237	0.5	1.79912	199.223	26.6965
238	0.5	1.85218	202.654	27.6226
239	0.5	1.91103	206.306	28.5781
240	0.5	1.97737	210.216	29.5668
241	0.88	2.05375	214.434	31.3741
242	0.97	2.14441	219.032	33.4542
243	1.1	2.25713	224.127	35.937
244	1.4	2.40892	229.93	39.3095
245	1.7	2.65209	236.963	43.818

Data Set Standard Deviation = 0.229443
Numerator = 1920.02
Denominator = 3043.83
W Statistic = 0.630791 = 1920.02 / 3043.83

5% Critical value of 0.976 exceeds 0.630791
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.630791
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 = 245

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	-2.14441	22.5296	25.8646
5	-2.73337	-2.05375	26.7475	31.4783
6	-2.73337	-1.97737	30.6575	36.8831
7	-2.73337	-1.91103	34.3095	42.1067
8	-2.73337	-1.85218	37.7401	47.1694
9	-2.73337	-1.79912	40.9769	52.087
10	-2.73337	-1.75069	44.0418	56.8723
11	-2.73337	-1.70604	46.9524	61.5355
12	-2.73337	-1.66456	49.7231	66.0854
13	-2.73337	-1.62576	52.3662	70.5292
14	-2.73337	-1.58927	54.892	74.8733
15	-2.73337	-1.55477	57.3093	79.123
16	-2.73337	-1.5141	59.6018	83.2616
17	-2.73337	-1.48328	61.802	87.316
18	-2.73337	-1.4538	63.9155	91.2898
19	-2.73337	-1.42554	65.9477	95.1863
20	-2.73337	-1.39838	67.9031	99.0086
21	-2.73337	-1.3722	69.7861	102.759
22	-2.73337	-1.34694	71.6003	106.441
23	-2.73337	-1.32251	73.3494	110.056
24	-2.73337	-1.29884	75.0363	113.606
25	-2.73337	-1.27588	76.6642	117.094
26	-2.73337	-1.25357	78.2356	120.52
27	-2.73337	-1.23187	79.7531	123.887
28	-2.73337	-1.21073	81.219	127.196
29	-2.73337	-1.19012	82.6353	130.45
30	-2.73337	-1.17	84.0043	133.648
31	-2.73337	-1.1455	85.3164	136.779
32	-2.73337	-1.12639	86.5852	139.857
33	-2.73337	-1.10768	87.8121	142.885
34	-2.73337	-1.08935	88.9988	145.863
35	-2.73337	-1.07138	90.1467	148.791
36	-2.73337	-1.05375	91.2571	151.672
37	-2.73337	-1.03643	92.3312	154.504
38	-2.73337	-1.01943	93.3705	157.291
39	-2.73337	-1.00271	94.3759	160.032
40	-2.73337	-0.986272	95.3486	162.728
41	-2.73337	-0.970094	96.2897	165.379
42	-2.73337	-0.954165	97.2002	167.987
43	-2.73337	-0.938476	98.0809	170.552
44	-2.73337	-0.923014	98.9328	173.075
45	-2.73337	-0.907769	99.7569	175.557
46	-2.73337	-0.892733	100.554	177.997
47	-2.73337	-0.874218	101.318	180.386
48	-2.73337	-0.859618	102.057	182.736
49	-2.73337	-0.845198	102.771	185.046

50	-2.73337	-0.830953	103.462	187.318
51	-2.73337	-0.816874	104.129	189.55
52	-2.73337	-0.802956	104.774	191.745
53	-2.04022	-0.789191	105.397	193.355
54	-1.96611	-0.775574	105.998	194.88
55	-1.83258	-0.7621	106.579	196.277
56	-1.66073	-0.748762	107.14	197.52
57	-1.23787	-0.735557	107.681	198.431
58	-0.891598	-0.722479	108.203	199.075
59	-0.693147	-0.709522	108.706	199.567
60	-0.693147	-0.696684	109.192	200.05
61	-0.693147	-0.68396	109.659	200.524
62	-0.693147	-0.668209	110.106	200.987
63	-0.693147	-0.655726	110.536	201.441
64	-0.693147	-0.643345	110.95	201.887
65	-0.693147	-0.631062	111.348	202.325
66	-0.693147	-0.618872	111.731	202.754
67	-0.693147	-0.606775	112.099	203.174
68	-0.693147	-0.594766	112.453	203.587
69	-0.693147	-0.582841	112.793	203.991
70	-0.693147	-0.570999	113.119	204.386
71	-0.693147	-0.559237	113.431	204.774
72	-0.693147	-0.547551	113.731	205.154
73	-0.693147	-0.53594	114.018	205.525
74	-0.693147	-0.524401	114.293	205.889
75	-0.693147	-0.51293	114.556	206.244
76	-0.693147	-0.501527	114.808	206.592
77	-0.693147	-0.487364	115.046	206.93
78	-0.693147	-0.476105	115.272	207.26
79	-0.693147	-0.464904	115.488	207.582
80	-0.693147	-0.453763	115.694	207.896
81	-0.693147	-0.442676	115.89	208.203
82	-0.693147	-0.431644	116.077	208.502
83	-0.693147	-0.420664	116.253	208.794
84	-0.693147	-0.409735	116.421	209.078
85	-0.693147	-0.398855	116.58	209.354
86	-0.693147	-0.388022	116.731	209.623
87	-0.693147	-0.377233	116.873	209.885
88	-0.693147	-0.36649	117.008	210.139
89	-0.693147	-0.355788	117.134	210.385
90	-0.693147	-0.345126	117.253	210.625
91	-0.693147	-0.334503	117.365	210.857
92	-0.693147	-0.323919	117.47	211.081
93	-0.693147	-0.310738	117.567	211.296
94	-0.693147	-0.300232	117.657	211.505
95	-0.693147	-0.28976	117.741	211.705
96	-0.693147	-0.279319	117.819	211.899
97	-0.693147	-0.268908	117.891	212.085
98	-0.693147	-0.258527	117.958	212.265
99	-0.693147	-0.248174	118.02	212.437
100	-0.693147	-0.237847	118.076	212.602
101	-0.693147	-0.227545	118.128	212.759
102	-0.693147	-0.217267	118.175	212.91
103	-0.693147	-0.207012	118.218	213.053
104	-0.693147	-0.196779	118.257	213.19
105	-0.693147	-0.186567	118.292	213.319
106	-0.693147	-0.176374	118.323	213.441
107	-0.693147	-0.166199	118.35	213.556
108	-0.693147	-0.153505	118.374	213.663
109	-0.693147	-0.143367	118.394	213.762
110	-0.693147	-0.133244	118.412	213.855
111	-0.693147	-0.123135	118.427	213.94

112	-0.693147	-0.113039	118.44	214.018
113	-0.693147	-0.102953	118.451	214.09
114	-0.693147	-0.0928787	118.459	214.154
115	-0.693147	-0.0828129	118.466	214.211
116	-0.693147	-0.0727562	118.471	214.262
117	-0.693147	-0.0627062	118.475	214.305
118	-0.693147	-0.0526632	118.478	214.342
119	-0.693147	-0.0426257	118.48	214.371
120	-0.693147	-0.0325917	118.481	214.394
121	-0.693147	-0.0225612	118.482	214.41
122	-0.693147	-0.0125328	118.482	214.418
123	-0.693147	0	118.482	214.418
124	-0.693147	0.0125328	118.482	214.41
125	-0.693147	0.0225612	118.482	214.394
126	-0.693147	0.0325917	118.483	214.371
127	-0.693147	0.0426257	118.485	214.342
128	-0.693147	0.0526632	118.488	214.305
129	-0.693147	0.0627062	118.492	214.262
130	-0.693147	0.0727562	118.497	214.211
131	-0.693147	0.0828129	118.504	214.154
132	-0.693147	0.0928787	118.513	214.09
133	-0.693147	0.102953	118.523	214.018
134	-0.693147	0.113039	118.536	213.94
135	-0.693147	0.123135	118.551	213.855
136	-0.693147	0.133244	118.569	213.762
137	-0.693147	0.143367	118.59	213.663
138	-0.693147	0.153505	118.613	213.556
139	-0.693147	0.166199	118.641	213.441
140	-0.693147	0.176374	118.672	213.319
141	-0.693147	0.186567	118.707	213.19
142	-0.693147	0.196779	118.745	213.053
143	-0.693147	0.207012	118.788	212.91
144	-0.693147	0.217267	118.835	212.759
145	-0.693147	0.227545	118.887	212.602
146	-0.693147	0.237847	118.944	212.437
147	-0.693147	0.248174	119.005	212.265
148	-0.693147	0.258527	119.072	212.085
149	-0.693147	0.268908	119.145	211.899
150	-0.693147	0.279319	119.223	211.705
151	-0.693147	0.28976	119.306	211.505
152	-0.693147	0.300232	119.397	211.296
153	-0.693147	0.310738	119.493	211.081
154	-0.693147	0.323919	119.598	210.857
155	-0.693147	0.334503	119.71	210.625
156	-0.693147	0.345126	119.829	210.385
157	-0.693147	0.355788	119.956	210.139
158	-0.693147	0.36649	120.09	209.885
159	-0.693147	0.377233	120.232	209.623
160	-0.693147	0.388022	120.383	209.354
161	-0.693147	0.398855	120.542	209.078
162	-0.693147	0.409735	120.71	208.794
163	-0.693147	0.420664	120.887	208.502
164	-0.693147	0.431644	121.073	208.203
165	-0.693147	0.442676	121.269	207.896
166	-0.693147	0.453763	121.475	207.582
167	-0.693147	0.464904	121.691	207.26
168	-0.693147	0.476105	121.918	206.93
169	-0.693147	0.487364	122.155	206.592
170	-0.693147	0.501527	122.407	206.244
171	-0.693147	0.51293	122.67	205.889
172	-0.693147	0.524401	122.945	205.525
173	-0.693147	0.53594	123.232	205.154

174	-0.693147	0.547551	123.532	204.774
175	-0.693147	0.559237	123.845	204.386
176	-0.693147	0.570999	124.171	203.991
177	-0.693147	0.582841	124.51	203.587
178	-0.693147	0.594766	124.864	203.174
179	-0.693147	0.606775	125.232	202.754
180	-0.693147	0.618872	125.615	202.325
181	-0.693147	0.631062	126.014	201.887
182	-0.693147	0.643345	126.428	201.441
183	-0.693147	0.655726	126.858	200.987
184	-0.693147	0.668209	127.304	200.524
185	-0.693147	0.68396	127.772	200.05
186	-0.693147	0.696684	128.257	199.567
187	-0.693147	0.709522	128.761	199.075
188	-0.693147	0.722479	129.283	198.574
189	-0.693147	0.735557	129.824	198.064
190	-0.693147	0.748762	130.384	197.545
191	-0.693147	0.7621	130.965	197.017
192	-0.693147	0.775574	131.567	196.48
193	-0.693147	0.789191	132.189	195.932
194	-0.693147	0.802956	132.834	195.376
195	-0.693147	0.816874	133.501	194.81
196	-0.693147	0.830953	134.192	194.234
197	-0.693147	0.845198	134.906	193.648
198	-0.693147	0.859618	135.645	193.052
199	-0.693147	0.874218	136.409	192.446
200	-0.693147	0.892733	137.206	191.827
201	-0.693147	0.907769	138.03	191.198
202	-0.693147	0.923014	138.882	190.558
203	-0.693147	0.938476	139.763	189.908
204	-0.693147	0.954165	140.674	189.246
205	-0.693147	0.970094	141.615	188.574
206	-0.693147	0.986272	142.587	187.89
207	-0.693147	1.00271	143.593	187.195
208	-0.693147	1.01943	144.632	186.489
209	-0.693147	1.03643	145.706	185.77
210	-0.693147	1.05375	146.817	185.04
211	-0.693147	1.07138	147.965	184.297
212	-0.693147	1.08935	149.151	183.542
213	-0.693147	1.10768	150.378	182.774
214	-0.693147	1.12639	151.647	181.994
215	-0.693147	1.1455	152.959	181.2
216	-0.693147	1.17	154.328	180.389
217	-0.693147	1.19012	155.744	179.564
218	-0.693147	1.21073	157.21	178.725
219	-0.693147	1.23187	158.728	177.871
220	-0.693147	1.25357	160.299	177.002
221	-0.693147	1.27588	161.927	176.117
222	-0.693147	1.29884	163.614	175.217
223	-0.693147	1.32251	165.363	174.3
224	-0.693147	1.34694	167.177	173.367
225	-0.693147	1.3722	169.06	172.416
226	-0.693147	1.39838	171.016	171.446
227	-0.693147	1.42554	173.048	170.458
228	-0.693147	1.4538	175.161	169.451
229	-0.693147	1.48328	177.362	168.422
230	-0.693147	1.5141	179.654	167.373
231	-0.693147	1.55477	182.071	166.295
232	-0.693147	1.58927	184.597	165.194
233	-0.127833	1.62576	187.24	164.986
234	-0.0304592	1.66456	190.011	164.935
235	0	1.70604	192.922	164.935

236	0	1.75069	195.986	164.935	
237	0	1.79912	199.223	164.935	
238	0	1.85218	202.654	164.935	
239	0	1.91103	206.306	164.935	
240	0	1.97737	210.216	164.935	
241	0	2.05375	214.434	164.935	
242	0	2.14441	219.032	164.935	
243	0.0953102		2.25713	224.127	165.15
244	0.336472		2.40892	229.93	165.961
245	0.530628		2.65209	236.963	167.368

Data Set Standard Deviation = 0.877737
Numerator = 28012.1
Denominator = 44545
W Statistic = 0.628848 = 28012.1 / 44545

5% Critical value of 0.976 exceeds 0.628848
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.628848
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 = 95.5102%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 20
Maximum Background Concentration = 0
Confidence Level = 71.4%
False Positive Rate = 28.6%

Location	Date	Samples	Mean	Significant
LMW-16	7/6/2011	1	-2.73337	FALSE
LMW-9D	7/6/2011	1	-2.04022	FALSE
LMW-10	7/6/2011	1	0.336472	TRUE
LMW-15R	7/6/2011	1	-2.73337	FALSE
LMW-3	7/6/2011	1	-2.73337	FALSE
LMW-3S	7/6/2011	1	-2.73337	FALSE
LMW-6	7/6/2011	1	-2.73337	FALSE
LMW-7	7/6/2011	1	-2.73337	FALSE
LMW-8	7/6/2011	1	-2.73337	FALSE
LMW-9	7/6/2011	1	-1.83258	FALSE
LMW-14R	7/6/2011	1	-2.73337	FALSE
LMW-9S	7/6/2011	1	-2.73337	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: Trichloroethylene

Location: LMW-10

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

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
ND<-0.693147	ND<-0.693147	0	0	0
ND<-0.693147	ND<-0.693147	0	0	0
ND<-0.693147	ND<-0.693147	0	0	0
ND<0 J	ND<-0.693147	0.693147	1	0
ND<0 J	ND<-0.693147	0.693147	2	0
ND<0 J	ND<-0.693147	0.693147	3	0
ND<0 J	ND<-0.693147	0.693147	4	0
ND<-0.693147	ND<-0.693147	0	4	0
ND<-0.693147	ND<-0.693147	0	4	0
ND<-0.693147	ND<-0.693147	0	4	0
ND<0 J	ND<-0.693147	0.693147	5	0
-0.127833 J	ND<-0.693147	0.565314	6	0
0.530628	ND<-0.693147	1.22378	7	0
0.0953102	ND<-0.693147	0.788457	8	0
-0.0304592 J	ND<-0.693147	0.662688	9	0
0.336472	ND<-0.693147	1.02962	10	0
ND<-0.693147	ND<-0.693147	0	10	0
ND<-0.693147	ND<-0.693147	0	10	0
ND<0 J	ND<-0.693147	0.693147	11	0
ND<0 J	ND<-0.693147	0.693147	12	0
ND<0 J	ND<-0.693147	0.693147	13	0
ND<0 J	ND<-0.693147	0.693147	14	0
ND<-0.693147	ND<-0.693147	0	14	0
ND<-0.693147	ND<-0.693147	0	14	0
ND<-0.693147	ND<-0.693147	0	14	0
ND<0 J	ND<-0.693147	0.693147	15	0
-0.127833 J	ND<-0.693147	0.565314	16	0
0.530628	ND<-0.693147	1.22378	17	0
0.0953102	ND<-0.693147	0.788457	18	0
-0.0304592 J	ND<-0.693147	0.662688	19	0
0.336472	ND<-0.693147	1.02962	20	0
ND<-0.693147	ND<-0.693147	0	20	0
ND<0 J	ND<-0.693147	0.693147	21	0
ND<0 J	ND<-0.693147	0.693147	22	0
ND<0 J	ND<-0.693147	0.693147	23	0
ND<0 J	ND<-0.693147	0.693147	24	0
ND<-0.693147	ND<-0.693147	0	24	0
ND<-0.693147	ND<-0.693147	0	24	0
ND<-0.693147	ND<-0.693147	0	24	0
ND<0 J	ND<-0.693147	0.693147	25	0
-0.127833 J	ND<-0.693147	0.565314	26	0
0.530628	ND<-0.693147	1.22378	27	0
0.0953102	ND<-0.693147	0.788457	28	0
-0.0304592 J	ND<-0.693147	0.662688	29	0
0.336472	ND<-0.693147	1.02962	30	0

ND<0 J	ND<-0.693147	0.693147	31	0
ND<0 J	ND<-0.693147	0.693147	32	0
ND<0 J	ND<-0.693147	0.693147	33	0
ND<0 J	ND<-0.693147	0.693147	34	0
ND<-0.693147	ND<-0.693147	0	34	0
ND<-0.693147	ND<-0.693147	0	34	0
ND<-0.693147	ND<-0.693147	0	34	0
ND<0 J	ND<-0.693147	0.693147	35	0
-0.127833 J	ND<-0.693147	0.565314	36	0
0.530628	ND<-0.693147	1.22378	37	0
0.0953102	ND<-0.693147	0.788457	38	0
-0.0304592 J	ND<-0.693147	0.662688	39	0
0.336472	ND<-0.693147	1.02962	40	0

ND<0 J	ND<0 J	0	40	0
ND<0 J	ND<0 J	0	40	0
ND<0 J	ND<0 J	0	40	0
ND<-0.693147	ND<0 J	-0.693147	40	1
ND<-0.693147	ND<0 J	-0.693147	40	2
ND<-0.693147	ND<0 J	-0.693147	40	3
ND<0 J	ND<0 J	0	40	3
-0.127833 J	ND<0 J	-0.127833	40	4
0.530628	ND<0 J	0.530628	41	4
0.0953102	ND<0 J	0.0953102	42	4
-0.0304592 J	ND<0 J	-0.0304592	42	5
0.336472	ND<0 J	0.336472	43	5

ND<0 J	ND<0 J	0	43	5
ND<0 J	ND<0 J	0	43	5
ND<-0.693147	ND<0 J	-0.693147	43	6
ND<-0.693147	ND<0 J	-0.693147	43	7
ND<-0.693147	ND<0 J	-0.693147	43	8
ND<0 J	ND<0 J	0	43	8
-0.127833 J	ND<0 J	-0.127833	43	9
0.530628	ND<0 J	0.530628	44	9
0.0953102	ND<0 J	0.0953102	45	9
-0.0304592 J	ND<0 J	-0.0304592	45	10
0.336472	ND<0 J	0.336472	46	10

ND<0 J	ND<0 J	0	46	10
ND<-0.693147	ND<0 J	-0.693147	46	11
ND<-0.693147	ND<0 J	-0.693147	46	12
ND<-0.693147	ND<0 J	-0.693147	46	13
ND<0 J	ND<0 J	0	46	13
-0.127833 J	ND<0 J	-0.127833	46	14
0.530628	ND<0 J	0.530628	47	14
0.0953102	ND<0 J	0.0953102	48	14
-0.0304592 J	ND<0 J	-0.0304592	48	15
0.336472	ND<0 J	0.336472	49	15

ND<-0.693147	ND<0 J	-0.693147	49	16
ND<-0.693147	ND<0 J	-0.693147	49	17
ND<-0.693147	ND<0 J	-0.693147	49	18
ND<0 J	ND<0 J	0	49	18
-0.127833 J	ND<0 J	-0.127833	49	19
0.530628	ND<0 J	0.530628	50	19
0.0953102	ND<0 J	0.0953102	51	19
-0.0304592 J	ND<0 J	-0.0304592	51	20
0.336472	ND<0 J	0.336472	52	20

ND<-0.693147	ND<-0.693147	0	52	20
ND<-0.693147	ND<-0.693147	0	52	20

ND<0 J	ND<-0.693147	0.693147	53	20
-0.127833 J	ND<-0.693147	0.565314	54	20
0.530628	ND<-0.693147	1.22378	55	20
0.0953102	ND<-0.693147	0.788457	56	20
-0.0304592 J	ND<-0.693147	0.662688	57	20
0.336472	ND<-0.693147	1.02962	58	20
ND<-0.693147	ND<-0.693147	0	58	20
ND<0 J	ND<-0.693147	0.693147	59	20
-0.127833 J	ND<-0.693147	0.565314	60	20
0.530628	ND<-0.693147	1.22378	61	20
0.0953102	ND<-0.693147	0.788457	62	20
-0.0304592 J	ND<-0.693147	0.662688	63	20
0.336472	ND<-0.693147	1.02962	64	20
ND<0 J	ND<-0.693147	0.693147	65	20
-0.127833 J	ND<-0.693147	0.565314	66	20
0.530628	ND<-0.693147	1.22378	67	20
0.0953102	ND<-0.693147	0.788457	68	20
-0.0304592 J	ND<-0.693147	0.662688	69	20
0.336472	ND<-0.693147	1.02962	70	20
-0.127833 J	ND<0 J	-0.127833	70	21
0.530628	ND<0 J	0.530628	71	21
0.0953102	ND<0 J	0.0953102	72	21
-0.0304592 J	ND<0 J	-0.0304592	72	22
0.336472	ND<0 J	0.336472	73	22
0.530628	-0.127833 J	0.658462	74	22
0.0953102	-0.127833 J	0.223144	75	22
-0.0304592 J	-0.127833 J	0.0973742	76	22
0.336472	-0.127833 J	0.464306	77	22
0.0953102	0.530628	-0.435318	77	23
-0.0304592 J	0.530628	-0.561087	77	24
0.336472	0.530628	-0.194156	77	25
-0.0304592 J	0.0953102	-0.125769	77	26
0.336472	0.0953102	0.241162	78	26
0.336472	-0.0304592 J	0.366931	79	26

S Statistic = 79 - 26 = 53

Tied Group	Value	Members
1	-0.693147	7
2	0	5

Time Period	Observations
3/14/2000	1
9/23/2003	1
3/10/2004	1
10/12/2004	1
4/1/2005	1
10/26/2005	1
6/19/2006	1
11/18/2006	1
6/2/2007	1
11/15/2007	1

5/20/2008	1
11/20/2008	1
6/11/2009	1
11/16/2009	1
6/30/2010	1
11/17/2010	1
7/6/2011	1

There are 0 time periods with multiple data

A = 1098
B = 0
C = 270
D = 0
E = 62
F = 0
a = 10608
b = 36720
c = 544
Group Variance = 528.333
Z-Score = 2.2623
Comparison Level at 1.0 - (0.05 / 2) = 97.5% confidence level = 1.97737 (two-tailed)
|2.2623| > 1.97737 indicating a trend

Concentrations (ppb)

Parameter: Trichlorofluoromethane

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 257
Total Non-Detect: 202
Percent Non-Detects: 78.5992%
Total Background Measurements: 21
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	21	9 (42.8571%)	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	16 B	16 B
			11/16/2009	2.4	2.4
			6/30/2010	2	2
			11/17/2010	1.7	1.7
			7/6/2011	0.31 J	0.31 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-9D	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<0.25 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
			7/6/2011	ND<0.25 U	ND<0.25 U
LMW-9	21	20 (95.2381%)	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
			7/6/2011	ND<0.25 U		ND<0.25 U
LMW-8	21	20 (95.2381%)	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
			7/6/2011	ND<0.25 U		ND<0.25 U
LMW-7	18	16 (88.8889%)	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
			7/6/2011	ND<0.25 U		ND<0.25 U
LMW-6	21	12 (57.1429%)	1/16/1998	ND<1	ND<1	
			3/16/1999	ND<1	ND<1	
			9/23/1999	ND<1	ND<1	
			3/14/2000	ND<1	ND<1	
			9/23/2003	ND<1	ND<1	
			3/10/2004	ND<1	ND<1	
			10/12/2004	ND<1	ND<1	

			4/1/2005	ND<0 J	ND<0 J	
			10/26/2005	1	1	
			6/19/2006	1	1	
			11/18/2006	ND<1	ND<1	
			6/2/2007	ND<1	ND<1	
			11/15/2007	ND<0 J	ND<0 J	
			5/20/2008	1	1	
			11/20/2008	ND<0 J	ND<0 J	
			6/11/2009	0.95 J	0.95 J	
			11/16/2009	1.1	1.1	
			11/16/2009	41	41	
			6/30/2010	0.72 J	0.72 J	
			11/17/2010	0.48 J	0.48 J	
			7/6/2011	0.7 J	0.7 J	
LMW-3S	11	4 (36.3636%)	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	0.97 J	0.97 J	
			11/16/2009	13	13	
			6/30/2010	1.4	1.4	
			11/17/2010	1.1	1.1	
			7/6/2011	0.36 J	0.36 J	
LMW-3	23	17 (73.913%)	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	32 B	32 B	
			11/16/2009	0.68 J	0.68 J	
			6/30/2010	0.58 J	0.58 J	
			11/17/2010	0.52 J	0.52 J	
			7/6/2011	0.51 J	0.51 J	
LMW-16	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<0.25 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	
			7/6/2011	ND<0.25 U	ND<0.25 U	

LMW-15R	12	12 (100%)	11/18/2006	ND<1	ND<1
		6/2/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		11/15/2007	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		5/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
		11/20/2008	ND<1	ND<1	
		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	
		7/6/2011	ND<0.25 U	ND<0.25 U	
LMW-14R	8	8 (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	
		7/6/2011	ND<0.25 U	ND<0.25 U	
LMW-9S	15	12 (80%)	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	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	
		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	
		7/6/2011	ND<0.25 U	ND<0.25 U	
LMW-10	18	7 (38.8889%)	3/14/2000	ND<1	ND<1
		9/23/2003	ND<1	ND<1	
		3/10/2004	ND<1	ND<1	
		10/12/2004	ND<1	ND<1	
		4/1/2005	ND<1	ND<1	
		10/26/2005	ND<0 J	ND<0 J	
		6/19/2006	2	2	
		11/18/2006	7	7	
		6/2/2007	3	3	
		11/15/2007	ND<1	ND<1	
		5/20/2008	10	10	
		11/20/2008	3	3	
		6/11/2009	6.6	6.6	
		11/16/2009	13	13	
		11/16/2009	21	21	
		6/30/2010	5.8	5.8	
		11/17/2010	7.3	7.3	
		7/6/2011	3.7	3.7	
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		7	7
			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 = 257

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0	-2.747777	55021	0
2	0	-2.457271	3.5884	0
3	0	-2.290361	8.8342	0
4	0	-2.170092	3.5435	0
5	0	-2.074852	7.8485	0
6	0	-1.995393	1.8301	0
7	0	-1.926843	5.5428	0
8	0	-1.866293	9.0258	0
9	0	-1.825014	2.3564	0
10	0	-1.774384	5.5049	0
11	0	-1.727934	8.4906	0
12	0	-1.684945	1.3296	0
13	0	-1.644855	4.0352	0
14	0.125	-1.607255	6.6184	-0.200906
15	0.125	-1.571795	9.0889	-0.39738
16	0.125	-1.5382	61.455	-0.589655
17	0.125	-1.5141	63.7475	-0.778918
18	0.125	-1.483286	5.9476	-0.964328
19	0.125	-1.4538	68.0612	-1.14605
20	0.125	-1.425547	0.0934	-1.32425
21	0.125	-1.398387	2.0488	-1.49904
22	0.125	-1.3722	73.9318	-1.67057
23	0.125	-1.346947	5.746	-1.83894
24	0.125	-1.322517	7.495	-2.00425
25	0.125	-1.304697	9.1972	-2.16734
26	0.125	-1.281558	0.8396	-2.32753
27	0.125	-1.259088	2.4249	-2.48491
28	0.125	-1.237248	3.9557	-2.63957
29	0.125	-1.215968	5.4342	-2.79156
30	0.125	-1.195228	6.8628	-2.94097
31	0.125	-1.174998	8.2434	-3.08784
32	0.125	-1.155228	9.5779	-3.23224
33	0.125	-1.140699	0.8791	-3.37483
34	0.125	-1.121689	2.1372	-3.51504
35	0.125	-1.103069	3.354	-3.65292
36	0.125	-1.084829	4.5308	-3.78852
37	0.125	-1.066949	5.6692	-3.92189
38	0.125	-1.049399	6.7704	-4.05307
39	0.125	-1.032159	7.8357	-4.18208
40	0.125	-1.015229	8.8664	-4.30899
41	0.125	-1.002719	9.8718	-4.43433
42	0.125	-0.986272	100.845	-4.55761
43	0.125	-0.970094	101.786	-4.67887
44	0.125	-0.954165	102.696	-4.79814
45	0.125	-0.938476	103.577	-4.91545
46	0.125	-0.923014	104.429	-5.03083
47	0.125	-0.907769	105.253	-5.1443
48	0.125	-0.892733	106.05	-5.25589
49	0.125	-0.881587	106.827	-5.36609

50	0.125	-0.866894	107.578	-5.47445
51	0.125	-0.852385	108.305	-5.581
52	0.31	-0.838054	109.007	-5.8408
53	0.36	-0.823893	109.686	-6.1374
54	0.48	-0.809896	110.342	-6.52615
55	0.5	-0.796056	110.976	-6.92418
56	0.5	-0.782366	111.588	-7.31536
57	0.5	-0.772193	112.184	-7.70145
58	0.5	-0.758753	112.76	-8.08083
59	0.5	-0.745449	113.316	-8.45356
60	0.5	-0.732275	113.852	-8.81969
61	0.5	-0.719228	114.369	-9.17931
62	0.5	-0.706302	114.868	-9.53246
63	0.5	-0.693493	115.349	-9.87921
64	0.5	-0.680797	115.812	-10.2196
65	0.5	-0.671346	116.263	-10.5553
66	0.5	-0.658838	116.697	-10.8847
67	0.5	-0.646431	117.115	-11.2079
68	0.5	-0.634124	117.517	-11.525
69	0.5	-0.621911	117.904	-11.8359
70	0.5	-0.609791	118.276	-12.1408
71	0.5	-0.597761	118.633	-12.4397
72	0.5	-0.585815	118.976	-12.7326
73	0.5	-0.576911	119.309	-13.0211
74	0.5	-0.565108	119.628	-13.3036
75	0.5	-0.553384	119.935	-13.5803
76	0.5	-0.541736	120.228	-13.8512
77	0.5	-0.530162	120.509	-14.1163
78	0.5	-0.518658	120.778	-14.3756
79	0.5	-0.507221	121.035	-14.6292
80	0.5	-0.49585	121.281	-14.8771
81	0.5	-0.487364	121.519	-15.1208
82	0.5	-0.476105	121.746	-15.3589
83	0.5	-0.464904	121.962	-15.5913
84	0.5	-0.453763	122.168	-15.8182
85	0.5	-0.442676	122.364	-16.0395
86	0.5	-0.431644	122.55	-16.2554
87	0.5	-0.420664	122.727	-16.4657
88	0.5	-0.409735	122.895	-16.6706
89	0.5	-0.401571	123.056	-16.8713
90	0.5	-0.390726	123.209	-17.0667
91	0.5	-0.379927	123.353	-17.2567
92	0.5	-0.369171	123.489	-17.4413
93	0.5	-0.358459	123.618	-17.6205
94	0.5	-0.347787	123.739	-17.7944
95	0.5	-0.337155	123.852	-17.963
96	0.5	-0.326561	123.959	-18.1262
97	0.5	-0.318639	124.061	-18.2856
98	0.5	-0.308108	124.156	-18.4396
99	0.5	-0.297612	124.244	-18.5884
100	0.5	-0.287147	124.327	-18.732
101	0.5	-0.276714	124.403	-18.8703
102	0.5	-0.266311	124.474	-19.0035
103	0.5	-0.255936	124.54	-19.1315
104	0.5	-0.24559	124.6	-19.2543
105	0.5	-0.237847	124.656	-19.3732
106	0.5	-0.227545	124.708	-19.487
107	0.5	-0.217267	124.755	-19.5956
108	0.5	-0.207012	124.798	-19.6991
109	0.5	-0.196779	124.837	-19.7975
110	0.5	-0.186567	124.872	-19.8908
111	0.5	-0.176374	124.903	-19.979

112	0.5	-0.166199	124.931	-20.0621
113	0.5	-0.158579	124.956	-20.1413
114	0.5	-0.148434	124.978	-20.2156
115	0.5	-0.138305	124.997	-20.2847
116	0.5	-0.128189	125.013	-20.3488
117	0.5	-0.118085	125.027	-20.4079
118	0.5	-0.107995	125.039	-20.4618
119	0.5	-0.0979139	125.048	-20.5108
120	0.5	-0.0878447	125.056	-20.5547
121	0.5	-0.0802981	125.063	-20.5949
122	0.5	-0.0702426	125.068	-20.63
123	0.5	-0.0601949	125.071	-20.6601
124	0.5	-0.0501541	125.074	-20.6852
125	0.5	-0.0401167	125.075	-20.7052
126	0.5	-0.0300838	125.076	-20.7203
127	0.5	-0.0200544	125.077	-20.7303
128	0.5	-0.0100272	125.077	-20.7353
129	0.5	0	125.077	-20.7353
130	0.5	0.0100272	125.077	-20.7303
131	0.5	0.0200544	125.077	-20.7203
132	0.5	0.0300838	125.078	-20.7052
133	0.5	0.0401167	125.08	-20.6852
134	0.5	0.0501541	125.082	-20.6601
135	0.5	0.0601949	125.086	-20.63
136	0.5	0.0702426	125.091	-20.5949
137	0.5	0.0802981	125.097	-20.5547
138	0.5	0.0878447	125.105	-20.5108
139	0.5	0.0979139	125.115	-20.4618
140	0.5	0.107995	125.126	-20.4079
141	0.5	0.118085	125.14	-20.3488
142	0.5	0.128189	125.157	-20.2847
143	0.5	0.138305	125.176	-20.2156
144	0.5	0.148434	125.198	-20.1413
145	0.5	0.158579	125.223	-20.0621
146	0.5	0.166199	125.251	-19.979
147	0.5	0.176374	125.282	-19.8908
148	0.5	0.186567	125.316	-19.7975
149	0.5	0.196779	125.355	-19.6991
150	0.5	0.207012	125.398	-19.5956
151	0.5	0.217267	125.445	-19.487
152	0.5	0.227545	125.497	-19.3732
153	0.5	0.237847	125.554	-19.2543
154	0.5	0.24559	125.614	-19.1315
155	0.5	0.255936	125.679	-19.0035
156	0.5	0.266311	125.75	-18.8703
157	0.5	0.276714	125.827	-18.732
158	0.5	0.287147	125.909	-18.5884
159	0.5	0.297612	125.998	-18.4396
160	0.5	0.308108	126.093	-18.2856
161	0.5	0.318639	126.194	-18.1262
162	0.5	0.326561	126.301	-17.963
163	0.5	0.337155	126.415	-17.7944
164	0.5	0.347787	126.536	-17.6205
165	0.5	0.358459	126.664	-17.4413
166	0.5	0.369171	126.8	-17.2567
167	0.5	0.379927	126.945	-17.0667
168	0.5	0.390726	127.097	-16.8713
169	0.5	0.401571	127.259	-16.6706
170	0.5	0.409735	127.427	-16.4657
171	0.5	0.420664	127.604	-16.2554
172	0.5	0.431644	127.79	-16.0395
173	0.5	0.442676	127.986	-15.8182

174	0.5	0.453763		128.192	-15.5913
175	0.5	0.464904		128.408	-15.3589
176	0.5	0.476105		128.635	-15.1208
177	0.5	0.487364		128.872	-14.8771
178	0.5	0.49585	129.118	-14.6292	
179	0.5	0.507221		129.375	-14.3756
180	0.5	0.518658		129.644	-14.1163
181	0.5	0.530162		129.925	-13.8512
182	0.5	0.541736		130.219	-13.5803
183	0.5	0.553384		130.525	-13.3036
184	0.5	0.565108		130.844	-13.0211
185	0.5	0.576911		131.177	-12.7326
186	0.5	0.585815		131.52	-12.4397
187	0.5	0.597761		131.878	-12.1408
188	0.5	0.609791		132.249	-11.8359
189	0.5	0.621911		132.636	-11.525
190	0.5	0.634124		133.038	-11.2079
191	0.5	0.646431		133.456	-10.8847
192	0.5	0.658838		133.89	-10.5553
193	0.5	0.671346		134.341	-10.2196
194	0.5	0.680797		134.804	-9.87921
195	0.5	0.693493		135.285	-9.53246
196	0.5	0.706302		135.784	-9.17931
197	0.5	0.719228		136.302	-8.81969
198	0.5	0.732275		136.838	-8.45356
199	0.5	0.745449		137.393	-8.08083
200	0.5	0.758753		137.969	-7.70145
201	0.5	0.772193		138.565	-7.31536
202	0.5	0.782366		139.178	-6.92418
203	0.5	0.796056		139.811	-6.52615
204	0.5	0.809896		140.467	-6.1212
205	0.5	0.823893		141.146	-5.70925
206	0.51	0.838054		141.848	-5.28185
207	0.52	0.852385		142.575	-4.83861
208	0.58	0.866894		143.326	-4.33581
209	0.68	0.881587		144.104	-3.73633
210	0.7	0.892733		144.901	-3.11141
211	0.72	0.907769		145.725	-2.45782
212	0.82	0.923014		146.577	-1.70095
213	0.84	0.938476		147.457	-0.91263
214	0.95	0.954165		148.368	-0.00617356
215	0.97	0.970094		149.309	0.934818
216	1	0.986272		150.282	1.92109
217	1	1.00271	151.287	2.9238	
218	1	1.01522	152.318	3.93902	
219	1	1.03215	153.383	4.97118	
220	1.1	1.04939	154.484	6.1255	
221	1.1	1.06694	155.623	7.29913	
222	1.1	1.08482	156.799	8.49244	
223	1.4	1.10306	158.016	10.0367	
224	1.7	1.12168	159.274	11.9436	
225	2	1.14069	160.575	14.225	
226	2	1.15522	161.91	16.5354	
227	2	1.17499	163.291	18.8854	
228	2	1.19522	164.719	21.2758	
229	2	1.21596	166.198	23.7077	
230	2	1.23724	167.728	26.1822	
231	2	1.25908	169.314	28.7004	
232	2.4	1.28155	170.956	31.7761	
233	3	1.30469	172.658	35.6902	
234	3	1.32251	174.407	39.6577	
235	3	1.34694	176.222	43.6985	

236	3	1.3722	178.105	47.8151
237	3.7	1.39838	180.06	52.9891
238	4	1.42554	182.092	58.6913
239	5.8	1.4538	184.206	67.1233
240	6.6	1.48328	186.406	76.913
241	7	1.5141	188.698	87.5117
242	7	1.5382	191.064	98.2791
243	7	1.57179	193.535	109.282
244	7.3	1.60725	196.118	121.015
245	9.1	1.64485	198.824	135.983
246	9.3	1.68494	201.663	151.653
247	10	1.72793	204.649	168.932
248	13	1.77438	207.797	191.999
249	13	1.82501	211.128	215.724
250	15	1.86629	214.611	243.718
251	16	1.92684	218.323	274.548
252	19	1.99539	222.305	312.46
253	21	2.07485	226.61	356.032
254	25	2.17009	231.319	410.284
255	26	2.29036	236.565	469.834
256	32	2.45727	242.603	548.466
257	41	2.74777	250.153	661.125

Data Set Standard Deviation = 4.68804
Numerator = 437086
Denominator = 1.40744e+006
W Statistic = 0.310555 = 437086 / 1.40744e+006

5% Critical value of 0.976 exceeds 0.310555
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.310555
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 = 257

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-2.07944	-2.74777	7.55021	5.71382
2	-2.07944	-2.45727	13.5884	10.8236
3	-2.07944	-2.29036	18.8342	15.5862
4	-2.07944	-2.17009	23.5435	20.0988
5	-2.07944	-2.07485	27.8485	24.4134
6	-2.07944	-1.99539	31.8301	28.5627
7	-2.07944	-1.92684	35.5428	32.5694
8	-2.07944	-1.86629	39.0258	36.4502
9	-2.07944	-1.82501	42.3564	40.2452
10	-2.07944	-1.77438	45.5049	43.935
11	-2.07944	-1.72793	48.4906	47.5281
12	-2.07944	-1.68494	51.3296	51.0318
13	-2.07944	-1.64485	54.0352	54.4522
14	-2.07944	-1.60725	56.6184	57.7944
15	-2.07944	-1.57179	59.0889	61.0628
16	-2.07944	-1.5382	61.455	64.2614
17	-2.07944	-1.5141	63.7475	67.4099
18	-2.07944	-1.48328	65.9476	70.4943
19	-2.07944	-1.4538	68.0612	73.5174
20	-2.07944	-1.42554	70.0934	76.4817
21	-2.07944	-1.39838	72.0488	79.3896
22	-2.07944	-1.3722	73.9318	82.243
23	-2.07944	-1.34694	75.746	85.0439
24	-2.07944	-1.32251	77.495	87.794
25	-2.07944	-1.30469	79.1972	90.507
26	-2.07944	-1.28155	80.8396	93.1719
27	-2.07944	-1.25908	82.4249	95.7901
28	-2.07944	-1.23724	83.9557	98.3628
29	-2.07944	-1.21596	85.4342	100.891
30	-2.07944	-1.19522	86.8628	103.377
31	-2.07944	-1.17499	88.2434	105.82
32	-2.07944	-1.15522	89.5779	108.222
33	-2.07944	-1.14069	90.8791	110.594
34	-2.07944	-1.12168	92.1372	112.927
35	-2.07944	-1.10306	93.354	115.22
36	-2.07944	-1.08482	94.5308	117.476
37	-2.07944	-1.06694	95.6692	119.695
38	-2.07944	-1.04939	96.7704	121.877
39	-1.17118	-1.03215	97.8357	123.086
40	-1.02165	-1.01522	98.8664	124.123
41	-0.733969	-1.00271	99.8718	124.859
42	-0.693147	-0.986272	100.845	125.543
43	-0.693147	-0.970094	101.786	126.215
44	-0.693147	-0.954165	102.696	126.877
45	-0.693147	-0.938476	103.577	127.527
46	-0.693147	-0.923014	104.429	128.167
47	-0.693147	-0.907769	105.253	128.796
48	-0.693147	-0.892733	106.05	129.415
49	-0.693147	-0.881587	106.827	130.026

50	-0.693147	-0.866894	107.578	130.627
51	-0.693147	-0.852385	108.305	131.218
52	-0.693147	-0.838054	109.007	131.798
53	-0.693147	-0.823893	109.686	132.37
54	-0.693147	-0.809896	110.342	132.931
55	-0.693147	-0.796056	110.976	133.483
56	-0.693147	-0.782366	111.588	134.025
57	-0.693147	-0.772193	112.184	134.56
58	-0.693147	-0.758753	112.76	135.086
59	-0.693147	-0.745449	113.316	135.603
60	-0.693147	-0.732275	113.852	136.11
61	-0.693147	-0.719228	114.369	136.609
62	-0.693147	-0.706302	114.868	137.099
63	-0.693147	-0.693493	115.349	137.579
64	-0.693147	-0.680797	115.812	138.051
65	-0.693147	-0.671346	116.263	138.517
66	-0.693147	-0.658838	116.697	138.973
67	-0.693147	-0.646431	117.115	139.421
68	-0.693147	-0.634124	117.517	139.861
69	-0.693147	-0.621911	117.904	140.292
70	-0.693147	-0.609791	118.276	140.715
71	-0.693147	-0.597761	118.633	141.129
72	-0.693147	-0.585815	118.976	141.535
73	-0.693147	-0.576911	119.309	141.935
74	-0.693147	-0.565108	119.628	142.327
75	-0.693147	-0.553384	119.935	142.71
76	-0.693147	-0.541736	120.228	143.086
77	-0.693147	-0.530162	120.509	143.453
78	-0.693147	-0.518658	120.778	143.813
79	-0.693147	-0.507221	121.035	144.164
80	-0.693147	-0.49585121.281	144.508	
81	-0.693147	-0.487364	121.519	144.846
82	-0.693147	-0.476105	121.746	145.176
83	-0.693147	-0.464904	121.962	145.498
84	-0.693147	-0.453763	122.168	145.812
85	-0.693147	-0.442676	122.364	146.119
86	-0.693147	-0.431644	122.55	146.418
87	-0.693147	-0.420664	122.727	146.71
88	-0.693147	-0.409735	122.895	146.994
89	-0.693147	-0.401571	123.056	147.272
90	-0.693147	-0.390726	123.209	147.543
91	-0.693147	-0.379927	123.353	147.807
92	-0.693147	-0.369171	123.489	148.062
93	-0.693147	-0.358459	123.618	148.311
94	-0.693147	-0.347787	123.739	148.552
95	-0.693147	-0.337155	123.852	148.786
96	-0.693147	-0.326561	123.959	149.012
97	-0.693147	-0.318639	124.061	149.233
98	-0.693147	-0.308108	124.156	149.447
99	-0.693147	-0.297612	124.244	149.653
100	-0.693147	-0.287147	124.327	149.852
101	-0.693147	-0.276714	124.403	150.044
102	-0.693147	-0.266311	124.474	150.228
103	-0.693147	-0.255936	124.54	150.406
104	-0.693147	-0.24559124.6	150.576	
105	-0.693147	-0.237847	124.656	150.741
106	-0.693147	-0.227545	124.708	150.898
107	-0.693147	-0.217267	124.755	151.049
108	-0.693147	-0.207012	124.798	151.193
109	-0.693147	-0.196779	124.837	151.329
110	-0.693147	-0.186567	124.872	151.458
111	-0.693147	-0.176374	124.903	151.581

112	-0.693147	-0.166199	124.931	151.696
113	-0.693147	-0.158579	124.956	151.806
114	-0.693147	-0.148434	124.978	151.909
115	-0.693147	-0.138305	124.997	152.004
116	-0.693147	-0.128189	125.013	152.093
117	-0.693147	-0.118085	125.027	152.175
118	-0.693147	-0.107995	125.039	152.25
119	-0.693147	-0.0979139	125.048	152.318
120	-0.693147	-0.0878447	125.056	152.379
121	-0.693147	-0.0802981	125.063	152.434
122	-0.693147	-0.0702426	125.068	152.483
123	-0.693147	-0.0601949	125.071	152.525
124	-0.693147	-0.0501541	125.074	152.56
125	-0.693147	-0.0401167	125.075	152.587
126	-0.693147	-0.0300838	125.076	152.608
127	-0.693147	-0.0200544	125.077	152.622
128	-0.693147	-0.0100272	125.077	152.629
129	-0.693147	0	125.077	152.629
130	-0.693147	0.0100272	125.077	152.622
131	-0.693147	0.0200544	125.077	152.608
132	-0.693147	0.0300838	125.078	152.587
133	-0.693147	0.0401167	125.08	152.56
134	-0.693147	0.0501541	125.082	152.525
135	-0.693147	0.0601949	125.086	152.483
136	-0.693147	0.0702426	125.091	152.434
137	-0.693147	0.0802981	125.097	152.379
138	-0.693147	0.0878447	125.105	152.318
139	-0.693147	0.0979139	125.115	152.25
140	-0.693147	0.107995	125.126	152.175
141	-0.693147	0.118085	125.14	152.093
142	-0.693147	0.128189	125.157	152.004
143	-0.693147	0.138305	125.176	151.909
144	-0.693147	0.148434	125.198	151.806
145	-0.693147	0.158579	125.223	151.696
146	-0.693147	0.166199	125.251	151.581
147	-0.693147	0.176374	125.282	151.458
148	-0.693147	0.186567	125.316	151.329
149	-0.693147	0.196779	125.355	151.193
150	-0.693147	0.207012	125.398	151.049
151	-0.693147	0.217267	125.445	150.898
152	-0.693147	0.227545	125.497	150.741
153	-0.693147	0.237847	125.554	150.576
154	-0.693147	0.24559	125.614	150.406
155	-0.693147	0.255936	125.679	150.228
156	-0.693147	0.266311	125.75	150.044
157	-0.693147	0.276714	125.827	149.852
158	-0.693147	0.287147	125.909	149.653
159	-0.693147	0.297612	125.998	149.447
160	-0.693147	0.308108	126.093	149.233
161	-0.693147	0.318639	126.194	149.012
162	-0.693147	0.326561	126.301	148.786
163	-0.693147	0.337155	126.415	148.552
164	-0.693147	0.347787	126.536	148.311
165	-0.693147	0.358459	126.664	148.062
166	-0.693147	0.369171	126.8	147.807
167	-0.693147	0.379927	126.945	147.543
168	-0.693147	0.390726	127.097	147.272
169	-0.693147	0.401571	127.259	146.994
170	-0.693147	0.409735	127.427	146.71
171	-0.693147	0.420664	127.604	146.418
172	-0.693147	0.431644	127.79	146.119
173	-0.693147	0.442676	127.986	145.812

174	-0.693147		0.453763	128.192	145.498
175	-0.693147		0.464904	128.408	145.176
176	-0.693147		0.476105	128.635	144.846
177	-0.693147		0.487364	128.872	144.508
178	-0.693147		0.49585	129.118	144.164
179	-0.693147		0.507221	129.375	143.813
180	-0.693147		0.518658	129.644	143.453
181	-0.693147		0.530162	129.925	143.086
182	-0.693147		0.541736	130.219	142.71
183	-0.693147		0.553384	130.525	142.327
184	-0.693147		0.565108	130.844	141.935
185	-0.693147		0.576911	131.177	141.535
186	-0.693147		0.585815	131.52	141.129
187	-0.693147		0.597761	131.878	140.715
188	-0.693147		0.609791	132.249	140.292
189	-0.693147		0.621911	132.636	139.861
190	-0.693147		0.634124	133.038	139.421
191	-0.693147		0.646431	133.456	138.973
192	-0.693147		0.658838	133.89	138.517
193	-0.673345		0.671346	134.341	138.064
194	-0.653926		0.680797	134.804	137.619
195	-0.544727		0.693493	135.285	137.242
196	-0.385662		0.706302	135.784	136.969
197	-0.356675		0.719228	136.302	136.713
198	-0.328504		0.732275	136.838	136.472
199	-0.198451		0.745449	137.393	136.324
200	-0.174353		0.758753	137.969	136.192
201	-0.0512933		0.772193	138.565	136.152
202	-0.0304592		0.782366	139.178	136.128
203	0	0.796056		139.811	136.128
204	0	0.809896		140.467	136.128
205	0	0.823893		141.146	136.128
206	0	0.838054		141.848	136.128
207	0	0.852385		142.575	136.128
208	0	0.866894		143.326	136.128
209	0	0.881587		144.104	136.128
210	0	0.892733		144.901	136.128
211	0	0.907769		145.725	136.128
212	0	0.923014		146.577	136.128
213	0	0.938476		147.457	136.128
214	0	0.954165		148.368	136.128
215	0	0.970094		149.309	136.128
216	0	0.986272		150.282	136.128
217	0	1.00271	151.287	136.128	
218	0	1.01522	152.318	136.128	
219	0	1.03215	153.383	136.128	
220	0.0953102		1.04939	154.484	136.228
221	0.0953102		1.06694	155.623	136.33
222	0.0953102		1.08482	156.799	136.433
223	0.336472		1.10306	158.016	136.805
224	0.530628		1.12168	159.274	137.4
225	0.693147		1.14069	160.575	138.19
226	0.693147		1.15522	161.91	138.991
227	0.693147		1.17499	163.291	139.806
228	0.693147		1.19522	164.719	140.634
229	0.693147		1.21596	166.198	141.477
230	0.693147		1.23724	167.728	142.335
231	0.693147		1.25908	169.314	143.207
232	0.875469		1.28155	170.956	144.329
233	1.09861	1.30469	172.658	145.763	
234	1.09861	1.32251	174.407	147.215	
235	1.09861	1.34694	176.222	148.695	

236	1.09861	1.3722	178.105	150.203
237	1.30833	1.39838	180.06	152.032
238	1.38629	1.42554	182.092	154.009
239	1.75786	1.4538	184.206	156.564
240	1.88707	1.48328	186.406	159.363
241	1.94591	1.5141	188.698	162.309
242	1.94591	1.5382	191.064	165.303
243	1.94591	1.57179	193.535	168.361
244	1.98787	1.60725	196.118	171.556
245	2.20827	1.64485	198.824	175.189
246	2.23001	1.68494	201.663	178.946
247	2.30259	1.72793	204.649	182.925
248	2.56495	1.77438	207.797	187.476
249	2.56495	1.82501	211.128	192.157
250	2.70805	1.86629	214.611	197.211
251	2.77259	1.92684	218.323	202.553
252	2.94444	1.99539	222.305	208.429
253	3.04452	2.07485	226.61	214.746
254	3.21888	2.17009	231.319	221.731
255	3.2581	2.29036	236.565	229.193
256	3.46574	2.45727	242.603	237.709
257	3.71357	2.74777	250.153	247.913

Data Set Standard Deviation = 1.12004
Numerator = 61461
Denominator = 80336.8
W Statistic = 0.765041 = 61461 / 80336.8

5% Critical value of 0.976 exceeds 0.765041
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.765041
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	101.5
	3/16/1999	ND<-0.693147	101.5
	9/23/1999	ND<-0.693147	101.5
	3/14/2000	ND<-0.693147	101.5
	9/23/2003	ND<-0.693147	101.5
	3/10/2004	ND<-0.693147	101.5
	10/12/2004	ND<-0.693147	101.5
	4/1/2005	0.693147	225
	10/26/2005	ND<0 J	101.5
	6/19/2006	0.693147	226
	11/18/2006	0.693147	227
	6/2/2007	1.09861	233
	11/15/2007	ND<-0.693147	101.5
	5/20/2008	1.09861	234
	11/20/2008	0.693147	228
	6/11/2009	-0.198451 J	212
	11/16/2009	2.77259 B	251
	11/16/2009	0.875469	232
	6/30/2010	0.693147	229
	11/17/2010	0.530628	224
	7/6/2011	-1.17118 J	203

Rank Sum = 3637.5
Rank Mean = 173.214

Background Rank Sum = 3637.5
Background Rank Mean = 173.214

Compliance Wells

Well ID	Date	Result	Rank
LMW-9D	11/18/2006	ND<-0.693147	101.5
	6/2/2007	ND<-0.693147	101.5
	11/15/2007	ND<-0.693147	101.5
	5/20/2008	ND<-0.693147	101.5
	11/20/2008	ND<-0.693147	101.5
	6/11/2009	ND<-2.07944 U	101.5
	11/16/2009	3.21888	254
	11/16/2009	ND<-2.07944 U	101.5
	6/30/2010	ND<-2.07944 U	101.5
	11/17/2010	ND<-2.07944 U	101.5
	7/6/2011	ND<-2.07944 U	101.5

Rank Sum = 1269
Rank Mean = 115.364

LMW-9	1/16/1998	ND<-0.693147	101.5
	3/16/1999	ND<-0.693147	101.5

	9/23/1999	ND<-0.693147	101.5
	3/14/2000	ND<-0.693147	101.5
	9/23/2003	ND<-0.693147	101.5
	3/10/2004	ND<-0.693147	101.5
	10/12/2004	ND<-0.693147	101.5
	4/1/2005	ND<-0.693147	101.5
	10/26/2005	ND<-0.693147	101.5
	6/19/2006	ND<-0.693147	101.5
	11/18/2006	ND<-0.693147	101.5
	6/2/2007	ND<-0.693147	101.5
	11/15/2007	ND<-0.693147	101.5
	5/20/2008	ND<-0.693147	101.5
	11/20/2008	ND<-0.693147	101.5
	6/11/2009	ND<-2.07944 U	101.5
	11/16/2009	1.94591 J	241
	11/16/2009	ND<-2.07944 U	101.5
	6/30/2010	ND<-2.07944 U	101.5
	11/17/2010	ND<-2.07944 U	101.5
	7/6/2011	ND<-2.07944 U	101.5

Rank Sum = 2271
Rank Mean = 108.143

LMW-8	1/16/1998	ND<-0.693147	101.5
	3/16/1999	ND<-0.693147	101.5
	9/23/1999	ND<-0.693147	101.5
	3/14/2000	ND<-0.693147	101.5
	9/23/2003	ND<-0.693147	101.5
	3/10/2004	ND<-0.693147	101.5
	10/12/2004	ND<-0.693147	101.5
	4/1/2005	ND<-0.693147	101.5
	10/26/2005	ND<-0.693147	101.5
	6/19/2006	ND<-0.693147	101.5
	11/18/2006	ND<-0.693147	101.5
	6/2/2007	ND<-0.693147	101.5
	11/15/2007	ND<-0.693147	101.5
	5/20/2008	ND<-0.693147	101.5
	11/20/2008	ND<-0.693147	101.5
	6/11/2009	ND<-2.07944 U	101.5
	11/16/2009	2.94444	252
	11/16/2009	ND<-2.07944 U	101.5
	6/30/2010	ND<-2.07944 U	101.5
	11/17/2010	ND<-2.07944 U	101.5
	7/6/2011	ND<-2.07944 U	101.5

Rank Sum = 2282
Rank Mean = 108.667

LMW-7	1/16/1998	ND<-0.693147	101.5
	3/16/1999	ND<-0.693147	101.5
	9/23/1999	ND<-0.693147	101.5
	3/14/2000	ND<-0.693147	101.5
	9/23/2003	ND<-0.693147	101.5
	3/10/2004	ND<-0.693147	101.5
	10/12/2004	ND<-0.693147	101.5
	4/1/2005	ND<-0.693147	101.5
	10/26/2005	ND<-0.693147	101.5
	6/19/2006	ND<-0.693147	101.5
	11/18/2006	ND<-0.693147	101.5
	6/2/2007	0.693147	230
	11/15/2007	1.38629	238
	5/20/2008	ND<-0.693147	101.5
	11/20/2008	ND<-0.693147	101.5
	6/11/2009	ND<-2.07944 U	101.5

	11/17/2010	ND<-2.07944 U	101.5
	7/6/2011	ND<-2.07944 U	101.5

Rank Sum = 2092
Rank Mean = 116.222

LMW-6	1/16/1998	ND<-0.693147	101.5
	3/16/1999	ND<-0.693147	101.5
	9/23/1999	ND<-0.693147	101.5
	3/14/2000	ND<-0.693147	101.5
	9/23/2003	ND<-0.693147	101.5
	3/10/2004	ND<-0.693147	101.5
	10/12/2004	ND<-0.693147	101.5
	4/1/2005	ND<0 J	101.5
	10/26/2005	0	216
	6/19/2006	0	217
	11/18/2006	ND<-0.693147	101.5
	6/2/2007	ND<-0.693147	101.5
	11/15/2007	ND<0 J	101.5
	5/20/2008	0	218
	11/20/2008	ND<0 J	101.5
	6/11/2009	-0.0512933 J	214
	11/16/2009	0.0953102	220
	11/16/2009	3.71357	257
	6/30/2010	-0.328504 J	211
	11/17/2010	-0.733969 J	205
	7/6/2011	-0.356675 J	210

Rank Sum = 3186
Rank Mean = 151.714

LMW-3S	11/18/2006	ND<-0.693147	101.5
	6/2/2007	ND<-0.693147	101.5
	11/15/2007	0	219
	5/20/2008	ND<0 J	101.5
	11/20/2008	ND<0 J	101.5
	6/11/2009	0.0953102	221
	11/16/2009	-0.0304592 J	215
	11/16/2009	2.56495	248
	6/30/2010	0.336472	223
	11/17/2010	0.0953102	222
	7/6/2011	-1.02165 J	204

Rank Sum = 1958
Rank Mean = 178

LMW-3	11/19/1996	ND<-0.693147	101.5
	3/24/1997	ND<-0.693147	101.5
	1/16/1998	ND<-0.693147	101.5
	3/16/1999	ND<-0.693147	101.5
	9/23/1999	ND<-0.693147	101.5
	3/14/2000	ND<-0.693147	101.5
	9/23/2003	ND<-0.693147	101.5
	3/10/2004	ND<-0.693147	101.5
	10/12/2004	ND<-0.693147	101.5
	4/1/2005	ND<0 J	101.5
	10/26/2005	ND<0 J	101.5
	6/19/2006	ND<0 J	101.5
	11/18/2006	ND<-0.693147	101.5
	6/2/2007	ND<-0.693147	101.5
	11/15/2007	ND<0 J	101.5
	5/20/2008	ND<0 J	101.5
	11/20/2008	ND<0 J	101.5
	6/11/2009	-0.174353 J	213
	11/16/2009	3.46574 B	256

	11/16/2009	-0.385662 J	209
	6/30/2010	-0.544727 J	208
	11/17/2010	-0.653926 J	207
	7/6/2011	-0.673345 J	206

Rank Sum = 3024.5
Rank Mean = 131.5

LMW-16	11/18/2006	ND<-0.693147	101.5
	6/2/2007	ND<-0.693147	101.5
	11/15/2007	ND<-0.693147	101.5
	5/20/2008	ND<-0.693147	101.5
	11/20/2008	ND<-0.693147	101.5
	6/11/2009	ND<-2.07944 U	101.5
	11/16/2009	2.23001 J B	246
	11/16/2009	ND<-2.07944 U	101.5
	6/30/2010	ND<-2.07944 U	101.5
	11/17/2010	ND<-2.07944 U	101.5
	7/6/2011	ND<-2.07944 U	101.5

Rank Sum = 1261
Rank Mean = 114.636

LMW-15R	11/18/2006	ND<-0.693147	101.5
	6/2/2007	ND<-0.693147	101.5
	11/15/2007	ND<-0.693147	101.5
	11/15/2007	ND<-0.693147	101.5
	5/20/2008	ND<-0.693147	101.5
	5/20/2008	ND<-0.693147	101.5
	11/20/2008	ND<-0.693147	101.5
	11/20/2008	ND<-0.693147	101.5
	6/11/2009	ND<-2.07944 U	101.5
	6/30/2010	ND<-2.07944 U	101.5
	11/17/2010	ND<-2.07944 U	101.5
	7/6/2011	ND<-2.07944 U	101.5

Rank Sum = 1218
Rank Mean = 101.5

LMW-14R	6/2/2007	ND<-0.693147	101.5
	11/15/2007	ND<-0.693147	101.5
	5/20/2008	ND<-0.693147	101.5
	11/20/2008	ND<-0.693147	101.5
	6/11/2009	ND<-2.07944 U	101.5
	6/30/2010	ND<-2.07944 U	101.5
	11/17/2010	ND<-2.07944 U	101.5
	7/6/2011	ND<-2.07944 U	101.5

Rank Sum = 812
Rank Mean = 101.5

LMW-9S	11/18/2006	ND<-0.693147	101.5
	6/2/2007	ND<-0.693147	101.5
	11/15/2007	ND<-0.693147	101.5
	5/20/2008	ND<-0.693147	101.5
	11/20/2008	ND<-0.693147	101.5
	6/11/2009	ND<-2.07944 U	101.5
	11/16/2009	ND<-2.07944 U	101.5
	11/16/2009	3.2581 B	255
	11/16/2009	2.20827 J B	245
	11/16/2009	2.70805 B	250
	11/16/2009	ND<-2.07944 U	101.5
	11/16/2009	ND<-2.07944 U	101.5
	6/30/2010	ND<-2.07944 U	101.5
	11/17/2010	ND<-2.07944 U	101.5
	7/6/2011	ND<-2.07944 U	101.5

Rank Sum = 1968
Rank Mean = 131.2

LMW-10	3/14/2000	ND<-0.693147	101.5
	9/23/2003	ND<-0.693147	101.5
	3/10/2004	ND<-0.693147	101.5
	10/12/2004	ND<-0.693147	101.5
	4/1/2005	ND<-0.693147	101.5
	10/26/2005	ND<0 J	101.5
	6/19/2006	0.693147	231
	11/18/2006	1.94591	242
	6/2/2007	1.09861	235
	11/15/2007	ND<-0.693147	101.5
	5/20/2008	2.30259	247
	11/20/2008	1.09861	236
	6/11/2009	1.88707	240
	11/16/2009	2.56495	249
	11/16/2009	3.04452	253
	6/30/2010	1.75786	239
	11/17/2010	1.98787	244
	7/6/2011	1.30833	237

Rank Sum = 3363.5
Rank Mean = 186.861

LMW-11	3/14/2000	ND<-0.693147	101.5
	9/23/2003	ND<-0.693147	101.5
	3/10/2004	ND<-0.693147	101.5
	10/12/2004	ND<-0.693147	101.5
	4/1/2005	ND<-0.693147	101.5
	10/26/2005	ND<-0.693147	101.5
	6/19/2006	ND<-0.693147	101.5
	6/2/2007	ND<-0.693147	101.5
	11/15/2007	ND<-0.693147	101.5
	5/20/2008	ND<-0.693147	101.5
	11/20/2008	ND<-0.693147	101.5

Rank Sum = 1116.5
Rank Mean = 101.5

LMW-12	3/14/2000	ND<-0.693147	101.5
	9/23/2003	ND<-0.693147	101.5
	3/10/2004	ND<-0.693147	101.5
	10/12/2004	ND<-0.693147	101.5
	4/1/2005	ND<-0.693147	101.5
	10/26/2005	ND<-0.693147	101.5
	6/19/2006	ND<-0.693147	101.5
	6/2/2007	ND<-0.693147	101.5
	11/15/2007	ND<-0.693147	101.5
	5/20/2008	ND<-0.693147	101.5
	11/20/2008	ND<-0.693147	101.5

Rank Sum = 1116.5
Rank Mean = 101.5

MW-5	1/16/1998	ND<-0.693147	101.5
	3/16/1999	ND<-0.693147	101.5
	9/23/1999	ND<-0.693147	101.5
	3/14/2000	ND<-0.693147	101.5
	9/23/2003	ND<-0.693147	101.5
	3/10/2004	ND<-0.693147	101.5
	10/12/2004	ND<-0.693147	101.5
	4/1/2005	ND<-0.693147	101.5
	10/26/2005	ND<-0.693147	101.5
	6/19/2006	ND<-0.693147	101.5

	11/15/2007	1.94591	243
	5/20/2008	ND<-0.693147	101.5
	11/20/2008	ND<-0.693147	101.5

Rank Sum = 1461
Rank Mean = 112.385

LMW-13	3/14/2000	ND<-0.693147	101.5
	9/23/2003	ND<-0.693147	101.5
	3/10/2004	ND<-0.693147	101.5
	10/12/2004	ND<-0.693147	101.5
	4/1/2005	ND<-0.693147	101.5
	10/26/2005	ND<-0.693147	101.5
	6/19/2006	ND<-0.693147	101.5
	6/2/2007	ND<-0.693147	101.5
	11/15/2007	ND<-0.693147	101.5
	5/20/2008	ND<-0.693147	101.5
	11/20/2008	ND<-0.693147	101.5

Rank Sum = 1116.5
Rank Mean = 101.5

Calculation Results:

Kruskal-Wallis H Statistic = 37.5566
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 73.0061
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
37.5566 > 26.2962 indicating a significant group difference at 5% significance level
73.0061 > 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 173.214

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9D	115.364	-57.8506	64.3618
LMW-9	108.143	-65.0714	53.366
LMW-8	108.667	-64.5476	53.366
LMW-7	116.222	-56.9921	55.5451
LMW-6	151.714	-21.5	53.366
LMW-3S	178	4.78571	64.3618
LMW-3	131.5	-41.7143	52.193
LMW-16	114.636	-58.5779	64.3618
LMW-15R	101.5	-71.7143	62.5772
LMW-14R	101.5	-71.7143	71.8462
LMW-9S	131.2	-42.0143	58.4595
LMW-10	186.861	13.6468	55.5451
LMW-11	101.5	-71.7143	64.3618
LMW-12	101.5	-71.7143	64.3618
MW-5	112.385	-60.8297	61.0264
LMW-13	101.5	-71.7143	64.3618

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 173.214

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-9D	115.364	-57.8506	76.0212
LMW-9	108.143	-65.0714	63.0334
LMW-8	108.667	-64.5476	63.0334
LMW-7	116.222	-56.9921	65.6073
LMW-6	151.714	-21.5	63.0334

LMW-3S	178	4.78571	76.0212
LMW-3	131.5	-41.714	361.6479
LMW-16	114.636	-58.577	976.0212
LMW-15R		101.5	-71.714
LMW-14R		101.5	-71.714
LMW-9S	131.2	-42.014	369.0496
LMW-10	186.861	13.6468	65.6073
LMW-11	101.5	-71.714	376.0212
LMW-12	101.5	-71.714	376.0212
MW-5	112.385	-60.829	772.0815
LMW-13	101.5	-71.714	376.0212

373.9132
384.8613

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Trichlorofluoromethane

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

Total Percent Non-Detects = 78.5992%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 21
Maximum Background Concentration = 2.77259
Confidence Level = 72.4%
False Positive Rate = 27.6%

Location	Date	Samples	Mean	Significant
LMW-9D	7/6/2011	1	-2.07944	FALSE
LMW-9	7/6/2011	1	-2.07944	FALSE
LMW-8	7/6/2011	1	-2.07944	FALSE
LMW-7	7/6/2011	1	-2.07944	FALSE
LMW-6	7/6/2011	1	-0.356675	FALSE
LMW-3S	7/6/2011	1	-1.02165	FALSE
LMW-3	7/6/2011	1	-0.673345	FALSE
LMW-16	7/6/2011	1	-2.07944	FALSE
LMW-15R	7/6/2011	1	-2.07944	FALSE
LMW-14R	7/6/2011	1	-2.07944	FALSE
LMW-9S	7/6/2011	1	-2.07944	FALSE
LMW-10	7/6/2011	1	1.30833	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

Concentrations (ppb)

Parameter: Vanadium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 245
Total Non-Detect: 204
Percent Non-Detects: 83.2653%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	20	19 (95%)	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
			7/6/2011	ND<1.4 U	ND<1.4 U

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-14R	8	7 (87.5%)	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
			7/6/2011	ND<1.4 U	ND<1.4 U
LMW-15R	12	11 (91.6667%)	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
			7/6/2011	ND<1.4 U	ND<1.4 U

LMW-16	10	8 (80%)	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
			7/6/2011	2.7 J	2.7 J	
LMW-3	22	21 (95.4545%)	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	
			7/6/2011	ND<1.4 U		ND<1.4 U
LMW-6	20	19 (95%)	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
			7/6/2011	ND<1.4 U		ND<1.4 U
LMW-7	18	9 (50%)	1/16/1998	ND<20	ND<20	
			3/16/1999	7 J	7 J	
			9/23/1999	49	49	
			3/14/2000	ND<20	ND<20	
			9/23/2003	ND<20	ND<20	
			3/10/2004	ND<20	ND<20	

			10/12/2004	ND<20	ND<20	
			4/1/2005	12 J	12 J	
			10/26/2005	18 J	18 J	
			6/19/2006	8 J	8 J	
			11/18/2006	3 J	3 J	
			6/2/2007	14	14	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	2.9 J	2.9 J	
			11/17/2010	ND<1.4 U		ND<1.4 U
			7/6/2011	7	7	
LMW-8	20	19 (95%)	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
			7/6/2011	ND<1.4 U	ND<1.4 U	
LMW-9	20	13 (65%)	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	
			7/6/2011	ND<1.4 U	ND<1.4 U	
LMW-9D	10	1 (10%)	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	
			7/6/2011	2.6 J	2.6 J	
LMW-9S	12	10 (83.3333%)	11/18/2006	ND<20	ND<20	
			6/2/2007	5	5	
			11/15/2007	ND<20	ND<20	
			5/20/2008	ND<20	ND<20	
			11/20/2008	ND<20	ND<20	
			6/11/2009	ND<1.4 U		ND<1.4 U
			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	
			7/6/2011	ND<1.4 U	ND<1.4 U	
LMW-10	17	15 (88.2353%)	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
			7/6/2011	ND<1.4 U	ND<1.4 U	
LMW-3S	10	6 (60%)	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	
			7/6/2011	3.2 J	3.2 J	
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-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

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 = 245

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	-2.14441	22.5296	-6.62378
5	0.7	-2.05375	26.7475	-8.06141
6	0.7	-1.97737	30.6575	-9.44556
7	0.7	-1.91103	34.3095	-10.7833
8	0.7	-1.85218	37.7401	-12.0798
9	0.7	-1.79912	40.9769	-13.3392
10	0.7	-1.75069	44.0418	-14.5647
11	0.7	-1.70604	46.9524	-15.7589
12	0.7	-1.66456	49.7231	-16.9241
13	0.7	-1.62576	52.3662	-18.0621
14	0.7	-1.58927	54.892	-19.1746
15	0.7	-1.55477	57.3093	-20.263
16	0.7	-1.5141	59.6018	-21.3228
17	0.7	-1.48328	61.802	-22.3611
18	0.7	-1.4538	63.9155	-23.3788
19	0.7	-1.42554	65.9477	-24.3767
20	0.7	-1.39838	67.9031	-25.3555
21	0.7	-1.3722	69.7861	-26.3161
22	0.7	-1.34694	71.6003	-27.2589
23	0.7	-1.32251	73.3494	-28.1847
24	0.7	-1.29884	75.0363	-29.0939
25	0.7	-1.27588	76.6642	-29.987
26	0.7	-1.25357	78.2356	-30.8645
27	0.7	-1.23187	79.7531	-31.7268
28	0.7	-1.21073	81.219	-32.5743
29	0.7	-1.19012	82.6353	-33.4074
30	0.7	-1.17	84.0043	-34.2264
31	0.7	-1.1455	85.3164	-35.0282
32	0.7	-1.12639	86.5852	-35.8167
33	0.7	-1.10768	87.8121	-36.5921
34	0.7	-1.08935	88.9988	-37.3546
35	0.7	-1.07138	90.1467	-38.1046
36	0.7	-1.05375	91.2571	-38.8422
37	0.7	-1.03643	92.3312	-39.5677
38	0.7	-1.01943	93.3705	-40.2813
39	0.7	-1.00271	94.3759	-40.9832
40	0.7	-0.986272	95.3486	-41.6736
41	0.7	-0.970094	96.2897	-42.3527
42	0.7	-0.954165	97.2002	-43.0206
43	0.7	-0.938476	98.0809	-43.6775
44	0.7	-0.923014	98.9328	-44.3236
45	0.7	-0.907769	99.7569	-44.9591
46	0.7	-0.892733	100.554	-45.584
47	0.7	-0.874218	101.318	-46.1959
48	1.8	-0.859618	102.057	-47.7432
49	1.8	-0.845198	102.771	-49.2646

50	2	-0.830953	103.462	-50.9265
51	2	-0.816874	104.129	-52.5603
52	2.1	-0.802956	104.774	-54.2465
53	2.3	-0.789191	105.397	-56.0616
54	2.3	-0.775574	105.998	-57.8454
55	2.5	-0.7621	106.579	-59.7507
56	2.6	-0.748762	107.14	-61.6975
57	2.6	-0.735557	107.681	-63.6099
58	2.7	-0.722479	108.203	-65.5606
59	2.9	-0.709522	108.706	-67.6182
60	3	-0.696684	109.192	-69.7083
61	3	-0.68396	109.659	-71.7601
62	3	-0.668209	110.106	-73.7648
63	3.2	-0.655726	110.536	-75.8631
64	4.6	-0.643345	110.95	-78.8225
65	5	-0.631062	111.348	-81.9778
66	5	-0.618872	111.731	-85.0722
67	5	-0.606775	112.099	-88.106
68	5	-0.594766	112.453	-91.0799
69	5	-0.582841	112.793	-93.9941
70	6.2	-0.570999	113.119	-97.5343
71	7	-0.559237	113.431	-101.449
72	7	-0.547551	113.731	-105.282
73	7	-0.53594	114.018	-109.033
74	7	-0.524401	114.293	-112.704
75	7.5	-0.51293	114.556	-116.551
76	8	-0.501527	114.808	-120.563
77	8	-0.487364	115.046	-124.462
78	8	-0.476105	115.272	-128.271
79	9	-0.464904	115.488	-132.455
80	10	-0.453763	115.694	-136.993
81	10	-0.442676	115.89	-141.42
82	10	-0.431644	116.077	-145.736
83	10	-0.420664	116.253	-149.943
84	10	-0.409735	116.421	-154.04
85	10	-0.398855	116.58	-158.029
86	10	-0.388022	116.731	-161.909
87	10	-0.377233	116.873	-165.681
88	10	-0.36649	117.008	-169.346
89	10	-0.355788	117.134	-172.904
90	10	-0.345126	117.253	-176.355
91	10	-0.334503	117.365	-179.7
92	10	-0.323919	117.47	-182.939
93	10	-0.310738	117.567	-186.047
94	10	-0.300232	117.657	-189.049
95	10	-0.28976	117.741	-191.947
96	10	-0.279319	117.819	-194.74
97	10	-0.268908	117.891	-197.429
98	10	-0.258527	117.958	-200.014
99	10	-0.248174	118.02	-202.496
100	10	-0.237847	118.076	-204.874
101	10	-0.227545	118.128	-207.15
102	10	-0.217267	118.175	-209.323
103	10	-0.207012	118.218	-211.393
104	10	-0.196779	118.257	-213.361
105	10	-0.186567	118.292	-215.226
106	10	-0.176374	118.323	-216.99
107	10	-0.166199	118.35	-218.652
108	10	-0.153505	118.374	-220.187
109	10	-0.143367	118.394	-221.621
110	10	-0.133244	118.412	-222.953
111	10	-0.123135	118.427	-224.184

112	10	-0.113039	118.44	-225.315
113	10	-0.102953	118.451	-226.344
114	10	-0.0928787	118.459	-227.273
115	10	-0.0828129	118.466	-228.101
116	10	-0.0727562	118.471	-228.829
117	10	-0.0627062	118.475	-229.456
118	10	-0.0526632	118.478	-229.983
119	10	-0.0426257	118.48	-230.409
120	10	-0.0325917	118.481	-230.735
121	10	-0.0225612	118.482	-230.96
122	10	-0.0125328	118.482	-231.086
123	10	0	118.482	-231.086
124	10	0.0125328	118.482	-230.96
125	10	0.0225612	118.482	-230.735
126	10	0.0325917	118.483	-230.409
127	10	0.0426257	118.485	-229.983
128	10	0.0526632	118.488	-229.456
129	10	0.0627062	118.492	-228.829
130	10	0.0727562	118.497	-228.101
131	10	0.0828129	118.504	-227.273
132	10	0.0928787	118.513	-226.344
133	10	0.102953	118.523	-225.315
134	10	0.113039	118.536	-224.184
135	10	0.123135	118.551	-222.953
136	10	0.133244	118.569	-221.621
137	10	0.143367	118.59	-220.187
138	10	0.153505	118.613	-218.652
139	10	0.166199	118.641	-216.99
140	10	0.176374	118.672	-215.226
141	10	0.186567	118.707	-213.361
142	10	0.196779	118.745	-211.393
143	10	0.207012	118.788	-209.323
144	10	0.217267	118.835	-207.15
145	10	0.227545	118.887	-204.874
146	10	0.237847	118.944	-202.496
147	10	0.248174	119.005	-200.014
148	10	0.258527	119.072	-197.429
149	10	0.268908	119.145	-194.74
150	10	0.279319	119.223	-191.947
151	10	0.28976	119.306	-189.049
152	10	0.300232	119.397	-186.047
153	10	0.310738	119.493	-182.939
154	10	0.323919	119.598	-179.7
155	10	0.334503	119.71	-176.355
156	10	0.345126	119.829	-172.904
157	10	0.355788	119.956	-169.346
158	10	0.36649	120.09	-165.681
159	10	0.377233	120.232	-161.909
160	10	0.388022	120.383	-158.029
161	10	0.398855	120.542	-154.04
162	10	0.409735	120.71	-149.943
163	10	0.420664	120.887	-145.736
164	10	0.431644	121.073	-141.42
165	10	0.442676	121.269	-136.993
166	10	0.453763	121.475	-132.455
167	10	0.464904	121.691	-127.806
168	10	0.476105	121.918	-123.045
169	10	0.487364	122.155	-118.172
170	10	0.501527	122.407	-113.156
171	10	0.51293	122.67	-108.027
172	10	0.524401	122.945	-102.783
173	10	0.53594	123.232	-97.4235

174	10	0.547551		123.532	-91.948
175	10	0.559237		123.845	-86.3557
176	10	0.570999		124.171	-80.6457
177	10	0.582841		124.51	-74.8173
178	10	0.594766		124.864	-68.8696
179	10	0.606775		125.232	-62.8018
180	10	0.618872		125.615	-56.6131
181	10	0.631062		126.014	-50.3025
182	10	0.643345		126.428	-43.869
183	10	0.655726		126.858	-37.3118
184	10	0.668209		127.304	-30.6297
185	10	0.68396	127.772	-23.7901	
186	10	0.696684		128.257	-16.8232
187	10	0.709522		128.761	-9.72803
188	10	0.722479		129.283	-2.50324
189	10	0.735557		129.824	4.85233
190	10	0.748762		130.384	12.34
191	10	0.7621	130.965	19.9609	
192	10	0.775574		131.567	27.7167
193	10	0.789191		132.189	35.6086
194	10	0.802956		132.834	43.6382
195	10	0.816874		133.501	51.8069
196	10	0.830953		134.192	60.1164
197	10	0.845198		134.906	68.5684
198	10	0.859618		135.645	77.1646
199	10	0.874218		136.409	85.9068
200	10	0.892733		137.206	94.8341
201	10	0.907769		138.03	103.912
202	10	0.923014		138.882	113.142
203	10	0.938476		139.763	122.527
204	10	0.954165		140.674	132.068
205	10	0.970094		141.615	141.769
206	10	0.986272		142.587	151.632
207	10	1.00271	143.593	161.659	
208	10	1.01943	144.632	171.853	
209	10	1.03643	145.706	182.218	
210	10	1.05375	146.817	192.755	
211	10	1.07138	147.965	203.469	
212	10	1.08935	149.151	214.362	
213	10	1.10768	150.378	225.439	
214	10	1.12639	151.647	236.703	
215	10	1.1455	152.959	248.158	
216	10	1.17	154.328	259.858	
217	10	1.19012	155.744	271.759	
218	10	1.21073	157.21	283.867	
219	10	1.23187	158.728	296.185	
220	10	1.25357	160.299	308.721	
221	10	1.27588	161.927	321.48	
222	10	1.29884	163.614	334.468	
223	10	1.32251	165.363	347.693	
224	10	1.34694	167.177	361.163	
225	10	1.3722	169.06	374.885	
226	10	1.39838	171.016	388.868	
227	10	1.42554	173.048	403.124	
228	10	1.4538	175.161	417.662	
229	10	1.48328	177.362	432.495	
230	10	1.5141	179.654	447.636	
231	10	1.55477	182.071	463.183	
232	10	1.58927	184.597	479.076	
233	10	1.62576	187.24	495.334	
234	10	1.66456	190.011	511.979	
235	10	1.70604	192.922	529.04	

236	10	1.75069	195.986	546.547
237	10	1.79912	199.223	564.538
238	11	1.85218	202.654	584.912
239	12	1.91103	206.306	607.844
240	14	1.97737	210.216	635.527
241	15	2.05375	214.434	666.334
242	18	2.14441	219.032	704.933
243	30	2.25713	224.127	772.647
244	41	2.40892	229.93	871.413
245	49	2.65209	236.963	1001.36

Data Set Standard Deviation = 5.4149
Numerator = 1.00273e+006
Denominator = 1.69532e+006
W Statistic = 0.591469 = 1.00273e+006 / 1.69532e+006

5% Critical value of 0.976 exceeds 0.591469
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.591469
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 = 245

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	-2.14441	22.5296	3.37505
5	-0.356675	-2.05375	26.7475	4.10757
6	-0.356675	-1.97737	30.6575	4.81285
7	-0.356675	-1.91103	34.3095	5.49447
8	-0.356675	-1.85218	37.7401	6.15509
9	-0.356675	-1.79912	40.9769	6.79679
10	-0.356675	-1.75069	44.0418	7.42122
11	-0.356675	-1.70604	46.9524	8.02972
12	-0.356675	-1.66456	49.7231	8.62343
13	-0.356675	-1.62576	52.3662	9.2033
14	-0.356675	-1.58927	54.892	9.77015
15	-0.356675	-1.55477	57.3093	10.3247
16	-0.356675	-1.5141	59.6018	10.8647
17	-0.356675	-1.48328	61.802	11.3938
18	-0.356675	-1.4538	63.9155	11.9123
19	-0.356675	-1.42554	65.9477	12.4208
20	-0.356675	-1.39838	67.9031	12.9195
21	-0.356675	-1.3722	69.7861	13.409
22	-0.356675	-1.34694	71.6003	13.8894
23	-0.356675	-1.32251	73.3494	14.3611
24	-0.356675	-1.29884	75.0363	14.8244
25	-0.356675	-1.27588	76.6642	15.2794
26	-0.356675	-1.25357	78.2356	15.7266
27	-0.356675	-1.23187	79.7531	16.1659
28	-0.356675	-1.21073	81.219	16.5978
29	-0.356675	-1.19012	82.6353	17.0223
30	-0.356675	-1.17	84.0043	17.4396
31	-0.356675	-1.1455	85.3164	17.8481
32	-0.356675	-1.12639	86.5852	18.2499
33	-0.356675	-1.10768	87.8121	18.645
34	-0.356675	-1.08935	88.9988	19.0335
35	-0.356675	-1.07138	90.1467	19.4156
36	-0.356675	-1.05375	91.2571	19.7915
37	-0.356675	-1.03643	92.3312	20.1612
38	-0.356675	-1.01943	93.3705	20.5248
39	-0.356675	-1.00271	94.3759	20.8824
40	-0.356675	-0.986272	95.3486	21.2342
41	-0.356675	-0.970094	96.2897	21.5802
42	-0.356675	-0.954165	97.2002	21.9205
43	-0.356675	-0.938476	98.0809	22.2553
44	-0.356675	-0.923014	98.9328	22.5845
45	-0.356675	-0.907769	99.7569	22.9082
46	-0.356675	-0.892733	100.554	23.2267
47	-0.356675	-0.874218	101.318	23.5385
48	0.587787	-0.859618	102.057	23.0332
49	0.587787	-0.845198	102.771	22.5364

50	0.693147	-0.830953	103.462	21.9604
51	0.693147	-0.816874	104.129	21.3942
52	0.741937	-0.802956	104.774	20.7985
53	0.832909	-0.789191	105.397	20.1412
54	0.832909	-0.775574	105.998	19.4952
55	0.916291	-0.7621	106.579	18.7969
56	0.955511	-0.748762	107.14	18.0814
57	0.955511	-0.735557	107.681	17.3786
58	0.993252	-0.722479	108.203	16.661
59	1.06471	-0.709522	108.706	15.9055
60	1.09861	-0.696684	109.192	15.1402
61	1.09861	-0.68396	109.659	14.3887
62	1.09861	-0.668209	110.106	13.6546
63	1.16315	-0.655726	110.536	12.8919
64	1.52606	-0.643345	110.95	11.9102
65	1.60944	-0.631062	111.348	10.8945
66	1.60944	-0.618872	111.731	9.89847
67	1.60944	-0.606775	112.099	8.9219
68	1.60944	-0.594766	112.453	7.96466
69	1.60944	-0.582841	112.793	7.02661
70	1.82455	-0.570999	113.119	5.9848
71	1.94591	-0.559237	113.431	4.89657
72	1.94591	-0.547551	113.731	3.83109
73	1.94591	-0.53594	114.018	2.7882
74	1.94591	-0.524401	114.293	1.76776
75	2.0149	-0.51293	114.556	0.734254
76	2.07944	-0.501527	114.808	-0.308642
77	2.07944	-0.487364	115.046	-1.32209
78	2.07944	-0.476105	115.272	-2.31212
79	2.19722	-0.464904	115.488	-3.33362
80	2.30259	-0.453763	115.694	-4.37845
81	2.30259	-0.442676	115.89	-5.39774
82	2.30259	-0.431644	116.077	-6.39164
83	2.30259	-0.420664	116.253	-7.36026
84	2.30259	-0.409735	116.421	-8.30371
85	2.30259	-0.398855	116.58	-9.22211
86	2.30259	-0.388022	116.731	-10.1156
87	2.30259	-0.377233	116.873	-10.9842
88	2.30259	-0.36649	117.008	-11.828
89	2.30259	-0.355788	117.134	-12.6473
90	2.30259	-0.345126	117.253	-13.442
91	2.30259	-0.334503	117.365	-14.2122
92	2.30259	-0.323919	117.47	-14.958
93	2.30259	-0.310738	117.567	-15.6735
94	2.30259	-0.300232	117.657	-16.3648
95	2.30259	-0.28976	117.741	-17.032
96	2.30259	-0.279319	117.819	-17.6752
97	2.30259	-0.268908	117.891	-18.2944
98	2.30259	-0.258527	117.958	-18.8897
99	2.30259	-0.248174	118.02	-19.4611
100	2.30259	-0.237847	118.076	-20.0088
101	2.30259	-0.227545	118.128	-20.5327
102	2.30259	-0.217267	118.175	-21.033
103	2.30259	-0.207012	118.218	-21.5096
104	2.30259	-0.196779	118.257	-21.9627
105	2.30259	-0.186567	118.292	-22.3923
106	2.30259	-0.176374	118.323	-22.7984
107	2.30259	-0.166199	118.35	-23.1811
108	2.30259	-0.153505	118.374	-23.5346
109	2.30259	-0.143367	118.394	-23.8647
110	2.30259	-0.133244	118.412	-24.1715
111	2.30259	-0.123135	118.427	-24.455

112	2.30259	-0.113039	118.44	-24.7153
113	2.30259	-0.102953	118.451	-24.9524
114	2.30259	-0.0928787	118.459	-25.1662
115	2.30259	-0.0828129	118.466	-25.3569
116	2.30259	-0.0727562	118.471	-25.5245
117	2.30259	-0.0627062	118.475	-25.6688
118	2.30259	-0.0526632	118.478	-25.7901
119	2.30259	-0.0426257	118.48	-25.8883
120	2.30259	-0.0325917	118.481	-25.9633
121	2.30259	-0.0225612	118.482	-26.0152
122	2.30259	-0.0125328	118.482	-26.0441
123	2.30259	0	118.482	-26.0441
124	2.30259	0.0125328	118.482	-26.0152
125	2.30259	0.0225612	118.482	-25.9633
126	2.30259	0.0325917	118.483	-25.8883
127	2.30259	0.0426257	118.485	-25.7901
128	2.30259	0.0526632	118.488	-25.6688
129	2.30259	0.0627062	118.492	-25.5245
130	2.30259	0.0727562	118.497	-25.3569
131	2.30259	0.0828129	118.504	-25.1662
132	2.30259	0.0928787	118.513	-24.9524
133	2.30259	0.102953	118.523	-24.7153
134	2.30259	0.113039	118.536	-24.455
135	2.30259	0.123135	118.551	-24.1715
136	2.30259	0.133244	118.569	-23.8647
137	2.30259	0.143367	118.59	-23.5346
138	2.30259	0.153505	118.613	-23.1811
139	2.30259	0.166199	118.641	-22.7984
140	2.30259	0.176374	118.672	-22.3923
141	2.30259	0.186567	118.707	-21.9627
142	2.30259	0.196779	118.745	-21.5096
143	2.30259	0.207012	118.788	-21.033
144	2.30259	0.217267	118.835	-20.5327
145	2.30259	0.227545	118.887	-20.0088
146	2.30259	0.237847	118.944	-19.4611
147	2.30259	0.248174	119.005	-18.8897
148	2.30259	0.258527	119.072	-18.2944
149	2.30259	0.268908	119.145	-17.6752
150	2.30259	0.279319	119.223	-17.032
151	2.30259	0.28976	119.306	-16.3648
152	2.30259	0.300232	119.397	-15.6735
153	2.30259	0.310738	119.493	-14.958
154	2.30259	0.323919	119.598	-14.2122
155	2.30259	0.334503	119.71	-13.442
156	2.30259	0.345126	119.829	-12.6473
157	2.30259	0.355788	119.956	-11.828
158	2.30259	0.36649	120.09	-10.9842
159	2.30259	0.377233	120.232	-10.1156
160	2.30259	0.388022	120.383	-9.22211
161	2.30259	0.398855	120.542	-8.30371
162	2.30259	0.409735	120.71	-7.36026
163	2.30259	0.420664	120.887	-6.39164
164	2.30259	0.431644	121.073	-5.39774
165	2.30259	0.442676	121.269	-4.37845
166	2.30259	0.453763	121.475	-3.33362
167	2.30259	0.464904	121.691	-2.26314
168	2.30259	0.476105	121.918	-1.16687
169	2.30259	0.487364	122.155	-0.0446678
170	2.30259	0.501527	122.407	1.11014
171	2.30259	0.51293	122.67	2.29121
172	2.30259	0.524401	122.945	3.49868
173	2.30259	0.53594	123.232	4.73273

174	2.30259	0.547551		123.532	5.99351
175	2.30259	0.559237		123.845	7.28121
176	2.30259	0.570999		124.171	8.59598
177	2.30259	0.582841		124.51	9.93802
178	2.30259	0.594766		124.864	11.3075
179	2.30259	0.606775		125.232	12.7047
180	2.30259	0.618872		125.615	14.1297
181	2.30259	0.631062		126.014	15.5828
182	2.30259	0.643345		126.428	17.0641
183	2.30259	0.655726		126.858	18.574
184	2.30259	0.668209		127.304	20.1126
185	2.30259	0.68396	127.772	21.6875	
186	2.30259	0.696684		128.257	23.2916
187	2.30259	0.709522		128.761	24.9254
188	2.30259	0.722479		129.283	26.5889
189	2.30259	0.735557		129.824	28.2826
190	2.30259	0.748762		130.384	30.0067
191	2.30259	0.7621	130.965	31.7615	
192	2.30259	0.775574		131.567	33.5473
193	2.30259	0.789191		132.189	35.3645
194	2.30259	0.802956		132.834	37.2134
195	2.30259	0.816874		133.501	39.0943
196	2.30259	0.830953		134.192	41.0076
197	2.30259	0.845198		134.906	42.9538
198	2.30259	0.859618		135.645	44.9331
199	2.30259	0.874218		136.409	46.9461
200	2.30259	0.892733		137.206	49.0017
201	2.30259	0.907769		138.03	51.0919
202	2.30259	0.923014		138.882	53.2172
203	2.30259	0.938476		139.763	55.3781
204	2.30259	0.954165		140.674	57.5752
205	2.30259	0.970094		141.615	59.8089
206	2.30259	0.986272		142.587	62.0799
207	2.30259	1.00271	143.593	64.3887	
208	2.30259	1.01943	144.632	66.736	
209	2.30259	1.03643	145.706	69.1225	
210	2.30259	1.05375	146.817	71.5488	
211	2.30259	1.07138	147.965	74.0158	
212	2.30259	1.08935	149.151	76.5241	
213	2.30259	1.10768	150.378	79.0746	
214	2.30259	1.12639	151.647	81.6682	
215	2.30259	1.1455	152.959	84.3059	
216	2.30259	1.17	154.328	86.9999	
217	2.30259	1.19012	155.744	89.7402	
218	2.30259	1.21073	157.21	92.528	
219	2.30259	1.23187	158.728	95.3645	
220	2.30259	1.25357	160.299	98.251	
221	2.30259	1.27588	161.927	101.189	
222	2.30259	1.29884	163.614	104.179	
223	2.30259	1.32251	165.363	107.225	
224	2.30259	1.34694	167.177	110.326	
225	2.30259	1.3722	169.06	113.486	
226	2.30259	1.39838	171.016	116.706	
227	2.30259	1.42554	173.048	119.988	
228	2.30259	1.4538	175.161	123.336	
229	2.30259	1.48328	177.362	126.751	
230	2.30259	1.5141	179.654	130.237	
231	2.30259	1.55477	182.071	133.817	
232	2.30259	1.58927	184.597	137.477	
233	2.30259	1.62576	187.24	141.22	
234	2.30259	1.66456	190.011	145.053	
235	2.30259	1.70604	192.922	148.981	

236	2.30259	1.75069	195.986	153.012
237	2.30259	1.79912	199.223	157.155
238	2.3979	1.85218	202.654	161.596
239	2.48491	1.91103	206.306	166.345
240	2.63906	1.97737	210.216	171.563
241	2.70805	2.05375	214.434	177.125
242	2.89037	2.14441	219.032	183.323
243	3.4012	2.25713	224.127	191
244	3.71357	2.40892	229.93	199.946
245	3.89182	2.65209	236.963	210.267

Data Set Standard Deviation = 1.07956
Numerator = 44212.3
Denominator = 67385.1
W Statistic = 0.656115 = 44212.3 / 67385.1

5% Critical value of 0.976 exceeds 0.656115
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.656115
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	102.5
	3/16/1999	ND<2.30259	102.5
	9/23/1999	ND<2.30259	102.5
	3/14/2000	ND<2.30259	102.5
	9/23/2003	ND<2.30259	102.5
	3/10/2004	ND<2.30259	102.5
	10/12/2004	ND<2.30259	102.5
	4/1/2005	ND<2.30259	102.5
	10/26/2005	ND<2.30259	102.5
	6/19/2006	ND<2.30259	102.5
	11/18/2006	ND<2.30259	102.5
	6/2/2007	2.70805	241
	11/15/2007	ND<2.30259	102.5
	5/20/2008	ND<2.30259	102.5
	11/20/2008	ND<2.30259	102.5
	6/11/2009	ND<-0.356675 U	102.5
	11/16/2009	ND<-0.356675 U	102.5
	6/30/2010	ND<-0.356675 U	102.5
	11/17/2010	ND<-0.356675 U	102.5
	7/6/2011	ND<-0.356675 U	102.5

Rank Sum = 2188.5
Rank Mean = 109.425

Background Rank Sum = 2188.5
Background Rank Mean = 109.425

Compliance Wells

Well ID	Date	Result	Rank
LMW-14R	6/2/2007	0.693147 J	207
	11/15/2007	ND<2.30259	102.5
	5/20/2008	ND<2.30259	102.5
	11/20/2008	ND<2.30259	102.5
	6/11/2009	ND<-0.356675 U	102.5
	6/30/2010	ND<-0.356675 U	102.5
	11/17/2010	ND<-0.356675 U	102.5
	7/6/2011	ND<-0.356675 U	102.5

Rank Sum = 924.5
Rank Mean = 115.563

LMW-15R	11/18/2006	ND<2.30259	102.5
	6/2/2007	ND<2.30259	102.5
	11/15/2007	ND<2.30259	102.5
	11/15/2007	ND<2.30259	102.5
	5/20/2008	ND<2.30259	102.5
	5/20/2008	ND<2.30259	102.5

	11/20/2008	ND<2.30259	102.5
	11/20/2008	ND<2.30259	102.5
	6/11/2009	2.0149	232
	6/30/2010	ND<-0.356675 U	102.5
	11/17/2010	ND<-0.356675 U	102.5
	7/6/2011	ND<-0.356675 U	102.5

Rank Sum = 1359.5
Rank Mean = 113.292

LMW-16	11/18/2006	ND<2.30259	102.5
	6/2/2007	3.71357	244
	11/15/2007	ND<2.30259	102.5
	5/20/2008	ND<2.30259	102.5
	11/20/2008	ND<2.30259	102.5
	6/11/2009	ND<-0.356675 U	102.5
	11/16/2009	ND<-0.356675 U	102.5
	6/30/2010	ND<-0.356675 U	102.5
	11/17/2010	ND<-0.356675 U	102.5
	7/6/2011	0.993252 J	215

Rank Sum = 1279
Rank Mean = 127.9

LMW-3	11/19/1996	ND<2.30259	102.5
	3/24/1997	ND<2.30259	102.5
	1/16/1998	ND<2.30259	102.5
	3/16/1999	ND<2.30259	102.5
	9/23/1999	ND<2.30259	102.5
	3/14/2000	ND<2.30259	102.5
	9/23/2003	ND<2.30259	102.5
	3/10/2004	ND<2.30259	102.5
	10/12/2004	ND<2.30259	102.5
	4/1/2005	ND<2.30259	102.5
	10/26/2005	ND<2.30259	102.5
	6/19/2006	ND<2.30259	102.5
	11/18/2006	ND<2.30259	102.5
	6/2/2007	ND<2.30259	102.5
	11/15/2007	ND<2.30259	102.5
	5/20/2008	ND<2.30259	102.5
	11/20/2008	ND<2.30259	102.5
	6/11/2009	ND<-0.356675 U	102.5
	11/16/2009	ND<-0.356675 U	102.5
	6/30/2010	ND<-0.356675 U	102.5
	11/17/2010	0.587787 J	205
	7/6/2011	ND<-0.356675 U	102.5

Rank Sum = 2357.5
Rank Mean = 107.159

LMW-6	1/16/1998	ND<2.30259	102.5
	3/16/1999	ND<2.30259	102.5
	9/23/1999	ND<2.30259	102.5
	3/14/2000	ND<2.30259	102.5
	9/23/2003	ND<2.30259	102.5
	3/10/2004	ND<2.30259	102.5
	10/12/2004	ND<2.30259	102.5
	4/1/2005	ND<2.30259	102.5
	10/26/2005	ND<2.30259	102.5
	6/19/2006	ND<2.30259	102.5
	11/18/2006	ND<2.30259	102.5
	6/2/2007	1.09861	217
	11/15/2007	ND<2.30259	102.5
	5/20/2008	ND<2.30259	102.5
	11/20/2008	ND<2.30259	102.5

	6/11/2009	ND<-0.356675 U	102.5
	11/16/2009	ND<-0.356675 U	102.5
	6/30/2010	ND<-0.356675 U	102.5
	11/17/2010	ND<-0.356675 U	102.5
	7/6/2011	ND<-0.356675 U	102.5

Rank Sum = 2164.5
Rank Mean = 108.225

LMW-7	1/16/1998	ND<2.30259	102.5
	3/16/1999	1.94591 J	228
	9/23/1999	3.89182	245
	3/14/2000	ND<2.30259	102.5
	9/23/2003	ND<2.30259	102.5
	3/10/2004	ND<2.30259	102.5
	10/12/2004	ND<2.30259	102.5
	4/1/2005	2.48491 J	239
	10/26/2005	2.89037 J	242
	6/19/2006	2.07944 J	233
	11/18/2006	1.09861 J	218
	6/2/2007	2.63906	240
	11/15/2007	ND<2.30259	102.5
	5/20/2008	ND<2.30259	102.5
	11/20/2008	ND<2.30259	102.5
	6/11/2009	1.06471 J	216
	11/17/2010	ND<-0.356675 U	102.5
	7/6/2011	1.94591	229

Rank Sum = 3012.5
Rank Mean = 167.361

LMW-8	1/16/1998	ND<2.30259	102.5
	3/16/1999	ND<2.30259	102.5
	9/23/1999	1.94591 J	230
	3/14/2000	ND<2.30259	102.5
	9/23/2003	ND<2.30259	102.5
	3/10/2004	ND<2.30259	102.5
	10/12/2004	ND<2.30259	102.5
	4/1/2005	ND<2.30259	102.5
	10/26/2005	ND<2.30259	102.5
	6/19/2006	ND<2.30259	102.5
	11/18/2006	ND<2.30259	102.5
	6/2/2007	ND<2.30259	102.5
	11/15/2007	ND<2.30259	102.5
	5/20/2008	ND<2.30259	102.5
	11/20/2008	ND<2.30259	102.5
	6/11/2009	ND<-0.356675 U	102.5
	11/16/2009	ND<-0.356675 U	102.5
	6/30/2010	ND<-0.356675 U	102.5
	11/17/2010	ND<-0.356675 U	102.5
	7/6/2011	ND<-0.356675 U	102.5

Rank Sum = 2177.5
Rank Mean = 108.875

LMW-9	1/16/1998	ND<2.30259	102.5
	3/16/1999	ND<2.30259	102.5
	9/23/1999	ND<2.30259	102.5
	3/14/2000	ND<2.30259	102.5
	9/23/2003	ND<2.30259	102.5
	3/10/2004	ND<2.30259	102.5
	10/12/2004	ND<2.30259	102.5
	4/1/2005	2.07944 J	234
	10/26/2005	2.3979 J	238
	6/19/2006	3.4012	243

	11/18/2006	ND<2.30259	102.5
	6/2/2007	1.94591	231
	11/15/2007	ND<2.30259	102.5
	5/20/2008	0.693147 J	208
	11/20/2008	ND<2.30259	102.5
	6/11/2009	0.955511 J	213
	11/16/2009	ND<-0.356675 U	102.5
	6/30/2010	ND<-0.356675 U	102.5
	11/17/2010	1.60944	222
	7/6/2011	ND<-0.356675 U	102.5

Rank Sum = 2921.5
Rank Mean = 146.075

LMW-9D	11/18/2006	2.30259 J	237
	6/2/2007	1.60944	223
	11/15/2007	ND<2.30259	102.5
	5/20/2008	1.60944 J	224
	11/20/2008	1.60944 J	225
	6/11/2009	0.916291 J	212
	11/16/2009	0.832909 J	210
	6/30/2010	0.587787 J	206
	11/17/2010	0.832909 J	211
	7/6/2011	0.955511 J	214

Rank Sum = 2064.5
Rank Mean = 206.45

LMW-9S	11/18/2006	ND<2.30259	102.5
	6/2/2007	1.60944	226
	11/15/2007	ND<2.30259	102.5
	5/20/2008	ND<2.30259	102.5
	11/20/2008	ND<2.30259	102.5
	6/11/2009	ND<-0.356675 U	102.5
	11/16/2009	ND<-0.356675 U	102.5
	11/16/2009	ND<-0.356675 U	102.5
	11/16/2009	ND<-0.356675 U	102.5
	6/30/2010	ND<-0.356675 U	102.5
	11/17/2010	1.82455	227
	7/6/2011	ND<-0.356675 U	102.5

Rank Sum = 1478
Rank Mean = 123.167

LMW-10	3/14/2000	ND<2.30259	102.5
	9/23/2003	ND<2.30259	102.5
	3/10/2004	ND<2.30259	102.5
	10/12/2004	ND<2.30259	102.5
	4/1/2005	ND<2.30259	102.5
	10/26/2005	ND<2.30259	102.5
	6/19/2006	2.07944 J	235
	11/18/2006	ND<2.30259	102.5
	6/2/2007	1.09861 J	219
	11/15/2007	ND<2.30259	102.5
	5/20/2008	ND<2.30259	102.5
	11/20/2008	ND<2.30259	102.5
	6/11/2009	ND<-0.356675 U	102.5
	11/16/2009	ND<-0.356675 U	102.5
	6/30/2010	ND<-0.356675 U	102.5
	11/17/2010	ND<-0.356675 U	102.5
	7/6/2011	ND<-0.356675 U	102.5

Rank Sum = 1991.5
Rank Mean = 117.147

LMW-3S	11/18/2006	ND<2.30259	102.5

	6/2/2007	2.19722	236
	11/15/2007	ND<2.30259	102.5
	5/20/2008	ND<2.30259	102.5
	11/20/2008	ND<2.30259	102.5
	6/11/2009	0.741937 J	209
	11/16/2009	ND<-0.356675 U	102.5
	6/30/2010	ND<-0.356675 U	102.5
	11/17/2010	1.52606 J	221
	7/6/2011	1.16315 J	220

Rank Sum = 1501
Rank Mean = 150.1

MW-5	1/16/1998	ND<2.30259	102.5
	3/16/1999	ND<2.30259	102.5
	9/23/1999	ND<2.30259	102.5
	3/14/2000	ND<2.30259	102.5
	9/23/2003	ND<2.30259	102.5
	3/10/2004	ND<2.30259	102.5
	10/12/2004	ND<2.30259	102.5
	4/1/2005	ND<2.30259	102.5
	10/26/2005	ND<2.30259	102.5
	6/19/2006	ND<2.30259	102.5
	11/15/2007	ND<2.30259	102.5
	5/20/2008	ND<2.30259	102.5
	11/20/2008	ND<2.30259	102.5

Rank Sum = 1332.5
Rank Mean = 102.5

LMW-11	3/14/2000	ND<2.30259	102.5
	9/23/2003	ND<2.30259	102.5
	3/10/2004	ND<2.30259	102.5
	10/12/2004	ND<2.30259	102.5
	4/1/2005	ND<2.30259	102.5
	10/26/2005	ND<2.30259	102.5
	6/19/2006	ND<2.30259	102.5
	6/2/2007	ND<2.30259	102.5
	11/15/2007	ND<2.30259	102.5
	5/20/2008	ND<2.30259	102.5
	11/20/2008	ND<2.30259	102.5

Rank Sum = 1127.5
Rank Mean = 102.5

LMW-12	3/14/2000	ND<2.30259	102.5
	9/23/2003	ND<2.30259	102.5
	3/10/2004	ND<2.30259	102.5
	10/12/2004	ND<2.30259	102.5
	4/1/2005	ND<2.30259	102.5
	10/26/2005	ND<2.30259	102.5
	6/19/2006	ND<2.30259	102.5
	6/2/2007	ND<2.30259	102.5
	11/15/2007	ND<2.30259	102.5
	5/20/2008	ND<2.30259	102.5
	11/20/2008	ND<2.30259	102.5

Rank Sum = 1127.5
Rank Mean = 102.5

LMW-13	3/14/2000	ND<2.30259	102.5
	9/23/2003	ND<2.30259	102.5
	3/10/2004	ND<2.30259	102.5
	10/12/2004	ND<2.30259	102.5
	4/1/2005	ND<2.30259	102.5
	10/26/2005	ND<2.30259	102.5

6/19/2006	ND<2.30259	102.5
6/2/2007	ND<2.30259	102.5
11/15/2007	ND<2.30259	102.5
5/20/2008	ND<2.30259	102.5
11/20/2008	ND<2.30259	102.5

Rank Sum = 1127.5
Rank Mean = 102.5

Calculation Results:

Kruskal-Wallis H Statistic = 32.3235
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 76.4662
95% Confidence comparison value is 26.2962 at 16 degrees of freedom
32.3235 > 26.2962 indicating a significant group difference at 5% significance level
76.4662 > 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 109.425

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-14R	115.563	6.1375	68.9688
LMW-15R	113.292	3.86667	60.2009
LMW-16	127.9	18.475	63.8527
LMW-3	107.159	-2.26591	50.9368
LMW-6	108.225	-1.2	52.1355
LMW-7	167.361	57.9361	53.5641
LMW-8	108.875	-0.55	52.1355
LMW-9	146.075	36.65	52.1355
LMW-9D	206.45	97.025	63.8527
LMW-9S	123.167	13.7417	60.2009
LMW-10	117.147	7.72206	54.387
LMW-3S	150.1	40.675	63.8527
MW-5	102.5	-6.925	58.7359
LMW-11	102.5	-6.925	61.8875
LMW-12	102.5	-6.925	61.8875
LMW-13	102.5	-6.925	61.8875

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 109.425

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-14R	115.563	6.1375	81.4627
LMW-15R	113.292	3.86667	71.1064
LMW-16	127.9	18.475	75.4198
LMW-3	107.159	-2.26591	60.1642
LMW-6	108.225	-1.2	61.58
LMW-7	167.361	57.9361	63.2674
LMW-8	108.875	-0.55	61.58
LMW-9	146.075	36.65	61.58
LMW-9D	206.45	97.025	75.4198
LMW-9S	123.167	13.7417	71.1064
LMW-10	117.147	7.72206	64.2393
LMW-3S	150.1	40.675	75.4198
MW-5	102.5	-6.925	69.3761
LMW-11	102.5	-6.925	73.0986
LMW-12	102.5	-6.925	73.0986
LMW-13	102.5	-6.925	73.0986

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	
0.955511 J		2.30259 J	-1.347070	8	
ND<2.30259		1.60944	0.693147	1	8
1.60944 J		1.60944	0 1	8	
1.60944 J		1.60944	0 1	8	
0.916291 J		1.60944	-0.693147	1	9
0.832909 J		1.60944	-0.776529	1	10
0.587787 J		1.60944	-1.021651	11	
0.832909 J		1.60944	-0.776529	1	12
0.955511 J		1.60944	-0.653926	1	13
1.60944 J		ND<2.30259	-0.693147	1	14
1.60944 J		ND<2.30259	-0.693147	1	15
0.916291 J		ND<2.30259	-1.386291	16	
0.832909 J		ND<2.30259	-1.469681	17	
0.587787 J		ND<2.30259	-1.7148 1	18	
0.832909 J		ND<2.30259	-1.469681	19	
0.955511 J		ND<2.30259	-1.347071	20	
1.60944 J		1.60944 J	0 1	20	
0.916291 J		1.60944 J	-0.693147	1	21
0.832909 J		1.60944 J	-0.776529	1	22
0.587787 J		1.60944 J	-1.021651	23	
0.832909 J		1.60944 J	-0.776529	1	24
0.955511 J		1.60944 J	-0.653926	1	25
0.916291 J		1.60944 J	-0.693147	1	26
0.832909 J		1.60944 J	-0.776529	1	27
0.587787 J		1.60944 J	-1.021651	28	
0.832909 J		1.60944 J	-0.776529	1	29
0.955511 J		1.60944 J	-0.653926	1	30
0.832909 J		0.916291 J	-0.0833816	1	31
0.587787 J		0.916291 J	-0.328504	1	32
0.832909 J		0.916291 J	-0.0833816	1	33
0.955511 J		0.916291 J	0.0392207	2	33
0.587787 J		0.832909 J	-0.245122	2	34
0.832909 J		0.832909 J	0 2	34	

0.955511 J	0.832909 J	0.122602	3	34
0.832909 J	0.587787 J	0.245122	4	34
0.955511 J	0.587787 J	0.367725	5	34
0.955511 J	0.832909 J	0.122602	6	34

S Statistic = 6 - 34 = -28
Comparing at 1.0 - (0.05 / 2) = 97.5% confidence level (two-tailed)
Failed to calculate probability for S = -28
Table out of range

Concentrations (ppb)

Parameter: Xylenes, Total

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 244
Total Non-Detect: 241
Percent Non-Detects: 98.7705%
Total Background Measurements: 20
There is 1 background location

Loc.	Meas.	ND	Date	Conc.	Original
LMW-4	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<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<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			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
			7/6/2011	0.24 J	0.24 J

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-14R	8	8 (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<0.2 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
			7/6/2011	ND<0.2 U	ND<0.2 U
LMW-9D	10	10 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.2 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
			7/6/2011	ND<0.2 U	ND<0.2 U
LMW-9	20	20 (100%)	1/16/1998	ND<1	ND<1

			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<0 J	ND<0 J
			6/11/2009	ND<0.2 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
			7/6/2011	ND<0.2 U	ND<0.2 U
LMW-8	20	20 (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<0.2 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
			7/6/2011	ND<0.2 U	ND<0.2 U
LMW-7	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<1	ND<1
			11/18/2006	ND<0 J	ND<0 J
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.2 U	ND<0.2 U
			11/17/2010	ND<0.2 U	ND<0.2 U
			7/6/2011	0.22 J	0.22 J
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<0.2 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
			7/6/2011	ND<0.2 U	ND<0.2 U
LMW-3S	10	10 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.2 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
			7/6/2011	ND<0.2 U	ND<0.2 U
LMW-9S	12	12 (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<0.2 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
			7/6/2011	ND<0.2 U	ND<0.2 U
LMW-3	22	21 (95.4545%)	11/19/1996	ND<1	ND<1
			3/24/1997	ND<1	ND<1
			1/16/1998	ND<1	ND<1
			3/16/1999	ND<1	ND<1
			9/23/1999	ND<1	ND<1
			3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<0 J	ND<0 J
			6/11/2009	ND<0.2 U	ND<0.2 U
			11/16/2009	0.32 J	0.32 J
			6/30/2010	ND<0.2 U	ND<0.2 U

			11/17/2010	ND<0.2 U	ND<0.2 U
			7/6/2011	ND<0.2 U	ND<0.2 U
LMW-16	10	10 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			6/11/2009	ND<0.2 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
			7/6/2011	ND<0.2 U	ND<0.2 U
LMW-15R	12	12 (100%)	11/18/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
			11/20/2008	ND<0 J	ND<0 J
			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
			7/6/2011	ND<0.2 U	ND<0.2 U
LMW-10	17	17 (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<0.2 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
			7/6/2011	ND<0.2 U	ND<0.2 U
LMW-12	11	11 (100%)	3/14/2000	ND<1	ND<1
			9/23/2003	ND<1	ND<1
			3/10/2004	ND<1	ND<1
			10/12/2004	ND<1	ND<1
			4/1/2005	ND<1	ND<1
			10/26/2005	ND<1	ND<1
			6/19/2006	ND<1	ND<1
			6/2/2007	ND<1	ND<1
			11/15/2007	ND<1	ND<1
			5/20/2008	ND<1	ND<1
			11/20/2008	ND<1	ND<1
LMW-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	
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	

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Shapiro-Francia Test of Normality

Parameter: Xylenes, Total

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	-1.91103	34.3095	-0.191103
8	0.1	-1.85218	37.7401	-0.376321
9	0.1	-1.79912	40.9769	-0.556232
10	0.1	-1.75069	44.0418	-0.731301
11	0.1	-1.70604	46.9524	-0.901905
12	0.1	-1.66456	49.7231	-1.06836
13	0.1	-1.61644	52.336	-1.23001
14	0.1	-1.58047	54.8339	-1.38805
15	0.1	-1.54643	57.2253	-1.54269
16	0.1	-1.5141	59.5178	-1.69411
17	0.1	-1.48328	61.718	-1.84243
18	0.1	-1.4538	63.8315	-1.98781
19	0.1	-1.42554	65.8637	-2.13037
20	0.1	-1.39838	67.8191	-2.27021
21	0.1	-1.3722	69.7021	-2.40743
22	0.1	-1.34694	71.5163	-2.54212
23	0.1	-1.32251	73.2653	-2.67437
24	0.1	-1.29884	74.9523	-2.80425
25	0.1	-1.27024	76.5658	-2.93128
26	0.1	-1.24809	78.1235	-3.05609
27	0.1	-1.22653	79.6279	-3.17874
28	0.1	-1.20553	81.0812	-3.29929
29	0.1	-1.18504	82.4855	-3.4178
30	0.1	-1.16505	83.8429	-3.5343
31	0.1	-1.1455	85.155	-3.64885
32	0.1	-1.12639	86.4238	-3.76149
33	0.1	-1.10768	87.6508	-3.87226
34	0.1	-1.08935	88.8374	-3.98119
35	0.1	-1.07138	89.9853	-4.08833
36	0.1	-1.05375	91.0957	-4.19371
37	0.1	-1.03215	92.161	-4.29692
38	0.1	-1.01522	93.1917	-4.39844
39	0.1	-0.998575	94.1888	-4.4983
40	0.1	-0.982202	95.1536	-4.59652
41	0.1	-0.966088	96.0869	-4.69313
42	0.1	-0.950222	96.9898	-4.78815
43	0.1	-0.934599	97.8633	-4.88161
44	0.1	-0.919183	98.7082	-4.97353
45	0.1	-0.903992	99.5254	-5.06393
46	0.1	-0.889006	100.316	-5.15283
47	0.1	-0.874218	101.08	-5.24025
48	0.1	-0.859618	101.819	-5.32621
49	0.1	-0.841621	102.527	-5.41038

50	0.1	-0.827417	103.212	-5.49312
51	0.1	-0.813379	103.873	-5.57445
52	0.1	-0.7995	104.513	-5.6544
53	0.1	-0.785774	105.13	-5.73298
54	0.1	-0.772193	105.726	-5.8102
55	0.1	-0.758753	106.302	-5.88608
56	0.1	-0.745449	106.858	-5.96062
57	0.1	-0.732275	107.394	-6.03385
58	0.1	-0.719228	107.911	-6.10577
59	0.1	-0.706302	108.41	-6.1764
60	0.1	-0.693493	108.891	-6.24575
61	0.1	-0.680797	109.355	-6.31383
62	0.1	-0.665079	109.797	-6.38034
63	0.1	-0.652622	110.223	-6.4456
64	0.1	-0.640266	110.633	-6.50963
65	0.1	-0.628006	111.027	-6.57243
66	0.22	-0.615839	111.406	-6.70791
67	0.24	-0.603765	111.771	-6.85282
68	0.32	-0.591776	112.121	-7.04219
69	0.5	-0.579873	112.457	-7.33212
70	0.5	-0.568052	112.78	-7.61615
71	0.5	-0.556308	113.09	-7.8943
72	0.5	-0.544642	113.386	-8.16662
73	0.5	-0.533048	113.67	-8.43315
74	0.5	-0.518658	113.939	-8.69248
75	0.5	-0.507221	114.197	-8.94609
76	0.5	-0.49585	114.442	-9.19401
77	0.5	-0.484544	114.677	-9.43628
78	0.5	-0.473299	114.901	-9.67293
79	0.5	-0.462114	115.115	-9.90399
80	0.5	-0.450985	115.318	-10.1295
81	0.5	-0.439913	115.512	-10.3494
82	0.5	-0.428895	115.696	-10.5639
83	0.5	-0.417928	115.87	-10.7728
84	0.5	-0.40701	116.036	-10.9764
85	0.5	-0.396142	116.193	-11.1744
86	0.5	-0.382622	116.339	-11.3657
87	0.5	-0.371856	116.478	-11.5517
88	0.5	-0.361133	116.608	-11.7322
89	0.5	-0.350451	116.731	-11.9075
90	0.5	-0.33981	116.846	-12.0774
91	0.5	-0.329206	116.955	-12.242
92	0.5	-0.318639	117.056	-12.4013
93	0.5	-0.308108	117.151	-12.5553
94	0.5	-0.297612	117.24	-12.7041
95	0.5	-0.287147	117.322	-12.8477
96	0.5	-0.276714	117.399	-12.9861
97	0.5	-0.266311	117.47	-13.1192
98	0.5	-0.253347	117.534	-13.2459
99	0.5	-0.243007	117.593	-13.3674
100	0.5	-0.232693	117.647	-13.4838
101	0.5	-0.222403	117.696	-13.595
102	0.5	-0.212137	117.741	-13.701
103	0.5	-0.201894	117.782	-13.802
104	0.5	-0.191671	117.819	-13.8978
105	0.5	-0.181468	117.852	-13.9885
106	0.5	-0.171285	117.881	-14.0742
107	0.5	-0.161119	117.907	-14.1547
108	0.5	-0.150969	117.93	-14.2302
109	0.5	-0.140835	117.95	-14.3006
110	0.5	-0.130716	117.967	-14.366
111	0.5	-0.118085	117.981	-14.425

112	0.5	-0.107995	117.993	-14.479
113	0.5	-0.0979139	118.002	-14.528
114	0.5	-0.0878447	118.01	-14.5719
115	0.5	-0.0777834	118.016	-14.6108
116	0.5	-0.0677301	118.02	-14.6447
117	0.5	-0.0576847	118.024	-14.6735
118	0.5	-0.0476439	118.026	-14.6973
119	0.5	-0.0376076	118.027	-14.7161
120	0.5	-0.0275759	118.028	-14.7299
121	0.5	-0.0175476	118.029	-14.7387
122	0.5	-0.00751925	118.029	-14.7425
123	0.5	0.00751925	118.029	-14.7387
124	0.5	0.0175476	118.029	-14.7299
125	0.5	0.0275759	118.03	-14.7161
126	0.5	0.0376076	118.031	-14.6973
127	0.5	0.0476439	118.033	-14.6735
128	0.5	0.0576847	118.037	-14.6447
129	0.5	0.0677301	118.041	-14.6108
130	0.5	0.0777834	118.047	-14.5719
131	0.5	0.0878447	118.055	-14.528
132	0.5	0.0979139	118.065	-14.479
133	0.5	0.107995	118.076	-14.425
134	0.5	0.118085	118.09	-14.366
135	0.5	0.130716	118.107	-14.3006
136	0.5	0.140835	118.127	-14.2302
137	0.5	0.150969	118.15	-14.1547
138	0.5	0.161119	118.176	-14.0742
139	0.5	0.171285	118.205	-13.9885
140	0.5	0.181468	118.238	-13.8978
141	0.5	0.191671	118.275	-13.802
142	0.5	0.201894	118.316	-13.701
143	0.5	0.212137	118.361	-13.595
144	0.5	0.222403	118.41	-13.4838
145	0.5	0.232693	118.464	-13.3674
146	0.5	0.243007	118.523	-13.2459
147	0.5	0.253347	118.588	-13.1192
148	0.5	0.266311	118.659	-12.9861
149	0.5	0.276714	118.735	-12.8477
150	0.5	0.287147	118.818	-12.7041
151	0.5	0.297612	118.906	-12.5553
152	0.5	0.308108	119.001	-12.4013
153	0.5	0.318639	119.103	-12.242
154	0.5	0.329206	119.211	-12.0774
155	0.5	0.33981	119.326	-11.9075
156	0.5	0.350451	119.449	-11.7322
157	0.5	0.361133	119.58	-11.5517
158	0.5	0.371856	119.718	-11.3657
159	0.5	0.382622	119.864	-11.1744
160	0.5	0.396142	120.021	-10.9764
161	0.5	0.40701	120.187	-10.7728
162	0.5	0.417928	120.362	-10.5639
163	0.5	0.428895	120.546	-10.3494
164	0.5	0.439913	120.739	-10.1295
165	0.5	0.450985	120.942	-9.90399
166	0.5	0.462114	121.156	-9.67293
167	0.5	0.473299	121.38	-9.43628
168	0.5	0.484544	121.615	-9.19401
169	0.5	0.49585	121.861	-8.94609
170	0.5	0.507221	122.118	-8.69248
171	0.5	0.518658	122.387	-8.43315
172	0.5	0.533048	122.671	-8.16662
173	0.5	0.544642	122.968	-7.8943

174	0.5	0.556308	123.277	-7.61615
175	0.5	0.568052	123.6	-7.33212
176	0.5	0.579873	123.936	-7.04219
177	0.5	0.591776	124.286	-6.7463
178	0.5	0.603765	124.651	-6.44441
179	0.5	0.615839	125.03	-6.13649
180	0.5	0.628006	125.424	-5.82249
181	0.5	0.640266	125.834	-5.50236
182	0.5	0.652622	126.26	-5.17605
183	0.5	0.665079	126.703	-4.84351
184	0.5	0.680797	127.166	-4.50311
185	0.5	0.693493	127.647	-4.15636
186	0.5	0.706302	128.146	-3.80321
187	0.5	0.719228	128.663	-3.4436
188	0.5	0.732275	129.199	-3.07746
189	0.5	0.745449	129.755	-2.70474
190	0.5	0.758753	130.331	-2.32536
191	0.5	0.772193	130.927	-1.93926
192	0.5	0.785774	131.545	-1.54638
193	0.5	0.7995	132.184	-1.14663
194	0.5	0.813379	132.845	-0.739936
195	0.5	0.827417	133.53	-0.326228
196	0.5	0.841621	134.238	0.0945829
197	0.5	0.859618	134.977	0.524392
198	0.5	0.874218	135.742	0.961501
199	0.5	0.889006	136.532	1.406
200	0.5	0.903992	137.349	1.858
201	0.5	0.919183	138.194	2.31759
202	0.5	0.93459	139.067	2.78489
203	0.5	0.950222	139.97	3.26
204	0.5	0.966088	140.904	3.74304
205	0.5	0.982202	141.868	4.23414
206	0.5	0.998575	142.866	4.73343
207	0.5	1.01522	143.896	5.24104
208	0.5	1.03215	144.962	5.75712
209	0.5	1.05375	146.072	6.28399
210	0.5	1.07138	147.22	6.81968
211	0.5	1.08935	148.406	7.36435
212	0.5	1.10768	149.633	7.91819
213	0.5	1.12639	150.902	8.48139
214	0.5	1.1455	152.214	9.05414
215	0.5	1.16505	153.572	9.63666
216	0.5	1.18504	154.976	10.2292
217	0.5	1.20553	156.429	10.832
218	0.5	1.22653	157.934	11.4452
219	0.5	1.24809	159.491	12.0693
220	0.5	1.27024	161.105	12.7044
221	0.5	1.29884	162.792	13.3538
222	0.5	1.32251	164.541	14.015
223	0.5	1.34694	166.355	14.6885
224	0.5	1.3722	168.238	15.3746
225	0.5	1.39838	170.194	16.0738
226	0.5	1.42554	172.226	16.7866
227	0.5	1.4538	174.339	17.5135
228	0.5	1.48328	176.539	18.2551
229	0.5	1.5141	178.832	19.0122
230	0.5	1.54643	181.223	19.7854
231	0.5	1.58047	183.721	20.5756
232	0.5	1.61644	186.334	21.3838
233	0.5	1.66456	189.105	22.2161
234	0.5	1.70604	192.015	23.0691
235	0.5	1.75069	195.08	23.9445

236	0.5	1.79912	198.317	24.844
237	0.5	1.85218	201.748	25.7701
238	0.5	1.91103	205.4	26.7256
239	0.5	1.97737	209.31	27.7143
240	0.5	2.05375	213.528	28.7412
241	0.5	2.14441	218.126	29.8134
242	0.5	2.25713	223.221	30.942
243	0.5	2.40892	229.024	32.1464
244	0.5	2.65209	236.057	33.4725

Data Set Standard Deviation = 0.182117
Numerator = 1120.41
Denominator = 1902.49
W Statistic = 0.588915 = 1120.41 / 1902.49

5% Critical value of 0.976 exceeds 0.588915
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.588915
Evidence of non-normality at 99% level of significance

Shapiro-Francia Test of Normality

Parameter: Xylenes, Total

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	-2.30259	-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	-2.14441	22.5296	21.7883
5	-2.30259	-2.05375	26.7475	26.5172
6	-2.30259	-1.97737	30.6575	31.0703
7	-2.30259	-1.91103	34.3095	35.4706
8	-2.30259	-1.85218	37.7401	39.7354
9	-2.30259	-1.79912	40.9769	43.878
10	-2.30259	-1.75069	44.0418	47.9091
11	-2.30259	-1.70604	46.9524	51.8374
12	-2.30259	-1.66456	49.7231	55.6702
13	-2.30259	-1.61644	52.336	59.3922
14	-2.30259	-1.58047	54.8339	63.0314
15	-2.30259	-1.54643	57.2253	66.5922
16	-2.30259	-1.5141	59.5178	70.0785
17	-2.30259	-1.48328	61.718	73.4939
18	-2.30259	-1.4538	63.8315	76.8414
19	-2.30259	-1.42554	65.8637	80.1239
20	-2.30259	-1.39838	67.8191	83.3437
21	-2.30259	-1.3722	69.7021	86.5033
22	-2.30259	-1.34694	71.5163	89.6048
23	-2.30259	-1.32251	73.2653	92.65
24	-2.30259	-1.29884	74.9523	95.6407
25	-2.30259	-1.27024	76.5658	98.5655
26	-2.30259	-1.24809	78.1235	101.439
27	-2.30259	-1.22653	79.6279	104.263
28	-2.30259	-1.20553	81.0812	107.039
29	-2.30259	-1.18504	82.4855	109.768
30	-2.30259	-1.16505	83.8429	112.451
31	-2.30259	-1.1455	85.155	115.088
32	-2.30259	-1.12639	86.4238	117.682
33	-2.30259	-1.10768	87.6508	120.232
34	-2.30259	-1.08935	88.8374	122.741
35	-2.30259	-1.07138	89.9853	125.208
36	-2.30259	-1.05375	91.0957	127.634
37	-2.30259	-1.03215	92.161	130.011
38	-2.30259	-1.01522	93.1917	132.348
39	-2.30259	-0.998575	94.1888	134.648
40	-2.30259	-0.982202	95.1536	136.909
41	-2.30259	-0.966088	96.0869	139.134
42	-2.30259	-0.950222	96.9898	141.322
43	-2.30259	-0.93459	97.8633	143.474
44	-2.30259	-0.919183	98.7082	145.59
45	-2.30259	-0.903992	99.5254	147.672
46	-2.30259	-0.889006	100.316	149.719
47	-2.30259	-0.874218	101.08	151.732
48	-2.30259	-0.859618	101.819	153.711
49	-2.30259	-0.841621	102.527	155.649

50	-2.30259	-0.827417	103.212	157.554
51	-2.30259	-0.813379	103.873	159.427
52	-2.30259	-0.7995	104.513	161.268
53	-2.30259	-0.785774	105.13	163.077
54	-2.30259	-0.772193	105.726	164.855
55	-2.30259	-0.758753	106.302	166.602
56	-2.30259	-0.745449	106.858	168.319
57	-2.30259	-0.732275	107.394	170.005
58	-2.30259	-0.719228	107.911	171.661
59	-2.30259	-0.706302	108.41	173.287
60	-1.51413	-0.693493	108.891	174.337
61	-1.42712	-0.680797	109.355	175.309
62	-1.13943	-0.665079	109.797	176.067
63	-0.693147	-0.652622	110.223	176.519
64	-0.693147	-0.640266	110.633	176.963
65	-0.693147	-0.628006	111.027	177.398
66	-0.693147	-0.615839	111.406	177.825
67	-0.693147	-0.603765	111.771	178.243
68	-0.693147	-0.591776	112.121	178.654
69	-0.693147	-0.579873	112.457	179.056
70	-0.693147	-0.568052	112.78	179.449
71	-0.693147	-0.556308	113.09	179.835
72	-0.693147	-0.544642	113.386	180.212
73	-0.693147	-0.533048	113.67	180.582
74	-0.693147	-0.518658	113.939	180.941
75	-0.693147	-0.507221	114.197	181.293
76	-0.693147	-0.49585	114.442	181.637
77	-0.693147	-0.484544	114.677	181.973
78	-0.693147	-0.473299	114.901	182.301
79	-0.693147	-0.462114	115.115	182.621
80	-0.693147	-0.450985	115.318	182.934
81	-0.693147	-0.439913	115.512	183.238
82	-0.693147	-0.428895	115.696	183.536
83	-0.693147	-0.417928	115.87	183.825
84	-0.693147	-0.40701	116.036	184.108
85	-0.693147	-0.396142	116.193	184.382
86	-0.693147	-0.382622	116.339	184.647
87	-0.693147	-0.371856	116.478	184.905
88	-0.693147	-0.361133	116.608	185.155
89	-0.693147	-0.350451	116.731	185.398
90	-0.693147	-0.33981	116.846	185.634
91	-0.693147	-0.329206	116.955	185.862
92	-0.693147	-0.318639	117.056	186.083
93	-0.693147	-0.308108	117.151	186.297
94	-0.693147	-0.297612	117.24	186.503
95	-0.693147	-0.287147	117.322	186.702
96	-0.693147	-0.276714	117.399	186.894
97	-0.693147	-0.266311	117.47	187.078
98	-0.693147	-0.253347	117.534	187.254
99	-0.693147	-0.243007	117.593	187.422
100	-0.693147	-0.232693	117.647	187.584
101	-0.693147	-0.222403	117.696	187.738
102	-0.693147	-0.212137	117.741	187.885
103	-0.693147	-0.201894	117.782	188.025
104	-0.693147	-0.191671	117.819	188.158
105	-0.693147	-0.181468	117.852	188.283
106	-0.693147	-0.171285	117.881	188.402
107	-0.693147	-0.161119	117.907	188.514
108	-0.693147	-0.150969	117.93	188.618
109	-0.693147	-0.140835	117.95	188.716
110	-0.693147	-0.130716	117.967	188.807
111	-0.693147	-0.118085	117.981	188.888

112	-0.693147	-0.107995	117.993	188.963
113	-0.693147	-0.0979139	118.002	189.031
114	-0.693147	-0.0878447	118.01	189.092
115	-0.693147	-0.0777834	118.016	189.146
116	-0.693147	-0.0677301	118.02	189.193
117	-0.693147	-0.0576847	118.024	189.233
118	-0.693147	-0.0476439	118.026	189.266
119	-0.693147	-0.0376076	118.027	189.292
120	-0.693147	-0.0275759	118.028	189.311
121	-0.693147	-0.0175476	118.029	189.323
122	-0.693147	-0.00751925	118.029	189.329
123	-0.693147	0.00751925	118.029	189.323
124	-0.693147	0.0175476	118.029	189.311
125	-0.693147	0.0275759	118.03	189.292
126	-0.693147	0.0376076	118.031	189.266
127	-0.693147	0.0476439	118.033	189.233
128	-0.693147	0.0576847	118.037	189.193
129	-0.693147	0.0677301	118.041	189.146
130	-0.693147	0.0777834	118.047	189.092
131	-0.693147	0.0878447	118.055	189.031
132	-0.693147	0.0979139	118.065	188.963
133	-0.693147	0.107995	118.076	188.888
134	-0.693147	0.118085	118.09	188.807
135	-0.693147	0.130716	118.107	188.716
136	-0.693147	0.140835	118.127	188.618
137	-0.693147	0.150969	118.15	188.514
138	-0.693147	0.161119	118.176	188.402
139	-0.693147	0.171285	118.205	188.283
140	-0.693147	0.181468	118.238	188.158
141	-0.693147	0.191671	118.275	188.025
142	-0.693147	0.201894	118.316	187.885
143	-0.693147	0.212137	118.361	187.738
144	-0.693147	0.222403	118.41	187.584
145	-0.693147	0.232693	118.464	187.422
146	-0.693147	0.243007	118.523	187.254
147	-0.693147	0.253347	118.588	187.078
148	-0.693147	0.266311	118.659	186.894
149	-0.693147	0.276714	118.735	186.702
150	-0.693147	0.287147	118.818	186.503
151	-0.693147	0.297612	118.906	186.297
152	-0.693147	0.308108	119.001	186.083
153	-0.693147	0.318639	119.103	185.862
154	-0.693147	0.329206	119.211	185.634
155	-0.693147	0.33981	119.326	185.398
156	-0.693147	0.350451	119.449	185.155
157	-0.693147	0.361133	119.58	184.905
158	-0.693147	0.371856	119.718	184.647
159	-0.693147	0.382622	119.864	184.382
160	-0.693147	0.396142	120.021	184.108
161	-0.693147	0.40701	120.187	183.825
162	-0.693147	0.417928	120.362	183.536
163	-0.693147	0.428895	120.546	183.238
164	-0.693147	0.439913	120.739	182.934
165	-0.693147	0.450985	120.942	182.621
166	-0.693147	0.462114	121.156	182.301
167	-0.693147	0.473299	121.38	181.973
168	-0.693147	0.484544	121.615	181.637
169	-0.693147	0.49585	121.861	181.293
170	-0.693147	0.507221	122.118	180.941
171	-0.693147	0.518658	122.387	180.582
172	-0.693147	0.533048	122.671	180.212
173	-0.693147	0.544642	122.968	179.835

174	-0.693147	0.556308	123.277	179.449
175	-0.693147	0.568052	123.6	179.056
176	-0.693147	0.579873	123.936	178.654
177	-0.693147	0.591776	124.286	178.243
178	-0.693147	0.603765	124.651	177.825
179	-0.693147	0.615839	125.03	177.398
180	-0.693147	0.628006	125.424	176.963
181	-0.693147	0.640266	125.834	176.519
182	-0.693147	0.652622	126.26	176.067
183	-0.693147	0.665079	126.703	175.606
184	-0.693147	0.680797	127.166	175.134
185	-0.693147	0.693493	127.647	174.653
186	-0.693147	0.706302	128.146	174.163
187	-0.693147	0.719228	128.663	173.665
188	-0.693147	0.732275	129.199	173.157
189	-0.693147	0.745449	129.755	172.641
190	-0.693147	0.758753	130.331	172.115
191	-0.693147	0.772193	130.927	171.58
192	-0.693147	0.785774	131.545	171.035
193	-0.693147	0.7995	132.184	170.481
194	-0.693147	0.813379	132.845	169.917
195	-0.693147	0.827417	133.53	169.343
196	-0.693147	0.841621	134.238	168.76
197	-0.693147	0.859618	134.977	168.164
198	-0.693147	0.874218	135.742	167.558
199	-0.693147	0.889006	136.532	166.942
200	-0.693147	0.903992	137.349	166.315
201	-0.693147	0.919183	138.194	165.678
202	-0.693147	0.93459	139.067	165.03
203	-0.693147	0.950222	139.97	164.372
204	-0.693147	0.966088	140.904	163.702
205	-0.693147	0.982202	141.868	163.021
206	-0.693147	0.998575	142.866	162.329
207	-0.693147	1.01522	143.896	161.626
208	-0.693147	1.03215	144.962	160.91
209	-0.693147	1.05375	146.072	160.18
210	-0.693147	1.07138	147.22	159.437
211	-0.693147	1.08935	148.406	158.682
212	-0.693147	1.10768	149.633	157.914
213	-0.693147	1.12639	150.902	157.133
214	-0.693147	1.1455	152.214	156.339
215	-0.693147	1.16505	153.572	155.532
216	-0.693147	1.18504	154.976	154.71
217	-0.693147	1.20553	156.429	153.875
218	-0.693147	1.22653	157.934	153.025
219	-0.693147	1.24809	159.491	152.16
220	-0.693147	1.27024	161.105	151.279
221	-0.693147	1.29884	162.792	150.379
222	-0.693147	1.32251	164.541	149.462
223	-0.693147	1.34694	166.355	148.529
224	-0.693147	1.3722	168.238	147.577
225	-0.693147	1.39838	170.194	146.608
226	-0.693147	1.42554	172.226	145.62
227	-0.693147	1.4538	174.339	144.612
228	-0.693147	1.48328	176.539	143.584
229	-0.693147	1.5141	178.832	142.535
230	-0.693147	1.54643	181.223	141.463
231	-0.693147	1.58047	183.721	140.367
232	-0.693147	1.61644	186.334	139.247
233	-0.693147	1.66456	189.105	138.093
234	-0.693147	1.70604	192.015	136.911
235	-0.693147	1.75069	195.08	135.697

236	-0.693147	1.79912	198.317	134.45
237	-0.693147	1.85218	201.748	133.166
238	-0.693147	1.91103	205.4	131.842
239	0	1.97737	209.31	131.842
240	0	2.05375	213.528	131.842
241	0	2.14441	218.126	131.842
242	0	2.25713	223.221	131.842
243	0	2.40892	229.024	131.842
244	0	2.65209	236.057	131.842

Data Set Standard Deviation = 0.70806
Numerator = 17382.2
Denominator = 28758.4
W Statistic = 0.604422 = 17382.2 / 28758.4

5% Critical value of 0.976 exceeds 0.604422
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.604422
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Xylenes, Total

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

Total Percent Non-Detects = 98.7705%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 20
Maximum Background Concentration = 0
Confidence Level = 71.4%
False Positive Rate = 28.6%

Location	Date	Samples	Mean	Significant
LMW-14R	7/6/2011	1	-2.30259	FALSE
LMW-9D	7/6/2011	1	-2.30259	FALSE
LMW-9	7/6/2011	1	-2.30259	FALSE
LMW-8	7/6/2011	1	-2.30259	FALSE
LMW-7	7/6/2011	1	-1.51413	FALSE
LMW-6	7/6/2011	1	-2.30259	FALSE
LMW-3S	7/6/2011	1	-2.30259	FALSE
LMW-9S	7/6/2011	1	-2.30259	FALSE
LMW-3	7/6/2011	1	-2.30259	FALSE
LMW-16	7/6/2011	1	-2.30259	FALSE
LMW-15R	7/6/2011	1	-2.30259	FALSE
LMW-10	7/6/2011	1	-2.30259	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
MW-5	11/20/2008	1	-0.693147	FALSE

Concentrations (ppb)

Parameter: Zinc

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Measurements: 233
Total Non-Detect: 140
Percent Non-Detects: 60.0858%
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<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
			7/6/2011	20	20

There are 16 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
LMW-6	19	8 (42.1053%)	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
			7/6/2011	8.7 J	8.7 J
LMW-10	16	12 (75%)	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	
			7/6/2011	4.2 J	4.2 J	
LMW-14R	8	2 (25%)	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	
			7/6/2011	10	10	
LMW-15R	12	6 (50%)	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	
			7/6/2011	8.6 J	8.6 J	
LMW-16	9	3 (33.3333%)	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	
			7/6/2011	5.1 J	5.1 J	
LMW-3	21	13 (61.9048%)	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	
			7/6/2011	7.6 J	7.6 J	
LMW-7	18	7 (38.8889%)	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	
			7/6/2011	59	59	
LMW-8	19	13 (68.4211%)	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	
			7/6/2011	11 J	11 J	
LMW-9	19	12 (63.1579%)	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	
			7/6/2011	3.7 J	3.7 J	
LMW-9D	9	3 (33.3333%)	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	
			7/6/2011	13	13	
LMW-9S	9	5 (55.5556%)	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	
			7/6/2011	ND<2.6 U	ND<2.6 U	
LMW-3S	9	1 (11.1111%)	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	
			7/6/2011	7.6 J	7.6 J	
MW-5	13	11 (84.6154%)	1/16/1998	ND<60	ND<60	
			3/16/1999	40 J	40 J	
			9/23/1999	36 J	36 J	
			3/14/2000	ND<60	ND<60	
			9/23/2003	ND<60	ND<60	
			3/10/2004	ND<60	ND<60	
			10/12/2004	ND<60	ND<60	
			4/1/2005	ND<60	ND<60	
			10/26/2005	ND<60	ND<60	
			6/19/2006	ND<60	ND<60	
			11/15/2007	ND<60	ND<60	
			5/20/2008	ND<60	ND<60	
			11/20/2008	ND<60	ND<60	
LMW-13	11	11 (100%)	3/14/2000	ND<60	ND<60	
			9/23/2003	ND<60	ND<60	
			3/10/2004	ND<60	ND<60	
			10/12/2004	ND<60	ND<60	
			4/1/2005	ND<60	ND<60	
			10/26/2005	ND<60	ND<60	
			6/19/2006	ND<60	ND<60	
			6/2/2007	ND<60	ND<60	
			11/15/2007	ND<60	ND<60	
			5/20/2008	ND<60	ND<60	
			11/20/2008	ND<60	ND<60	
LMW-12	11	11 (100%)	3/14/2000	ND<60	ND<60	

			9/23/2003	ND<60	ND<60
			3/10/2004	ND<60	ND<60
			10/12/2004	ND<60	ND<60
			4/1/2005	ND<60	ND<60
			10/26/2005	ND<60	ND<60
			6/19/2006	ND<60	ND<60
			6/2/2007	ND<60	ND<60
			11/15/2007	ND<60	ND<60
			5/20/2008	ND<60	ND<60
			11/20/2008	ND<60	ND<60
LMW-11	11	11 (100%)	3/14/2000	ND<60	ND<60
			9/23/2003	ND<60	ND<60
			3/10/2004	ND<60	ND<60
			10/12/2004	ND<60	ND<60
			4/1/2005	ND<60	ND<60
			10/26/2005	ND<60	ND<60
			6/19/2006	ND<60	ND<60
			6/2/2007	ND<60	ND<60
			11/15/2007	ND<60	ND<60
			5/20/2008	ND<60	ND<60
			11/20/2008	ND<60	ND<60

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 = 233

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	1.3	-2.65209	7.03356	-3.44771
2	1.3	-2.40892	12.8365	-6.57931
3	1.3	-2.25713	17.9311	-9.51358
4	1.3	-2.12007	22.4258	-12.2697
5	3.2	-2.03352	26.561	-18.7769
6	3.5	-1.95996	30.4025	-25.6368
7	3.5	-1.8957	33.9961	-32.2717
8	3.6	-1.82501	37.3268	-38.8418
9	3.6	-1.77438	40.4752	-45.2295
10	3.7	-1.72793	43.4609	-51.6229
11	4.2	-1.67466	46.2654	-58.6564
12	4.4	-1.63524	48.9394	-65.8515
13	4.5	-1.59819	51.4936	-73.0433
14	4.5	-1.56322	53.9373	-80.0778
15	4.5	-1.52203	56.2539	-86.927
16	4.9	-1.49085	58.4765	-94.2322
17	5	-1.46106	60.6112	-101.537
18	5.1	-1.4325	62.6633	-108.843
19	5.1	-1.39838	64.6187	-115.975
20	5.2	-1.3722	66.5017	-123.11
21	5.3	-1.34694	68.3159	-130.249
22	5.4	-1.31652	70.0492	-137.358
23	5.6	-1.29303	71.7211	-144.599
24	6	-1.27024	73.3346	-152.221
25	6.3	-1.24809	74.8923	-160.084
26	6.5	-1.22123	76.3837	-168.022
27	6.6	-1.20036	77.8246	-175.944
28	6.7	-1.18	79.217	-183.85
29	6.9	-1.16012	80.5629	-191.855
30	7	-1.1359	81.8531	-199.806
31	7	-1.11699	83.1008	-207.625
32	7	-1.09847	84.3074	-215.314
33	7.3	-1.07584	85.4648	-223.168
34	7.3	-1.05812	86.5845	-230.892
35	7.6	-1.04073	87.6676	-238.802
36	7.6	-1.02365	88.7154	-246.582
37	7.9	-1.00271	89.7209	-254.503
38	8.2	-0.986272	90.6936	-262.59
39	8.2	-0.970094	91.6347	-270.545
40	8.3	-0.954165	92.5451	-278.465
41	8.5	-0.93459	93.4186	-286.409
42	8.6	-0.919183	94.2635	-294.314
43	8.6	-0.903992	95.0807	-302.088
44	8.7	-0.885291	95.8644	-309.79
45	9.5	-0.87055	96.6223	-318.06
46	10	-0.855996	97.355	-326.62
47	10	-0.841621	98.0633	-335.037
48	10	-0.823893	98.7421	-343.275
49	10	-0.809896	99.3981	-351.374

50	11	-0.796056	100.032	-360.131
51	11	-0.782366	100.644	-368.737
52	11	-0.765456	101.23	-377.157
53	11	-0.752084	101.795	-385.43
54	11	-0.738846	102.341	-393.557
55	12	-0.722479	102.863	-402.227
56	13	-0.709522	103.367	-411.451
57	14	-0.696684	103.852	-421.204
58	14	-0.68396	104.32	-430.78
59	15	-0.668209	104.766	-440.803
60	15	-0.655726	105.196	-450.639
61	15	-0.643345	105.61	-460.289
62	15	-0.631062	106.008	-469.755
63	16	-0.615839	106.388	-479.608
64	16	-0.603765	106.752	-489.269
65	17	-0.591776	107.102	-499.329
66	17	-0.576911	107.435	-509.136
67	18	-0.565108	107.755	-519.308
68	18	-0.553384	108.061	-529.269
69	18	-0.541736	108.354	-539.02
70	20	-0.52728	108.632	-549.566
71	20	-0.515791	108.898	-559.882
72	20	-0.504372	109.153	-569.969
73	20	-0.493018	109.396	-579.83
74	20	-0.478914	109.625	-589.408
75	21	-0.467699	109.844	-599.23
76	27	-0.456542	110.052	-611.556
77	27	-0.442676	110.248	-623.509
78	29	-0.431644	110.435	-636.026
79	30	-0.420664	110.612	-648.646
80	30	-0.409735	110.78	-660.938
81	30	-0.396142	110.936	-672.822
82	30	-0.385321	111.085	-684.382
83	30	-0.374544	111.225	-695.618
84	30	-0.363809	111.358	-706.533
85	30	-0.350451	111.48	-717.046
86	30	-0.33981	111.596	-727.24
87	30	-0.329206	111.704	-737.117
88	30	-0.316004	111.804	-746.597
89	30	-0.305481	111.897	-755.761
90	30	-0.294992	111.984	-764.611
91	30	-0.284535	112.065	-773.147
92	30	-0.271509	112.139	-781.292
93	30	-0.26112	112.207	-789.126
94	30	-0.250759	112.27	-796.649
95	30	-0.240426	112.328	-803.861
96	30	-0.227545	112.38	-810.688
97	30	-0.217267	112.427	-817.206
98	30	-0.207012	112.47	-823.416
99	30	-0.194225	112.508	-829.243
100	30	-0.184017	112.541	-834.763
101	30	-0.173829	112.572	-839.978
102	30	-0.163659	112.598	-844.888
103	30	-0.150969	112.621	-849.417
104	30	-0.140835	112.641	-853.642
105	30	-0.130716	112.658	-857.564
106	30	-0.12061	112.673	-861.182
107	30	-0.107995	112.684	-864.422
108	30	-0.0979139	112.694	-867.359
109	30	-0.0878447	112.702	-869.995
110	30	-0.0752698	112.707	-872.253
111	30	-0.0652187	112.712	-874.209

112	30	-0.0551734	112.715	-875.865
113	30	-0.0451348	112.717	-877.219
114	30	-0.0325917	112.718	-878.196
115	30	-0.0225612	112.718	-878.873
116	30	-0.0125328	112.718	-879.249
117	30	0	112.718	-879.249
118	30	0.0125328	112.719	-878.873
119	30	0.0225612	112.719	-878.196
120	30	0.0325917	112.72	-877.219
121	30	0.0451348	112.722	-875.865
122	30	0.0551734	112.725	-874.209
123	30	0.0652187	112.729	-872.253
124	30	0.0752698	112.735	-869.995
125	30	0.0878447	112.743	-867.359
126	30	0.0979139	112.752	-864.422
127	30	0.107995	112.764	-861.182
128	30	0.12061	112.779	-857.564
129	30	0.130716	112.796	-853.642
130	30	0.140835	112.816	-849.417
131	30	0.150969	112.838	-844.888
132	30	0.163659	112.865	-839.978
133	30	0.173829	112.895	-834.763
134	30	0.184017	112.929	-829.243
135	30	0.194225	112.967	-823.416
136	30	0.207012	113.01	-817.206
137	30	0.217267	113.057	-810.688
138	30	0.227545	113.109	-803.861
139	30	0.240426	113.167	-796.649
140	30	0.250759	113.229	-789.126
141	30	0.26112	113.298	-781.292
142	30	0.271509	113.371	-773.147
143	30	0.284535	113.452	-764.611
144	30	0.294992	113.539	-755.761
145	30	0.305481	113.633	-746.597
146	30	0.316004	113.732	-737.117
147	30	0.329206	113.841	-727.24
148	30	0.33981	113.956	-717.046
149	30	0.350451	114.079	-706.533
150	30	0.363809	114.211	-695.618
151	30	0.374544	114.352	-684.382
152	30	0.385321	114.5	-672.822
153	30	0.396142	114.657	-660.938
154	30	0.409735	114.825	-648.646
155	30	0.420664	115.002	-636.026
156	30	0.431644	115.188	-623.077
157	30	0.442676	115.384	-609.797
158	30	0.456542	115.593	-596.1
159	30	0.467699	115.811	-582.069
160	30	0.478914	116.041	-567.702
161	30	0.493018	116.284	-552.911
162	30	0.504372	116.538	-537.78
163	30	0.515791	116.804	-522.307
164	30	0.52728	117.082	-506.488
165	30	0.541736	117.376	-490.236
166	30	0.553384	117.682	-473.635
167	30	0.565108	118.001	-456.681
168	30	0.576911	118.334	-439.374
169	30	0.591776	118.684	-421.621
170	30	0.603765	119.049	-403.508
171	30	0.615839	119.428	-385.033
172	30	0.631062	119.826	-366.101
173	30	0.643345	120.24	-346.8

174	30	0.655726		120.67	-327.129
175	30	0.668209		121.117	-307.082
176	30	0.68396	121.585	-286.563	
177	30	0.696684		122.07	-265.663
178	30	0.709522		122.573	-244.377
179	30	0.722479		123.095	-222.703
180	30	0.738846		123.641	-200.538
181	30	0.752084		124.207	-177.975
182	30	0.765456		124.793	-155.011
183	30	0.782366		125.405	-131.54
184	30	0.796056		126.039	-107.659
185	30	0.809896		126.695	-83.3619
186	30	0.823893		127.373	-58.6451
187	30	0.841621		128.082	-33.3964
188	30	0.855996		128.814	-7.71654
189	30	0.87055	129.572	18.4	
190	30	0.885291		130.356	44.9587
191	30	0.903992		131.173	72.0785
192	30	0.919183		132.018	99.6539
193	30	0.93459	132.892	127.692	
194	30	0.954165		133.802	156.317
195	30	0.970094		134.743	185.419
196	30	0.986272		135.716	215.008
197	30	1.00271	136.721	245.089	
198	30	1.02365	137.769	275.798	
199	30	1.04073	138.852	307.02	
200	30	1.05812	139.972	338.764	
201	30	1.07584	141.129	371.039	
202	30	1.09847	142.336	403.993	
203	30	1.11699	143.584	437.503	
204	30	1.1359	144.874	471.58	
205	30	1.16012	146.22	506.383	
206	30	1.18	147.612	541.783	
207	30	1.20036	149.053	577.794	
208	30	1.22123	150.544	614.431	
209	30	1.24809	152.102	651.874	
210	30	1.27024	153.716	689.981	
211	30	1.29303	155.388	728.772	
212	30	1.31652	157.121	768.267	
213	30	1.34694	158.935	808.676	
214	30	1.3722	160.818	849.842	
215	30	1.39838	162.773	891.793	
216	31	1.4325	164.825	936.201	
217	32	1.46106	166.96	982.954	
218	36	1.49085	169.183	1036.63	
219	39	1.52203	171.499	1095.98	
220	40	1.56322	173.943	1158.51	
221	40	1.59819	176.497	1222.44	
222	40	1.63524	179.171	1287.85	
223	40	1.67466	181.976	1354.84	
224	47	1.72793	184.962	1436.05	
225	48	1.77438	188.11	1521.22	
226	50	1.82501	191.441	1612.47	
227	51	1.8957	195.034	1709.15	
228	53	1.95996	198.876	1813.03	
229	59	2.03352	203.011	1933.01	
230	66	2.12007	207.506	2072.93	
231	69	2.25713	212.6	2228.67	
232	90	2.40892	218.403	2445.48	
233	90	2.65209	225.437	2684.16	

Data Set Standard Deviation = 13.369
Numerator = 7.20473e+006
Denominator = 9.34782e+006
W Statistic = 0.770739 = 7.20473e+006 / 9.34782e+006

5% Critical value of 0.976 exceeds 0.770739
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.770739
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 = 233

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0.262364	-2.65209	7.03356	-0.695813
2	0.262364	-2.40892	12.8365	-1.32783
3	0.262364	-2.25713	17.9311	-1.92002
4	0.262364	-2.12007	22.4258	-2.47625
5	1.16315	-2.03352	26.561	-4.84154
6	1.25276	-1.95996	30.4025	-7.29691
7	1.25276	-1.8957	33.9961	-9.67176
8	1.28093	-1.82501	37.3268	-12.0095
9	1.28093	-1.77438	40.4752	-14.2823
10	1.30833	-1.72793	43.4609	-16.543
11	1.43508	-1.67466	46.2654	-18.9463
12	1.4816	-1.63524	48.9394	-21.3691
13	1.50408	-1.59819	51.4936	-23.7729
14	1.50408	-1.56322	53.9373	-26.1241
15	1.50408	-1.52203	56.2539	-28.4134
16	1.58924	-1.49085	58.4765	-30.7827
17	1.60944	-1.46106	60.6112	-33.1342
18	1.62924	-1.4325	62.6633	-35.4681
19	1.62924	-1.39838	64.6187	-37.7463
20	1.64866	-1.3722	66.5017	-40.0086
21	1.66771	-1.34694	68.3159	-42.2549
22	1.6864	-1.31652	70.0492	-44.4751
23	1.72277	-1.29303	71.7211	-46.7027
24	1.79176	-1.27024	73.3346	-48.9787
25	1.84055	-1.24809	74.8923	-51.2758
26	1.8718	-1.22123	76.3837	-53.5617
27	1.88707	-1.20036	77.8246	-55.8269
28	1.90211	-1.18	79.217	-58.0714
29	1.93152	-1.16012	80.5629	-60.3122
30	1.94591	-1.1359	81.8531	-62.5225
31	1.94591	-1.11699	83.1008	-64.6961
32	1.94591	-1.09847	84.3074	-66.8336
33	1.98787	-1.07584	85.4648	-68.9722
34	1.98787	-1.05812	86.5845	-71.0757
35	2.02815	-1.04073	87.6676	-73.1864
36	2.02815	-1.02365	88.7154	-75.2625
37	2.06686	-1.00271	89.7209	-77.335
38	2.10413	-0.986272	90.6936	-79.4103
39	2.10413	-0.970094	91.6347	-81.4515
40	2.11626	-0.954165	92.5451	-83.4707
41	2.14007	-0.93459	93.4186	-85.4708
42	2.15176	-0.919183	94.2635	-87.4487
43	2.15176	-0.903992	95.0807	-89.3938
44	2.16332	-0.885291	95.8644	-91.309
45	2.25129	-0.87055	96.6223	-93.2689
46	2.30259	-0.855996	97.355	-95.2399
47	2.30259	-0.841621	98.0633	-97.1778
48	2.30259	-0.823893	98.7421	-99.0749
49	2.30259	-0.809896	99.3981	-100.94

50	2.3979	-0.796056	100.032	-102.849
51	2.3979	-0.782366	100.644	-104.725
52	2.3979	-0.765456	101.23	-106.56
53	2.3979	-0.752084	101.795	-108.364
54	2.3979	-0.738846	102.341	-110.135
55	2.48491	-0.722479	102.863	-111.93
56	2.56495	-0.709522	103.367	-113.75
57	2.63906	-0.696684	103.852	-115.589
58	2.63906	-0.68396	104.32	-117.394
59	2.70805	-0.668209	104.766	-119.204
60	2.70805	-0.655726	105.196	-120.979
61	2.70805	-0.643345	105.61	-122.721
62	2.70805	-0.631062	106.008	-124.43
63	2.77259	-0.615839	106.388	-126.138
64	2.77259	-0.603765	106.752	-127.812
65	2.83321	-0.591776	107.102	-129.488
66	2.83321	-0.576911	107.435	-131.123
67	2.89037	-0.565108	107.755	-132.756
68	2.89037	-0.553384	108.061	-134.356
69	2.89037	-0.541736	108.354	-135.922
70	2.99573	-0.52728	108.632	-137.501
71	2.99573	-0.515791	108.898	-139.046
72	2.99573	-0.504372	109.153	-140.557
73	2.99573	-0.493018	109.396	-142.034
74	2.99573	-0.478914	109.625	-143.469
75	3.04452	-0.467699	109.844	-144.893
76	3.29584	-0.456542	110.052	-146.398
77	3.29584	-0.442676	110.248	-147.857
78	3.3673	-0.431644	110.435	-149.31
79	3.4012	-0.420664	110.612	-150.741
80	3.4012	-0.409735	110.78	-152.134
81	3.4012	-0.396142	110.936	-153.482
82	3.4012	-0.385321	111.085	-154.792
83	3.4012	-0.374544	111.225	-156.066
84	3.4012	-0.363809	111.358	-157.304
85	3.4012	-0.350451	111.48	-158.496
86	3.4012	-0.33981	111.596	-159.651
87	3.4012	-0.329206	111.704	-160.771
88	3.4012	-0.316004	111.804	-161.846
89	3.4012	-0.305481	111.897	-162.885
90	3.4012	-0.294992	111.984	-163.888
91	3.4012	-0.284535	112.065	-164.856
92	3.4012	-0.271509	112.139	-165.779
93	3.4012	-0.26112	112.207	-166.668
94	3.4012	-0.250759	112.27	-167.52
95	3.4012	-0.240426	112.328	-168.338
96	3.4012	-0.227545	112.38	-169.112
97	3.4012	-0.217267	112.427	-169.851
98	3.4012	-0.207012	112.47	-170.555
99	3.4012	-0.194225	112.508	-171.216
100	3.4012	-0.184017	112.541	-171.842
101	3.4012	-0.173829	112.572	-172.433
102	3.4012	-0.163659	112.598	-172.989
103	3.4012	-0.150969	112.621	-173.503
104	3.4012	-0.140835	112.641	-173.982
105	3.4012	-0.130716	112.658	-174.427
106	3.4012	-0.12061	112.673	-174.837
107	3.4012	-0.107995	112.684	-175.204
108	3.4012	-0.0979139	112.694	-175.537
109	3.4012	-0.0878447	112.702	-175.836
110	3.4012	-0.0752698	112.707	-176.092
111	3.4012	-0.0652187	112.712	-176.314

112	3.4012	-0.0551734	112.715	-176.501
113	3.4012	-0.0451348	112.717	-176.655
114	3.4012	-0.0325917	112.718	-176.766
115	3.4012	-0.0225612	112.718	-176.842
116	3.4012	-0.0125328	112.718	-176.885
117	3.4012	0	112.718	-176.885
118	3.4012	0.0125328	112.719	-176.842
119	3.4012	0.0225612	112.719	-176.766
120	3.4012	0.0325917	112.72	-176.655
121	3.4012	0.0451348	112.722	-176.501
122	3.4012	0.0551734	112.725	-176.314
123	3.4012	0.0652187	112.729	-176.092
124	3.4012	0.0752698	112.735	-175.836
125	3.4012	0.0878447	112.743	-175.537
126	3.4012	0.0979139	112.752	-175.204
127	3.4012	0.107995	112.764	-174.837
128	3.4012	0.12061	112.779	-174.427
129	3.4012	0.130716	112.796	-173.982
130	3.4012	0.140835	112.816	-173.503
131	3.4012	0.150969	112.838	-172.989
132	3.4012	0.163659	112.865	-172.433
133	3.4012	0.173829	112.895	-171.842
134	3.4012	0.184017	112.929	-171.216
135	3.4012	0.194225	112.967	-170.555
136	3.4012	0.207012	113.01	-169.851
137	3.4012	0.217267	113.057	-169.112
138	3.4012	0.227545	113.109	-168.338
139	3.4012	0.240426	113.167	-167.52
140	3.4012	0.250759	113.229	-166.668
141	3.4012	0.26112	113.298	-165.779
142	3.4012	0.271509	113.371	-164.856
143	3.4012	0.284535	113.452	-163.888
144	3.4012	0.294992	113.539	-162.885
145	3.4012	0.305481	113.633	-161.846
146	3.4012	0.316004	113.732	-160.771
147	3.4012	0.329206	113.841	-159.651
148	3.4012	0.33981	113.956	-158.496
149	3.4012	0.350451	114.079	-157.304
150	3.4012	0.363809	114.211	-156.066
151	3.4012	0.374544	114.352	-154.792
152	3.4012	0.385321	114.5	-153.482
153	3.4012	0.396142	114.657	-152.134
154	3.4012	0.409735	114.825	-150.741
155	3.4012	0.420664	115.002	-149.31
156	3.4012	0.431644	115.188	-147.842
157	3.4012	0.442676	115.384	-146.336
158	3.4012	0.456542	115.593	-144.784
159	3.4012	0.467699	115.811	-143.193
160	3.4012	0.478914	116.041	-141.564
161	3.4012	0.493018	116.284	-139.887
162	3.4012	0.504372	116.538	-138.172
163	3.4012	0.515791	116.804	-136.417
164	3.4012	0.52728	117.082	-134.624
165	3.4012	0.541736	117.376	-132.781
166	3.4012	0.553384	117.682	-130.899
167	3.4012	0.565108	118.001	-128.977
168	3.4012	0.576911	118.334	-127.015
169	3.4012	0.591776	118.684	-125.002
170	3.4012	0.603765	119.049	-122.949
171	3.4012	0.615839	119.428	-120.854
172	3.4012	0.631062	119.826	-118.708
173	3.4012	0.643345	120.24	-116.52

174	3.4012	0.655726		120.67	-114.289
175	3.4012	0.668209		121.117	-112.017
176	3.4012	0.68396	121.585	-109.69	
177	3.4012	0.696684		122.07	-107.321
178	3.4012	0.709522		122.573	-104.908
179	3.4012	0.722479		123.095	-102.45
180	3.4012	0.738846		123.641	-99.9374
181	3.4012	0.752084		124.207	-97.3794
182	3.4012	0.765456		124.793	-94.7759
183	3.4012	0.782366		125.405	-92.1149
184	3.4012	0.796056		126.039	-89.4074
185	3.4012	0.809896		126.695	-86.6528
186	3.4012	0.823893		127.373	-83.8505
187	3.4012	0.841621		128.082	-80.988
188	3.4012	0.855996		128.814	-78.0766
189	3.4012	0.87055	129.572	-75.1157	
190	3.4012	0.885291		130.356	-72.1047
191	3.4012	0.903992		131.173	-69.03
192	3.4012	0.919183		132.018	-65.9037
193	3.4012	0.93459	132.892	-62.725	
194	3.4012	0.954165		133.802	-59.4796
195	3.4012	0.970094		134.743	-56.1802
196	3.4012	0.986272		135.716	-52.8257
197	3.4012	1.00271	136.721	-49.4152	
198	3.4012	1.02365	137.769	-45.9336	
199	3.4012	1.04073	138.852	-42.3939	
200	3.4012	1.05812	139.972	-38.795	
201	3.4012	1.07584	141.129	-35.1358	
202	3.4012	1.09847	142.336	-31.3997	
203	3.4012	1.11699	143.584	-27.6006	
204	3.4012	1.1359	144.874	-23.7372	
205	3.4012	1.16012	146.22	-19.7914	
206	3.4012	1.18	147.612	-15.778	
207	3.4012	1.20036	149.053	-11.6954	
208	3.4012	1.22123	150.544	-7.54173	
209	3.4012	1.24809	152.102	-3.29674	
210	3.4012	1.27024	153.716	1.02359	
211	3.4012	1.29303	155.388	5.42145	
212	3.4012	1.31652	157.121	9.89919	
213	3.4012	1.34694	158.935	14.4804	
214	3.4012	1.3722	160.818	19.1475	
215	3.4012	1.39838	162.773	23.9037	
216	3.43399	1.4325	164.825	28.8229	
217	3.46574	1.46106	166.96	33.8865	
218	3.58352	1.49085	169.183	39.229	
219	3.66356	1.52203	171.499	44.8051	
220	3.68888	1.56322	173.943	50.5716	
221	3.68888	1.59819	176.497	56.4672	
222	3.68888	1.63524	179.171	62.4994	
223	3.68888	1.67466	181.976	68.677	
224	3.85015	1.72793	184.962	75.3298	
225	3.8712	1.77438	188.11	82.1987	
226	3.91202	1.82501	191.441	89.3382	
227	3.93183	1.8957	195.034	96.7918	
228	3.97029	1.95996	198.876	104.573	
229	4.07754	2.03352	203.011	112.865	
230	4.18965	2.12007	207.506	121.747	
231	4.23411	2.25713	212.6	131.304	
232	4.49981	2.40892	218.403	142.144	
233	4.49981	2.65209	225.437	154.078	

Data Set Standard Deviation = 0.774442
Numerator = 23740
Denominator = 31368.3
W Statistic = 0.756816 = 23740 / 31368.3

5% Critical value of 0.976 exceeds 0.756816
Evidence of non-normality at 95% level of significance

1% Critical value of 0.967 exceeds 0.756816
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	70.5
	3/16/1999	3.91202 J	226
	9/23/1999	ND<3.4012	70.5
	3/14/2000	ND<3.4012	70.5
	9/23/2003	ND<3.4012	70.5
	3/10/2004	ND<3.4012	70.5
	10/12/2004	ND<3.4012	70.5
	4/1/2005	ND<3.4012	70.5
	10/26/2005	ND<3.4012	70.5
	6/19/2006	ND<3.4012	70.5
	11/18/2006	2.3979 J	186
	6/2/2007	3.85015	224
	11/15/2007	ND<3.4012	70.5
	5/20/2008	2.70805 J	195
	11/20/2008	ND<3.4012	70.5
	6/11/2009	1.90211 J	164
	6/30/2010	1.93152 J	165
	11/17/2010	1.98787 J	169
	7/6/2011	2.99573	206

Rank Sum = 2310.5
Rank Mean = 121.605

Background Rank Sum = 2310.5
Background Rank Mean = 121.605

Compliance Wells

Well ID	Date	Result	Rank
LMW-6	1/16/1998	ND<3.4012	70.5
	3/16/1999	3.4012 J	215
	9/23/1999	3.97029 J	228
	3/14/2000	ND<3.4012	70.5
	9/23/2003	ND<3.4012	70.5
	3/10/2004	ND<3.4012	70.5
	10/12/2004	ND<3.4012	70.5
	4/1/2005	ND<3.4012	70.5
	10/26/2005	ND<3.4012	70.5
	6/19/2006	2.99573 J	207
	11/18/2006	1.94591 J	166
	6/2/2007	2.83321 J	201
	11/15/2007	3.29584 J	212
	5/20/2008	2.30259 J	182
	11/20/2008	ND<3.4012	70.5
	6/11/2009	2.10413 J B	174
	6/30/2010	2.3979	187
	11/17/2010	2.15176 J	178
	7/6/2011	2.16332 J	180

Rank Sum = 2694
Rank Mean = 141.789

LMW-10	3/14/2000	ND<3.4012	70.5
	9/23/2003	ND<3.4012	70.5
	3/10/2004	ND<3.4012	70.5
	10/12/2004	ND<3.4012	70.5
	4/1/2005	ND<3.4012	70.5
	10/26/2005	ND<3.4012	70.5
	6/19/2006	ND<3.4012	70.5
	11/18/2006	ND<3.4012	70.5
	6/2/2007	ND<3.4012	70.5
	11/15/2007	ND<3.4012	70.5
	5/20/2008	3.68888 J	220
	11/20/2008	ND<3.4012	70.5
	6/11/2009	ND<0.262364 U	70.5
	6/30/2010	1.28093 J	144
	11/17/2010	1.66771 J	157
	7/6/2011	1.43508 J	147

Rank Sum = 1514
Rank Mean = 94.625

LMW-14R	6/2/2007	2.70805 J	196
	11/15/2007	ND<3.4012	70.5
	5/20/2008	2.89037 J	203
	11/20/2008	ND<3.4012	70.5
	6/11/2009	1.84055 J	161
	6/30/2010	1.58924 J	152
	11/17/2010	1.50408 J	149
	7/6/2011	2.30259	183

Rank Sum = 1185
Rank Mean = 148.125

LMW-15R	11/18/2006	2.63906 J	193
	6/2/2007	ND<3.4012	70.5
	11/15/2007	ND<3.4012	70.5
	11/15/2007	ND<3.4012	70.5
	5/20/2008	3.66356 J	219
	5/20/2008	ND<3.4012	70.5
	11/20/2008	ND<3.4012	70.5
	11/20/2008	ND<3.4012	70.5
	6/11/2009	1.8718 J	162
	6/30/2010	1.88707 J	163
	11/17/2010	2.11626 J	176
	7/6/2011	2.15176 J	179

Rank Sum = 1515
Rank Mean = 126.25

LMW-16	11/18/2006	ND<3.4012	70.5
	6/2/2007	2.77259 J	199
	11/15/2007	4.23411	231
	5/20/2008	2.70805 J	197
	11/20/2008	ND<3.4012	70.5
	6/11/2009	ND<0.262364 U	70.5
	6/30/2010	2.06686 J	173
	11/17/2010	1.6864 J	158
	7/6/2011	1.62924 J	154

Rank Sum = 1323.5
Rank Mean = 147.056

LMW-3	11/19/1996	ND<3.4012	70.5
	3/24/1997	ND<3.4012	70.5

	1/16/1998	ND<3.4012	70.5
	3/16/1999	2.99573 J	208
	9/23/1999	ND<3.4012	70.5
	3/14/2000	ND<3.4012	70.5
	9/23/2003	ND<3.4012	70.5
	3/10/2004	ND<3.4012	70.5
	10/12/2004	ND<3.4012	70.5
	4/1/2005	ND<3.4012	70.5
	10/26/2005	ND<3.4012	70.5
	6/19/2006	ND<3.4012	70.5
	11/18/2006	1.79176 J	160
	6/2/2007	ND<3.4012	70.5
	11/15/2007	4.18965	230
	5/20/2008	2.48491 J	191
	11/20/2008	ND<3.4012	70.5
	6/11/2009	1.98787 J B	170
	6/30/2010	2.14007 J	177
	11/17/2010	2.3979	188
	7/6/2011	2.02815 J	171

Rank Sum = 2411.5
Rank Mean = 114.833

LMW-7	1/16/1998	ND<3.4012	70.5
	3/16/1999	2.99573 J	209
	9/23/1999	3.68888 J	221
	3/14/2000	ND<3.4012	70.5
	9/23/2003	ND<3.4012	70.5
	3/10/2004	ND<3.4012	70.5
	10/12/2004	ND<3.4012	70.5
	4/1/2005	3.29584 J	213
	10/26/2005	3.43399 J	216
	6/19/2006	3.68888 J	222
	11/18/2006	3.04452 J	211
	6/2/2007	3.93183	227
	11/15/2007	ND<3.4012	70.5
	5/20/2008	2.30259 J	184
	11/20/2008	ND<3.4012	70.5
	6/11/2009	3.3673 B	214
	11/17/2010	2.25129 J	181
	7/6/2011	4.07754	229

Rank Sum = 2820.5
Rank Mean = 156.694

LMW-8	1/16/1998	ND<3.4012	70.5
	3/16/1999	4.49981	232
	9/23/1999	ND<3.4012	70.5
	3/14/2000	ND<3.4012	70.5
	9/23/2003	ND<3.4012	70.5
	3/10/2004	ND<3.4012	70.5
	10/12/2004	ND<3.4012	70.5
	4/1/2005	ND<3.4012	70.5
	10/26/2005	ND<3.4012	70.5
	6/19/2006	ND<3.4012	70.5
	11/18/2006	ND<3.4012	70.5
	6/2/2007	ND<3.4012	70.5
	11/15/2007	ND<3.4012	70.5
	5/20/2008	1.60944 J	153
	11/20/2008	ND<3.4012	70.5
	6/11/2009	2.10413 J	175
	6/30/2010	1.50408 J	150
	11/17/2010	1.16315 J	141
	7/6/2011	2.3979 J	189

Rank Sum = 1956.5
Rank Mean = 102.974

LMW-9	1/16/1998	ND<3.4012	70.5
	3/16/1999	4.49981	233
	9/23/1999	ND<3.4012	70.5
	3/14/2000	ND<3.4012	70.5
	9/23/2003	ND<3.4012	70.5
	3/10/2004	ND<3.4012	70.5
	10/12/2004	ND<3.4012	70.5
	4/1/2005	ND<3.4012	70.5
	10/26/2005	ND<3.4012	70.5
	6/19/2006	2.99573 J	210
	11/18/2006	ND<3.4012	70.5
	6/2/2007	2.83321 J	202
	11/15/2007	ND<3.4012	70.5
	5/20/2008	1.94591 J	167
	11/20/2008	ND<3.4012	70.5
	6/11/2009	ND<0.262364 U	70.5
	6/30/2010	1.4816 J	148
	11/17/2010	1.50408 J	151
	7/6/2011	1.30833 J	146

Rank Sum = 2103
Rank Mean = 110.684

LMW-9D	11/18/2006	1.94591 J	168
	6/2/2007	ND<3.4012	70.5
	11/15/2007	ND<3.4012	70.5
	5/20/2008	2.89037 J	204
	11/20/2008	ND<3.4012	70.5
	6/11/2009	1.25276 J	142
	6/30/2010	1.72277 J	159
	11/17/2010	1.62924 J	155
	7/6/2011	2.56495	192

Rank Sum = 1231.5
Rank Mean = 136.833

LMW-9S	11/18/2006	ND<3.4012	70.5
	6/2/2007	ND<3.4012	70.5
	11/15/2007	ND<3.4012	70.5
	5/20/2008	3.46574 J	217
	11/20/2008	ND<3.4012	70.5
	6/11/2009	1.64866 J	156
	6/30/2010	1.25276 J	143
	11/17/2010	1.28093 J	145
	7/6/2011	ND<0.262364 U	70.5

Rank Sum = 1013.5
Rank Mean = 112.611

LMW-3S	11/18/2006	2.30259 J	185
	6/2/2007	2.77259 J	200
	11/15/2007	3.8712 J	225
	5/20/2008	2.70805 J	198
	11/20/2008	ND<3.4012	70.5
	6/11/2009	2.89037 B	205
	6/30/2010	2.63906 Q	194
	11/17/2010	2.3979	190
	7/6/2011	2.02815 J	172

Rank Sum = 1639.5
Rank Mean = 182.167

MW-5	1/16/1998	ND<3.4012	70.5

	3/16/1999	3.68888 J	223
	9/23/1999	3.58352 J	218
	3/14/2000	ND<3.4012	70.5
	9/23/2003	ND<3.4012	70.5
	3/10/2004	ND<3.4012	70.5
	10/12/2004	ND<3.4012	70.5
	4/1/2005	ND<3.4012	70.5
	10/26/2005	ND<3.4012	70.5
	6/19/2006	ND<3.4012	70.5
	11/15/2007	ND<3.4012	70.5
	5/20/2008	ND<3.4012	70.5
	11/20/2008	ND<3.4012	70.5

Rank Sum = 1216.5
Rank Mean = 93.5769

LMW-13	3/14/2000	ND<3.4012	70.5
	9/23/2003	ND<3.4012	70.5
	3/10/2004	ND<3.4012	70.5
	10/12/2004	ND<3.4012	70.5
	4/1/2005	ND<3.4012	70.5
	10/26/2005	ND<3.4012	70.5
	6/19/2006	ND<3.4012	70.5
	6/2/2007	ND<3.4012	70.5
	11/15/2007	ND<3.4012	70.5
	5/20/2008	ND<3.4012	70.5
	11/20/2008	ND<3.4012	70.5

Rank Sum = 775.5
Rank Mean = 70.5

LMW-12	3/14/2000	ND<3.4012	70.5
	9/23/2003	ND<3.4012	70.5
	3/10/2004	ND<3.4012	70.5
	10/12/2004	ND<3.4012	70.5
	4/1/2005	ND<3.4012	70.5
	10/26/2005	ND<3.4012	70.5
	6/19/2006	ND<3.4012	70.5
	6/2/2007	ND<3.4012	70.5
	11/15/2007	ND<3.4012	70.5
	5/20/2008	ND<3.4012	70.5
	11/20/2008	ND<3.4012	70.5

Rank Sum = 775.5
Rank Mean = 70.5

LMW-11	3/14/2000	ND<3.4012	70.5
	9/23/2003	ND<3.4012	70.5
	3/10/2004	ND<3.4012	70.5
	10/12/2004	ND<3.4012	70.5
	4/1/2005	ND<3.4012	70.5
	10/26/2005	ND<3.4012	70.5
	6/19/2006	ND<3.4012	70.5
	6/2/2007	ND<3.4012	70.5
	11/15/2007	ND<3.4012	70.5
	5/20/2008	ND<3.4012	70.5
	11/20/2008	ND<3.4012	70.5

Rank Sum = 775.5
Rank Mean = 70.5

Calculation Results:

Kruskal-Wallis H Statistic = 41.9
Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 53.5067

95% Confidence comparison value is 26.2962 at 16 degrees of freedom
41.9 > 26.2962 indicating a significant group difference at 5% significance level
53.5067 > 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 121.605

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-6	141.789	20.1842	50.8753
LMW-10	94.625	-26.9803	53.2067
LMW-14R	148.125	26.5197	66.089
LMW-15R	126.25	4.64474	57.8206
LMW-16	147.056	25.4503	63.4527
LMW-3	114.833	-6.77193	49.6492
LMW-7	156.694	35.0892	51.5771
LMW-8	102.974	-18.6316	50.8753
LMW-9	110.684	-10.9211	50.8753
LMW-9D	136.833	15.2281	63.4527
LMW-9S	112.611	-8.99415	63.4527
LMW-3S	182.167	60.5614	63.4527
MW-5	93.5769	-28.0283	56.4411
LMW-13	70.5	-51.1053	59.4096
LMW-12	70.5	-51.1053	59.4096
LMW-11	70.5	-51.1053	59.4096

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 121.605

Well	Mean Rank	Dif from Bkg	Critical Value
LMW-6	141.789	20.1842	60.0915
LMW-10	94.625	-26.9803	62.8452
LMW-14R	148.125	26.5197	78.0612
LMW-15R	126.25	4.64474	68.2949
LMW-16	147.056	25.4503	74.9473
LMW-3	114.833	-6.77193	58.6433
LMW-7	156.694	35.0892	60.9204
LMW-8	102.974	-18.6316	60.0915
LMW-9	110.684	-10.9211	60.0915
LMW-9D	136.833	15.2281	74.9473
LMW-9S	112.611	-8.99415	74.9473
LMW-3S	182.167	60.5614	74.9473
MW-5	93.5769	-28.0283	66.6655
LMW-13	70.5	-51.1053	70.1718
LMW-12	70.5	-51.1053	70.1718
LMW-11	70.5	-51.1053	70.1718

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Zinc

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 60.0858%
Number of comparisons = 16
Future Samples (k) = 8
Recent Dates = 1
Background Samples (n) = 19
Maximum Background Concentration = 60
Confidence Level = 70.4%
False Positive Rate = 29.6%

Location	Date	Samples	Mean	Significant
LMW-6	7/6/2011	1	8.7	FALSE
LMW-10	7/6/2011	1	4.2	FALSE
LMW-14R	7/6/2011	1	10	FALSE
LMW-15R	7/6/2011	1	8.6	FALSE
LMW-16	7/6/2011	1	5.1	FALSE
LMW-3	7/6/2011	1	7.6	FALSE
LMW-7	7/6/2011	1	59	FALSE
LMW-8	7/6/2011	1	11	FALSE
LMW-9	7/6/2011	1	3.7	FALSE
LMW-9D	7/6/2011	1	13	FALSE
LMW-9S	7/6/2011	1	2.6	FALSE
LMW-3S	7/6/2011	1	7.6	FALSE
MW-5	11/20/2008	1	60	FALSE
LMW-13	11/20/2008	1	60	FALSE
LMW-12	11/20/2008	1	60	FALSE
LMW-11	11/20/2008	1	60	FALSE